EPA-740-B-23-001
OMB Control Number: 2070-0212
March 2023

Toxic Chemical Release Inventory Reporting Forms and Instructions

Revised 2022 Version

Section 313
of the Emergency Planning and Community Right-to-Know Act

(Title III of the Superfund Amendments and Reauthorization Act of 1986)

Paperwork Reduction Act Notice: This collection of information is approved by OMB under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. (OMB Control No. 2070-0212). Responses to this collection of information are mandatory, as specified in 40 CFR 372. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The public reporting and recordkeeping burden for this collection of information is estimated to be 36-22 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates and any suggested methods for minimizing respondent burden to the Regulatory Support Division Director, U.S. Environmental Protection Agency (2821T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques, to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW, Washington, DC 20503, Attention: Desk Officer for EPA. Include the EPA ICR number and OMB control number in any correspondence.

The completed forms should be submitted in accordance with these instructions and as specified in the corresponding regulation.

Table of Contents

List of Acronyms ..... **i**
Important Information for Reporting Year (RY) 2022 ..... **ii**
New Information for RY 2022 ii
Other Important Information iv
A. General Information **1**
A.1 Who Must Report 1
A.2 How to Submit Forms 2
A.2.a. TRI-MEweb RY 2022 Version 3
A.2.b. How to Use the TRI-MEweb RY 2022 Application 3
A.2.c. Electronic Signature Agreement 4
A.2.d. Miscellaneous Information on TRI-MEweb and User Resources 5
A.2.e. Confirmation of TRI Submission(s) to EPA 6
A.2.f. State and Tribal Submissions 7
A.3 Trade Secret Claims 7
A.4 Recordkeeping 7
A.5 How to Revise, Withdraw, or Cancel TRI Data 8
A.5.a. Revising TRI Data 8
A.5.b. Withdrawing TRI Data 9
A.5.c. Canceling a TRI Submission 9
A.5.d. Deleting Draft TRI Forms 10
A.6 When the TRI Report Must Be Submitted 10
A.7 How to Obtain the TRI Reporting Forms 11
A.8 What to Do If You Do Not Need to Submit any TRI Reports 11
B. How to Determine if Your Facility Must Submit a Form R or Is Eligible to Use the Form A Certification Statement **12**
B.1 Full-Time Employee Determination 12
B.2 Primary NAICS Code Determination 14
B.2.a. Auxiliary Facilities 14
B.2.b. Multi-establishment Facilities 14
B.2.c. Property Owners 16
B.2.d. Federal Facilities 16
B.2.e. Discretionary Authority 16
B.3 Activity Determination 16
B.3.a. Definitions of Manufacture, Process, and Otherwise Use 16
B.3.b. Chemicals of Special Concern Overview 20
B.3.c. Per- and Polyfluoroalkyl Substances (PFAS) 21
B.3.d. Activity Exemptions 21
B.4 Threshold Determinations 28
B.4.a. How to Determine if Your Facility Has Exceeded Thresholds 29
B.4.b. Threshold Determinations for On-Site Reuse Operations 30
B.4.c. Threshold Determinations for Ammonia 31
B.4.d. Threshold Determinations for Chemical Categories 31
B.4.e. Threshold Determinations for Chemicals of Special Concern 32
B.4.f. Threshold Determinations for PFAS 33
B.4.g. Threshold Determinations for Mixtures and Other Trade Name Products 33
B.5 Release and Other Waste Management Calculations for Chemical Categories (Including Metals, Metal Category Compounds, and Nitrate Compounds) 35
B.6. Facility Eligibility Determination for Alternate Threshold and for Reporting on TRI Form A Certification Statement 40

B.6.a. Alternate Threshold 40
B.6.b. What is the Form A Certification Statement? 40
B.6.c. What Is the Annual Reportable Amount? 40
B.6.d. Recordkeeping 40
B.6.e. Multi-establishment Facilities 41
B.6.f. Metals and Metal Category Compounds 41
B.6.g. Other Categories 41
Instructions for Completing TRI Forms R and A 42
C. Part I. Facility Identification Information (Form R & A) 42
Section 1. Reporting Year 42
Section 2. Trade Secret Information 42
Section 3. Certification 42
Section 4. Facility Identification 42
4.1 Facility Name, Location, TRI Facility Identification Number, and Tribal Country Name 42
4.2 Full or Partial Facility Indication and Federal Facility Designation 44
4.3 Technical Contact 45
4.4 Public Contact 45
4.5 North American Industry Classification System (NAICS) Codes 46
4.6 Dun & Bradstreet Number(s) 46
Section 5. Parent Company Information 46
5.1 Name of Parent Company 47
5.2 Parent Company's Dun & Bradstreet Number 47
D. Part II. Chemical-Specific Information (Form R & A) 50
Section 1. EPCRA Section 313 Chemical Identity (Form R & A) 50
1.1 CAS Number 50
1.2 Toxic Chemical or Chemical Category Name 50
1.3 Generic Chemical Name 50
Section 2. Mixture Component Identity (Form R & A) 51
2.1 Generic Chemical Name Provided by Supplier 51
Section 3. Activities and Uses of the EPCRA Section 313 Chemical at the Facility (Form R) 51
3.1 Manufacture the EPCRA Section 313 Chemical 52
3.2 Process the EPCRA Section 313 Chemical 52
3.3 Otherwise Use the EPCRA Section 313 Chemical (non-incorporative activities) 53
Section 4. Maximum Amount of the EPCRA Section 313 Chemical On-site at Any Time during the Calendar Year (Form R) 55
Section 5. Quantity of the Toxic Chemical Entering Each Environmental Medium On-Site (Form R) 56
5.1 Fugitive or Non-Point Air Emissions 57
5.2 Stack or Point Air Emissions 57
5.3 Discharges to Receiving Streams or Water Bodies 57
Sections 5.4 and 5.5: Disposal to Land On-site 58
Section 6. Transfer(s) of the Toxic Chemical in Wastes to Off-Site Locations (Form R) 64
6.1 Discharges to Publicly Owned Treatment Works 64
6.2 Transfers to Other Off-Site Locations 66
Section 7. On-Site Waste Treatment, Energy Recovery, and Recycling Methods (Form R) 73
Section 7A: On-Site Waste Treatment Methods and Efficiency 73
Section 7B: On-Site Energy Recovery Processes 77
Section 7C: On-Site Recycling Processes 77
Section 8. Source Reduction and Waste Management (Form R) 81
8.1 On- and Off-Site Disposal and Other Releases 86
Sections 8.2 and 8.3: Energy Recovery 87

Sections 8.4 and 8.5: Recycling 87
Sections 8.6 and 8.7: Treatment 88
8.8 Non-Production-Related Waste Managed 88
8.9 Production Ratio or Activity Ratio 91
8.10 Did Your Facility Engage in Any Newly Implemented Source Reduction Activities for This Chemical During the Reporting Year? 95
8.11 Optional Pollution Prevention Information 107
Section 9. Miscellaneous Information (Form R & A) 108
9.1 Miscellaneous, Optional, and Additional Information for Your Form R Report 108
9.2 Optional Pollution Prevention and Additional Information for This Toxic Chemical on Your Form A Certification Statement 108
E. Instructions for Completing Form R Schedule 1 (Dioxin and Dioxin-like Compounds) 110
E.1 What Is the Form R Schedule 1? 110
E.2 Who Is Required to File a Form R Schedule 1? 110
E.3 What Information Is Reported on the Form R Schedule 1? 110
E.4 How Do I Report Form R Schedule 1 Data? 112
F. Optional Facility-Level Information and Non-Reporting 113

Examples

Example 1: Coincidental Manufacture 18
Example 2: Typical Process and Manufacture Activities 18
Example 3: Typical Otherwise Use Activities 19
Example 4: Articles Exemption 22
Example 5: *De Minimis* Applications to Process and Otherwise Use Scenarios for EPCRA Section 313 Chemicals not Classified as Chemicals of Special Concern 25
Example 6: Concentration Ranges Straddling the *De Minimis* Value 26
Example 7: *De Minimis* Application in the Manufacture of a Toxic Chemical in a Mixture 27
Example 8: Coal Mining Extraction Activities 28
Example 9: Mixtures and Other Trade Name Products 34
Example 10: Reporting After a Change in Name or Ownership 44
Example 11: Identifying the Parent Company 47
Example 12: Reporting for Multiple Sites and/or Owners 48
Example 13: Mixture Containing Unidentified EPCRA Section 313 Chemical 50
Example 14: Manufacturing and Processing Activities of EPCRA Section 313 Chemicals 54
Example 15: Reporting Dioxins and Dioxin-Like Compounds 56
Example 16: Stormwater Runoff 63
Example 17: Container Residue 69
Example 18: Reporting Metals and Metal Category Compounds that are sent Off-site 71
Example 19: Reporting Chemicals Sent Off-site for Waste Management 72
Example 20: Calculating Releases and Other Waste Management Quantities 75
Example 21: On-Site Waste Treatment 79
Example 22: Reporting On-Site Energy Recovery 80
Example 23: Reporting On-Site Recycling 80
Example 24: Reporting Future Estimates 83
Example 25: Avoiding Double-Counting Quantities in Sections 8.1 through 8.7 88
Example 26: Non-Production-Related Waste Managed (Quantity Released to the Environment or Transferred Off Site as a Result of Remedial Actions, Catastrophic Events, or Other One-Time Events Not Associated with Production Processes) 90
Example 27: Selecting a Production or Activity Variable 93
Example 28: Determining a Production Ratio 93
Example 29: Determining an Activity Ratio 93
Example 30: "NA" is Entered Instead of a Production Ratio or Activity Ratio 94
Example 31: Determining the Production Ratio Based on a Weighted Average 94
Example 32: Source Reduction 99
Example 33: Reporting Source Reduction Activities 99
Example 34: Source Reduction Activity Scenarios 106

Figures

Figure 1. TRI-MEweb's Preparation, Certification, and Submission Process and Electronic Signature Agreement Approval 2
Figure 2. EPCRA Section 313 Reporting Decision Diagram 13
Figure 3. Example of a Multi-Establishment Facility 15
Figure 4A. EPCRA Section 313 Chemical Reporting Threshold Worksheet for Chemicals with 25,000/10,000-Pound Reporting Thresholds 36
Figure 4B. EPCRA Section 313 Chemical Reporting Threshold Worksheet for Chemicals of Special Concern and PFAS with 100-Pound Reporting Thresholds 37
Figure 4C. EPCRA Section 313 Chemical Reporting Threshold Worksheet for Chemicals of Special Concern with 10-Pound Reporting Thresholds 38
Figure 4D. EPCRA Section 313 Chemical Reporting Threshold Worksheet for Dioxin and Dioxin-Like Compounds Chemical Category 39
Figure 5. Reporting EPCRA Section 313 Chemicals 54
Figure 6. Waste Management Hierarchy 81
Figure 7. Hypothetical Form R, Section 5.1 and Form R Schedule 1, Section 5.1 111

Tables

Table I NAICS Codes I-1
Table II EPCRA Section 313 Chemicals for Reporting Year 2021 (including Toxic Chemical Categories) II-1
Table III Default Percentages for Section 6.1 Transfers III-1

Appendix

Appendix A Trade Secret Submissions A-1

List of Acronyms

BIA	Bureau of Indian Affairs
CAS	Chemical Abstracts Service
CASRN	Chemical Abstracts Service Registry Number
CBI	Confidential Business Information
CDX	Central Data Exchange
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFC	Chlorofluorocarbon
CFR	Code of Federal Regulations
C.I.	Color Index
COPR	Chromite Ore Processing Residue
D	Dichlorophenoxyacetic acid
DB	Dichlorophenoxybutyric acid
D&B	Dun & Bradstreet
DMR	Discharge Monitoring Report
DP	Dichlorprop
DPC	Data Processing Center
EBDC	Ethylenebisdithiocarbamic
eFDP	Electronic Facility Data Profile
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Electronic Signature Agreement
FR	Federal Register
GOCO	Government-Owned, Contractor-Operated
HCFC	Hydrochlorofluorocarbon
IARC	International Agency for Research on Cancer
ICR	Information Collection Request
NA	Not Applicable
NAICS	North American Industry Classification System
NDAA	National Defense Authorization Act
NON	Notice of Non-Compliance
NPDES	National Pollutant Discharge Elimination System
NPEs	Nonylphenol Ethoxylates
NTP	National Toxicology Program
OMB	Office of Management and Budget
OSHA	Occupational Safety and Health Administration
P2	Pollution Prevention
PACs	Polycyclic Aromatic Compounds
PBBs	Polybrominated Biphenyls
PBT	Persistent Bioaccumulative Toxic
PFAS	Per- and Polyfluoroalkyl Substances
POTW	Publicly Owned Treatment Works
PPA	Pollution Prevention Act
RCRA	Resource Conservation and Recovery Act
RSEI	Risk-Screening Environmental Indicators
RY	Reporting Year
SBREFA	Small Business Regulatory Enforcement Fairness Act
SDS	Safety Data Sheet
SIC	Standard Industrial Classification
TDX	TRI Data Exchange
TRI	Toxics Release Inventory
TRIFID	Toxics Release Inventory Facility Identification Number
TRIPS	Toxics Release Inventory Processing System
UIC	Underground Injection Control
USC	United States Code
USGS	United States Geological Survey
VOCs	Volatile Organic Compounds

Important Information for Reporting Year (RY) 2022

New Information for RY 2022

Please note that this version of the Toxics Release Inventory (TRI) Reporting Forms and Instructions document supersedes previous versions.

PFAS Reporting. The Fiscal Year 2020 National Defense Authorization Act (NDAA) added four per- and polyfluoroalkyl substances (PFAS) (see: https://www.epa.gov/newsreleases/epa-requires-reporting-releases-and-other-waste-management-certain-pfas-including-pfbs) to the TRI List effective RY 2022, with TRI forms due by July 1, 2023.

These are:

- perfluorobutane sulfonic acid (375-73-5),
- potassium perfluorobutane sulfonate (29420-49-3),
- perfluorobutanesulfonate (45187-15-3), and
- 2-Propenoic acid, 2-methyl-, hexadecyl ester, polymers with 2-hydroxyethyl methacrylate, γ-ω-perfluoro-C10-16-alkyl acrylate and stearyl methacrylate (203743-03-7)

A list of these chemicals is also available at https://www.epa.gov/toxics-release-inventory-tri-program/tri-listed-chemicals.

Updated *De Minimis* Levels for Aniline and Acrolein Beginning with Reporting Year 2022. Per the requirements of 40 CFR §372.38(a), the *de minimis* levels for aniline (62-53-3) and acrolein (107-02-8) have been changed from 1.0% to 0.1% since these chemicals are classified as carcinogens due to assessments by the International Agency for Research on Cancer (IARC).

In addition, to help with tracking and collecting data for Reporting Year 2023, be advised that beginning with RY 2023, the *de minimis* levels for the following chemicals will be changed from 1.0% to 0.1% as they will also be classified as carcinogens due to assessments by IARC:

- C.I. Direct Blue 218 (28407-37-6)
- 1,1,1-Trichloroethane (71-55-6)
- Diphenylamine (122-39-4)
- *N*-Methylolacrylamide (924-42-5)

2022 TRI NAICS Codes Revision. A final rule was published in the Federal Register on November 28, 2022 (87 FR 72891), to adopt the 2022 North American Industry Classification System (NAICS) codes for RY 2022, with forms due July 1, 2023. Table I lists all industries that are covered under EPCRA Section 313 and their corresponding codes. This final rule is a conforming edit to update the NAICS list to 2022 codes from 2017 codes and does not alter the universe of entities required to report to TRI. As a result of updating the 2017 NAICS codes to the 2022 NAICS codes, 54 TRI-covered NAICS codes have changed.

Application of TRI Reporting Requirements to Natural Gas Processing Facilities. A final rule was published in the Federal Register on November 24, 2021 (86 FR 66953) to add natural gas processing facilities to the scope of facilities covered by the TRI. This rule expands coverage to include all natural gas processing facilities that receive and refine natural gas. Facilities that primarily recover sulfur from natural gas were already covered by TRI. Facilities primarily engaged in natural gas extraction (e.g., exploration, fracking) are not included in this rule. Natural gas processing facilities should track their 2022 chemical activities and releases and other waste management quantities and, if appropriate, submit TRI data by the July 1, 2023 deadline.

Application of TRI Reporting Requirements to Certain Contract Sterilization Facilities. On December 28, 2021 (86 FR 73764), EPA issued a determination extending TRI reporting requirements for ethylene oxide (EtO) to 29 contract sterilization facilities. This determination also included reporting requirements for ethylene glycol for 16 of these facilities. These facilities should track their 2022 chemical activities and releases and other waste management quantities and, if appropriate, submit TRI data by the July 1, 2023, deadline. More information on EPA's discretionary authority to extend TRI reporting requirements to certain EtO facilities is available at: https://www.epa.gov/toxics-release-inventory-tri-program/epas-discretionary-authority-extend-tri-reporting-requirements.

Parent Company Definition for TRI Reporting. A final rule was published on October 21, 2022 (87 FR 63950) to codify the definition of "parent company" for TRI reporting purposes. The rule clarifies existing requirements to reporting facilities and adds a foreign parent company data element, if applicable. Starting with RY 2022, for forms due by July 1, 2023, reporters must enter their parent company information as codified in the following data elements:

- Part I, Section 5.1: Highest-level U.S.-based parent company
- Part I, Section 5.2: Dun & Bradstreet Number of Highest-level U.S.-based parent company

Additionally, starting with RY 2023 (reporting forms due by July 1, 2024), TRI facilities must report their foreign parent company, if applicable, in the following data elements:

- Part I, Section 5.3: Foreign parent company
- Part I, Section 5.4: Dun & Bradstreet Number of foreign parent company

All TRI reporting facilities are required to report their parent company according to the codified definition at 40 CFR 372.3, which clarifies how to report the highest-level parent company and its Dun & Bradstreet (D&B) number, if one exists, under various corporate ownership scenarios. All facilities must verify the accuracy of facility and parent company information (e.g., D&B number, parent company name). Facilities should also ensure they are providing the parent company name and Dun & Bradstreet number (if applicable) as of December 31 of the reporting year.

Related questions and answers are provided in Examples 10, 11, and 12. The Parent Company Definition for TRI Reporting guidance document contains several example ownership scenarios and descriptions of appropriate reporting.

Additionally, all TRI facilities must report their parent company's name according to standardized formats. Please note that EPA pre-loads standardized parent company names into TRI-MEweb that were researched from the prior year submissions. This step was taken to improve the accuracy of parent company names as well as create a standard format for the names themselves. For example, only capital letters are used and all periods are eliminated from the parent names. In addition, standardized abbreviations are used for common terms found in parent names such as 'CO for Company' and 'INC for Incorporated.' More detailed explanations and a facility-by-facility list of standardized parent names can be found at: https://guideme.epa.gov/ords/guideme_ext/guideme/file/ry_2022_parent_companies.xlsx.

To verify the accuracy of your facility and parent company Dun & Bradstreet number and name, as required in the Certification Statement in Section 5 of both Form R and Form A, go to: https://www.dnb.com/duns-number/lookup.html to verify your information. Callers to the phone number given on the website should understand that the Dun & Bradstreet support representatives will need to verify that callers requesting the D&B numbers are agents of the business. Dun & Bradstreet recommends knowing basic information such as when the business originated, officer names, and the name, address, and phone number for the facility.

Addition of 12 Chemicals. A final rule was published on November 30, 2022 (87 FR 73475), to add 12 chemicals to the TRI toxic chemical list following a petition to EPA from the Toxics Use Reduction Institute (TURI). Reporting on these chemicals is effective for Reporting Year 2023, so the first reports are due by July 1, 2024. Facilities are advised to begin tracking their activities involving these chemicals beginning with calendar year 2023.

The 12 chemicals added to the TRI list through this rule are:

- Dibutyltin dichloride; 683-18-1
- 1,3-Dichloro-2-propanol; 96-23-1
- Formamide; 75-12-7
- 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta[g]-2-benzopyran; 1222-05-5 *[see additional note below]*
- N-Hydroxyethylethylenediamine; 111-41-1
- Nitrilotriacetic acid trisodium salt; 5064-31-3
- p-(1,1,3,3-Tetramethylbutyl)phenol; 140-66-9
- 1,2,3-Trichlorobenzene; 87-61-6
- Triglycidyl isocyanurate; 2451-62-9
- Tris(2-chloroethyl) phosphate; 115-96-8

- Tris(1,3-dichloro-2-propyl) phosphate; 13674-87-8
- Tris(dimethylphenol) phosphate; 25155-23-1

Facilities should also be advised that one of the chemicals added to the TRI chemical list has been classified as a persistent, bioaccumulative and toxic (PBT) chemical and designated as a chemical of special concern for TRI purposes with a 100-pound reporting threshold: 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta[g]-2-benzopyran (1222-05-5).

The de minimis levels for these chemicals are 1.0%, except for Nitrilotriacetic acid trisodium salt (5064-31-3) which is classified as a carcinogen due to an assessment by IARC.

PFAS Reporting. The Fiscal Year 2020 National Defense Authorization Act (NDAA) added four per- and polyfluoroalkyl substances (PFAS) to the TRI List effective RY 2023, with TRI forms due by July 1, 2024.

- Acetamide, N-[3-(dimethylamino)propyl]-, 2-[(γ-ω-perfluoro-C4-20-alkyl)thio] derivs. (2738952-61-7)
- Acetic acid, 2-[(γ-ω-perfluoro-C4-20-alkyl)thio] derivs., 2-hydroxypropyl esters (2744262-09-5)
- Acetamide, N-(2-aminoethyl)-, 2-[(γ-ω-perfluoro-C4-20-alkyl)thio] derivs., polymers with N1,N1-dimethyl-1,3-propanediamine, epichlorohydrin and ethylenediamine, oxidized (2742694-36-4)
- Alcohols, C8-16, γ-ω-perfluoro, reaction products with 1,6-diisocyanatohexane, glycidol and stearyl alc. (2728655-42-1)
- Ammonium perfluorobutanoate (10495-86-0)
- Perfluorobutanoate (45048-62-2)
- Perfluorobutanoic acid (375-22-4)
- Potassium perfluorobutanoate (2966-54-3)
- Sodium perfluorobutanoate (2218-54-4)

Other Important Information

Source Reduction Activity Reporting. The source reduction activity codes were condensed to improve clarity, better reflect industrial activity, and reduce reporting burden. The revised set consists of 24 source reduction activity codes (S codes) corresponding to five source reduction categories. From this set of 24 codes, 10 have been designated as green chemistry/green engineering codes. The changes are effective for reporting year 2021.

Default Percentages for Section 6.1 Transfers. Default TRI POTW distribution percentages for zinc (fume or dust) (7440-66-6), aluminum (fume or dust) (7429-90-5), asbestos (friable) (1332-21-4), hydrochloric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size) (7647-01-0), and sulfuric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size) (7664-93-9) have been updated and assigned to Table III.

Reporting Codes. All reporting codes used for the TRI Form R and Form A Certification Statement are included in this document within the section applicable to the given code. Additionally, a list of all current reporting codes is provided via a separate resource: https://guideme.epa.gov/ords/guideme_ext/f?p=guideme:gd:::::gd:reporting_form_codes.

Pollution Prevention. To promote pollution prevention (P2), EPA has increased the prominence and accessibility of the P2 information reported in Sections 8.10 and 8.11 of the Form R. Some companies reporting P2 are highlighted in the annual TRI National Analysis report (found at https://www.epa.gov/trinationalanalysis) and all P2 entries are featured in the TRI P2 Search tool, (found at https://enviro.epa.gov/facts/tri/p2.html), including P2 data at the corporate level. To learn more, visit: https://www.epa.gov/toxics-release-inventory-tri-program/pollution-prevention-p2-and-tri.

GuideME. EPA provides TRI guidance materials via GuideME. GuideME provides consolidated, searchable access to TRI guidance materials, including Questions and Answers guidance, Reporting Forms & Instructions, Chemical and Industry Guidance Documents, Training Slides, and other materials. You may access these guidance materials through your Web browser or download the materials as PDFs. GuideME is available at: https://www.epa.gov/tri/guideme.

Facilities May Submit Optional Facility Level Information in TRI-MEweb Without Having to

Submit a Form R or Form A Certification Statement. You can use TRI-MEweb to update location and contact information for your facility without having to submit a TRI reporting form. Additionally, without submitting a TRI reporting form, you can use TRI-MEweb to indicate that your facility will no longer be reporting to TRI or will not be submitting a form for one or more specific TRI-listed chemicals for the current reporting year.

EPA's Audit Policy. Regulated entities of any size that discover, promptly disclose, expeditiously correct, and take steps to prevent recurrence of potential violations voluntarily may be eligible for a reduction or elimination of any civil penalties that otherwise might apply. Most violations can be disclosed and processed via EPA's automated online "eDisclosure" system (https://www.epa.gov/compliance/epas-edisclosure). To learn more about EPA's violation disclosure policies, including conditions for eligibility, please review EPA's Audit Policy website at https://www.epa.gov/compliance/epas-audit-policy. Many states also offer incentives for self-policing; please check with the appropriate state agency for more information.

EPA's Small Business Compliance Policy. If you have 100 or fewer employees and discover that your facility is or may have been in violation of Section 313 of EPCRA (TRI Reporting), please refer to EPA's Small Business Compliance Policy. EPA will eliminate or significantly reduce penalties for small businesses that meet the conditions of the Policy, including discovering violations and promptly disclosing and correcting them voluntarily. This Policy implements Section 223 of the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996. For more information, see the Agency's website: https://www.epa.gov/compliance/small-business-compliance.

A. General Information

Reporting to the Toxic Chemical Release Inventory (i.e., Toxics Release Inventory (TRI)) is required by Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA, or Title III of the Superfund Amendments and Reauthorization Act of 1986), Pub. L. No. 99-499. The information contained in the Form R constitutes a "report," and the submission of a report to the appropriate authorities constitutes "reporting."

The Pollution Prevention Act (PPA) of October 1990 (Pub. L. No. 101 508), added reporting requirements to the Form R. These requirements began with calendar year 1991 reports and affect all facilities required to submit a Form R under Section 313 of EPCRA.

Reporting is required to provide information to the public on releases and other waste management of EPCRA Section 313 chemicals in their communities and to provide EPA with release and other waste management information to assist the Agency in determining the need for future regulations. Facilities must report the quantities of routine and accidental releases, and releases resulting from catastrophic or other one-time events of EPCRA Section 313 chemicals, as well as the maximum amount of the EPCRA Section 313 chemical on-site during the calendar year and the amount contained in wastes managed on-site or transferred off-site.

A completed Form R or Form A Certification Statement must be submitted for each EPCRA Section 313 chemical manufactured, processed, or otherwise used at each covered facility as described in the reporting rules in 40 Code of Federal Regulations (CFR) Part 372 (originally published February 16, 1988, in the *Federal Register* and November 30, 1994, in the *Federal Register* (for Form A Certification Statement)).

The Electronic Reporting Rule was published in the *Federal Register* on August 27, 2013 (78 FR 52860), and requires that all forms be submitted electronically. Reports that are not submitted electronically using TRI-MEweb will not be processed as acceptable submissions. However, facilities submitting TRI reports containing trade secrets will still submit their reports to EPA on paper, not via TRI-MEweb. This electronic reporting requirement includes late submissions for prior reporting years, revisions, and withdrawals.

July 1 is the TRI reporting deadline. There is a legal obligation to file an accurate and complete Form R report for each chemical by July 1 each year. EPA may take enforcement action and assess civil administrative penalties in response to corrections to errors in Form R reports that are not changes based on previously unavailable information or procedures which improve the accuracy of the data initially reported. The kinds of errors which may result in enforcement and/or penalties include but are not limited to: (1) errors caused by not using the most readily available information (e.g., not using monitoring data collected for compliance or other purposes with other regulations in calculating releases); (2) omitting a major source of emissions; (3) a mathematical or transcription or typographical error which seriously compromises the accuracy of the information, and; (4) other errors which seriously affect the utility of the data, particularly errors in release reporting for which the facility has no records showing the derivation of the release calculation, and cannot provide a sufficient explanation of the report.

A.1 Who Must Report

EPCRA Section 313 requires that owners and operators of certain facilities submit reports. The owners and operators of a facility must report if:

- The facility manufactures (defined to include importing), processes, or otherwise uses any EPCRA Section 313 chemical in quantities greater than the established threshold in the course of a calendar year. Reporting thresholds are listed in Section B.4; **and**
- The facility either:
  a. Has 10 or more full-time employee equivalents (i.e., a total of 20,000 hours or greater; see 40 CFR 372.3) **and** is included in a NAICS code listed in Table I; **or**
  b. Is specifically required to report based a determination by the Administrator under EPCRA 313(b)(2).

In 1993, Executive Order 12856 extended these reporting requirements to federal facilities, regardless of their SIC or NAICS code. Subsequent Executive Orders have not changed this requirement.

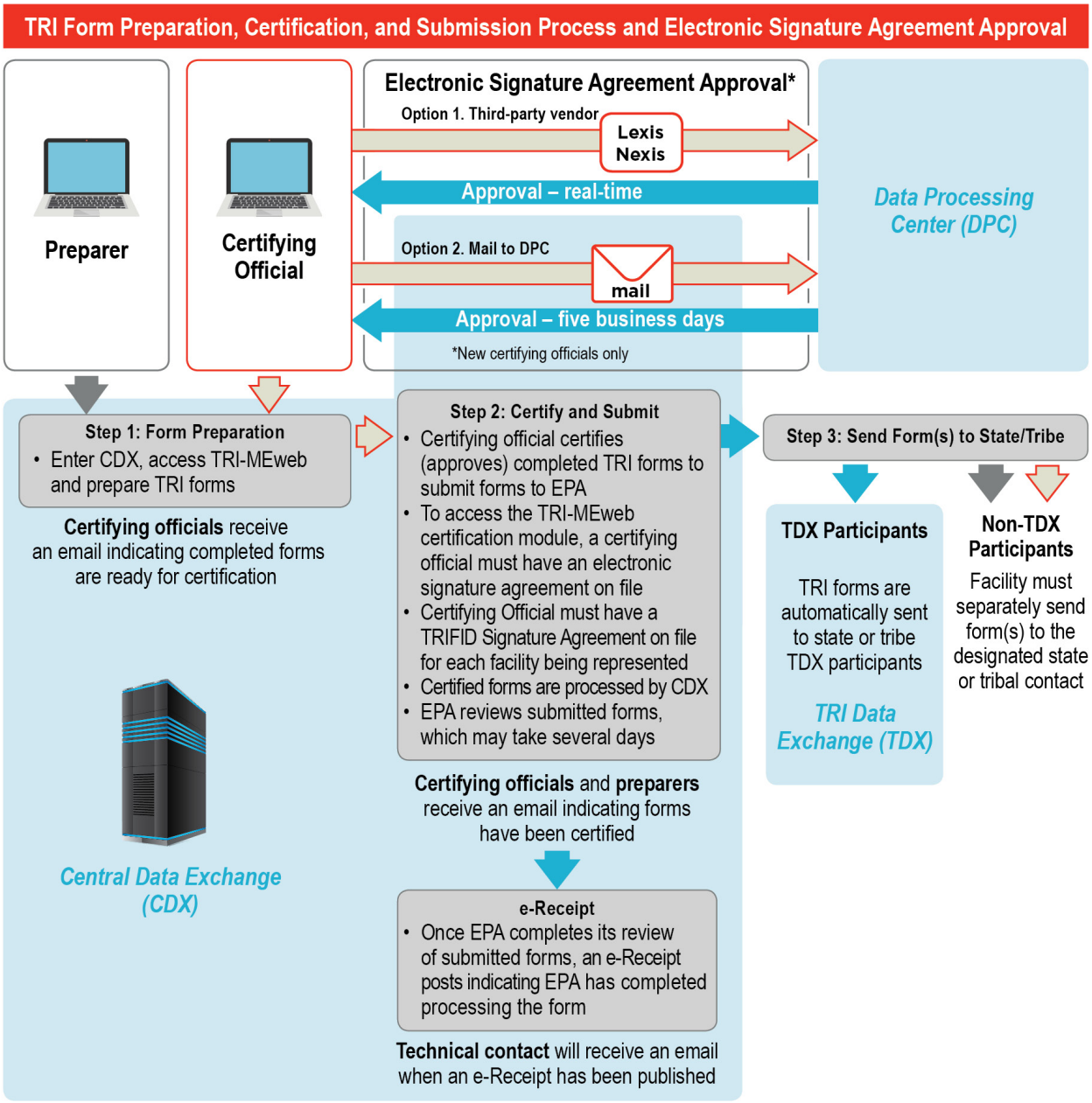


Figure 1. TRI-MEweb's Preparation, Certification, and Submission Process and Electronic Signature Agreement Approval

A.2 How to Submit Forms

Facilities must use the TRI-MEweb application to submit non-trade secret TRI reports. TRI-MEweb is accessible online and assists facilities reporting TRI data.

Some facilities prepare TRI reporting forms using their own software. These facilities still need to upload and submit their TRI reporting forms to EPA using TRI-MEweb via the online reporting application's Upload XML feature. More information on the Upload XML feature can be found by watching this tutorial video: https://www3.epa.gov/tri/tutorials/TRIT-39/index.html and by reviewing the "TRI schema and supporting documentation" accessible here: https://www.exchangenetwork.net/data-exchange/toxics-release-inventory-tri/.

Facilities must submit a copy of each reporting form sent to EPA to the state, territory, or tribe in which that facility is located. Additional information related to state, territory, and tribal submission is located in Section A.2.f.

A.2.a. TRI-MEweb RY 2022 Version

Facilities use TRI-MEweb to fulfill their Emergency Planning and Community Right-to-Know (EPCRA) Section 313 and Pollution Prevention Act (PPA) Section 6607 reporting obligations. TRI-MEweb is an interactive, web-based application that guides facilities through TRI reporting. Using a series of logically ordered questions, TRI-MEweb streamlines the analysis needed to determine if a user must complete a Form R Report or if they meet thresholds that allow them to use the Form A Certification Statement for a particular chemical.

The TRI-MEweb software provides guidance for each data element on the TRI reporting forms. TRI-MEweb checks the entered data for common errors and then prepares it for electronic transmission and certification in the Agency's Central Data Exchange (CDX) (see the flow diagram of the TRI-MEweb reporting process in Figure 1). TRI-MEweb allows facilities to submit, revise, and withdraw TRI reporting forms for RYs 1991 through the current reporting year, provided the forms do not contain trade secret information.

A.2.b. How to Use the TRI-MEweb RY 2022 Application

TRI-MEweb is accessed through EPA's CDX. The TRI-MEweb application uses EPA's CDX network to certify and submit electronic submissions to EPA. CDX allows facilities to submit a paperless report and receive instant confirmation receipt of their submission. TRI-MEweb supports most Web browsers; however, ***should you encounter any problems in accessing CDX or TRI-MEweb, consult the TRI-MEweb Resource webpage***: https://www.epa.gov/toxics-release-inventory-tri-program/tri-meweb-resources.

Two user roles involved in TRI reporting. There are two user roles in the TRI reporting process: a preparer role and a certifying official role. Figure 1 illustrates how these two roles are involved in the TRI reporting process. The "Preparer" is the person who prepares TRI forms for submission in TRI-MEweb but is not authorized to certify them. The "Certifying Official" is the person of authority or legal representative at a facility that certifies the data contained in the submitted TRI Form R or Form A Certification Statement in TRI-MEweb to both EPA and their state or tribe. Certifying officials may also prepare forms, but the preparer cannot certify TRI forms. Both TRI roles require a CDX user account with the TRI-MEweb application added to the *MyCDX* profile. Step-by-step instructions for creating CDX user accounts for new preparers or certifying officials can be found on the TRI-MEweb Resources webpage: https://www.epa.gov/toxics-release-inventory-tri-program/tri-meweb-resources. Establishing a CDX account and getting started in TRI-MEweb as a new preparer or certifying official.

- Access the CDX login webpage at https://cdx.epa.gov/. Click the "**Register with CDX**" link to begin creating a new CDX user account.
- When registering with CDX, search for TRI-MEweb when adding a Program Service to your account.
- Note that CDX passwords expire after 90 days.
- All new certifying officials must submit an Electronic Signature Agreement (ESA) form to EPA for approval before certifying and submitting TRI forms. If you are registering as a certifying official, then please review the ESA section below to learn how to become authorized to certify and submit TRI reporting forms.
- Users that already have a CDX account for other EPA reporting programs that require an CDX ESA and have never reported to TRI before will only need to add TRI-MEweb by clicking the **Manage Your Program Services** link on their "**MyCDX**" page. This will enable TRI reporting through their CDX account.

Linking your new CDX account to an existing TRI facility in TRI-MEweb. If your facility has submitted a TRI reporting form for a prior reporting year, it will already have a TRI Facility Identification Number (TRIFID) assigned to it. *You **should not** create a new TRIFID for your facility if the facility has previously submitted a TRI reporting form.* See Section 4.1 Facility Name, Location, TRI Facility

Identification Number, and Tribal Country Name for more information on reporting a TRIFID.

In TRI-MEweb, you can also load information about an existing TRI facility by providing the technical contact information and TRIFID used on a report from the prior reporting year. Or, you can enter an access key for your facility, which was created when the TRIFID was established and is provided to the facility's preparers and certifying officials. In TRI-MEweb, you may request that the facility access key be emailed to you. Additionally, the person who previously prepared or certified forms for your facility can use TRI-MEweb to send the access key via email to allow a preparer or certifying official to connect to an existing facility. You can also contact the CDX Help Desk at (888) 890-1995 to obtain an access key.

A.2.c. Electronic Signature Agreement

An Electronic Signature Agreement (ESA) is a statement that declares that the person electronically signing a document (i.e., a reporting form) understands the electronic signature is as legally binding as a handwritten signature. EPA requires a certifying official to have a signed ESA on record before the certifying official can certify and submit a TRI form created in TRI-MEweb. Returning certifying officials since RY 2013 will likely have a signed ESA on record in CDX. All signed ESAs in PDF format can be found under the "**Facility Management**" tab. Certifying officials will only need to navigate to the "**Forms**" tab and then to the "**Pending Forms**" subtab in TRI-MEweb to find pending submission(s) that are ready to be certified.

ESAs are created when a user creates a new CDX account with a certifying official role. Currently, there are two ways to obtain an ESA approval from EPA:

Option 1 - LexisNexis real-time CDX ESA approval. A new certifying official may use a third-party identity-verification vendor to obtain an ESA electronically within CDX. (Note: the use of third-party verification and identification widgets is common in banking systems.) The certifying official will need to voluntarily provide personally identifying information to the third-party vendor (EPA does not collect any personal information from our users) to authenticate their identity. The most significant benefit gained from using this third-party identity verification is that users will no longer need to wait up to five business days for EPA to approve a paper ESA. If the certifying official does not wish to provide personal information to a third-party vendor, they should print and mail a paper ESA form to the TRI Data Processing Center instead well ahead of the July 1 reporting deadline.

A significant advantage of this real-time method, besides obtaining immediate ESA approval through CDX, is that the real-time approval is applicable to multiple CDX system flows. Programs like eTSCA and Risk Management Plan (RMP eSubmit) share the security credentials offered by the CDX ESA obtained under TRI.

Option 2 - Paper ESA form. A printable ESA form can be generated during the CDX registration process. The ESA form must be signed and mailed to EPA's Data Processing Center (DPC in Figure 1) for approval before the certifying official can certify any TRI forms completed by the preparer in CDX using TRI-MEweb. The paper ESA approval process requires the printing, completion, and mailing of an ESA form. Paper ESA approval may take up to five business days, so please plan accordingly or consider option one, LexisNexis. Access to the TRI-MEweb application on the "**MyCDX**" page is activated when the ESA is approved by the DPC.

Paper ESAs can be mailed to the address below:

Attention: TRI ESA Approval Request
TRI Reporting Center
P.O. Box 10163
Fairfax, VA 22038

Certifying officials who do not have a signed electronic or paper ESA that has been approved by the DPC will not be able to certify forms in TRI-MEweb. It is recommended that certifying officials complete their ESA well in advance of the July 1 reporting deadline.

Accidental deletion of ESA in TRI-MEweb. The TRI-MEweb application has the capability to manage user profiles (previously authorized preparers or certifying officials) that have been granted access to facility accounts. This capability includes revoking approved ESA(s) for any certifying official(s) that has left the facility's payroll or is no longer authorized to certify forms. An ESA could also be accidently revoked by the preparer. If this occurs, there is a 45-day grace period to get the ESA

reactivated by the CDX helpdesk without having to send a paper form to EPA for re-approval. An email notification is sent to the affected certifying official by CDX when an ESA has been revoked within TRI-MEweb.

TRIFID Signature Agreement Form. In addition to the ESA requirement, new certifying officials must sign a TRIFID Signature Agreement form for each facility they represent for TRI reporting. By signing the TRIFID Signature Agreement, certifying officials are confirming that they are owner/operators or senior management officials for the reporting facility and are authorized to certify forms for that facility. Certifying officials must complete the TRIFID Signature Agreement form only once for each facility they represent as a certifying official. Returning certifying officials will be ready to certify any forms for a facility account for which a TRIFID Signature Agreement was previously signed. A single CDX ESA will also allow new and returning certifying officials to represent additional facility accounts without the need for an ESA approval for each facility account. All newly added facility accounts will require a TRIFID Signature Agreement to be signed.

A certifying official must have an approved ESA before they can log into TRI-MEweb. Once in TRI-MEweb, the certifying official should click on the "**Facility Management**" tab to access the "**Manage TRIFID Signature Agreements***"* page, where a list of TRIFIDs pending a TRIFID Signature Agreement is displayed. Select the checkbox next to the facility's TRIFID in the *Pending Signature* table and click the "**Sign Agreement**" button. If your facility account is not visible in the "Signature Received" section, click the "**Add Facility**" button to incorporate your missing facility account using the access key code method. Review the TRIFID Signature Agreement and click the "**I Agree**" button. The electronic signature widget will prompt the certifying official to enter their CDX password, answer a security question, or enter a PIN sent by text message (i.e., Short Message Service (SMS)), and click the "**Sign**" button. A confirmation box will appear, noting the successful signature.

CDX ESA and TRIFID Signature Agreement Status in TRI-MEweb. The CDX ESA and TRIFID Signature Agreement status of the certifying official(s) assigned to each facility is listed under the "Status" column on the "**Manage Users**" page in TRI-MEweb.

- A status of **No CDX ESA** indicates that no certifying officials have been associated with a facility account.
- A status of **Sign CDX ESA** indicates that the new certifying official has not signed an ESA. The certifying official must sign a new CDX ESA.
- A status of **Sign TRIFID Signature Agreement** indicates that the certifying official has obtained approval of the CDX ESA, but still needs to sign the TRIFID Signature Agreement within TRI-MEweb for the facility account.
- A status of **Active Certifying Official Available** indicates that your assigned certifying official has received approval of the CDX ESA, signed the TRIFID Signature Agreement form, and is ready to certify any pending forms completed by the preparer for a specific facility account.

A.2.d. Miscellaneous Information on TRI-MEweb and User Resources

Resetting CDX Passwords. CDX passwords expire after 90 days. You will likely need to reset your password. Click the "**Forgot your password**?" link to reset your password. You have two options to verify your identity. You can answer one of five security questions correctly or you can request that a numeric PIN be sent via text message to your registered mobile phone (previously registered). Completion of the identity verification step enables you to reset your password. If you do not remember the answers you provided to the security questions completed when you registered with CDX, then you will need to contact the CDX Help Desk at (888) 890-1995. Once you have successfully logged into your CDX account, you may edit the answers to your security questions by clicking the "**My Profile**" tab on the "**MyCDX**" page.

Importing Previous Year Data into Current Year Chemical Forms. TRI-MEweb can import certain data fields provided from the prior year data (if RY 2021 data were provided by the facility in the previous year) into each selected current year TRI chemical form. Although it is optional, importing

data can accelerate data entry if the same chemicals are reported to EPA each year. Importing data into any forms for the current reporting year that have been already started in TRI-MEweb will result in the data being overwritten in the imported data fields. Keep in mind that not all the data fields are populated with prior year data so you must still complete calculations and run the error checking validation on your forms before you may certify and submit them.

Error Checker Software in TRI-MEweb. Once data entry is complete or data is imported into TRI forms using TRI-MEweb, you must click the "**Check for Errors**" button to start the error checking software in TRI-MEweb. The error checking software will detect three categories of errors: critical errors, potential errors, and data quality alerts. All critical errors must be fixed before a TRI submission can be certified. Potential errors and data quality alerts need to be reviewed and verified; however, their presence will not prevent the submission from being certified and sent to EPA. You may also walk through any detected errors and alerts by clicking the "**View/Fix Errors**" button on the "**Review Forms**" page and the clicking the "**Enter Error Navigation Mode"** button on the **Error List** pop-up. Error reports can be generated from the "**Review Forms**" page under the "**Forms**" tab.

Processing TRI Forms for Certification. Once you have checked for errors using TRI-MEweb's error checking software and have passed with no detectable critical errors, you can proceed to designate a certifying official to review your completed TRI forms who will then be able to log into TRI-MEweb to review and electronically sign the forms. A certifying official can cancel a form to return it to an editable form should a correction to the form be necessary. If no corrections are needed and the certifying official is ready to submit the form to EPA, the certifying official can electronically sign the form and submit it. To sign and submit a TRI reporting form, the certifying official will need to answer a security question or use a SMS text verification service to verify identity. An email from CDX will confirm that the form has been properly certified and submitted.

Uncertified TRI-MEweb Submissions. A facility's registered certifying official must electronically sign Form R and/or Form A Certification Statements via TRI-MEweb before the submission is considered complete. Uncertified TRI-MEweb electronic submissions are not considered complete according to the reporting requirements in EPCRA Section 313. Lack of certification will prevent the submission from being processed. Uncertified TRI forms do not satisfy the requirements of the TRI Program. Failure to adhere to the requirements of Section 313 of EPCRA and its implementing regulations could result in an EPA enforcement action against a facility.

TRI-MEweb User Resources

- TRI-MEweb website:

  https://www.epa.gov/toxics-release-inventory-tri-program/tri-meweb-resources.
  Service notifications and reference materials for reporting are posted on this webpage.

- TRI-MEweb online tutorials:
  https://www.epa.gov/system/files/documents/2022-08/TRI-MEweb%20Mini-Tutorial%20List.pdf.
  Online Tutorials that provide step-by step instructions for using TRI-MEweb.

For assistance, contact the TRI Information Center Hotline at (800) 424-9346 (select option 3) or CDX Help Desk at (888) 890-1995. These hotlines provide regulatory reporting assistance and CDX/TRI-MEweb technical support to TRI reporting facilities.

A.2.e. Confirmation of TRI Submission(s) to EPA

You can confirm that you have properly submitted your TRI Form R and Form A Certification Statement by the following methods:

TRI-MEweb: Confirmation of your federal and state/territory/tribal submission can be found on the "**Submission History**" tab in the TRI-MEweb application.

CDX Email: A CDX email is sent to the registered email address of the certifying official, preparer and technical contact of the reporting facility after the form has been certified in TRI-MEweb. If you have not received a confirmation email, verify that your registered email address has not changed or that the CDX email is not being diverted to another inbox by your junk/spam email filter.

Electronic Receipt (e-Receipt): After a form is certified and submitted it goes through additional data quality checks. Once the form clears these checks, which may take 30 minutes or up to several days, it enters EPA's TRI database. Upon form entry into the TRI database, you will be able to access an *e-Receipt* report in TRI-MEweb by reviewing the "**Submission History**" tab in TRI-MEweb.

If the facility's Technical Contact provides an email address in the Form R/Form A Certification Statement, they will also receive an email notifying them when their e-Receipt has been published for review in TRI-MEweb. *Please Note*: the Technical Contact will typically receive this email following the certification and submission of a form; however, data quality checks performed after submittal of the form could delay the sending of this e-Receipt email by several days, especially if certification occurred during the last days before the TRI deadline.

A.2.f. State and Tribal Submissions

Facilities that reside in a state or territory participating in the TDX will have their RY 2005 - 2022 forms sent simultaneously to EPA and their state or tribal TRI representative in electronic format. Find which states are participating in TDX at: https://www.epa.gov/toxics-release-inventory-tri-program/tri-data-exchange.

If the facility is located in a state, territory, or tribal country that is not in TDX, then the facility must also send a copy of the report to the state. To verify whether your state is or is not in the TDX system, go to: https://www.epa.gov/toxics-release-inventory-tri-program/tri-data-exchange. "State" also includes: the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, Marshall Islands, the U.S. Virgin Islands, the Commonwealth of the Northern Mariana Islands, and any other jurisdiction and Indian country. Refer to: https://www.epa.gov/toxics-release-inventory-tri-program/tri-state-contacts for the appropriate state submission addresses.

Facilities located within a tribe's Indian country will need to provide their three-digit Bureau of Indian Affairs (BIA) tribal code for their Indian country name in the "BIA Code" field on the Form R or Form A Certification Statement in Section 4.1. The "**Edit Facility**" page in TRI-MEweb provides a searchable list of BIA codes and corresponding Indian country names. BIA tribal codes are accessible via this webpage: https://www.epa.gov/data-standards/tribal-identifier-data-standard.

Hard copies of TRI forms must be mailed to the tribe's Chief Executive Officer. If tribes have entered into a cooperative agreement with states, report submissions should be sent to the entity designated in the cooperative agreement. Facilities using TRI-MEweb to fulfill their federal and tribal reporting requirements under EPCRA Section 313 will be able to print a paper of the TRI form to mail to their Indian country's Chief Executive Officer. A list of TRI Tribal Contacts is available at: https://www.epa.gov/toxics-release-inventory-tri-program/tri-tribal-contacts

RYs 1991 - 2004 submissions: If a facility prepares and submits a TRI RY 1991 through RY 2004 form using TRI-MEweb, they must print/save a copy of their TRI form on alternate media and send it to their State or Tribal TRI coordinator, even if State or Tribal Country is on the TDX network. TDX is not configured to transmit pre-RY 2005 TRI forms.

A.3 Trade Secret Claims

A trade secret claim may be submitted to prevent disclosure of the identity of an EPCRA Section 313 chemical. See Appendix A for instructions on preparing and submitting trade secret claims. Note that trade secret submissions must be on paper and that TRI-MEweb does not support the preparation of trade secret TRI reporting forms.

A.4 Recordkeeping

Sound recordkeeping practices are essential for accurate and efficient TRI reporting. It is in the facility's interest, as well as EPA's, to maintain records properly. Facilities must keep a copy of each report filed for at least three years from the date of submission. These reports will be of use when completing future reports.

Facilities must also maintain those documents, calculations, worksheets, and other forms upon which they relied to gather information for prior reports. In the event of a problem with data elements on a facility's Form R or Form A Certification Statement, EPA may request documentation from the facility that supports the information reported.

EPA may conduct data quality reviews of Form R or Form A Certification Statement submissions. An essential component of this process involves reviewing a facility's records for accuracy and completeness. EPA recommends that facilities keep a record for those EPCRA Section 313 chemicals for which they did not file EPCRA Section 313 reports.

EPA also recommends keeping records of all documentation containing your CDX account information for your preparer(s) and certifying official(s) that use TRI-MEweb to prepare and certify the reporting facility's TRI Form R and/or Form A Certification Statement. These CDX documents include the ESA and the facility's unique alphanumeric access key.

Records to maintain include:

- Previous years' EPCRA Section 313 reports;
- EPCRA Section 313 Reporting Threshold Worksheets;
- Engineering calculations and other notes;
- Purchase records from suppliers;
- Inventory data;
- EPA (NPDES) permits and monitoring reports;
- EPCRA Section 312 Tier II Reports;
- Monitoring records;
- Flowmeter data;
- RCRA Hazardous Waste Generator's Report;
- Pretreatment reports filed by the facility with the local government;
- Invoices from waste management companies;
- Manufacturer's estimates of treatment efficiencies;
- RCRA manifests;
- Process diagrams that indicate emissions and other releases;
- Records for those EPCRA Section 313 chemicals for which they did not file EPCRA Section 313 reports; and
- CDX account information including unique access key to pre-load facility account into TRI-MEweb and copies of the ESA(s) submitted to EPA for approval.

A.5 How to Revise, Withdraw, or Cancel TRI Data

A.5.a. Revising TRI Data

Facilities that filed a Form R and/or Form A Certification Statement under EPCRA Section 313 may submit a request to revise a form that was previously submitted, stored in EPA's historical database called the Toxics Release Inventory Processing System (TRIPS), and made available to the public through various resources such as Envirofacts and TRI Explorer. Refer to https://www.epa.gov/toxics-release-inventory-tri-program/tri-data-and-tools for more information on available TRI data and tools.

Facilities may only revise TRI reporting forms submitted for RY 1991 through the current reporting year and must do so using TRI-MEweb.

Facilities may request a revision for one or more of the following reasons:

Revision codes:

- RR1 - New Monitoring Data
- RR2 - New Emissions Factor(s)
- RR3 - New Chemical Concentration Data
- RR4 - Recalculation(s)
- RR5 - Other Reason(s)

Please note that late submissions for chemicals not reported in a previous reporting year are not considered revisions for that year.

Facilities are reminded that there is a legal obligation to file an accurate and complete Form R or Form A Certification Statement for each chemical by July 1 each year. EPA may take enforcement action and assess civil administrative penalties regarding corrections to errors in Form R reports that are not changes based on previously unavailable information or procedures which improve the accuracy of the data initially reported. The kinds of errors which may result in enforcement and in penalties include but are not limited to the following: (1) Errors caused by not using the most readily available information, for example, not using monitoring data collected for compliance with other regulations in calculating releases; (2) omitting a major source of emissions; (3) a mathematical transcription, or typographical error which seriously compromises the accuracy of the information; and (4) other errors which seriously

affect the utility of the data, particularly errors in release reporting for which the facility has no records showing the derivation of the release calculation, and cannot provide a sufficient explanation of the report.

How do I revise my submission(s)?

If you plan to revise a TRI submission, send revised report(s) to EPA and the appropriate state or tribal agency (TRI-MEweb will inform you as to whether TDX will provide the revised reports to the state or tribe, or whether you must provide the revised report(s) to the given entity).

Use TRI-MEweb to submit revisions to TRI submissions. EPA will only accept revisions for RY 1991 through the current year.

If you have questions about using TRI-MEweb to revise your Form R/A, please refer to the *TRI-MEweb Tutorials* at:

https://www.epa.gov/toxics-release-inventory-tri-program/electronic-submission-tri-reporting-forms.

A.5.b. Withdrawing TRI Data

Facilities that filed a Form R and/or Form A Certification Statement under EPCRA Section 313 may submit a request to withdraw a form that was previously submitted, stored in TRIPS, and made available to the public through Envirofacts and TRI Explorer. EPA may periodically review withdrawals.

Use TRI-MEweb to withdraw TRI reporting forms submitted for RY 1991 through the current reporting year.

Facilities may request a withdrawal for one or several reasons, such as:

Withdrawal codes:

- WT1 - Did not meet the reporting threshold for manufacturing, processing, or otherwise use
- WT2 - Did not meet the reporting threshold for number of employees
- WT3 - Not in a covered NAICS Code
- WO1 - Other reason(s)

How do I withdraw my submission(s)?

If you plan to withdraw a TRI submission, send your request to EPA using TRI-MEweb – withdrawals on paper forms will not be accepted. Withdrawal requests for RY 2005 - 2022 forms will be automatically submitted to states participating in the TDX. Non-TDX state/tribal facilities need to mail in paper forms to their state or tribe. Keep in mind that successfully completed withdrawal requests remove the chemical release data that was provided by the reporting facility and processed into TRI's publicly available database.

If the reporting facility needs to make a correction to data submitted to EPA, you should revise the form rather than withdraw and resubmit the form.

Use TRI-MEweb to withdraw TRI forms from RY 1991 through the current year. Withdrawals can only be done for TRI submissions that have been properly completed, certified, and processed by EPA. If you have questions about using TRI-MEweb to withdraw your Form R/A, please refer to the *TRI-MEweb Tutorials* at:
https://www.epa.gov/toxics-release-inventory-tri-program/electronic-submission-tri-reporting-forms/.

A.5.c. Canceling a TRI Submission

Different situations may require a facility to cancel an electronic TRI submission. For instance, a facility's preparer or certifying official may determine that a draft electronic submission(s) requires cancellation because the facility's chemical activities did not, in fact, meet the reporting thresholds of EPCRA Section 313.

Another reason why a TRI-MEweb submission may require cancellation is if a preparer or certifying official has determined that a correction is needed on a TRI form that is pending certification in CDX, but has not yet been certified. To edit a TRI form in TRI-MEweb that is pending certification to CDX, the preparer will need to cancel the submission with a *Pending Certification* status in order to make the additional corrections in TRI-MEweb and reprocess the original submission or revision to be certified. Forms that have been completed but not certified do not satisfy TRI reporting requirements and cannot be submitted to EPA via TRI-MEweb.

A preparer or a certifying official cannot cancel a TRI form submission that has already been certified by the certifying official. If a chemical form has a status of *Certified and Sent to EPA* in TRI-MEweb, it cannot be called back to be edited or corrected. To change or remove data that has already been certified and submitted to EPA to be processed, either revise or withdraw the submission.

Note: ALL chemical forms that were included in the selected submission will be canceled.

How to Cancel a TRI Submission that has not been Certified. If your facility decides not to complete the certification process for any pending electronic submission(s), you should **CANCEL** the submission(s) using one of the following methods:

By the Preparer: The preparer may use the TRI-MEweb application to cancel any unwanted pending submission(s). In TRI-MEweb, the preparer must click the "**Forms Home**" subtab under the "**Forms**" tab, choose the Reporting Year corresponding to the unwanted submission(s), expand the form summary table by clicking the "+" sign, and select the "**Delete**" button for the chemical form to be cancelled from the "**Forms***"* page. Note: Only forms with a *Pending Certification* status can be canceled. In addition, all chemical forms that were included in the selected submission will be canceled.

By the Certifying Official: The certifying official may also cancel any unwanted TRI submission(s) pending certification (forms that have been assigned a certifying official). The certifying official must log into their CDX account and click the ***TRI-MEweb: TRI Made Easy Web*** link from their "**MyCDX**" page. This will open the "**My TRI**" page of the TRI-MEweb application. Then select the "**Forms**" tab and then the "**Pending Forms**" subtab. If the certifying official does not find the TRIFID for their reporting facility with pending submissions listed, they can gain access to the facility by entering the access key for the facility listed in the *Pending Authentication* section on the *"***Facility Management***"* tab and signing the TRIFID Signature Agreement on the "**Manage TRIFID Signature Agreements**" sub-tab and clicking the "**Next**" button. The electronic signature widget will pop up to confirm your authorized access to the facility account. Upon successful authentication of user identity, you may begin the cancellation process on the "**Pending Forms**" sub-tab under the "**Forms**" tab. You may view the content of the submission by clicking the "**Review Forms**" sub-tab, navigating to the *Passed Forms* section, and clicking the "**Edit Form**" button. The certifying official will then confirm that this is the correct submission to be cancelled. Select the "**Cancel**" button to cancel the submission.

A.5.d. Deleting Draft TRI Forms

EPA recommends deleting any unnecessary TRI forms that are in draft status. This prevents data from being accidentally or erroneously submitted to EPA. All draft TRI form(s) that have an *Available for Editing* status on the "**Forms Home**" page are considered forms in draft status. Click the "**Delete**" to remove any forms that are no longer needed.

A.6 When the TRI Report Must Be Submitted

As specified in EPCRA Section 313, the Form R or Form A Certification Statement report for any calendar year must be submitted on or before midnight on July 1 of the following year. If the reporting deadline falls on a Saturday or Sunday, EPA will accept forms submitted on the following Monday (i.e., the next business day).

Voluntary revisions to a report can be submitted anytime during the calendar year for the current or any prior reporting year. However, voluntary revisions for the current reporting year must be submitted by July 31 in order to be included in that year's TRI National Analysis.

Can I submit a paper form if I cannot certify forms before the July 1 deadline? Please note that if you are not able to certify prior to the July 1 deadline, you will not be able to submit on paper. Please ensure you execute an ESA well ahead of the July 1 deadline. If your certifying official could not certify prior to the July 1 deadline because they had not established an approved ESA, they should log into CDX after the ESA is approved by EPA's DPC and certify any pending submission(s). There is a legal obligation to file an accurate and complete Form R or Form A Certification Statement for each chemical by July 1 each year if TRI reporting is required, and EPA may take enforcement action and assess civil administrative penalties for late or inaccurate submissions.

If a facility could not process their ESA on time, should their certifying official still certify electronically after the July 1 deadline? Yes. EPA encourages facilities to have a certifying official complete an ESA well before the July 1 deadline. Additionally, EPA provides a real-time ESA approval method in CDX that will allow most

certifying officials instantaneous ESA approval to allow for ESA approval ahead of the July 1 deadline (see Section **A.2.c Electronic Signature Agreement** above for more details). However, if a certifying official cannot certify prior to the July 1 deadline because they do not have an approved ESA in place, they should log into CDX once it becomes approved by EPA and certify any pending forms(s). They may also call the CDX Helpdesk for support using the real-time ESA option. There is a legal obligation to file an accurate and complete Form R or Form A Certification Statement for each chemical by July 1 each year if TRI reporting is required, and EPA may take enforcement action and assess civil administrative penalties for late or inaccurate submissions.

A.7 How to Obtain the TRI Reporting Forms

The TRI Form R, Form R Schedule 1, Form A Certification Statement, and related guidance documents may be obtained from EPA's GuideME website at: https://guideme.epa.gov/ords/guideme_ext/f?p=guideme:rfi-home.

Except for trade secrets, paper forms are no longer processed by EPA. Please do not send any paper forms (except for trade secret submissions) to EPA's Data Processing Center.

A.8 What to Do If You Do Not Need to Submit any TRI Reports

If a facility does not exceed an activity threshold for a listed toxic chemical, or is not in a covered NAICS code, or does not have 10 or more full-time employee equivalents, it is not required to report under EPCRA Section 313 (see **Section B. How to Determine if Your Facility Must Submit a Form R or Is Eligible to Use Form A** for more information on TRI reporting thresholds). Further, such a facility is not required to maintain any records associated with its uses, releases, or other waste management activities involving listed toxic chemicals. Such facilities may still want to keep records of the amounts of listed toxic chemicals they manufacture, process, or otherwise use in order to defend against any claim that they failed to report.

To avoid future auditing, a facility may choose to provide voluntary information to EPA regarding the reason it is not reporting to EPA. TRI-MEweb can also be used by a facility to indicate that it is not reporting. To indicate that you are not reporting for one or more chemicals, go to the "**My TRI"** page, click the "**Facility Management**" tab; select the "**Manage Facilities**" subtab. Click the *Take Action* dropdown menu for the facility providing voluntary information and then select the *Not Reporting?* option. You can also access the page to provide voluntary information via the "**Tasks You Can Quickly Start in TRI-MEweb"** dropdown action box and selecting the *Not Reporting and Misc Information* option of TRI-MEweb's "**My TRI"** page.

See **Section F. Optional Facility-Level Information and Non-Reporting** for more information on how to inform EPA that you will not be submitting one or more reporting forms for the current reporting year.

B. How to Determine if Your Facility Must Submit a Form R or Is Eligible to Use the Form A Certification Statement

This section will help you determine whether you are required to submit an EPCRA Section 313 report (EPA Form R or Form A Certification Statement). This section discusses EPCRA Section 313 reporting requirements such as the number of full-time employees, primary NAICS code, and chemical activity threshold quantities. The EPCRA Section 313 chemicals and chemical categories subject to reporting are listed in Table II (also see 40 CFR 372.65). (See Figure 2 for more information.)

B.1 Full-Time Employee Determination

The number of full-time employees is dependent only upon the total number of hours worked by all employees and other individuals (e.g., contractors) for the facility during the calendar year and not the number of persons working. Therefore, a full-time employee, for purposes of EPCRA Section 313 reporting, is defined as working 2,000 hours per year. When making the full-time employee determination, the facility must include all paid holidays, paid vacation, and used sick leave as hours worked by each employee.

To determine the number of full-time employees working for your facility:

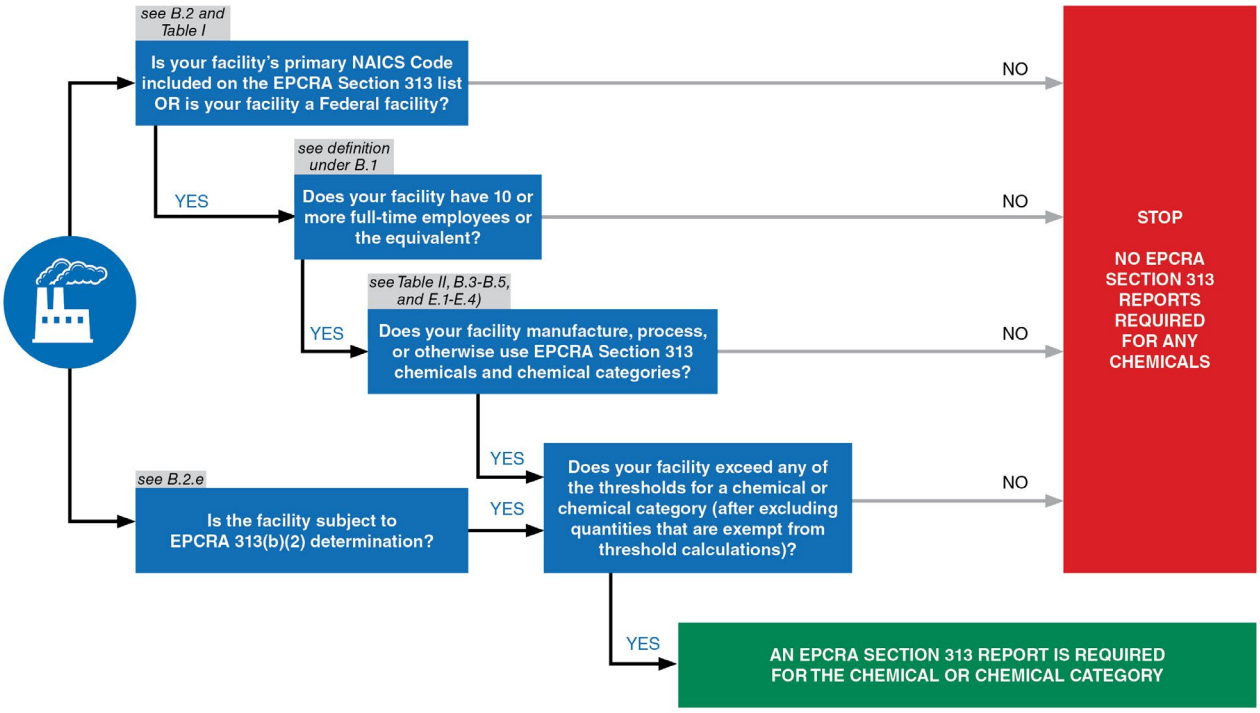
- add up the hours worked by all employees during the calendar year, including contract employees and sales and support staff, and
- divide the total by 2,000 hours.

The result is the number of full-time employees. In other words, if the total number of hours worked by all employees for your facility is 20,000 hours or more, your facility meets the ten-employee threshold.

Examples:

- A facility consists of 11 employees who each worked 1,500 hours for the facility in a calendar year. Consequently, the total number of hours worked by all employees for the facility during the calendar year is 16,500 hours. The number of full-time employees for this facility is equal to 16,500 hours divided by 2,000 hours per full-time employee, or 8.3 full-time employees. Therefore, even though 11 persons worked for this facility during the calendar year, the number of hours worked is equivalent to 8.3 full-time employees. This facility does not meet the full-time employee criterion and is not subject to EPCRA Section 313 reporting.
- Another facility consists of six workers and three sales staff. The six workers each worked 2,000 hours for the facility during the calendar year. The sales staff also each worked 2,000 hours during the calendar year, although they may have been on the road half of the year. In addition, five contract employees were hired for a period during which each worked 400 hours for the facility. The total number of hours is equal to the time worked by the workers (12,000 hours), plus the time worked by the sales staff for the facility (6,000 hours), plus the time worked by the contract employees (2,000 hours), or 20,000 hours. Dividing the 20,000 hours by 2,000 yields 10 full-time employees. This facility has met the full-time employee criterion and may be subject to reporting if the other criteria are met.

Determining if Your Facility Must Submit an EPCRA Section 313 Report



Determining Reporting Form Type and Method of Submission

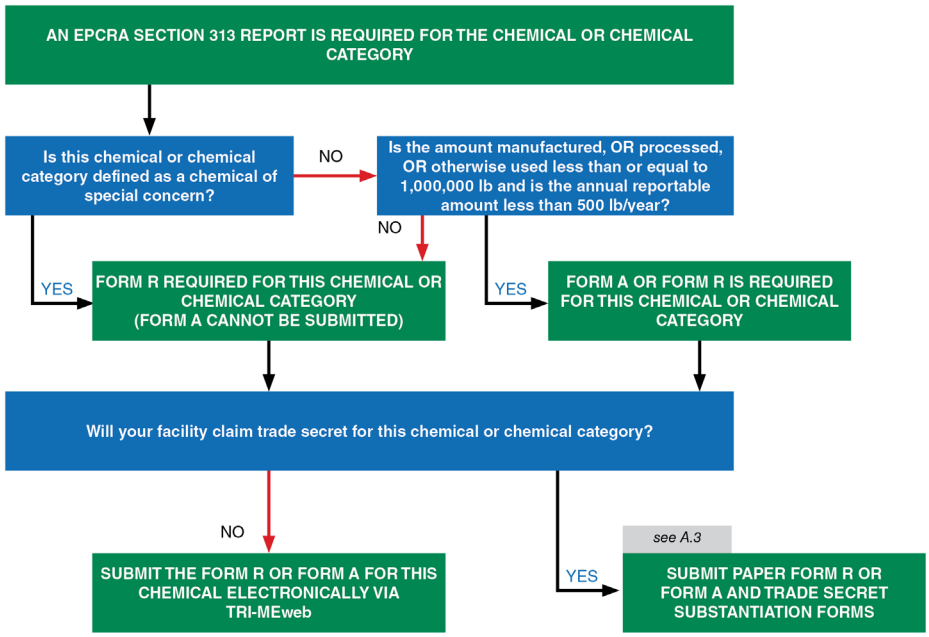


Figure 2. EPCRA Section 313 Reporting Decision Diagram

B.2 Primary NAICS Code Determination

The facility should determine its own North American Industry Classification System (NAICS) code(s), based on its on-site activities by conducting NAICS keyword and NAICS 2 to 6-digit code searches on the Census Bureau website at: https://www.census.gov/naics or referring to the 2022 NAICS Definitions at: https://www.census.gov/naics/?58967?yearbck=2022.

For purposes of EPCRA Section 313 reporting, state-assigned codes should not be used if they differ from codes assigned in the NAICS Manual.

The full list of NAICS codes for facilities that must report to TRI (including exceptions and/or limitations) if all other threshold determinations are met can be found in Table I of this document and at: https://guideme.epa.gov/ords/guideme_ext/f?p=guideme:gd:::::gd:naics_codes.

The TRI Program began requiring NAICS codes instead of Standard Industrial Classification (SIC) codes in Reporting Year 2006. NAICS codes found in Table I correspond to the following Standard Industrial Classification (SIC) Codes: SIC 10 (except 1011, 1081, and 1094), 12 (except 1241), 20-39, 4911 (limited to facilities that combust coal and/or oil for the purpose of generating electricity for distribution in commerce), 4931 (limited to facilities that combust coal and/or oil for the purpose of generating electricity for distribution in commerce), 4939 (limited to facilities that combust coal and/or oil for the purpose of generating electricity for distribution in commerce), 4953 (limited to facilities regulated under RCRA Subtitle C, 42 U.S.C. Section 6921 *et seq*.), 5169, 5171, and 7389 (limited to facilities primarily engaged in solvents recovery services on a contract or fee basis).

A final rule was published in the *Federal Register* on November 28, 2022 (87 FR 72891), to adopt 2022 NAICS codes for RY 2022 and subsequent reporting years.

B.2.a. Auxiliary Facilities

Under the Standard Industrial Classification (SIC) system, an auxiliary facility was defined as one that supported another covered establishment's activities (e.g., research and development laboratories, warehouses, and storage facilities). An auxiliary facility could assume the SIC code of another covered establishment if its primary function was to service the other covered establishment's operations. The NAICS that replaces the SIC system for TRI reporting does not recognize the concept of auxiliary facilities and assigns NAICS codes to all establishments based on economic activity. The TRI Program has adopted NAICS codes for TRI reporting and also the NAICS treatment of former "auxiliary facilities" as entities with their own distinct NAICS code.

B.2.b. Multi-establishment Facilities

Your facility may include multiple establishments that have different NAICS codes, some of which may not be covered under TRI. A multi-establishment facility consists of two or more distinct and separate economic units (e.g., trades or business activities) on contiguous/adjacent property owned by same person(s). If your facility is a multi-establishment facility, calculate the value added of the products produced, shipped, or services provided from each establishment within the facility and then use the following rule to determine if your facility meets the NAICS code criterion:

- If the total value added of the products produced, shipped, or services provided at establishments with covered NAICS codes is greater than 50% of the value added of the entire facility's products and services, the entire facility meets the NAICS code criterion.
- If an establishment with a covered NAICS code has a value added of services or products shipped or produced that is greater than any other establishment within the facility (40 CFR Section 372.22(b)(3)) the facility also meets the NAICS code criterion (see Figure 3).

Multi-Establishment Facility: Three separate establishments located on contiguous/adjacent property owned by same person(s), is one facility under EPCRA (40 CFR §§ 372.22 and 372.3)

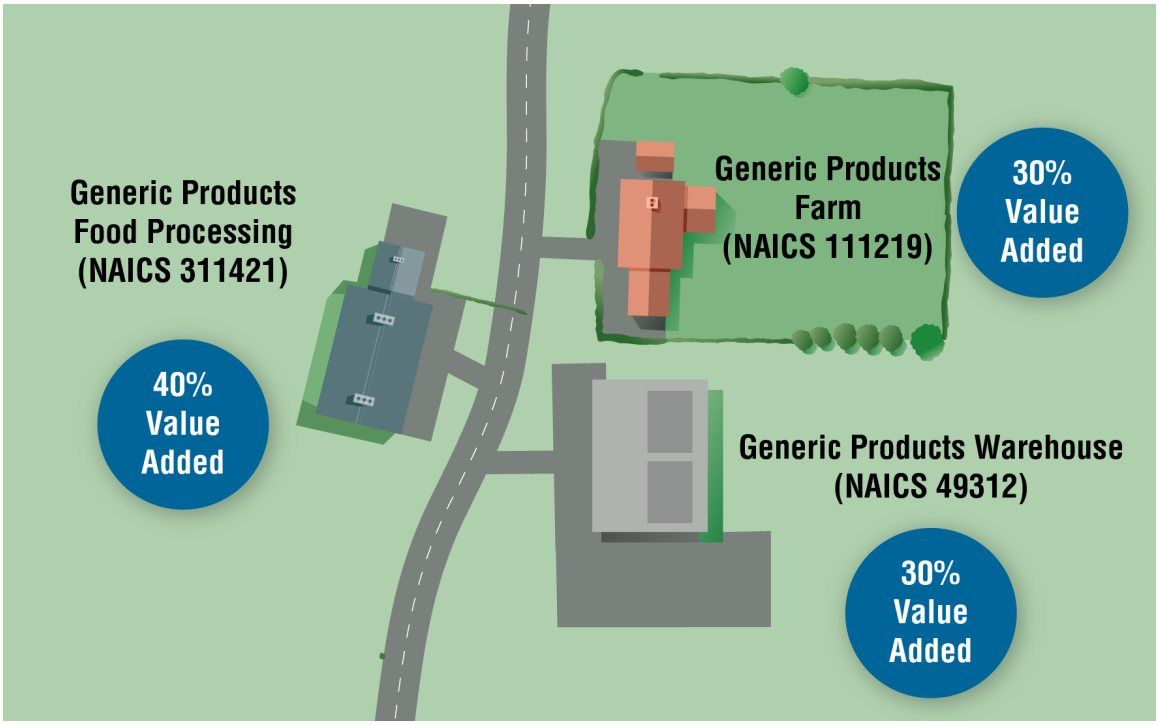


Figure 3. Example of a Multi-Establishment Facility

The value added of production or service attributable to an establishment may be isolated by subtracting the product value obtained from other establishments within the same facility from the total product or service value of the facility. The value added may be defined as:

Equation 1

$$value\ added = sum(value\ of\ products\ exiting\ the\ facility) - sum(value\ of\ products\ entering\ the\ facility)$$

This procedure eliminates the potential for "double counting" production and services in situations where establishments are engaged in sequential production or service activities at a single facility.

Examples include:

- A facility in coating, engraving and allied services has two establishments. The first establishment, a general automotive repair service, is in NAICS code 811113 (SIC 7537), which is not a covered NAICS code. However, the second establishment, a metal paint shop is in NAICS code 332812 (SIC 3479, which is a covered NAICS code). The metal paint shop paints the parts received from general automotive repair service. The facility determines the product is worth $500/unit as received from the general automotive repair service (in non-covered NAICS code 811113) and the value of the product is $1500/unit after processing by the metal paint shop (in covered NAICS code 332812). The value added by the metal paint shop is obtained by subtracting the value of the products from the general automotive repair service from that of the value of the products of the metal paint shop. (In this example, the value added = $1,500/unit - $500/unit = $1,000/unit.) The value added ($1,000/unit) by the establishment in NAICS code 332812 is more than 50% of the product value. Therefore, the facility's primary NAICS code is 332812, which is a covered NAICS code and all activities at all establishments

must be considered for TRI reporting purposes.

- A food processing establishment in a facility processes crops grown at the facility in a separate establishment. To determine the value added of the products of each establishment the facility could first determine the value of the crops grown at the agricultural establishment, then calculate the contribution of the food processing establishment by subtracting the crop value from the total value of the product shipped from the processing establishment (value of product shipped from processing - crop value = value of processing establishment).

A covered multi-establishment facility must make EPCRA Section 313 chemical threshold determinations and, if required, report all relevant information about releases and other waste management activities, and source reduction activities associated with an EPCRA Section 313 chemical **for the entire facility**, even from establishments that are not in covered NAICS codes. EPA realizes, however, that certain establishments in a multi-establishment facility can be, for all practical purposes, separate and distinct business units. Therefore, while threshold determinations must be made for the entire facility, individual establishments which compose the entire facility may report their individual releases and other waste management activities separately. However, the total releases and other waste management quantities for the entire facility must be represented by the sum of the releases and other quantities managed as waste reported by each of the separate establishments. Note that establishments report using the same TRIFID that is used for the entire multi-establishment facility.

B.2.c. Property Owners

You are not required to report if you merely own real estate on which a facility covered by this rule is located; that is, you have no other business interest in the operation of that facility (e.g., your company owns an industrial park). The operator of that facility, however, is subject to reporting requirements.

B.2.d. Federal Facilities

In 1993, pursuant to an Executive Order (EO), federal facilities began complying with Section 313 of EPCRA regardless of their primary NAICS code. Subsequent EOs reinforced this requirement. As a result, all federal facilities, regardless of NAICS code, must report if they meet the employee and chemical activity thresholds. See the Federal Facility Reporting Information guidance document for additional information on Federal Facility reporting requirements (https://guideme.epa.gov/ords/guideme_ext/f?p=guideme:gd-title:::::title:fed_fac).

B.2.e. Discretionary Authority

Under EPCRA Section 313(b)(2), EPA may apply the requirements of EPCRA 313 to specific facilities, regardless of their primary NAICS code or number of full-time employee-equivalents. If a facility is subject to TRI reporting requirements under this discretionary authority, that facility must make EPCRA Section 313 chemical threshold determinations in accordance with the requirements of EPCRA 313(f) and the implementing regulations. If chemical reporting thresholds are met, the facility must report all relevant information about releases, other waste management activities, and source reduction activities for the entire facility. EPCRA Section 313(b)(2) determinations apply to the particular facilities that are the subject of EPA's determination. Those facilities must continue reporting to EPA in accordance with the determination in subsequent years. Changes in facility ownership or controllership do not alter the applicability of the determination's requirements.

B.3 Activity Determination

B.3.a. Definitions of Manufacture, Process, and Otherwise Use

Manufacture: The term ***"manufacture"*** means to produce, prepare, compound, or import an EPCRA Section 313 chemical. (See Part II, Section 3.1 of these instructions for further clarification.)

Import is defined as causing the EPCRA Section 313 chemical to be imported into the customs territory of the United States. If you order an EPCRA Section 313 chemical (or a mixture containing the chemical) from a foreign supplier, then you have imported the chemical when that shipment arrives at your facility directly from a source outside of the United States. By ordering the chemical, you have caused it to be imported, even though you may have used an import

brokerage firm as an agent to obtain the EPCRA Section 313 chemical.

Do Not Overlook Coincidental Manufacture:

The term ***"manufacture"*** also includes coincidental production of an EPCRA Section 313 chemical (e.g., as a byproduct or impurity) as a result of the manufacture, processing, otherwise use or disposal of another chemical or mixture of chemicals. In the case of coincidental production of an impurity (i.e., an EPCRA Section 313 chemical that remains in the product that is distributed in commerce), the *de minimis* exemption, discussed in Section B.3.c of these instructions, applies. The *de minimis* exemption does not apply to byproducts (e.g., an EPCRA Section 313 chemical that is separated from a process stream and further processed or disposed of). Certain EPCRA Section 313 chemicals may be manufactured as a result of wastewater treatment or other treatment processes. For example, neutralization of wastewater containing nitric acid can result in the coincidental manufacture of a nitrate compound (solution), reportable as a member of the nitrate compounds category.

Process: The term ***"process"*** means the preparation of a listed EPCRA Section 313 chemical, after its manufacture, for distribution in commerce. Processing is usually the incorporation of an EPCRA Section 313 chemical into a product (see Part II, Section 3.2 of these instructions for further clarification). However, a facility may process an impurity that already exists in a raw material by distributing that impurity in commerce. Processing includes preparation of the EPCRA Section 313 chemicals in the same physical state or chemical form as that received by your facility, or preparation that produces a change in physical state or chemical form. The term also applies to the processing of a mixture or other trade name product (see Section B.4.b of these instructions) that contains a listed EPCRA Section 313 chemical as one component.

Otherwise Use: The term ***"otherwise use"*** means any use of an EPCRA Section 313 chemical, including an EPCRA Section 313 chemical contained in a mixture or other trade name product or waste, that is not covered by the terms manufacture or process. Otherwise use of an EPCRA Section 313 chemical also includes disposal, stabilization (without subsequent distribution in commerce), or treatment for destruction if:

(1) The EPCRA Section 313 chemical that was disposed of, stabilized, or treated for destruction was received from off-site for the purposes of further waste management;

Or

(2) The EPCRA Section 313 chemical that was disposed of, stabilized, or treated for destruction was manufactured as a result of waste management activities on materials received from off-site for the purposes of waste management activities. Relabeling or redistributing of the EPCRA Section 313 chemical where no repackaging of the EPCRA Section 313 chemical occurs does not constitute an otherwise use or processing of the EPCRA Section 313 chemical. (See 62 FR 23834 and Part II, Section 3.3 of these instructions for further clarification).

Example 1: Coincidental Manufacture

- Your company, a nitric acid manufacturer, uses aqueous ammonia in a waste treatment system to neutralize an acidic wastewater stream containing nitric acid. The reaction of ammonia and nitric acid produces a solution of ammonium nitrate.
  - Ammonium nitrate (solution) is manufactured as a byproduct and reportable under the nitrate compounds category. If the ammonium nitrate is produced in a quantity that exceeds the 25,000-pound manufacturing threshold, the facility must report under the nitrate compounds category.
  - Aqueous ammonia is considered to be otherwise used and 10% of the total aqueous ammonia would be counted toward the 10,000-pound otherwise use threshold. Reports for releases of ammonia must also include 10% of the total aqueous ammonia from the solution of ammonium nitrate (see the qualifier for the ammonia listing).
- As another example, combustion of coal or other fuel in boilers/furnaces can result in the coincidental manufacture of metal category compounds and sulfuric acid (acid aerosols), hydrochloric acid (acid aerosols), and hydrogen fluoride.

Example 2: Typical Process and Manufacture Activities

- Your facility acquires toluene, an EPCRA Section 313 chemical, from another facility, and reacts the toluene with air to form benzoic acid, which the facility distributes in commerce. Your facility processes toluene and manufactures and processes benzoic acid. Benzoic acid, however, is not an EPCRA Section 313 chemical and thus does not trigger reporting requirements.
- Your facility combines toluene purchased from a supplier with various materials to form paint which it then sells. Your facility processes toluene.
- Your facility purchases a nickel compound (nickel compounds is a listed EPCRA Section 313 chemical category) as a bulk solid and performs various size-reduction operations (e.g., grinding) before packaging the compound in 50-pound bags, which the company sells. Your facility processes the nickel compound.
- Your facility acquires a prepared mixture of resin and chopped fiber to be used in the injection molding of plastic products. The resin contains a listed EPCRA Section 313 chemical that becomes incorporated into the plastic, which the company distributes in commerce. Your facility processes the EPCRA Section 313 chemical.
- Your facility combusts coal or oil, which may produce metal category compounds from either the parent metal or a metal compound contained in the coal or oil. If a metal undergoes a change of valence, a metal compound is considered to be manufactured. For example, during the combustion process copper in valence state zero changes to copper in valence state +2 in a compound such as copper (II) oxide (CuO). Furthermore, a metallic compound could be transformed to another metallic compound without a change in valency (e.g., copper (II) chloride ($CuCl_2$) is transformed to copper (II) oxide (CuO)). The transformation to a new compound by combustion without a change in valence state is also considered to be "manufactured" for purposes of EPCRA Section 313.

Example 3: Typical Otherwise Use Activities

- When your facility cleans equipment with toluene, you are otherwise using toluene. Your facility also separates two components of a mixture by dissolving one component in toluene, and subsequently recovers the toluene from the process for reuse or disposal. Your facility otherwise uses toluene.
- A covered facility receives a waste containing 12,000 pounds of Chemical A from off-site. The facility treats the waste, destroying Chemical A, and in the treatment process manufactures 10,500 pounds of Chemical B. Both Chemical A and Chemical B are EPCRA Section 313 chemicals, and neither chemical has been classified as a chemical of special concern (see Section B.3.b for information on chemicals of special concern). Chemical B is disposed of on-site. Since the waste containing Chemical A was received from off-site for the purpose of waste management, the amount of Chemical A must be included in the otherwise use threshold determination for Chemical A. The otherwise use threshold for this chemical is 10,000 pounds and since the amount of Chemical A exceeds this threshold, all releases and other waste management activities for Chemical A must be reported. Chemical B was manufactured in the treatment of a waste received from off-site. The facility disposed of Chemical B on-site. Since Chemical B was generated from waste received from off-site for treatment for destruction, disposal, or stabilization, the disposal of Chemical B is considered to be an otherwise use. Thus, the amount of Chemical B must be considered in the otherwise use threshold determination. Thus, the reporting threshold for Chemical B has also been exceeded, and all releases and other waste management activities for Chemical B must be reported.

B.3.b. Chemicals of Special Concern Overview

On October 29, 1999, EPA published a final rule (64 FR 58666) adding certain chemicals and chemical categories to the EPCRA Section 313 list of toxic chemicals. Additionally, EPA classified these chemicals and categories, including certain other chemicals and chemical categories, as "chemicals of special concern." TRI-listed chemicals classified as chemicals of special concern have a lowered reporting threshold and, as explained below, certain aspects of TRI reporting differ for such chemicals.

In creating the chemicals of special concern classification, EPA designated that certain persistent bioaccumulative toxic (PBT) chemicals and PBT chemical categories would be classified as chemicals of special concern. In addition, on January 17, 2001, EPA published a final rule (66 FR 4500) that classified lead and lead compounds as PBT chemicals and as chemicals of special concern and lowered their reporting thresholds. The lower reporting thresholds for lead apply to all lead except when lead is contained in a stainless steel, brass, or bronze alloy.

EPA has continued to classify certain chemicals and chemical categories as chemicals of special concern for TRI reporting purposes. The list of all such chemicals is provided in Table IIc of these instructions.

EPA lowered the reporting thresholds for chemicals of special concern to either 100 pounds, 10 pounds, or in the case of the dioxin and dioxin-like compounds chemical category, to 0.1 grams. The table at the beginning of Section B.4 of these instructions lists the applicable manufacture, process, and otherwise use thresholds for the listed chemicals of special concern.

In classifying chemicals as EPCRA Section 313 chemicals of special concern, EPA eliminated the *de minimis* exemption for all such classified chemicals (except lead when contained in stainless steel, brass, or bronze alloy). However, this action does not affect the applicability of the *de minimis* exemption to the supplier notification requirements (40 CFR Section 372.45(d) (1)). In addition, as EPCRA Section 313 chemicals of special concern, the chemicals are ineligible for range reporting for on-site releases and transfers off-site for further waste management. This will not affect the applicability of range reporting of the maximum amount on-site as required by EPCRA Section 313(g).

All releases and other waste management quantities greater than 0.1 pounds of a chemical of special concern (except the dioxin and dioxin-like compounds chemical category) should be reported at a level of precision supported by the accuracy of the underlying data and estimation techniques on which the estimate is based. If a facility's release or other waste management estimates support reporting an amount that is more precise than whole numbers, then the more precise amount should be reported.

Quantities of chemicals of special concern under 0.1 pounds (e.g., 0.07 pounds) should either be rounded up to 0.1 pounds or reported as they are if the underlying data and estimation techniques support that level of precision. It is up to the facility to determine, based on the accuracy of the underlying data and the estimation techniques on which the estimate is based, whether it would be appropriate to round the value to 0.1 pounds, report the value as is, or round the value to 0 (zero).

For the dioxin and dioxin-like compounds chemical category, which has a 0.1-gram reporting threshold, facilities need only report all release and other waste management quantities greater than 100 micrograms (i.e., 0.0001 grams). Notwithstanding the numeric precision used when determining reporting eligibility thresholds, facilities should report on the Form R to the level of accuracy that their data supports, up to seven digits to the right of the decimal. EPA's reporting software and data management systems support data precision to seven digits to the right of the decimal. If a facility has information on the individual members of the dioxin and dioxin-like compounds category they will also need to report the release and transfer quantities of each congener (see instructions in Chapter E).

Lead and Lead Compounds

Lead and lead compounds are considered PBT chemicals and classified as chemicals of special concern subject to the lower manufacturing, processing, and otherwise use threshold of 100 pounds. However, when lead is contained in stainless steel, brass, or bronze alloys it remains subject to the higher 25,000-pound manufacturing and processing thresholds and the 10,000-pound otherwise use threshold. Typically, for steel to be considered

stainless steel with resistance to corrosion and oxidation, it must be composed of at least 10.5% chromium. Lead contained in stainless steel is subject to the higher activity thresholds, and lead contained in non-stainless steel (i.e., steel with less than 10.5% chromium content) is subject to the 100-pound threshold.

Listed below are some important guidelines to use when calculating threshold and release and other waste management quantities for lead and lead compounds:

1) quantities of lead not contained in stainless steel, brass or bronze alloy are applied to both the 100-pound threshold and the 25,000/10,000-pound thresholds;
2) quantities of lead that are contained in stainless steel, brass, or bronze alloys are only applied toward the 25,000/10,000-pound thresholds;
3) a facility may take the *de minimis* exemption for those quantities of lead in stainless steel, brass, or bronze alloys that meet the *de minimis* standard (e.g., manufactured as an impurity). Accordingly, the *de minimis* exemption may be considered for quantities of lead in stainless steel, brass, or bronze alloys but it may not be considered for lead not in stainless steel, brass, or bronze alloys;
4) if a facility exceeds the 100-pound threshold for lead other than in stainless steel, brass, or bronze alloys, the facility may not apply Form A Certification Statement eligibility, range reporting in Sections 5 and 6 of the Form R, or the use of whole numbers and two significant digits to any of the lead they report. If a facility that exceeds the 25,000/10,000-pound threshold for lead in stainless steel, brass, or bronze alloy without tripping the 100-pound threshold for non-alloyed lead, the facility may consider the Form A requirements, range reporting in Sections 5 and 6 of the Form R, and the use of whole numbers and two significant digits.

B.3.c. Per- and Polyfluoroalkyl Substances (PFAS)

Section 7321 of the National Defense Authorization Act for Fiscal Year 2020 (Pub. L. No. 116-92) (NDAA) added certain PFAS to the EPCRA Section 313 chemical list. (See: https://www.epa.gov/toxics-release-inventory-tri-program/addition-certain-pfas-tri-national-defense-authorization-act.) PFAS are listed with manufacturing, processing, and otherwise use thresholds of 100 pounds. Note that PFAS are not categorized as chemicals of special concern, and thus may qualify for the use of Form A Certification Statement, range code reporting, and the *de minimis* exemption. The *de minimis* level for Perfluorooctanoic acid (335-67-1) is 0.1%. All of the other PFAS additions have a *de minimis* level of 1%. Additional TRI reporting guidance for PFAS is available in GuideME at https://guideme.epa.gov/ords/guideme_ext/f?p=guideme:gd-title:::::title:pfas_resources.

B.3.d. Activity Exemptions

Otherwise Use Exemptions. Certain otherwise uses of listed EPCRA Section 313 chemicals are specifically exempted:

- Otherwise use as a structural component of the facility;
- Otherwise use in routine janitorial or facility grounds maintenance;
- Personal uses by employees or other persons;
- Otherwise use of products containing EPCRA Section 313 chemicals for the purpose of maintaining motor vehicles operated by the facility; and
- Otherwise use of EPCRA Section 313 chemicals contained in intake water (used for processing or non-contact cooling) or in intake air (used either as compressed air or for combustion).

The exemption of an EPCRA Section 313 chemical otherwise used (1) as a structural component of the facility; or (2) in routine janitorial or facility grounds maintenance; or (3) for personal use by an employee cannot be taken for activities involving process-related equipment.

Articles Exemption. EPCRA Section 313 chemicals contained in articles that are processed or otherwise used at a covered facility are exempt from threshold determinations and release and other waste management calculations. The exemption applies when the facility receives the article from another facility or when the facility produces the article itself. The exemption applies only to the quantity of EPCRA Section 313 chemical present in the article. If the EPCRA Section 313 chemical is manufactured

(including imported), processed, or otherwise used at the covered facility other than as part of the article, in excess of an applicable threshold quantity, the facility is required to report that use of a chemical (40 CFR Section 372.38(b)). For an EPCRA Section 313 chemical in an item to be exempt as part of the article, the item must meet all the following criteria in the EPCRA Section 313 article definition; that is, it must be a manufactured item (1) which is formed to a specific shape or design during manufacture, (2) which has end use functions dependent in whole or in part upon its shape or design during end use, and (3) which does not release a toxic chemical under normal conditions of processing or use of the item at the facility.

If the processing or otherwise use of all like items results in a total release of 0.5 pounds or less of an EPCRA Section 313 chemical in a reporting year to any environmental medium, EPA will allow this release to be rounded to zero, and the manufactured items retain their article status. The 0.5-pound threshold does not apply to each individual article, but applies to the sum of all releases from processing or otherwise use of all like articles. If all the releases of like articles over a reporting year are completely captured and recycled/reused on-site or off-site, those items retain their article status. Any amount that is released and is not recycled/reused will count toward the 0.5 pounds per year cut off value.

The articles exemption applies to the normal processing or use of articles. This exemption does not apply to the manufacture of the article. EPCRA Section 313 chemicals incorporated into articles produced at a facility must be factored into threshold determinations and release and other waste management calculations.

Example 4: Articles Exemption

- Nickel that is incorporated into a brass doorknob is processed to manufacture the brass doorknob, and therefore must be counted toward threshold determinations and release and other waste management calculations. However, the use of the brass doorknobs elsewhere in the facility does not have to be counted. Disposal of the brass doorknob after its use does not constitute a "release;" thus, the brass doorknob remains an article.
- If an item used in the facility is fragmented, the item is still an article if those fragments being discarded remain identifiable as the article (e.g., recognizable pieces of a cylinder, pieces of wire). For instance, an eight-foot piece of wire is cut into two four-foot pieces of wire, without releasing any EPCRA Section 313 chemicals. Each four-foot piece is identifiable as a piece of wire; therefore, the article status for these pieces of wire remains intact.
- EPCRA Section 313 chemicals received in the form of pellets are not articles because the pellet form is simply a convenient form for further processing of the material.

If, in the course of processing or use, an item retains its initial thickness or diameter, in whole or in part, it meets the first part (i.e., it must be a manufactured item which is formed to a specific shape or design during manufacture) of the article definition. If the item's basic dimensional characteristics are totally altered during processing or otherwise use, the item does not meet the first part of the definition. An example of items that do not meet the definition would be items that are cold extruded, such as lead ingots, which are formed into wire or rods. On the other hand, cutting a manufactured item into pieces that are recognizable as the article would not change the original dimensions as long as the diameter or the thickness of the item remained the same; the articles exemption would continue to apply. Metal wire may be bent and sheet metal may be cut, punched, stamped, or pressed without losing their article status as long as the diameter of the wire or tubing or the thickness of the sheet is not totally changed.

What constitutes a release of an EPCRA Section 313 chemical is important since processing or otherwise use of articles that results in a release to the environment (or more than 0.5 pounds) negates the article status and precludes eligibility for the exemption. Cutting, grinding, melting, or other processing of manufactured items could result in a release of an EPCRA Section 313 chemical during normal conditions of processing or otherwise use and therefore negate the exemption as articles.

***De Minimis* Exemption.** The *de minimis* exemption allows facilities to disregard certain minimal concentrations of EPCRA Section 313 chemicals not classified as chemicals of special concern in mixtures or other trade name products when making threshold determinations, and release and other waste management calculations. The *de minimis* exemption does not apply to the manufacture of an EPCRA Section 313 chemical unless that EPCRA Section 313 chemical is manufactured as an impurity and remains in the product distributed in commerce, or if the EPCRA Section 313 chemical is imported below the appropriate *de minimis* level. The *de minimis* exemption does not apply to a byproduct manufactured coincidentally as a result of manufacturing, processing, otherwise use, or any waste management activities. The *de minimis* exemption does not apply to any chemical of special concern (except lead when it is contained in stainless steel, brass, or bronze alloy) or chemical of special concern category. A list of chemicals of special concern may be found in Section B.4 of these instructions.

When determining whether the *de minimis* exemption applies to an EPCRA Section 313 chemical, the owner/operator must consider the concentration of the EPCRA Section 313 chemical in mixtures and other trade name products. If the EPCRA Section 313 chemical is not classified as a chemical of special concern; is in a mixture or other trade name product; is manufactured as an impurity, imported, processed, or otherwise used; and is below the appropriate *de minimis* concentration level; then the quantity of the chemical in that mixture or other trade name product does not have to be applied to threshold determinations nor included in release or other waste management determinations. If an EPCRA Section 313 chemical is not classified as a chemical of special concern and is in a mixture or other trade name product below the appropriate *de minimis* level, all releases and other waste management activities associated with the EPCRA Section 313 chemical in that mixture or other trade name product are exempt from EPCRA Section 313 reporting. It is possible to meet an activity (e.g., processing) threshold for an EPCRA Section 313 chemical on a facility-wide basis, but not be required to calculate releases or other waste management quantities associated with a particular process because that process involves only mixtures or other trade name products containing the chemical not classified as an EPCRA Section 313 chemical of special concern below the *de minimis* level.

EPA interprets the *de minimis* exemption such that once the concentration of an EPCRA Section 313 chemical not classified as a chemical of special concern is at or above the appropriate *de minimis* level in the mixture or other trade name product, threshold determinations, release, and other waste management calculations must be made, even if that chemical later falls below the *de minimis* level in the **same** mixture or other trade name product. Thus, EPA considers reportable all releases and other quantities managed as waste that occur after the *de minimis* level has been met or exceeded. If an EPCRA Section 313 chemical in a mixture or other trade name product at or above *de minimis* is brought on-site, the *de minimis* exemption never applies.

De minimis levels for EPCRA Section 313 chemicals and chemical categories not classified as chemicals of special concern are set at concentration levels of either 1% or 0.1%. The 0.1% *de minimis* levels are dictated by determinations made by the National Toxicology Program (NTP) in its Annual Report on Carcinogens, the International Agency for Research on Cancer (IARC) in its Monographs, or 29 CFR part 1910, subpart Z. Therefore, once an EPCRA Section 313 chemical not classified as a chemical of special concern has a status under NTP, IARC, or 29 CFR part 1910, subpart Z indicating that the chemical is a carcinogen or potential carcinogen, the reporting facility may disregard levels of the chemical below the 0.1% *de minimis* concentration provided that the other criteria for the *de minimis* exemption are met. *De minimis* levels for chemical categories apply to the total concentration of all chemicals in the category within a mixture, not the concentration of each individual category member within the mixture.

The Basis of OSHA Carcinogens document (https://guideme.epa.gov/ords/guideme_ext/f?p=guideme:gd:::::gd:osha_carcinogen) provides the specific basis for each chemical or chemical category that has been designated as a known or potential carcinogen.

De Minimis Application to the Processing or Otherwise Use of a Mixture

The *de minimis* exemption applies to the processing or otherwise use of an EPCRA Section 313 chemical not classified as a chemical of special concern in a mixture. Threshold determinations and release and other waste management calculations begin at the point where the chemical meets or exceeds the *de minimis* level. If an EPCRA Section 313 chemical is not classified as a chemical of special concern and is present in a mixture at a concentration below the *de minimis* level, this quantity of the chemical does not have to be included for threshold determinations, release and other waste management reporting, or supplier notification requirements. The exemption will apply as long as the mixture containing *de minimis* amounts of an EPCRA Section 313 chemical never equals or goes above the *de minimis* limit.

Example 5: *De Minimis* Applications to Process and Otherwise Use Scenarios for EPCRA Section 313 Chemicals not Classified as Chemicals of Special Concern

There are many cases in which the *de minimis* "limit" is crossed or re-crossed by EPCRA Section 313 chemicals not classified as chemicals of special concern within a process or otherwise use scenario. The following examples are meant to illustrate these complex reporting scenarios.

Increasing Concentration to or Above *De Minimis* Levels During Processing

A manufacturing facility receives toluene that contains chlorobenzene at a concentration below its *de minimis* limit. Through distillation, the chlorobenzene content in process streams is increased over the *de minimis* concentration of 1%. From the point at which the chlorobenzene concentration equals 1% in process streams, the amount present must be factored into threshold determinations and release and other waste management estimates. The facility does not need to consider the amount of chlorobenzene in the raw material when below *de minimis* levels, i.e., prior to distillation to 1%, when making threshold determinations. The facility does not have to report emissions of chlorobenzene from storage tanks or any other equipment associated with that specific process where the chlorobenzene content is less than 1%.

Fluctuating Concentration During Processing

A manufacturer produces an ink product that contains toluene, an EPCRA Section 313 chemical, below the *de minimis* level. The process used causes the percentage of toluene in the mixture to fluctuate: it rises above the *de minimis* level for a time but drops below the level as the process winds down. The facility must consider the chemical toward threshold determinations from the point at which it first equals the *de minimis* limit. Once the *de minimis* limit has been met the exemption cannot be taken.

Concentration Ranges Straddling the *De Minimis* Value

There may be instances in which the concentration of an EPCRA Section 313 chemical not classified as a chemical of special concern is given as a range straddling the *de minimis* limit. Example 6 illustrates how the *de minimis* exemption should be applied in such a scenario.

***De Minimis* Application in the Manufacture of the Listed Chemical in a Mixture**

The *de minimis* exemption generally does not apply to the manufacturing of an EPCRA Section 313 chemical. However, the *de minimis* exemption may apply to mixtures and other trade name products containing EPCRA Section 313 chemicals not classified as chemicals of special concern that are imported into the United States (see Example 5).

The exemption also applies to EPCRA Section 313 chemicals not classified as chemicals of special concern that are manufactured as impurities that remain in the product distributed in commerce below the *de minimis* levels. The amount remaining in the product is exempt from threshold determinations. If the chemical is separated from the final product, it cannot qualify for the exemption. Any amount that is separated, or is separate, from the product, is considered a byproduct and is subject to threshold determinations and release and other waste management calculations. Any amount of an EPCRA Section 313 chemical that is manufactured in a waste stream must be considered toward threshold determinations and release and other waste management calculations and accounted for on the Form R even if that chemical is manufactured below the *de minimis* level.

The *de minimis* exemption also does not apply to situations where a toxic chemical in waste is diluted to below the *de minimis* level.

Example 6: Concentration Ranges Straddling the *De Minimis* Value

Scenario 1: A facility processes 8,000,000 pounds of a mixture containing 0.25% to 1.25% manganese. Manganese is eligible for the *de minimis* exemption at concentrations up to 1%. The amount of mixture subject to reporting is the quantity containing manganese at or above the *de minimis* concentration:

[(8,000,000) × (1.25% - 0.99%)] ÷ (1.25% - 0.25%)

The average concentration of manganese that is not exempt (above the *de minimis*) is:

(1.25% + 1.00%) ÷ (2)

Therefore, the amount of manganese that is subject to threshold determination and release and other waste management estimates is:

$$\left[\frac{(8{,}000{,}000)\times(1.25\%-0.99\%)}{(1.25\%-0.25\%)}\right]\times\left[\frac{(1.25\%+1.00\%)}{(2)}\right]=23{,}400\,pounds$$

= 23,400 pounds manganese (which is below the processing threshold for manganese)

In this scenario, because the facility's information pertaining to manganese was available to two decimal places, 0.99 was used to determine the amount below the *de minimis* concentrations. If the information was available to one decimal place, 0.9 should be used, as in the scenario below.

Scenario 2: As in the previous example, manganese is present in a mixture, of which 8,000,000 pounds is processed. The SDS states the mixture contains 0.2% to 1.2% manganese. The amount of mixture subject to reporting (at or above *de minimis* limit) is:

[(8,000,000) × (1.2% - 0.9%)] ÷ (1.2% - 0.2%)

The average concentration of manganese that is not exempt (at or above *de minimis* limit) is:

(1.2% + 1.0%) ÷ (2)

Therefore, the amount of manganese that is subject to threshold determinations and release and other waste management estimates is:

$$\left[\frac{(8{,}000{,}000)\times(1.2\%-0.9\%)}{(1.2\%-0.2\%)}\right]\times\left[\frac{(1.2\%+1.0\%)}{(2)}\right]=26{,}400\,pounds$$

= 26,400 pounds manganese (which is above the processing threshold for manganese)

Example 7: *De Minimis* Application in the Manufacture of a Toxic Chemical in a Mixture

Manufacture as a Product Impurity

Toluene-2,4-diisocyanate reacts with trace amounts of water to form trace quantities of 2,4-diaminotoluene. The resulting product contains 99% toluene-2,4-diisocyanate and 0.05% 2,4-diaminotoluene. The 2,4-diaminotoluene would not be subject to EPCRA Section 313 reporting nor would supplier notification be required because the concentration of 2,4-diaminotoluene is below its *de minimis* limit of 0.1% in the product.

Manufacture as a Commercial Byproduct and Impurity

Chloroform is a reaction byproduct in the production of carbon tetrachloride. It is removed by distillation to a concentration of less than 150 ppm (0.0150%) remaining in the carbon tetrachloride. The separated chloroform at 90% concentration is sold as a byproduct. Chloroform is subject to a 0.1% (1,000 ppm) *de minimis* limit. Any amount of chloroform manufactured and separated as byproduct must be included in threshold determinations because EPA does not interpret the *de minimis* exemption to apply to the manufacture of a chemical as a byproduct. Releases of chloroform prior to and during purification of the carbon tetrachloride must be reported. The *de minimis* exemption can, however, be applied to the chloroform remaining in the carbon tetrachloride as an impurity. Because the concentration of chloroform remaining in the carbon tetrachloride is below the *de minimis* limit, this quantity of chloroform is exempt from threshold determinations, release and other waste management reporting, and supplier notification.

Manufacture as a Waste Byproduct

A small amount of formaldehyde is manufactured as a reaction byproduct during the production of phthalic anhydride. The formaldehyde is separated from the phthalic anhydride as a waste gas and burned, leaving no formaldehyde in the phthalic anhydride. The amount of formaldehyde produced and removed must be included in threshold determinations and release and other waste management estimates even if the formaldehyde were present below the *de minimis* level in the process stream where it was manufactured or in the waste stream to which it was separated because EPA does not interpret mixtures and trade name products to includes wastes.

Laboratory Activities Exemption. EPCRA Section 313 chemicals that are manufactured, processed, or otherwise used in a laboratory at a covered facility under the direct supervision of a technically qualified individual do not have to be considered for threshold determinations and release and other waste management calculations. However, pilot plant scale and specialty chemical production does not qualify for this laboratory activities exemption, nor does the use of EPCRA Section 313 chemicals for laboratory support activities, such as the use of chemicals for equipment maintenance.

Coal Extraction Activities Exemption. If an EPCRA Section 313 chemical is manufactured, processed, or otherwise used in extraction by facilities in NAICS codes 212114 or 212115 a person is not required to consider the quantity of the EPCRA Section 313 chemical as manufactured, processed, or otherwise used when considering threshold determinations and release and other waste management calculations (see Example 8). Reclamation activities occurring simultaneously with coal extraction activities (e.g., cast blasting) are included in the exemption. However, otherwise use of ash, waste rock, or fertilizer for reclamation purposes is not considered part of extraction; non-exempt amounts of EPCRA Section 313 chemicals contained in these materials must be considered toward threshold determinations and release and other waste management calculations.

Metal Mining Overburden Exemption. If an EPCRA Section 313 chemical that is a constituent of overburden is processed or otherwise used by facilities in NAICS codes 212220, 212230, or 212290, a person is not required to consider the quantity of the EPCRA Section 313 chemical as processed or otherwise used when considering threshold determinations and release and other waste management calculations.

For purposes of EPCRA Section 313 reporting, overburden is the unconsolidated material that overlies a deposit of useful material or ore. It does not include any portion of the ore or waste rock.

Example 8: Coal Mining Extraction Activities

Included among these are explosives for blasting operations, solvents, lubricants, and fuels for extraction-related equipment maintenance and use, as well as overburden and mineral deposits. The EPCRA Section 313 chemicals contained in these materials are exempt from threshold determinations and release and other waste management calculations, when manufactured, processed, or otherwise used during extraction activities at coal mines.

B.4 Threshold Determinations

EPCRA Section 313 reporting is required if threshold quantities are exceeded. Separate thresholds apply to the amount of the EPCRA Section 313 chemical that is manufactured, processed or otherwise used.

You must submit a report for any EPCRA Section 313 chemical that is listed neither as a chemical of special concern nor a PFAS, and which is:

- Manufactured in excess of 25,000 pounds over the calendar year (note that manufacture includes import of the chemical);
- Processed in excess of 25,000 pounds over the calendar year; or
- Otherwise used in excess of 10,000 pounds over the calendar year.

The chemical names, CASRNs, and reporting thresholds for chemicals of special concern are listed in the table below. See Table IIc of these instructions for lists of individual members of the dioxin and dioxin-like compounds category, the polycyclic aromatic compounds (PACs) chemical category, and the hexabromocyclododecane category.

Note that the reporting threshold for each PFAS is 100 pounds and that the PFAS chemical names and CASRNs are listed in Tables IId & IIe.

Chemical or chemical category name	CASRN or chemical category code	Threshold (lb, unless noted otherwise)
Aldrin	309-00-2	100
Benzo[g,h,i]perylene	191-24-2	10
Chlordane	57-74-9	10
Dioxin and dioxin-like compounds category (manufacturing; and the processing or otherwise use of dioxin and dioxin-like compounds category if the dioxin and dioxin-like compounds are present as contaminants in a chemical and if they were created during the manufacturing of that chemical)	N150	0.1 grams
Heptachlor	76-44-8	10
Hexabromocyclododecane category	N270	100
Hexachlorobenzene	118-74-1	10
Isodrin	465-73-6	10
Lead (this lower threshold does not apply to lead when it is contained in stainless steel, brass or bronze alloy)	7439-92-1	100
Lead compounds category	N420	100
Mercury	7439-97-6	10
Mercury compounds category	N458	10
Methoxychlor	72-43-5	100
Octachlorostyrene	29082-74-4	10
Pendimethalin	40487-42-1	100
Pentachlorobenzene	608-93-5	10
Polychlorinated biphenyls	1336-36-3	10
Polycyclic aromatic compounds category (PACs)	N590	100
Tetrabromobisphenol A	79-94-7	100
Toxaphene	8001-35-2	10
Trifluralin	1582-09-8	100

B.4.a. How to Determine if Your Facility Has Exceeded Thresholds

To determine whether your facility has exceeded an EPCRA Section 313 reporting threshold, compare quantities of EPCRA Section 313 chemicals that you manufacture, process, or otherwise use to the respective thresholds for those activities. A worksheet is provided in Figure 4A to assist facilities in determining whether they exceed any of the reporting thresholds for EPCRA Section 313 chemicals that are not chemicals of special concern; Figures 4B-D provide worksheets for chemicals of special concern. (The worksheets can be found at the end of Section B.5.) These worksheets also provide a format for maintaining reporting facility records. Use of these worksheets is not required and the completed worksheet(s) should not accompany Form R reports submitted to EPA and the state or tribe. Additionally, EPA provides an online threshold screening tool at: https://www.epa.gov/toxics-release-inventory-tri-program/tri-threshold-screening-tool.

Complete the appropriate worksheet for each EPCRA Section 313 chemical or chemical category. Base your threshold determination for EPCRA Section 313 chemicals with qualifiers only on the quantity of the EPCRA Section 313 chemical satisfying the qualifier.

Use of the worksheets is divided into three steps:

- *Step 1* allows you to record the gross amount of the EPCRA Section 313 chemical or chemical category involved in activities throughout the facility. Pure forms as well as the amounts of the EPCRA Section 313 chemical or chemical category present in mixtures or other trade name products must be considered. The types of activity (i.e., manufacturing, processing, or otherwise using) for which the EPCRA Section 313 chemical is used must be identified because separate thresholds apply to each of these activities. A record of the information source(s) used should be kept. Possible information sources include purchase records, inventory data, and calculations by a process engineer. The data collected in Step 1 will be totaled for each activity to identify the overall amount of the EPCRA Section 313 chemical or chemical category manufactured (including imported), processed, or otherwise used.

- *Step 2* allows you to identify uses of the EPCRA Section 313 chemical or chemical category that were included in Step 1 but are exempt under EPCRA Section 313. Do not include in Step 2 exempt quantities of the EPCRA Section 313 chemical not included in the calculations in Step 1. For example, if Freon contained in the building's air conditioners was not reported in Step 1, you would not include the amount as exempt in Step 2. Step 2 is intended for use when a quantity or use of the EPCRA Section 313 chemical is exempt while other quantities require reporting. Note the type of exemption for future reference. Also identify, if applicable, the fraction or percentage of the EPCRA Section 313 chemical present that is exempt. Add the amounts in each activity to obtain a subtotal for exempted amounts of the EPCRA Section 313 chemical or chemical categories at the facility.
- *Step 3* involves subtracting the result of Step 2 from the results of Step 1 for each activity. Compare this net sum to the applicable activity threshold. If the threshold is exceeded for any of the three activities, a facility must submit a Form R for that EPCRA Section 313 chemical or chemical category. Do not sum quantities of the EPCRA Section 313 chemical that are manufactured, processed, and otherwise used at your facility, because each of these activities requires a separate threshold determination. For example, if in a calendar year you processed 20,000 pounds of an EPCRA Section 313 chemical and you otherwise used 6,000 pounds of that same chemical, your facility has not exceeded any applicable threshold and thus is not required to report for that chemical.

Worksheets should be retained to document your determination for reporting or not reporting, but should not be submitted with the report.

You must submit a report if you exceed any threshold for any EPCRA Section 313 chemical or chemical category. For example, if your facility processes 22,000 pounds of an EPCRA Section 313 chemical that is not classified as a chemical of special concern and is not a PFAS, and also otherwise uses 16,000 pounds of that same chemical, it has exceeded the otherwise use threshold (10,000 pounds), and your facility must report even though it did not exceed the process threshold (25,000 pounds). In preparing your reports, you must consider all non-exempted activities and all releases and other waste management quantities of the EPCRA Section 313 chemical from your facility, not just releases and other waste management quantities from the otherwise use activity.

Also note that threshold determinations are based upon the actual amounts of an EPCRA Section 313 chemical manufactured, processed, or otherwise used over the course of the calendar year. The threshold determination may not relate to the amount of an EPCRA Section 313 chemical on-site during the calendar year. For example, if a stockpile of 100,000 pounds of an EPCRA Section 313 chemical remained present on-site from a preceding calendar year but only 20,000 pounds of that chemical is applied to a process in the current calendar year, only the 20,000 pounds processed is counted toward a threshold determination, not the entire 100,000 pounds of the stockpile.

B.4.b. Threshold Determinations for On-Site Reuse Operations

Threshold determinations of EPCRA Section 313 chemicals that are reused at the facility are based only on the amount of the EPCRA Section 313 chemical that is added during the year, not the total volume in the system. For example, a facility operates a refrigeration unit that contains 15,000 pounds of anhydrous ammonia at the beginning of the year. The system is charged with 2,000 pounds of anhydrous ammonia during the year. The facility has therefore "otherwise used" only 2,000 pounds of anhydrous ammonia, an EPCRA Section 313 chemical, which is below the otherwise use threshold for anhydrous ammonia and is not required to report (unless there are other "otherwise use" activities of ammonia that, when taken together, exceed the reporting threshold). If, however, the whole refrigeration unit was recharged with 15,000 pounds of anhydrous ammonia during the year, then the facility would have exceeded the otherwise use threshold and would be required to report.

This does not apply to EPCRA Section 313 chemicals "recycled" or "reused" off-site and returned to a facility. Such EPCRA Section 313 chemicals returned to a facility are treated as the equivalent of newly purchased material for purposes of EPCRA Section 313 threshold determinations.

B.4.c. Threshold Determinations for Ammonia

The listing for ammonia includes the qualifier "includes anhydrous ammonia and aqueous ammonia from water dissociable ammonium salts and other sources; 10% of total aqueous ammonia is reportable under this listing."

The term 'anhydrous' means 'lacking water,' whereas 'aqueous' means 'dissolved in water.' Anhydrous ammonia (in either the gas or compressed liquid state) may, however, contain a small amount of water. The presence of water in anhydrous ammonia does not constitute aqueous ammonia unless the amount of water present is sufficient to dissolve the ammonia. If ammonia is not actually dissolved in water, then the ammonia must be considered anhydrous.

The qualifier for ammonia means that anhydrous forms of ammonia are 100% reportable and aqueous forms are limited to 10% of total aqueous ammonia. Therefore, when determining threshold quantities, 100% of anhydrous ammonia is included but only 10% of total aqueous ammonia is included. If any ammonia evaporates from aqueous ammonia solutions, 100% of the evaporated ammonia is included in threshold determinations.

For example, if a facility processes aqueous ammonia, it has processed 100% of the aqueous ammonia in that solution. If the ammonia remains in solution, then 10% of the total aqueous ammonia is counted toward the threshold. If there are any evaporative losses of anhydrous ammonia, then 100% of those losses must be counted toward the processing threshold. If the manufacturing, processing, or otherwise use threshold for the ammonia listing is exceeded, the facility must report 100% of these evaporative losses in Sections 5 and 8 of the Form R.

B.4.d. Threshold Determinations for Chemical Categories

A number of chemical compound categories are subject to reporting. See Table IIc for a listing of these EPCRA Section 313 chemical categories. When preparing threshold determinations for one of these EPCRA Section 313 chemical categories, all individual members of a category that are manufactured, processed, or otherwise used must be counted. Where generic names are used for a mixture at a facility, threshold determinations should be based on the listed chemical or chemical category. For example, Isonate 125M does not appear among the reportable chemicals in Table IIa or IIb but its CASRN indicates Isonate 125M is a synonym for 4,4'-methylenedi(phenyl isocyanate), an individually-listed member of the diisocyanates chemical category (code N120). If a covered facility manufactures, processes, or otherwise uses more than one member of a listed chemical category, the total quantity of all the members of the category must be counted toward the applicable activity threshold (40 CFR Section 372.27(d)). Do not include in these threshold determinations for a category any chemicals that are also individually listed EPCRA Section 313 chemicals (see Table IIa or IIb). Individually listed EPCRA Section 313 chemicals are subject to their own individual threshold determination.

Threshold determinations are made in the same manner for both delimited (i.e., each chemical that is a member of the category is named within the category) and non-delimited chemical categories (i.e., chemicals included in the category are not individually named (e.g., any unique chemical substance that contains mercury as part of that chemical's structure)). For reporting on delimited categories, only the members that are specifically listed as part of the category are subject to EPCRA Section 313 reporting. When reporting other non-delimited chemical categories, any unique chemical substance that contains the named category compound as part of that chemical's structure, or any compound meeting the specified molecular formula, is subject to threshold determinations.

Organic Compounds

For the organic compound categories, you are required to account for the entire weight of all compounds within a specific compound category (e.g., glycol ethers) at the facility for BOTH the threshold determination and release and other waste management estimates.

Metal Category Compounds

Threshold determinations for metal category compounds present a special case. If, for example, your facility processes several different nickel compounds, you should base your threshold

determination on the total weight of all nickel compounds processed. However, if your facility processes both the "parent" metal (nickel) as well as one or more nickel compounds, you must make threshold determinations for both nickel (CASRN 7440-02-0) and nickel compounds (chemical category code N495) because they are separately listed EPCRA Section 313 chemicals. If your facility exceeds thresholds for both the parent metal and compounds of that same metal, EPA allows you to file one combined report (e.g., one report for nickel compounds, including nickel) because the release information required to be reported for the metal category compounds is the total pounds of the metal released. If you file one combined report, use the name of the metal compound category on the Form R. In the example above, the facility that exceeded reporting thresholds for both the nickel and nickel compounds chemical category based on total weight processed could submit a single Form R for the nickel compounds chemical category, which would contain release and other waste management information for the metal portion of both nickel and nickel compounds. This is explained further in B.5.

Note that only elemental metals without a chemical qualifier can be reported with their associated metal category compound on a combined Form R report. Elemental metals with qualifiers that are only reportable if they are manufactured, processed, or otherwise used in a specific form(s) cannot be reported with their associated metal compound category on the same Form R. For example, a facility that exceeds an activity threshold for both zinc (fume or dust) and zinc compounds must not report both zinc (fume or dust) and zinc compounds on the same Form R. Similarly, vanadium (except when contained in an alloy) and vanadium compounds must not be reported on the same Form R.

TRI-MEweb will prompt you to select a checkbox to indicate whether the form contains reports for both the parent metal and compounds of that same metal to indicate that the form contains reporting on both the parent metal and the metal compound (e.g., nickel and nickel compounds).

The case of metal category compounds involving more than one metal should be noted. Some metal category compounds may contain more than one listed metal. For example, lead chromate is both a lead compound and a chromium compound. In such cases, if applicable thresholds are exceeded, you are required to file two separate reports, one for lead compounds and one for chromium compounds. Apply the total weight of the lead chromate to the threshold determinations for both lead compounds and chromium compounds. (Note: Only the quantity of each parent metal released or otherwise managed as waste, not the quantity of the compound, would be reported on the appropriate sections of both Form Rs. See Section B.5.)

Nitrate Compounds (water dissociable; reportable only when in aqueous solution)

For the category nitrate compounds (water dissociable; reportable only when in aqueous solution), the entire weight of the nitrate compound is counted in making threshold determinations. A nitrate compound is covered by this listing only when in water and only if dissociated. If no information is available on the identity of the type of nitrate that is manufactured, processed or otherwise used, assume that the nitrate compound exists as sodium nitrate.

Chromium Compounds

The TRI chromium compounds category excludes chromite ore mined in the Transvaal Region of South Africa and the unreacted ore component of the chromite ore processing residue (COPR). COPR is the solid waste remaining after aqueous extraction of oxidized chromite ore that has been combined with soda ash and kiln roasted at approximately 2,000 °F. Note that if a facility makes any change to the chemical composition of the chromite ore they have manufactured a new chromium compound that is not exempt from reporting.

B.4.e. Threshold Determinations for Chemicals of Special Concern

There are three separate thresholds for EPCRA Section 313 chemicals of special concern; these thresholds are set based on the chemicals' potential to persist and bioaccumulate in the environment. The manufacturing (including import), processing, and otherwise use thresholds for chemicals of special concern is 100 pounds, while for the subset of chemicals of special concern that are highly persistent and highly bioaccumulative, it is 10 pounds. The third threshold, for the dioxin and dioxin-like compounds chemical category, is 0.1 grams. The EPCRA Section 313 chemicals of special concern, their CASRN or chemical category code,

and their reporting thresholds are listed in a table in the introductory section of B.4. See Table IIc of these instructions for lists of individual members of the dioxin and dioxin-like compounds chemical category, the polycyclic aromatic compounds (PACs) chemical category, and the hexabromocyclododecane category.

B.4.f. Threshold Determinations for PFAS

The NDAA established TRI manufacturing (including import), processing, and otherwise use reporting thresholds of 100 pounds for each of the listed PFAS.

B.4.g. Threshold Determinations for Mixtures and Other Trade Name Products

EPCRA Section 313 chemicals contained in mixtures and other trade name products must be factored into threshold determinations and release and other waste management calculations.

If your facility processed or otherwise used mixtures or other trade name products during the calendar year, you are required to use the best readily available data (or reasonable estimates if such data are not readily available) to determine whether the toxic chemicals in a mixture meet or exceed the *de minimis* concentration and, therefore, whether they must be included in threshold determinations and release and other waste management calculations. If you know that a mixture or other trade name product contains a specific EPCRA Section 313 chemical, combine the amount of the EPCRA Section 313 chemical in the mixture or other trade name product with other amounts of the same EPCRA Section 313 chemical processed or otherwise used at your facility for threshold determinations and release and other waste management calculations. If you know that a mixture contains an EPCRA Section 313 chemical but it is present below the *de minimis* level, you do not have to consider the amount of the EPCRA Section 313 chemical present in that mixture for purposes of threshold determinations and release and other waste management calculations. Chemicals of special concern are not eligible for the *de minimis* exemption except lead when it is contained in stainless steel, brass, or bronze alloy.

Observe the following guidelines in estimating concentrations of EPCRA Section 313 chemicals in mixtures when only limited information is available:

- If you only know the upper bound concentration, you must use it for threshold determinations (40 CFR Section 372.30(b)(ii)).
- If you know the lower and upper bound concentrations of an EPCRA Section 313 chemical in a mixture, EPA recommends you use the midpoint of these two concentrations for threshold determinations.
- If you know only the lower bound concentration, EPA recommends you subtract out the percentages of any other known components to determine a reasonable upper bound concentration, and then determine a midpoint.
- If you have no information other than the lower bound concentration, EPA recommends you calculate a midpoint assuming an upper bound concentration of 100%.

See Example 9 for additional guidance on determining whether TRI chemicals within mixtures and other trade name products meet the TRI reporting thresholds.

Example 9: Mixtures and Other Trade Name Products

Scenario #1: Your facility otherwise uses 12,000 pounds of an industrial solvent (Solvent X) for equipment cleaning. The Safety Data Sheet (SDS) for the solvent indicates that it contains at least 50% *n*-hexane, an EPCRA Section 313 chemical; however, it also states that the solvent contains 20% non-hazardous surfactants. This is the only *n*-hexane-containing mixture used at the facility.

EPA recommends you follow these steps to determine if the quantity of the EPCRA Section 313 chemical in Solvent X exceeds the threshold for otherwise use.

1) Determine a reasonable maximum concentration for the EPCRA Section 313 chemical by subtracting out the non-hazardous surfactants (i.e., 100% - 20% = 80%).

2) Determine the midpoint between the known minimum (50%) and the reasonable maximum calculated above (i.e., (80% + 50%)/2 = 65%).

3) Multiply total weight of Solvent X otherwise used by 65% (0.65).

   12,000 pounds × 0.65 = 7,800 pounds

4) Because the total amount of *n*-hexane otherwise used at the facility was less than the 10,000-pound otherwise use threshold, the facility is not required to file a Form R for *n*-hexane.

Scenario #2: Your facility otherwise used 15,000 pounds of Solvent Y to clean printed circuit boards. The SDS for the solvent lists only that Solvent Y contains at least 80% of an EPCRA Section 313 chemical that is only identified as chlorinated hydrocarbons.

EPA recommends you follow these steps to determine if the quantity of the EPCRA Section 313 chemical in the solvent exceeds the threshold for otherwise use.

1) Because the specific chemical is unknown, the Form R will be filed for "chlorinated hydrocarbons." This name will be entered into Part II, Section 2.1, "Mixture Component Identity." (Note: Because your supplier is claiming the EPCRA Section 313 chemical identity a trade secret, you do not have to file substantiation forms.)

2) The upper bound limit is assumed to be 100% and the lower bound limit is known to be 80%. Using this information, the specific concentration is estimated to be 90% (i.e., the mid-point between upper and lower limits).

   (100% + 80%)/2 = 90%

3) The total weight of Solvent Y is multiplied by 90% (0.90) when calculating for thresholds.

   15,000 × 0.90 = 13,500

4) Because the total amount of chlorinated hydrocarbons exceeds the 10,000-pound otherwise use threshold, you must file a Form R for this chemical.

B.5 Release and Other Waste Management Calculations for Chemical Categories (Including Metals, Metal Category Compounds, and Nitrate Compounds)

Chemical Category Reporting

In calculating release and other waste management quantities for chemical categories—except for the scenarios described below involving metal and nitrate category compounds—report the aggregated total weight of compounds belonging to the chemical category for each reported Form R data element. As provided below, for metal category and nitrate category compounds, use only the metal or nitrate portion of the compounds belonging to the category when calculating release and other waste management quantities (note that you use the entire weight of the compounds for threshold calculation purposes for such categories).

Metal Category Compounds

Although the complete weight of the metal category compounds must be used in threshold determinations for the metal compounds category, only the weight of the metal portion of the metal category compounds must be considered for release and other waste management calculations or estimates. Remember that for metal category compounds that consist of more than one metal, release and other waste management reporting must be based on the weight of each metal, provided that the appropriate thresholds have been exceeded.

Metals and Metal Category Compounds

For compounds within the metal compound categories, only the metal portion of the metal category compounds must be considered in calculating release and other waste management quantities for the metal category compounds. Therefore, if thresholds are separately exceeded for both the "parent" metal and its compound category, EPA allows you to file a combined Form R for the "parent" metal and its category compounds (except for elemental metals with a chemical qualifier (i.e., zinc and vanadium)). This Form R would contain all release and other waste management information for both the "parent" metal and metal portion of the related metal category compounds. For example, thresholds for chromium and chromium compounds are both exceeded. Instead of filing two Form Rs, you can file one combined Form R that contains information on quantities of chromium released or otherwise managed as waste and the quantities of the chromium portion of the chromium compounds released or otherwise managed as waste. When filing one combined Form R for an EPCRA Section 313 metal and metal compound category, facilities should identify the chemical reported as the metal compound category name and code in Section 1 of the Form R.

Note that these instructions do not apply to the Form A. See Section B.6.f for reporting instructions for reporting metals and metal category compounds using the Form A Certification Statement. See the Form R and Form A Certification Statement Reporting Codes and Instructions for Reporting Metals guidance document for more information about reporting the release and other waste management of metals and metal compounds.

Nitrate Compounds (water dissociable; reportable only in aqueous solution)

Although the complete weight of the nitrate compound must be used for threshold determinations for the nitrate compounds category, only the nitrate portion of the compound should be used for release and other waste management calculations.

Facility Name: _____ **Date Worksheet Prepared:** _____

EPCRA Section 313 Chemical or Chemical Category: _____ **Prepared By:** _____

CASRN: _____

Reporting Year: _____

Amounts of the EPCRA Section 313 chemical or chemical category manufactured, processed, or otherwise used.

Mixture Name or Other Identifier	Information Source	Total Weight (lb)	Percent EPCRA Section 313 Chemical by Weight	EPCRA Section 313 Chemical Weight (lb)	Amount of the EPCRA Section 313 Chemical or Chemical Category by Activity (lb):		
					Manufactured	Processed	Otherwise Used
1.							
2.							
3.							
4.							
Subtotal:					(A)_____lb	(B)_____lb	(C)_____lb

Exempt quantity of the EPCRA Section 313 chemical or chemical category that should be excluded.

Mixture Name as Listed Above	Applicable Exemption (articles, facility, activity)	Fraction or Percent Exempt (if Applicable)	Amount of the EPCRA Section 313 Chemical Exempt from Above (lb):		
			Manufactured	Processed	Otherwise Used
1.					
2.					
3.					
4.					
Subtotal:			(A_1)_____lb	(B_1)_____lb	(C_1)_____lb

Amount subject to threshold: **(A-A_1)_____ lb** **(B-B_1)_____ lb** **(C-C_1)_____ lb**

Compare to threshold for EPCRA Section 313 reporting. **25,000 lb** **25,000 lb** **10,000 lb**

If any threshold is exceeded, reporting is required for all activities. Keep this worksheet for your records.

Note: Chemicals listed as chemicals of special concern have separate thresholds (dioxin and dioxin-like compounds chemical category = 0.1 g; highly persistent, highly bioaccumulative toxic chemicals = 10 lb; all other chemicals of special concern = 100 lb). Make certain you are using the appropriate worksheet for the toxic chemical of special concern.

Figure 4A. EPCRA Section 313 Chemical Reporting Threshold Worksheet for Chemicals with 25,000/10,000-Pound Reporting Thresholds

Facility Name: _____ **Date Worksheet Prepared:** _____

EPCRA Section 313 Chemical or Chemical Category: _____ **Prepared By:** _____

CASRN: _____

Reporting Year: _____

Amounts of the EPCRA Section 313 chemical or chemical category manufactured, processed, or otherwise used.

Mixture Name or Other Identifier	Information Source	Total Weight (lb)	Percent EPCRA Section 313 Chemical by Weight	EPCRA Section 313 Chemical Weight (lb)	Amount of the EPCRA Section 313 Chemical or Chemical Category by Activity (lb):		
					Manufactured	Processed	Otherwise Used
1.							
2.							
3.							
4.							
Subtotal:					(A)_____lb	(B)_____lb	(C)_____lb

Exempt quantity of the EPCRA Section 313 chemical or chemical category that should be excluded.

Mixture Name as Listed Above	Applicable Exemption (articles, facility, activity) [1]	Fraction or Percent Exempt (if Applicable)	Amount of the EPCRA Section 313 Chemical Exempt from Above (lb):		
			Manufactured	Processed	Otherwise Used
1.					
2.					
3.					
4.					
Subtotal:			(A_1)_____lb	(B_1)_____lb	(C_1)_____lb

Amount subject to threshold: **($A-A_1$)_____ lb** **($B-B_1$)_____ lb** **($C-C_1$)_____ lb**

Compare to threshold for EPCRA Section 313 reporting. **100 lb** **100 lb** **100 lb**

If any threshold is exceeded, reporting is required for all activities. Keep this worksheet for your records.

[1] Chemicals listed as chemicals of special concern are not eligible for the *de minimis* exemption.

Figure 4B. EPCRA Section 313 Chemical Reporting Threshold Worksheet for Chemicals of Special Concern and PFAS with 100-Pound Reporting Thresholds

Facility Name: _____ **Date Worksheet Prepared:** _____

EPCRA Section 313 Chemical or Chemical Category: _____ **Prepared By:** _____

CASRN: _____

Reporting Year: _____

Amounts of the EPCRA Section 313 chemical or chemical category manufactured, processed, or otherwise used.

Mixture Name or Other Identifier	Information Source	Total Weight (lb)	Percent EPCRA Section 313 Chemical by Weight	EPCRA Section 313 Chemical Weight (lb)	Amount of the EPCRA Section 313 Chemical or Chemical Category by Activity (lb):		
					Manufactured	Processed	Otherwise Used
1.							
2.							
3.							
4.							
Subtotal:					(A)_____lb	(B)_____lb	(C)_____lb

Exempt quantity of the EPCRA Section 313 chemical or chemical category that should be excluded.

Mixture Name as Listed Above	Applicable Exemption (articles, facility, activity) [1]	Fraction or Percent Exempt (if Applicable)	Amount of the EPCRA Section 313 Chemical Exempt from Above (lb):		
			Manufactured	Processed	Otherwise Used
1.					
2.					
3.					
4.					
Subtotal:			(A_1)_____lb	(B_1)_____lb	(C_1)_____lb

Amount subject to threshold: **(A-A_1)_____ lb** **(B-B_1)_____ lb** **(C-C_1)_____ lb**

Compare to threshold for EPCRA Section 313 reporting. **10 lb** **10 lb** **10 lb**

If any threshold is exceeded, reporting is required for all activities. Keep this worksheet for your records.

[1] Chemicals listed as chemicals of special concern are not eligible for the *de minimis* exemption.

Figure 4C. EPCRA Section 313 Chemical Reporting Threshold Worksheet for Chemicals of Special Concern with 10-Pound Reporting Thresholds

Facility Name: _____ **Date Worksheet Prepared:** _____

EPCRA Section 313 Chemical or Chemical Category: Dioxin and Dioxin-like Compounds **Prepared By:** _____

CASRN: _____

Reporting Year: _____

Amounts of the EPCRA Section 313 chemical or chemical category manufactured, processed, or otherwise used.

Mixture Name or Other Identifier	Information Source	Total Weight (g)	Percent EPCRA Section 313 Chemical by Weight	EPCRA Section 313 Chemical Weight (g)	Amount of the EPCRA Section 313 Chemical or Chemical Category by Activity (g):		
					Manufactured	Processed	Otherwise Used
1.							
2.							
3.							
4.							
Subtotal:					(A)_____g	(B)_____g	(C)_____g

Exempt quantity of the EPCRA Section 313 chemical or chemical category that should be excluded.

Mixture Name as Listed Above	Applicable Exemption (articles, facility, activity) [1]	Fraction or Percent Exempt (if Applicable)	Amount of the EPCRA Section 313 Chemical Exempt from Above (g):		
			Manufactured	Processed	Otherwise Used
1.					
2.					
3.					
4.					
Subtotal:			(A_1)_____g	(B_1)_____g	(C_1)_____g

Amount subject to threshold: **($A-A_1$)_____ g** **($B-B_1$)_____ g** **($C-C_1$)_____ g**

Compare to threshold for EPCRA Section 313 reporting. **0.1 g** **0.1 g** **0.1 g**

If any threshold is exceeded, reporting is required for all activities. Keep this worksheet for your records.

[1] Chemicals listed as chemicals of special concern are not eligible for the *de minimis* exemption.

Figure 4D. EPCRA Section 313 Chemical Reporting Threshold Worksheet for Dioxin and Dioxin-Like Compounds Chemical Category

B.6. Facility Eligibility Determination for Alternate Threshold and for Reporting on TRI Form A Certification Statement

This section will help you determine whether you can submit the simplified Form A Certification Statement (hereafter referred to as Form A). The criteria are based on the total annual reportable amount of the listed chemical or chemical category and the amount manufactured, processed, or otherwise used. Note that, effective in Reporting Year 2008, the TRI Burden Reduction Rule has been voided by Congress. The criteria for using Form A have returned to what they were prior to Reporting Year 2006. The criteria are explained below. For more information about the final rule, see the TRI homepage at: https://www.epa.gov/toxics-release-inventory-tri-program/tri-laws-rulemakings-and-notices.

B.6.a. Alternate Threshold

The "TRI Alternate Threshold for Facilities with Low Annual Reportable Amounts," provides facilities that otherwise meet EPCRA Section 313 reporting thresholds the option of certifying on a simplified Form A provided that they do not exceed 500 pounds for the total annual reportable amount (defined below) for that chemical, and that their amounts manufactured, processed, or otherwise used do not exceed 1 million pounds. As with determining Section 313 reporting thresholds, amounts manufactured, processed, or otherwise used are to be considered independently. All chemicals of special concern (except certain instances of reporting lead in stainless steel, brass, or bronze alloys) are excluded from eligibility for the alternate threshold. This modification does not apply to forms being submitted on or before July 1, 1995 (covering the 1994 reporting year).

B.6.b. What is the Form A Certification Statement?

The Form A, which is described as the "certification statement" in 59 FR 61488, is intended as a means to reduce the compliance burden associated with EPCRA Section 313. If a facility chooses to use Form A as a substitute for Form R for any eligible chemical, it must be submitted on an annual basis. Facilities wishing to take advantage of this burden-reducing option may only submit Form A for chemicals that meet the conditions described in Section B.6.a, Alternate Threshold, and should not submit a Form R for the same chemicals. The information submitted on the Form A includes facility identification information and the chemical or chemical category identity. The information submitted on the Form A will appear in the TRI database in the same manner that information submitted on Form R appears.

B.6.c. What Is the Annual Reportable Amount?

For the purpose of this optional reporting modification, the annual reportable amount is equal to the combined total quantities of the following waste management activities:

- released at the facility (including disposed of within the facility),
- treated at the facility (as represented by amounts destroyed or converted by treatment processes),
- recovered at the facility as a result of recycling operations,
- combusted for the purpose of energy recovery at the facility, and
- amounts transferred from the facility to off-site locations for the purpose of recycling, energy recovery, treatment, and/or disposal.

These quantities correspond to the sum of amounts reportable for data elements on EPA Form R as Part II column B of Section 8, data elements 8.1 (quantity released), 8.2 (quantity used for energy recovery on-site), 8.3 (quantity used for energy recovery off-site), 8.4 (quantity recycled on-site), 8.5 (quantity recycled off-site), 8.6 (quantity treated on-site), and 8.7 (quantity treated off-site).

B.6.d. Recordkeeping

Each owner or operator who determines that they are eligible, and wishes to apply the alternate threshold to a particular chemical, must retain records substantiating this determination for a period of three years from the date of the submission of the Form A. These records must include sufficient documentation to support calculations as well as the calculations made by the facility that confirm their eligibility for each chemical for which the alternate threshold was applied.

A facility that fits within the category description, and manufactures, processes or otherwise uses no more than 1 million pounds of an EPCRA Section 313 chemical annually, and whose owner/operator elects to take advantage of the alternate threshold, is not considered an EPCRA Section 313 covered facility for that chemical for the purpose of submitting a Form R. This determination may provide further regulatory relief from other federal or state regulations that apply to facilities on the basis of their EPCRA Section 313 reporting status. A facility will need to reference other applicable regulations to determine if their actual requirements may be affected by this reporting modification.

B.6.e. Multi-establishment Facilities

For the purposes of using Form A, the facility must also make its determination based upon the entire facility's operations including all of its establishments (see 59 FR 61488 for greater detail). If the facility as a whole is able to take advantage of the alternate threshold, a single Form A is required. The eligibility to submit a Form A must be made on a whole facility determination. Thus, all of the information necessary to make the determination must be assembled to the facility level.

B.6.f. Metals and Metal Category Compounds

For metal category compounds, the threshold applies to the total amount (weight) of the metal category compounds manufactured, processed, or otherwise used. For Form A certification involving both listed parent metals and associated metal compounds, the 1 million pound alternate threshold must be applied separately to the listed parent metal and the associated metal compound(s). Threshold determinations must be made independently for each because they are separately listed EPCRA Section 313 chemicals.

- If the threshold is exceeded for the listed parent metal but not the associated metal category compounds, then the releases of metal reported on Form R for the parent metal need not include the releases from the metal category compounds.
- If both the parent metal and the associated metal compounds exceed the alternate threshold, then the facility has the option of filing one Form R for both, using the metal category compound name. Note the Form R should only include release and waste management quantities for the parent metal content.

If neither the parent metal nor the associated metal compounds exceed the alternate threshold, then the facility must use a separate listing on Form A for each, since the reporting thresholds must be applied to each listed parent metal and all compounds in the associated compound category. EPA believes it is appropriate to make the distinction between filing the Form R and Form A because the Form R accounts for amounts of metal released or otherwise managed and Form A verifies that the alternate threshold for each listed chemical or chemical category has not been exceeded.

B.6.g. Other Categories

Similarly, separate listings on Form A must be submitted for all other listed chemicals even if EPA allows one listing on Form R to be filed for two or more listed chemicals (e.g., *o*-xylene, *p*-xylene and xylene (mixed isomers)). For example, if a facility processes in three separate process streams, xylene (mixed isomers), *o*-xylene, and *p*-xylene, and exceeds the conditions of the alternate threshold for each of these listed substances, the facility may combine the appropriate information on the *o*-xylene, *p*-xylene, and xylene (mixed isomers) into one Form R, but cannot combine the reports into one listing on Form A.

Facilities that process *o*-xylene, *p*-xylene, and xylene (mixed isomers) in separate process streams and do not exceed the conditions of the alternate threshold for one or more of the compounds may submit a separate Form A for each of the forms of xylene meeting the alternate threshold and report on Form R for those forms that do not. Similar to reporting on the parent metals and their associated category compounds described above, facilities that separately process all types (i.e., isomers) of xylene with individual activity levels within the conditions of the alternate threshold should file a separate Form A for each type of xylene.

Instructions for Completing TRI Forms R and A

The following instructions provide information on how to enter data on Forms R and A for non-trade secret reporting using TRI-MEweb. Supplemental instructions for submitting trade secret claims are provided in Appendix A.

TRI-MEweb collects the same facility identification information and chemical specific information that facilities previously submitted on the paper TRI Forms. In some cases, TRI-MEweb does not sequentially follow the Sections numerically as listed on the Forms. As such, the TRI-MEweb experience differs somewhat from the sequential nature of the instructions in this document.

Facility identification information provided in Part I is entered only once per facility in TRI-MEweb and is duplicated on all forms submitted, except for the Technical and Public Contact that are collected for each form separately (See Part I, Sections 4.3 and 4.4). For facilities that have previously submitted TRI Forms, the facility information remains with the facility's profile and needs to be updated only if facility or parent company changes have occurred.

Chemical specific information on Part II (including Technical and Public Contact information) is entered separately for each chemical reported.

C. Part I. Facility Identification Information (Form R & A)

Section 1. Reporting Year

The reporting year is the calendar year to which the reported information applies, not the year in which you are submitting the report. Information for the 2022 reporting year must be submitted on or before July 1, 2023.

Section 2. Trade Secret Information

Trade secret submission is not supported by TRI-MEweb. As such, Section 2 is not to be completed by TRI-MEweb users for non-trade secret reports. For instructions on completing trade secret submissions, see Appendix A of these instructions.

Section 3. Certification

For both Form R and Form A, the certification statement must be signed by a senior official with management responsibility for the person (or persons) completing the form. A senior management official must certify the accuracy and completeness of the information reported on the form by signing and dating the form.

Electronic certification of completed forms prepared using TRI-MEweb is performed by certifying officials who have signed an ESA and TRIFID Signature Agreement form. For more information regarding certification of forms, see Section A.2.

Unlike the certification statement contained on Form R, the certification statement provided on the Alternate Threshold Form A pertains to the facility's eligibility of having met the conditions as described in 40 CFR Section 372.27.

Section 4. Facility Identification

4.1 Facility Name, Location, TRI Facility Identification Number, and Tribal Country Name

Enter the full name that the facility presents to the public and its customers in doing business (e.g., the name that appears on invoices, signs, and other official business documents). Do not use a nickname for the facility (e.g., Main Street Plant) unless that is the legal name of the facility under which it does business. Also enter the physical street address, mailing address, city, county, three-digit BIA code, if applicable, state, and ZIP code in the space provided. The street address provided must be the location where the EPCRA Section 313 chemicals are manufactured, processed, or otherwise used. You may not use PO Box as a facility address. If your mailing address and street address are the same, you should enter "**NA**" in the space for the mailing address.

If your facility is not in a county, put the name of your city, district (for example, District of Columbia), or parish (if you are in Louisiana) in the county block of the Form R and Form A Certification Statement as well as in the county field of TRI-MEweb. "**NA**" or "**None**" are not acceptable entries. TRI-MEweb provides a dropdown menu for the county name, including city districts and parish names.

If your facility is located in Indian country as defined by 18 USC §1151 you must enter the three-digit Bureau of Indian Affairs (BIA) tribal code in the "BIA Code" field. The BIA tribal codes are accessible via this webpage: https://www.epa.gov/data-standards/tribal-identifier-data-standard. Facilities using TRI-MEweb to complete their forms will be asked if they are located within a tribe's Indian country and, upon answering "yes," be taken to a look-up table to determine the correct BIA code.

If your facility is not located in Indian country as defined by 18 USC §1151 (the majority of TRI facilities are not in Indian country), you must enter only the city, county (as applicable), state, and ZIP code.

Facility identification information for a facility that has previously submitted data to EPA.

If your facility has submitted a Form R or A in previous reporting years, a TRI Facility Identification Number (TRIFID) has already been assigned to your facility. If you do not know your facility's information used in prior years' submissions, you can search for this information while setting up your account in TRI-MEweb, contact your Regional TRI Program representative, or use Envirofacts to look up the address, facility name, or TRIFID at: https://www3.epa.gov/enviro.

If you have previously submitted data for your facility using TRI-MEweb, the facility information including TRIFID remains with your profile. If you have not previously submitted EPCRA Section 313 data using the TRI-MEweb application, then you can add your facility to your profile using the 6-digit alphanumeric access key. To request your assigned access key, you should proceed to add a new facility account by selecting the option to indicate that the facility has previously reported to TRI. You will then be able to enter the TRIFID and technical contact information for the prior reporting year to gain access to the facility. Or, you may request the access key, which will be emailed to your CDX email address and can be used to gain access to the facility.

Facility identification information for a facility that has previously submitted data to EPA but has changed physical location.

If your facility has moved, you will need to request that a new TRIFID be assigned to your facility. To request a new TRIFID, add a new facility account to TRI-MEweb and choose to report as a new reporting facility (option 3). TRI-MEweb will automatically generate a new TRIFID for your facility. The TRIFID assigned to your new reporting facility should be used in all future reporting of TRI data.

Facility identification information for a facility that has changed ownership but has not changed physical location.

The TRIFID is established by the first Form R or A Certification Statement submitted by a facility at a particular location. Only a change in address warrants filing as a new facility; otherwise, the TRIFID is retained by the facility even if the facility changes name, ownership, production processes, NAICS codes, etc.

If your facility has changed ownership during the reporting year but not its physical location, the facility does not require a new TRIFID. Use the TRIFID used by the previous owner. TRI-MEweb can be used to update facility information to reflect the change of ownership.

The owner or operator of the facility on the annual July 1 reporting deadline is responsible for reporting the data for the entire previous year's operations at that facility. Any other owner or operator of the facility before the reporting deadline may also be held liable. The form submitted for a given reporting year must reflect the names used by the facility and its parent company on December 31 of that reporting year, even if the facility changed its name or ownership at any time during the reporting year. For guidance on specific scenarios, contact your Regional TRI Program representative.

Facility is submitting TRI reporting forms for the first time.

If your facility is reporting for the first time, upon creating your CDX account, and adding the TRI-MEweb application, you will be prompted to add a new facility account into TRI-MEweb. TRI-MEweb will automatically generate a new TRIFID for your facility. The TRIFID assigned to your new reporting facility should be used in all future reporting of TRI data.

Example 10: Reporting After a Change in Name or Ownership

The owner/operator of a covered facility is preparing Form Rs for a facility. The facility and its parent company both changed their names after the reporting year. What names should be reported by the owner/operator (for both the facility and the parent company) on the Form Rs covering the reporting year?

The facility should report the names used by the facility and parent company during that reporting year. When the owner/operator submits Form Rs for the next reporting year, these reports should reflect the names used by the facility and parent company during the new reporting year. (Note: the TRI Facility identification number will not change.)

EPCRA Section 313 Questions and Answers Document 2019 Consolidation Document, Question #774

If a covered facility does not have a Dun & Bradstreet number but the parent corporation does, should this number be reported?

Report the Dun & Bradstreet Number for the facility. If a facility does not have a Dun & Bradstreet Number, enter 'NA' in Part I, Section 4.6. The parent company's Dun & Bradstreet Number should be entered in Part I, Section 5.2 relating to parent company information.

EPCRA Section 313 Questions and Answers Document 2019 Consolidation Document, Question #117

In October, Facility X changes ownership and is purchased by Company Y. For that reporting year, which facility is obligated to submit the Form R or Form A, and whose name and what TRI identification number should be on the form?

The owner or operator of the facility on the annual July 1 reporting deadline (i.e., Company Y) is primarily responsible for reporting the data for the entire previous year's operations at that facility. Any other owner or operator of the facility before the reporting deadline may also be held liable. The form submitted for a given reporting year must reflect the names used by the facility and its parent company on December 31 of that reporting year, even if the facility changed its name or ownership at any time during the reporting year (Monthly Call Center Report Question, EPA530-R-98-005j; October 1998). In this scenario, because Facility X changed ownership before December 31 of the reporting year, Company Y's name should appear on the form. The TRI identification number is location-specific; thus, the identification number will stay the same even if the facility changes names, production processes, or NAICS codes.

EPCRA Section 313 Questions and Answers Document 2019 Consolidation Document, Question #92

4.2 Full or Partial Facility Indication and Federal Facility Designation

Full or Partial Facility Indication (Form R only)

EPCRA Section 313 requires reports by "facilities," which are defined as "all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person (or by any person which controls, is controlled by, or under common control with such person). A facility may contain more than one establishment."

EPCRA Section 313 defines establishment as "an economic unit, generally at a single physical location, where business is conducted or where services or industrial operations are performed." Under Section 372.30(c) of the reporting rule, you may submit a separate Form R for each establishment or for groups of establishments in your facility, provided all releases and other waste management activities and source reduction activities involving the EPCRA Section 313 chemical from the entire facility are reported. This allows you the option of reporting separately on the activities involving an EPCRA Section 313 chemical at each establishment, or group of establishments (e.g., part of a covered facility), rather than submitting a single Form R for that EPCRA Section 313 chemical for the entire facility.

However, if an establishment or group of establishments does not manufacture, process, or otherwise use or release or otherwise manage as waste an EPCRA Section 313 chemical, you do not have to submit a report for that establishment or group of establishments for that particular chemical. (See also Section B.2.b of these instructions.)

A covered facility must report all releases and other waste management activities and source reduction activities of an EPCRA Section 313 chemical if the facility meets a reporting threshold for that EPCRA Section 313 chemical. Whether submitting a report for the entire facility or separate reports for the establishments, the threshold determination must be made based on the entire facility. Indicate in Section 4.2 whether your report is for the entire covered facility as a whole or for part of a covered facility (i.e., one or more establishments).

In TRI-MEweb, facilities that wish to submit separate Form Rs for each establishment or group of establishments may select "*Reporting by Part*" with the "**Manage Facilities***"* page to set up unique establishments within the particular facility. All establishments reporting by part use the same TRIFID but should provide unique facility names.

Note that the reporting by part option is not applicable for facilities submitting a Form A Certification Statement for a TRI chemical. Unlike the Form R, the Form A Certification Statement does not utilize Sections 4.2a or 4.2b, which provide the option of reporting full or partial facility information if the facility is composed of several distinct establishments.

Federal Facility Designation

Executive Orders have directed federal facilities to comply with Right-To-Know Laws and Pollution Prevention Requirements. In TRI-MEweb, users should select the appropriate button for: (1) federal facility (Section 4.2c), (2) GOCO (government-owned, contractor-operated) facility (Section 4.2d), or (3) neither. Federal facilities should select only 'Federal Facility' even if their TRI reports contain release and other waste management information from contractors located at the facility. Contractors at federal facilities that are required by EPCRA Section 313 to file TRI reports independently of the federal facility, should select GOCO. This information is important to prevent duplication of federal facility data. (See the Federal Facility Reporting Information guidance document for further guidance on these instructions.)

4.3 Technical Contact

In TRI-MEweb, facilities must enter the name and telephone number (including area code) of a technical representative whom EPA, state, or tribal officials may contact for clarification of the information reported on Form R or A. If possible, this number should be for the technical representative rather than a general number for the facility. An email address should also be entered for this person. EPA encourages facilities to provide an email address for the Technical Contact on their TRI submissions because they will be able to receive important program updates and email alerts. If the technical contact does not have an email address, leave the field blank. This contact person does not have to be the same person who prepares the report or signs the certification statement and does not necessarily need to be someone at the location of the reporting facility. However, this person should be familiar with the details of the report so that they can answer questions about the information provided. As facilities may report unique technical contacts for each form, technical contact details are entered in TRI-MEweb with chemical-specific data rather than facility-identification information.

4.4 Public Contact

In TRI-MEweb, facilities must enter the name and telephone number (including area code) of a person who can respond to questions from the public about the form. You should also enter an e-mail address for this person. If the Public Contact does not have an email address, leave the field blank. If you choose to designate the same person as both the Technical and the Public Contact, or you do not have a Public Contact, you may enter "Same as Section 4.3" in this space. This contact person does not have to be the same person who prepares the form or signs the Certification Statement and does not necessarily need to be someone at the location of the reporting facility. As facilities may report unique Public Contacts for each form, Public Contact details are entered in TRI-MEweb with chemical-specific data rather than facility-identification information.

4.5 North American Industry Classification System (NAICS) Codes

Enter the appropriate six-digit NAICS code that is the primary NAICS code for your facility in Section 4.5(a). Use 2022 NAICS codes for RY 2022 reporting and subsequent years. For RY 2017 – 2021 reporting, use 2017 NAICS codes; for RY 2013 – 2016 reporting, use 2012 NAICS codes; for RY 2006 – 2012 reporting, use 2007 NAICS codes. Enter any other applicable NAICS codes for your facility in 4.5 (b)-(f), also called "secondary NAICS codes" in TRI-MEweb. If you do not know your NAICS code(s), consult the 2022 NAICS Manual or check the SIC to NAICS crosswalk tables at: http://www.census.gov.

NAICS is the economic classification system that replaced the 1987 SIC code system. A *Federal Register* notice was published on June 6, 2006 (71 FR 32464), adopting 2007 NAICS codes for TRI reporting. A direct final rule was published July 18, 2013 (78 FR 42875), adopting 2012 NAICS codes for RY 2013 and subsequent years. A final rule was published in the *Federal Register* on December 26, 2017 (82 FR 52674), to adopt 2017 NAICS codes for RY 2017 and subsequent years. Most recently, a final rule was published in the *Federal Register* on November 28, 2022 (87 FR 72891) to adopt 2022 NAICS codes for RY 2022 and subsequent years. Table I lists all industries that are covered under EPCRA Section 313 and their corresponding 2022 NAICS codes.

4.6 Dun & Bradstreet Number(s)

Enter the nine-digit number assigned by Dun & Bradstreet (D&B) for your facility or each establishment within your facility. These numbers code the facility for financial purposes. This number may be available from your facility's treasurer or financial officer. You can also obtain the numbers from Dun & Bradstreet by visiting this website: https://www.dnb.com/duns-number/lookup.html.

If a facility does not subscribe to the D&B service, a number can be obtained by contacting Dun & Bradstreet.

If none of your establishments has been assigned a D&B number, you should check "D&B Numbers Not Applicable." If only some of your establishments have been assigned D&B numbers, enter those numbers in Part I, Section 4.6.

Section 5. Parent Company Information

You must provide information on your parent company. For TRI Reporting purposes, "parent company" is defined at 40 CFR 372.3 beginning with RY 2022. *Parent company* means the highest-level company (or companies) of the facility's ownership hierarchy as of December 31 of the year for which data are being reported according to the following instructions. The U.S. parent company is located within the United States while the foreign parent company is located outside the United States:

(1) If the facility is entirely owned by a single U.S. company that is not owned by another company, that single company is the U.S. parent company.

(2) If the facility is entirely owned by a single U.S. company that is, itself, owned by another U.S.-based company (e.g., it is a division or subsidiary of a higher-level company), the highest-level company in the ownership hierarchy is the U.S. parent company. If there is a higher-level parent company that is outside of the United States, the highest-level foreign company in the ownership hierarchy is the foreign parent company.

(3) If the facility is owned by more than one company (e.g., company A owns 40 percent, company B owns 35 percent, and company C owns 25 percent), the highest-level U.S. company with the largest ownership interest in the facility is the U.S. parent company. If there is a higher-level foreign company in the ownership hierarchy, that company is the foreign parent company.

(4) If the facility is owned by a 50:50 joint venture or a cooperative, the joint venture or cooperative is its own parent company.

(5) If the facility is entirely owned by a foreign company (i.e., without a U.S.-based subsidiary within the facility's ownership hierarchy), the highest-level foreign parent company is the facility's foreign parent company.

(6) If the facility is federally owned, the highest-level federal agency or department operating the facility is the U.S. parent company.

(7) If the facility is owned by a non-federal public entity (e.g., a State, municipal, or tribal government), that entity is the U.S. parent company.

Note that under the final rule for defining "parent company," all TRI facilities must report on their highest-level U.S. parent company according to the above instructions starting with RY 2022. However, the requirement to report a facility's highest-level foreign parent company, if applicable, will be effective with RY 2023, for forms due by July 1, 2024.

EPA has also provided a guidance document to assist TRI facilities with interpreting the appropriate parent company(ies) to report, including examples under different ownership scenarios. This guidance document is available at: https://guideme.epa.gov/ords/guideme_ext/f?p=guideme:gd-title:::::title:parent_company. If there is no higher-level U.S. company owning the TRI facility, select the "No U.S. Parent Company (for TRI reporting purposes)" checkbox. All facilities must report on ownership. Nearly all facilities will report a U.S. parent unless a facility has entirely foreign ownership.

5.1 Name of Parent Company

Enter the name of the corporation or other business entity that is your U.S. parent company. If your facility has no parent company based in the U.S., select the "No U.S. Parent Company (for TRI reporting purposes)" checkbox.

To improve data quality, TRI facilities must report their parent company names according to the standardized format. TRI-MEweb is preloaded with the standardized parent company names. A full list of parent company names for RY 2022 is available for download at: https://guideme.epa.gov/ords/guideme_ext/f?p=guideme:rfi-home#downloadable.

5.2 Parent Company's Dun & Bradstreet Number

Enter the D&B number for your ultimate U.S. parent company, if applicable. The number may be obtained from the treasurer or financial officer of the company or by visiting this website: https://www.dnb.com/duns-number/lookup.html.

If your parent company does not have a D&B number, you should check "Parent Company D&B Number Not Applicable."

Example 11: Identifying the Parent Company

When a facility changes ownership after a Form R has been submitted, who is required to respond to a Notice of Non-Compliance (NON) related to the Form R? Is the current or prior owner/operator required to respond to the NON?

The current owner/operator has the primary responsibility for responding to a NON. However, all prior owners/operators back to January 1 of the reporting year may also be held responsible if the current owner/operator does not respond to the NON in an accurate, complete, and timely manner.

EPCRA Section 313 Questions and Answers Document 2019 Consolidation Document, Question #96

Who is the parent company for a 50/50 joint venture?

The 50/50 joint venture is its own parent company.

EPCRA Section 313 Questions and Answers Document 2019 Consolidation Document, Question #99

Mom and Pop Plastics is a wholly owned subsidiary of a major chemical company which is a wholly owned subsidiary of Big Oil Corporation, located in St. Paul, MN. Which is the parent company?

Big Oil Corporation is the parent company.

EPCRA Section 313 Questions and Answers Document 2019 Consolidation Document, Question #101

Example 12: Reporting for Multiple Sites and/or Owners

If two plants are separate establishments under the same site management, must they have separate Dun & Bradstreet numbers?

They may have separate Dun & Bradstreet numbers, especially if they are distinctly separate business units. However, different divisions of a company located at the same facility usually do not have separate Dun & Bradstreet numbers.

EPCRA Section 313 Questions and Answers Document 2019 Consolidation Document, Question #118

An electricity generating facility (EGF) is composed of multiple independent owners. Each individual owner runs his/her own separate operation, but each has a financial interest in the operation of the entire facility. What name should be entered as the parent company in Part I, Section 5.1 of the Form R? Should the facility report under one holding company name?

The electricity generating facility should enter in Part I, Section 5.1 of the Form R the name of the holding or parent company, consortium, joint venture, or other entity that owns, operates, or controls the facility.

EPCRA Section 313 Questions and Answers Document 2019 Consolidation Document, Question #98

A covered facility sells one of its establishments to a new owner. The operator of the newly sold establishment, however, does not change. The same operator operates the newly sold establishment and the rest of the facility. Although the facility makes its threshold determinations based on the activities at the entire facility (including the newly sold establishment), the facility chooses to report separately for the different establishments. What parent name should the newly sold establishment use, the parent name of the owner or the parent name of the operator (i.e., the same as the rest of the facility)?

All establishments of a covered facility must report the parent name of the facility. Therefore, in the instance described above, the newly sold establishment should use the parent name of the facility operator (i.e., the same parent name the rest of the facility is using.)

EPCRA Section 313 Questions and Answers Document 2019 Consolidation Document, Question #102

Two distinct NAICS code operations that are covered under EPCRA Section 313 (e.g., an electricity generating facility and a cement plant) are located on adjacent properties and are owned by the same parent company. The two operations are operated completely independently of one another (e.g., separate accounting procedures, employees, etc.). Are these two operations considered one facility under EPCRA Section 313?

Yes. Under EPCRA Section 313 a facility is defined as: all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person (40 CFR Section 372.3). Because these two operations are located on adjacent properties and are owned by the same person they are considered one facility for EPCRA Section 313 reporting purposes.

EPCRA Section 313 Questions and Answers Document 2019 Consolidation Document, Question #23

Example 12: Identifying the Parent Company (continued)

Company A purchases a facility from Company B between January 1 and June 30, of the same year. For the reporting forms covering the prior year, which company's name and identification number should appear on the Form R or Form A submission?

In the case that a facility is purchased between January 1 and June 30, the form submitted for the previous year must reflect the name used by the facility on December 31 of that reporting year (Monthly Call Center Report Question, EPA530-R-98-005; October 1998). In this example, Company B's name should appear on the form because it owned the facility for the duration of the reporting year. The TRI identification number is location-specific; thus, the identification number will stay the same even if the facility changes names, production processes, or NAICS codes. With regard to reporting, the owner or operator of the facility on the annual July 1 reporting deadline (Company A) is primarily responsible for reporting the data for the previous year's operations at that facility. However, all prior owners and operators back to January 1 of the year covered in the report may also be held responsible if the current owner or operator does not submit a report.

EPCRA Section 313 Questions and Answers Document 2019 Consolidation Document, Question #91

A piece of contiguous property consists of three covered sites with various buildings, structures and equipment. The three sites are owned by two different companies - Company A and Company B. All three sites operate completely independently of each other and have separate personnel, finances, and environmental reporting systems. Site 1 and its buildings and structures are owned and operated by Company A and site 3 and its buildings and structures are owned and operated by Company B. The middle site, site 2 and its buildings and structures, are owned by Company A and operated by Company B (see diagram). Are all three sites and their buildings and structures considered separate facilities under EPCRA Section 313? Who is responsible for reporting for each?

Site 1	**Site 2**	**Site 3**
Owned and operated by A	Owned by A and operated by B	Owned and operated by B

Under 40 CFR Section 372.3 a facility is defined as "all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person." Because all buildings and structures located on sites 1 and 2 are located on contiguous property and are owned by the same person, they are considered one facility. Because all buildings and structures located on sites 2 and 3 are located on contiguous property and are operated by the same person, they are also considered one facility. Therefore, for purposes of determining thresholds, the toxic chemicals manufactured, processed, and otherwise used at site 2 must be counted toward both Facility A's and Facility B's threshold determinations. Because the operator is primarily responsible for reporting, estimating and reporting releases and other waste management calculations for sites 2 and 3 are the primary responsibility of Company B, and the release and other waste management reporting for site 1 is the primary responsibility of Company A. EPA allows the release and other waste management reporting to be done in this manner to avoid "double-counting" releases and waste management activities at site 2. However, provided thresholds have been exceeded, if no reports are received from a covered facility both the owner and the operator are liable for penalties.

EPCRA Section 313 Questions and Answers Document 2019 Consolidation Document, Question #87

D. Part II. Chemical-Specific Information (Form R & A)

In Part II, you are to report on:

- The EPCRA Section 313 chemical being reported;
- The type of reporting form used (i.e., Form R or Form A Certification Statement);
- The general uses and activities involving the EPCRA Section 313 chemical at your facility (Form R only);
- On-site releases of the EPCRA Section 313 chemical from the facility to air, water, and land (Form R only);
- Quantities of the EPCRA Section 313 chemical transferred to off-site locations (Form R only);
- Information for on-site and off-site disposal, treatment, energy recovery, and recycling of the EPCRA Section 313 chemical (Form R only); and
- Source reduction activities (Form R only).

In TRI-MEweb, chemical specific information is entered by initiating a blank form for a chemical or chemical category. You may use the "Add New Chemical Forms" search tool to look up chemical and chemical categories by name or Chemical Abstracts Service Registry Number (CASRN or CAS number) to begin a new TRI reporting form. Alternately, you may use the "Import Data" function to create and pre-populate forms based on prior year forms submitted by the facility. TRI-MEweb will prompt users to indicate whether the form should be a TRI Form R or Form A Certification Statement.

TRI-MEweb will not accept forms for chemicals not listed in a particular reporting year. For example, TRI-MEweb will not accept forms for the nonylphenol category prior to RY 2016 as it was first added for RY 2016. Facilities reporting a generic name provided by a supplier should see instructions in Section 2.

TRI-MEweb will also allow the search of TRI chemicals by individual category member and their CASRN; however, only the category name CASRN will be used to populate the TRI Form R and Form A Certification Statement.

Reporting on the Alternate Threshold Form A Certification Statement for metals, metal category compounds, and mixed isomers differs somewhat from Form R reporting. Please refer to Section B.6.f for these guidelines.

Section 1. EPCRA Section 313 Chemical Identity (Form R & A)

1.1 CAS Number

Initiating a Form R or A for a chemical or chemical category in TRI-MEweb automatically completes this section.

1.2 Toxic Chemical or Chemical Category Name

Initiating a Form R or A for a chemical or chemical category in TRI-MEweb automatically completes this section.

1.3 Generic Chemical Name

Section 1.3 is completed only for trade secret submissions. For instructions on reporting trade secret claims, see Appendix A.

Example 13: Mixture Containing Unidentified EPCRA Section 313 Chemical

Your facility uses 20,000 pounds of a solvent that your supplier has told you contains 80% "chlorinated aromatic," their generic name for a chemical subject to reporting under EPCRA Section 313 that is not classified as a chemical of special concern and is not a PFAS. You, therefore, have used 16,000 pounds of some EPCRA Section 313 chemical and that exceeds the "otherwise use" threshold. You would file a Form R and enter the name "chlorinated aromatic" as the generic chemical name.

Section 2. Mixture Component Identity (Form R & A)

Complete this section only if you are reporting for an EPCRA Section 313 chemical whose identity has been withheld by the chemical supplier. You do not need to supply trade secret substantiation forms for this EPCRA Section 313 chemical because it is your supplier who is claiming the chemical identity a trade secret.

2.1 Generic Chemical Name Provided by Supplier

Enter the generic chemical name in this section only if the following three conditions apply:

1) You determine that the mixture contains an EPCRA Section 313 chemical but the only identity you have for that chemical is a generic name;

2) You know either the specific concentration of that EPCRA Section 313 chemical component or a maximum or average concentration; and

3) You multiply the concentration by the total annual amount of the whole mixture processed or otherwise used and determine that you meet the process or otherwise use threshold for that single, generically-identified mixture component.

To begin a TRI Form R or A for a generic chemical in TRI-MEweb, navigate to the "**Forms**" page, click the "**Add Form(s)"** button for the facility reporting on a generic chemical, click the ***Generic Chemical Name Provided by Supplier*** link on the search window pop-up, and then enter the generic chemical name. The generic chemical name may not be that of a listed TRI chemical or chemical category and must be less than 70 characters in length. Click the "**Add Chemical to List**" button next to the generic chemical name that will be added to the list of forms to be created, then click the "Start Form" button so that the facility can start the TRI form.

Section 3. Activities and Uses of the EPCRA Section 313 Chemical at the Facility (Form R)

[Note that the remaining Part II Sections apply to the Form R only.]

Indicate whether the EPCRA Section 313 chemical is manufactured (including imported), processed, or otherwise used at the facility and the general nature of such activities and uses at the facility during the calendar year (see Figure 5). For each type of activity performed by the facility for the reported chemical (i.e., manufacturing, processing, or otherwise using), specify how that chemical was used and select the corresponding checkboxes, and provide the corresponding sub-use codes as appropriate for categories that contain specific sub-uses (e.g., processing as a reactant provides for P codes to describe the processing activity with more detail). You are not required to report on Form R the quantity manufactured, processed, or otherwise used. Report activities and uses that take place only at your facility, not activities and uses that take place at other facilities involving your products. You must check all the boxes in this section that apply to the facility's chemical activities and uses, regardless of exemptions that may apply when determining reporting threshold and release and other waste management calculations.

Starting with RY 2018, some processing and otherwise use activities contain sub-uses. Select all of the codes that apply.

Note that a facility should use its best professional judgment to characterize its activities and uses when indicating sub-uses under Processing and Otherwise Use on the Form R. For certain industries, some of these sub-uses may overlap in scope. If your industry uses any of these terms synonymously, or discretely as two separate uses (e.g., 'feedstock' and 'raw material'), or there is some uncertainty as to which term is most applicable then indicate the option(s) that best align with industry norms.

Refer to the definitions of "manufacture," "process," and "otherwise use" in Section B.3.a or Part 40 Section 372.3 of the CFR for additional explanations.

3.1 Manufacture the EPCRA Section 313 Chemical

Persons who manufacture (including import) the EPCRA Section 313 chemical must check at least one of the following:

a. ***Produce*** — The EPCRA Section 313 chemical is produced at the facility.

b. ***Import*** — The EPCRA Section 313 chemical is imported by the facility into the Customs Territory of the United States. (See Section B.3.a of these instructions for further clarification of import.)

And check at least one of the following:

c. ***For on-site use/processing*** — The EPCRA Section 313 chemical is produced or imported and then further processed or otherwise used at the same facility. If you check this block, generally you should also check at least one item in Part II, Section 3.2 or 3.3.

d. ***For sale/distribution*** — The EPCRA Section 313 chemical is produced or imported specifically for sale or distribution outside the manufacturing facility.

e. ***As a byproduct*** — The EPCRA Section 313 chemical is produced coincidentally during the manufacture, processing, or otherwise use of another chemical substance or mixture and, following its production, is separated from that other chemical substance or mixture. EPCRA Section 313 chemicals produced as a result of waste management are also considered byproducts.

f. ***As an impurity*** — The EPCRA Section 313 chemical is produced coincidentally as a result of the manufacture, processing, or otherwise use of another chemical but is not separated and remains in the mixture or other trade name product with that other chemical.

In summary, if you are a manufacturer of the EPCRA Section 313 chemical, you must check (a) and/or (b), and at least one of (c), (d), (e), and (f) in Section 3.1.

3.2 Process the EPCRA Section 313 Chemical

Persons who process the EPCRA Section 313 chemical must enter at least one of the following processing use codes:

a. ***As a reactant*** — A natural or synthetic EPCRA Section 313 chemical is used in chemical reactions for the manufacture of another chemical substance or of a product. If the chemical is processed as a reactant, you must indicate the applicable sub-uses:

P101	Feedstocks
P102	Raw materials
P103	Intermediates
P104	Initiators
P199	Other

b. ***As a formulation component*** — An EPCRA Section 313 chemical is added to a product (or product mixture) prior to further distribution of the product that acts as a performance enhancer during use of the product. If the chemical is processed as a formulation component, you must indicate the applicable sub-uses:

P201	Additives
P202	Dyes
P203	Reaction diluents
P204	Initiators
P205	Solvents
P206	Inhibitors
P207	Emulsifiers
P208	Surfactants
P209	Lubricants
P210	Flame retardants
P211	Rheological modifiers
P299	Other

c. ***As an article component*** — An EPCRA Section 313 chemical becomes an integral component of an article distributed for industrial, trade, or consumer use. One example is the pigment components of paint applied to a chair that is sold.

d. ***Repackaging*** — This consists of processing or preparation of an EPCRA Section 313 chemical (or product mixture) for distribution in commerce in a different form, state, or quantity. This includes, but is not limited to, the transfer of material from a bulk container,

such as a tank truck to smaller containers such as cans or bottles. This does not include sending toxic chemicals off-site into commerce for recycling, which is indicated using (f) Recycling.

e. ***As an impurity*** — The EPCRA Section 313 chemical is processed but is not separated and remains in the mixture or other trade name product with that/those other chemical(s).

f. ***Recycling*** — This consists of processing or preparation of an EPCRA Section 313 chemical (or product mixture) for distribution in commerce in a different form, state, or quantity for purposes of recycling or reclamation.

In summary, if you are a processor of the EPCRA Section 313 chemical, you must check (a), (b), (c), (d), (e), or (f), and select all of the P codes for (a) or (b) that apply.

3.3 Otherwise Use the EPCRA Section 313 Chemical (non-incorporative activities)

Persons who otherwise use the EPCRA Section 313 chemical must enter at least one of the following otherwise use codes:

a. ***As a chemical processing aid*** — An EPCRA Section 313 chemical that is added to a reaction mixture to aid in the manufacture or synthesis of another chemical substance but is not intended to remain in or become part of the product or product mixture is otherwise used as chemical processing aid. If the chemical is otherwise used as a chemical processing aid, you must indicate the applicable sub-uses:

Z101	Process solvents
Z102	Catalysts
Z103	Inhibitors
Z104	Initiators
Z105	Reaction terminators
Z106	Solution buffers
Z199	Other

b. ***As a manufacturing aid*** — An EPCRA Section 313 chemical that aids the manufacturing process but does not become part of the resulting product and is not added to the reaction mixture during the manufacture or synthesis of another chemical substance is otherwise used as a manufacturing aid. If the chemical is otherwise used as a manufacturing aid, you must indicate the applicable sub-uses:

Z201	Process lubricants
Z202	Metalworking fluids
Z203	Coolants
Z204	Refrigerants
Z205	Hydraulic fluids
Z299	Other

c. ***Ancillary or other use*** — An EPCRA Section 313 chemical that is used at a facility for purposes other than aiding chemical processing or manufacturing as described above is otherwise used as an ancillary or other use. If the chemical is otherwise used as an ancillary or other use, you must indicate the applicable sub-uses:

Z301	Cleaner
Z302	Degreaser
Z303	Lubricant
Z304	Fuel
Z305	Flame retardant
Z306	Waste treatment
Z307	Water treatment
Z308	Construction Materials
Z399	Other

In summary, if you otherwise use the EPCRA Section 313 chemical, you must check (a), (b), and/or (c), and select all of the Z-codes for (a), (b), or (c) that apply.

SECTION 1. TOXIC CHEMICAL IDENTITY
(Important: DO NOT complete this section if you are reporting a mixture component in Section 2 below.)

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)
	334-88-3
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)
	Diazomethane
1.3	Generic Chemical Name (Important: Complete only if Part I, Section 2.1 is checked "Yes". Generic Name must be structurally descriptive.)

SECTION 2. MIXTURE COMPONENT IDENTITY **(Important: DO NOT complete this section if you completed Section 1.)**

2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)

SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY
(Important: Check all that apply.)

3.1 Manufacture the toxic chemical:	3.2 Process the toxic chemical:	3.3 Otherwise use the toxic chemical:
a. ☐ Produce b. ☐ Import If Produce or Import c. ☐ For on-site use/processing d. ☐ For sale/distribution e. ☐ As a byproduct f. ☐ As an impurity	a. ☐ As a reactant b. ☐ As a formulation component c. ☐ As an article component d. ☐ Repackaging e. ☐ As an impurity f. ☐ Recycling Enter 4-digit code from instruction package	a. ☐ As a chemical processing aid b. ☐ As a manufacturing aid c. ☐ Ancillary or other use Enter 4-digit code from instruction package

Figure 5. Reporting EPCRA Section 313 Chemicals

Example 14: Manufacturing and Processing Activities of EPCRA Section 313 Chemicals

In the two examples below, it is assumed that the threshold quantities for manufacture, process, or otherwise use (25,000 pounds, 25,000 pounds, and 10,000 pounds, respectively; 100 pounds for certain chemicals of special concern; 100 pounds for PFAS; 10 pounds for highly persistent, highly bioaccumulative toxic chemicals of special concern; and 0.1 grams for the chemicals of special concern category composed of dioxin and dioxin-like compounds) have been exceeded and the reporting of EPCRA Section 313 chemicals is therefore required.

1. Your facility manufactures diazomethane and sells 50% as a product. The remaining 50% is reacted with *alpha*-naphthylamine, forming *N*-methyl-*alpha*-naphthylamine and also producing nitrogen gas.

- Your company manufactures diazomethane, an EPCRA Section 313 chemical, both for sale/distribution as a commercial product and for on-site use/processing as a feedstock in the *N*-methyl-*alpha*-naphthylamine production process. Your facility also processes diazomethane: 50% is sold directly as a product, and the other 50% is further processed as a reactant. See Figure 5 for how this information would be reported in Part II, Section 3 of Form R.
- Your facility also processes *alpha*-naphthylamine, as a reactant to produce *N*-methyl-*alpha*-naphthylamine, a chemical not on the EPCRA Section 313 list.

2. Your facility is a commercial distributor of Missouri bituminous coal, which contains mercury at 1.5 ppm (w:w). You should check the box on Part II, Section 3.2.e for processing mercury as an impurity.

Section 4. Maximum Amount of the EPCRA Section 313 Chemical On-site at Any Time during the Calendar Year (Form R)

For data element 4.1 of Part II, select the code (see codes below) that indicates the maximum quantity of the EPCRA Section 313 chemical (e.g., in storage tanks, process vessels, on-site shipping containers, or in wastes generated) at your facility at any one time during the calendar year. If the EPCRA Section 313 chemical was present at several locations within your facility, use the maximum total amount present at the entire facility at any one time. While range reporting is not allowed for chemicals of special concern elsewhere on Form R, range reporting for chemicals of special concern is allowed for the Maximum Amount On-site.

Weight Range in Pounds

Range Code	From	To
01	0	99
02	100	999
03	1,000	9,999
04	10,000	99,999
05	100,000	999,999
06	1,000,000	9,999,999
07	10,000,000	49,999,999
08	50,000,000	99,999,999
09	100,000,000	499,999,999
10	500,000,000	999,999,999
11	1 billion	more than 1 billion

If the EPCRA Section 313 chemical present at your facility was part of a mixture or other trade name product, determine the maximum quantity of the EPCRA Section 313 chemical present at the facility by calculating the weight of the EPCRA Section 313 chemical only.

Do not include the weight of the entire mixture or other trade name product. These data may be found in the Tier II form your facility may have prepared under Section 312 of EPCRA. See Part 40, Section 372.30(b) of the CFR for further information on how to calculate the weight of the EPCRA Section 313 chemical in the mixture or other trade name product. For EPCRA Section 313 chemical categories (e.g., nickel compounds), include all chemical compounds in the category when calculating the maximum amount, using the entire weight of each compound.

Weight Range in Grams (Dioxin and Dioxin-like Compounds)

When reporting for the dioxin and dioxin-like compounds category use the following gram quantity range codes:

Range Code	From	To
12	0	0.099
13	0.1	0.99
14	1.0	9.99
15	10	99
16	100	999
17	1,000	9,999
18	10,000	99,999
19	100,000	999,999
20	1,000,000	more than 1 million

Section 5. Quantity of the Toxic Chemical Entering Each Environmental Medium On-Site (Form R)

In Section 5, you must account for the total aggregate on-site releases of the EPCRA Section 313 chemical to the environment from your facility for the calendar year.

On-site releases to the environment include emissions to the air, discharges to surface waters, and releases to land (including underground injection wells).

For all toxic chemicals (except the dioxin and dioxin-like compounds category), do not enter the values in Section 5 in gallons, tons, liters, or any measure other than pounds. You must also enter the values as whole numbers (do not use scientific notation). Digits following a decimal point are not acceptable for toxic chemicals other than those classified as chemicals of special concern. For chemicals of special concern, facilities should report release and other waste management quantities greater than 0.1 pounds (except the dioxin and dioxin-like compounds category), provided the accuracy of the underlying data on which the estimate is based supports this level of precision.

For the dioxin and dioxin-like compounds category, facilities should report at a level of precision supported by the accuracy of the underlying data and the estimation techniques on which the estimate is based. For the dioxin and dioxin-like compounds chemical category, which has a reporting threshold of 0.1 grams, facilities need only report all release and other waste management quantities greater than 100 micrograms (i.e., 0.0001 grams). (See Example 15.) Notwithstanding the numeric precision used when determining reporting eligibility thresholds, facilities should report on Form R to the level of accuracy that their data supports, up to seven digits to the right of the decimal. EPA's reporting software and data management systems support data precision up to seven digits to the right of the decimal.

Example 15: Reporting Dioxins and Dioxin-Like Compounds

If the total quantity for Section 5.2 of the Form R (i.e., stack or point air emissions) is 0.00005 grams or less, then zero can be entered. If the total quantity is between 0.00005 and 0.0001 grams, then 0.0001 grams can be entered or the actual number can be entered (e.g., 0.000075).

NA vs. a Numeric Value (e.g., Zero). Generally, "Not Applicable" (NA) is appropriate if the waste stream that contains or contained the EPCRA Section 313 chemical is not directed to the relevant environmental medium, or if leaks, spills, and fugitive emissions cannot occur. If the waste stream that contains or contained the EPCRA Section 313 chemical is directed to the environmental medium, or if leaks, spills or fugitive emissions can occur, NA should not be used, even if treatment or emission controls result in a release of zero. If the annual aggregate release of that chemical was equal to or less than 0.5 pounds, the value reported is 0 (zero) (unless the chemical is a chemical of special concern).

For Section 5.1, NA generally is not appropriate for volatile organic compounds (VOCs). For Section 5.5.4, NA generally would not be appropriate, recognizing the possibility of accidental spills or leaks of the EPCRA Section 313 chemical.

An example that illustrates the use of NA vs. a numeric value (e.g., 0 (zero)) would be nitric acid involved in a facility's processing activities. If the facility neutralizes the wastes containing nitric acid to a pH of 6 or above, then the facility reports a release of 0 (zero) for the EPCRA Section 313 chemical, not NA. Another example is when the facility has no underground injection well, in which case NA should be checked in Part II, Section 5.4.1 and 5.4.2 of Form R. Also, if the facility does not landfill the acidic waste, NA should be checked in Part II, Section 5.5.1.B of Form R.

All releases of the EPCRA Section 313 chemical to the air must be classified as either stack or fugitive emissions and included in the total quantity reported for these releases in Sections 5.1 and 5.2. Instructions for columns A, B, and C follow the discussions of Sections 5.1 through 5.5. (Column C only applies to Section 5.3.)

5.1 Fugitive or Non-Point Air Emissions

Report the total of all releases of the EPCRA Section 313 chemical to the air that are not released through stacks, vents, ducts, pipes, or any other confined air stream. You must include (1) fugitive equipment leaks from valves, pump seals, flanges, compressors, sampling connections, open-ended lines, etc.; (2) evaporative losses from surface impoundments and spills; (3) releases from building ventilation systems; and (4) any other fugitive or non-point air emissions. Engineering estimates and mass balance calculations (using purchase records, inventories, engineering knowledge or process specifications of the quantity of the EPCRA Section 313 chemical entering product, hazardous waste manifests, or monitoring records) may be useful in estimating fugitive emissions. You should check the "**NA**" checkbox in Section 5.1 if you do not engage in activities that result in fugitive or non-point air emissions of this listed toxic chemical. For VOCs, NA generally would not be appropriate.

5.2 Stack or Point Air Emissions

Report the total of all releases of the EPCRA Section 313 chemical to the air that occur through stacks, confined vents, ducts, pipes, or other confined air streams. You must include storage tank emissions. Air releases from air pollution control equipment would generally fall in this category. Monitoring data, engineering estimates, and mass balance calculations may help you to complete this section. You should check the "**NA**" checkbox in Section 5.2 if there are no stack air activities involving the waste stream that contains or contained the EPCRA Section 313 chemical.

5.3 Discharges to Receiving Streams or Water Bodies

In Section 5.3 you are to enter all the names of the receiving streams or water bodies to which your facility directly discharges the EPCRA Section 313 chemical on which you are reporting. Facilities may enter releases to as many unique receiving streams or water bodies as needed in TRI-MEweb. In addition, you may also enter the 14-digit reach code, which is a unique code that identifies a continuous piece of surface water with similar hydrologic characteristics that is assigned to each water reach by the National Hydrography Dataset. See https://www.usgs.gov/national-hydrography/national-hydrography-dataset for more information.

EPA maps all reported discharges to receiving streams or water bodies for purposes of its Risk-Screening Environmental Indicators (RSEI) model, the Water Pollutant Loading Tool (formerly known as the Discharge Monitoring Report (DMR) Pollutant Loading Tool), and for other analyses. Additionally identifying and entering in your reach code in this section ensures that EPA will map your discharges to the correct water stream segment.

In TRI-MEweb, facilities have the option of using an interactive map interface to locate and identify the receiving stream or water body to which the chemical was discharged. TRI-MEweb will automatically populate the appropriate reach code field when you select your receiving stream or water body on the map provided in the user interface for this section.

The name of the receiving stream or water body and reach code may be manually entered by following the "***Can't find or identify your stream or water body on the map***?" link. In such a case, you should report the name of the receiving stream or water body and reach code as it appears on a discharge permit or other appropriate documentation. If the stream is not included in the NPDES permit or its name is not identified in the NPDES permit, enter the name of the off-site stream or water body by which it is publicly known as or enter the first publicly named water body to which the receiving waters are a tributary, if the receiving waters are unnamed. Do not list a series of streams through which the EPCRA Section 313 chemical flows. Be sure to also include all the receiving streams or water bodies that receive stormwater runoff from your facility. Do not enter names of streams to which off-site treatment plants discharge.

You should check the "**NA**" checkbox in Section 5.3 if there are no discharges to receiving streams or water bodies of the waste stream that contains or contained the EPCRA Section 313 chemical (See discussion of NA vs. a Numeric Value (e.g., Zero) in the introduction of Section 5).

Enter the total annual amount of the EPCRA Section 313 chemical released from all discharge points at the facility to each receiving stream or water body.

Include process outfalls such as pipes and open trenches, releases from on-site wastewater treatment systems, and the contribution from stormwater runoff, if applicable (see instructions for column C below). Do not include discharges to a publicly owned treatment works (POTW) facility or to other off-site wastewater treatment facilities in this section. These off-site transfers must be reported in Part II, Section 6 of Form R. Wastewater analyses and flowmeter data may provide the quantities you will need to complete this section.

Discharges of listed acids (e.g., hydrogen fluoride, nitric acid) may be reported as zero if the discharges have been neutralized to pH 6 or above. If wastewater containing a listed acid is discharged below pH 6, then releases of the acid must be reported. In this case, pH measurements may be used to estimate the amount of mineral acid released.

Sections 5.4 and 5.5: Disposal to Land On-site

Eight predefined subcategories for reporting quantities released to land within the boundaries of the facility (including underground injection) are provided. Do not report land disposal at off-site locations in this section. Consulting accident histories and spill records may be useful when preparing this section (e.g., release notification reports required under Section 304 of EPCRA, Section 103 of CERCLA, and accident histories required under Section 112(r)(7)(B)(ii) of the Clean Air Act). Where relevant, you should check the "**NA**" checkbox in Sections 5.4.1 through 5.5.3 if there are no disposal activities for the waste stream that contains or contained the EPCRA Section 313 chemical (See discussion of NA vs. a Numeric Value (e.g., Zero) in the introduction of Section 5). For Section 5.5.4, facilities generally should report zero, recognizing the potential for spills or leaks.

Note that reporting for this section is chemical-specific. An amount reported should reflect the weight of the chemical, not the weight of the waste stream in which the chemical is located.

5.4.1 Class I Underground Injection Wells

Enter the total amount of the EPCRA Section 313 chemical that was injected into Class I wells at the facility. Chemical analyses, injection rate meters, and RCRA Hazardous Waste Generator Reports are good sources for obtaining data that will be useful in completing this section. You should check the "**NA**" checkbox in Section 5.4.1 if you do not inject the waste stream that contains or contained the EPCRA Section 313 chemical into Class I underground wells (See discussion of NA vs. a Numeric Value (e.g., Zero) in the introduction of Section 5).

5.4.2 Class II-V Underground Injection Wells

Enter the total amount of the EPCRA Section 313 chemical that was injected into wells at the facility other than Class I wells. Chemical analyses and injection rate meters are good sources for obtaining data that will be useful in completing this section. You should check the "**NA**" checkbox in Section 5.4.2 if you do not inject the waste stream that contains or contained the EPCRA Section 313 chemical into Class II-V underground wells (See discussion of NA vs. a Numeric Value (e.g., Zero) in the introduction of Section 5).

5.5.1A RCRA Subtitle C Landfills

Enter the total amount of the EPCRA Section 313 chemical that was placed in RCRA Subtitle C landfills. EPA has not required facilities to estimate leaks from landfills because the amount of the EPCRA Section 313 chemical has already been reported as a release.

5.5.1B Other Landfills

Enter the total amount of the EPCRA Section 313 chemical that was placed in landfills other than RCRA Subtitle C landfills. EPA has not required facilities to estimate leaks from landfills because the amount of the EPCRA Section 313 chemical has already been reported as a release.

5.5.2 Land Treatment/Application Farming

Land treatment is a disposal method in which a waste containing an EPCRA Section 313 chemical is applied onto or incorporated into soil. While this disposal method is considered a release to land, any volatilization of EPCRA Section 313 chemicals into the air occurring during the disposal operation must not be included in this section but must be included in the total fugitive air releases reported in Part II, Section 5.1 of Form R.

5.5.3 Surface Impoundments

A surface impoundment is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although some may be lined with man-made materials), that is designed to hold an accumulation of liquid wastes or

wastes containing free liquids. Examples of surface impoundments are holding, settling, storage, and elevation pits; ponds; and lagoons. If the pit, pond, or lagoon is intended for storage or holding without discharge, it would be considered to be a surface impoundment used as a final disposal method. A facility must determine, to the best of its ability, the percentage of a volatile chemical, e.g., benzene, that is in waste sent to a surface impoundment that evaporates during the reporting year. The facility must report this as a fugitive air emission in Section 5.1. The balance should be reported in either Section 5.5.3A or 5.5.3B.

Quantities of the EPCRA Section 313 chemical released to surface impoundments that are used merely as part of a wastewater treatment process generally should not be reported in this section. However, if an impoundment accumulates sludges containing the EPCRA Section 313 chemical, you must include an estimate in this section unless the sludges are removed and otherwise disposed of (in which case they must be reported under the appropriate section of the form). For the purposes of this reporting, storage tanks are not considered to be a type of disposal and are not to be reported in this section of Form R.

5.5.3A RCRA Subtitle C Surface Impoundments

Enter the total amount of the EPCRA Section 313 chemical that was placed in RCRA Subtitle C surface impoundments.

5.5.3B Other Surface Impoundments

Enter the total amount of the EPCRA Section 313 chemical that was placed in surface impoundments other than RCRA Subtitle C surface impoundments.

5.5.4 Other Disposal

Includes any amount of an EPCRA Section 313 chemical released to land that does not fit the categories of landfills, land treatment, or surface impoundment. This other disposal would include any spills or leaks of EPCRA Section 313 chemicals to land. For example, 2,000 pounds of benzene leaks from an underground pipeline into the land at a facility. Because the pipe was only a few feet from the surface at the erupt point, 30% of the benzene evaporates into the air. The 600 pounds released to the air would be reported as a fugitive air release (Part II, Section 5.1) and the remaining 1,400 pounds would be reported as a release to land, other disposal (Part II, Section 5.5.4).

Section 5 Column A: Total Release

Only on-site releases of the EPCRA Section 313 chemical to the environment for the calendar year are to be reported in this section of Form R. The total on-site releases from your facility do not include transfers or shipments of the EPCRA Section 313 chemical from your facility for sale or distribution in commerce, or of wastes to other facilities for disposal, treatment, energy recovery, or recycling (see Part II, Section 6 of these Instructions). Both routine releases, such as fugitive air emissions, and accidental or non-routine releases, such as chemical spills, must be included in your estimate of the quantity released.

Releases of Less Than 1,000 Pounds. For total annual releases or off-site transfers of an EPCRA Section 313 chemical from the facility of less than 1,000 pounds, the amount may be reported either as an estimate or by using the range codes that have been developed (range reporting in Section 5 does not apply to chemicals of special concern). Do not enter a range code and an estimate in the same box in column A.

The reporting range codes to be used are:

Code	Reporting Range (in pounds)
A	1-10
B	11-499
C	500-999

Total annual on-site releases of an EPCRA Section 313 chemical from the facility of less than 1 pound may be reported in one of several ways. You should round the value to the nearest pound. If the estimate is greater than 0.5 pounds, you should either enter the range code "A" for "1-10" or enter "1" in column A. If the release is equal to or less than 0.5 pounds, you may round to zero and enter "0" in column A.

Note that total annual releases of 0.5 pounds or less from the processing or otherwise use of all like items of an article maintain the article status of that item. Thus, if the only releases you have are from processing an article, and such releases from all like items are equal to or less than 0.5 pounds per year, you are not required to submit a report for that EPCRA Section 313 chemical. The 0.5-pound release determination does not apply to just a single article. It applies to the cumulative releases from the processing or otherwise use of the same type of

article (e.g., sheet metal or plastic film) that occurs over the course of the reporting year.

If you enter a range code in column A, some TRI data tools used by the public will display the midpoint of the range (i.e., 5, 250, or 750 lb).

Releases of 1,000 Pounds or More. For releases to any medium that amount to 1,000 pounds or more for the year, you must provide an estimate in pounds per year in column A.

Data Precision. Generally, estimates provided need not be reported to more than two significant figures. This estimate should be in whole numbers. However, facilities should report releases and other waste management amounts at a level of precision supported by the accuracy of the underlying data and the estimation techniques on which the estimate is based. If a facility's release or other management calculations support reporting an amount that is more precise than two significant digits, then the facility should report that more precise amount.

Calculating On-Site Releases. To provide the release information in column A, EPCRA Section 313(g) (2) requires a facility to use readily available data (including monitoring data) collected pursuant to other provisions of law, or, where such data are not readily available, "reasonable estimates" of the amounts involved. If available data (including monitoring data) are known to be non-representative, facilities must make reasonable estimates using the best readily-available information.

Reasonable estimates of the amounts released should be made using emissions factors, mass balance calculations, or engineering calculations. You may not use emissions factors or calculations to estimate releases if more accurate data are available.

No additional monitoring or measurement of the quantities or concentrations of any EPCRA Section 313 chemical released into the environment, or of the frequency of such releases, beyond that required under other provisions of law or regulation or as part of routine plant operations, is required for the purpose of completing Form R.

You must estimate the quantity (in pounds) of the EPCRA Section 313 chemical or chemical category that is released annually to each environmental medium on-site. Include only the quantity of the EPCRA Section 313 chemical in this estimate. If the EPCRA Section 313 chemical present at your facility was part of a mixture or other trade name product, calculate only the releases of the EPCRA Section 313 chemical, not the other components of the mixture or other trade name product. If you are only able to estimate the releases of the mixture or other trade name product as a whole, you should assume that the release of the EPCRA Section 313 chemical is proportional to its concentration in the mixture or other trade name product. See Part 40, Section 372.30(b) of the CFR for further information on how to calculate the concentration and weight of the EPCRA Section 313 chemical in the mixture or other trade name product.

If you are reporting an EPCRA Section 313 chemical category listed in Table II of these instructions rather than a specific EPCRA Section 313 chemical, you must combine the release data for all chemicals in the EPCRA Section 313 chemical category (e.g., all listed members of certain glycol ethers or all listed members of chlorophenols). For example, if your facility releases 3,000 pounds per year of 2-chlorophenol, 4,000 pounds per year of 3-chlorophenol, and 4,000 pounds per year of 4-chlorophenol to air as fugitive emissions, you must report that your facility releases 11,000 pounds per year of chlorophenols to air as fugitive emissions in Part II, Section 5.1.

For aqueous ammonia solutions, releases must be reported based on 10% of total aqueous ammonia. Ammonia evaporating from aqueous ammonia solutions is considered to be anhydrous ammonia; therefore, 100% of the anhydrous ammonia should be reported if it is released to the environment.

For dissociable nitrate compounds, release estimates should be based on the weight of the nitrate only.

For metal category compounds (e.g., chromium compounds), report releases of only the parent metal. For example, a user of various inorganic chromium salts would report the total chromium released regardless of the chemical compound and exclude any contribution to mass made by the other portion of the compound.

Section 5 Column B: Basis of Estimate

For each release and otherwise managed waste estimate (Sections 5 & 6), you are required to indicate the principal method used to determine the amount of release and otherwise managed waste reported. You

should enter a letter code identifying the method that applies to the largest portion of the total estimated release and otherwise managed waste quantity.

The codes are as follows:

M1 Estimate is based on continuous monitoring data or measurements for the EPCRA Section 313 chemical.

M2 Estimate is based on periodic or random monitoring data or measurements for the EPCRA Section 313 chemical.

C Estimate is based on mass balance calculations, such as calculation of the amount of the EPCRA Section 313 chemical in streams entering and leaving process equipment.

E1 Estimate is based on published emissions factors, such as those relating release quantity to through-put or equipment type (e.g., air emissions factors). This may include emissions factors in a trade association's publication or AP-42.

E2 Estimate is based on site-specific emissions factors, such as those relating release quantity to through-put or equipment type (e.g., air emissions factors). This may include emissions factors that are developed for a specific piece of equipment and that consider climate conditions on-site.

O Estimate is based on other approaches such as engineering calculations (e.g., estimating volatilization using published mathematical formulas) or best engineering judgment. This would include applying estimated removal efficiency to a waste stream, even if the composition of the stream before treatment was fully identified through monitoring data.

For example, if 40% of stack emissions of the reported EPCRA Section 313 chemical were derived using source testing data, 30% by mass balance, and 30% by published chemical-specific emissions factors, you should enter the code letter "M2" for periodic or random emission monitoring.

If the monitoring data, mass balance, or emissions factor used to estimate the release is not specific to the EPCRA Section 313 chemical being reported, the form should identify the estimate based on other methods of estimation (O).

If a mass balance calculation yields the flow rate of a waste, but the quantity of reported EPCRA Section 313 chemical in the waste is based on solubility data, you should report "O" because engineering calculations were used as the basis of estimate of the quantity of the EPCRA Section 313 chemical in the waste.

If the concentration of the EPCRA Section 313 chemical in the waste was measured by continuous emissions monitoring equipment and the flow rate of the waste was determined by mass balance, then the primary basis of the estimate should be "continuous emission monitoring" (M1). Even though a mass balance calculation also contributed to the estimate, "continuous emission monitoring" should be indicated because monitoring data were used to estimate the concentration of the chemical in waste.

Mass balance (C) should only be indicated if it is directly used to calculate the mass (weight) of EPCRA Section 313 chemical released. Monitoring data should be indicated as the basis of estimate only if the EPCRA Section 313 chemical concentration is measured in the waste. Monitoring data should not be indicated, for example, if the monitoring data relate to a concentration of the EPCRA Section 313 chemical in other process streams within the facility.

It is important to realize that the accuracy and proficiency of release estimation will improve over time. However, submitters are not required to use new emissions factors or estimation techniques to revise previous Form R submissions.

Section 5 Column C: Percent from Stormwater

This column relates only to Section 5.3 of the Form R (Discharges to Receiving Streams or Water Bodies). If your facility has monitoring data on the amount of the EPCRA Section 313 chemical in stormwater runoff (including unchanneled runoff), you must include that quantity of the EPCRA Section 313 chemical in your water release in column A and indicate the percentage of the total quantity (by weight) of the EPCRA Section 313 chemical contributed by stormwater in column C (Section 5.3C).

If your facility has monitoring data on the EPCRA Section 313 chemical and an estimate of flow rate, you must use these data to determine the percent from stormwater runoff.

If you have monitored stormwater but did not detect the EPCRA Section 313 chemical, enter zero in column C. If your facility has no stormwater monitoring data for the chemical, you should check the "**NA**" checkbox in TRI-MEweb (note that the Form R does not provide a "**NA**" checkbox).

If your facility does not have periodic measurements of stormwater releases of the EPCRA Section 313 chemical, but has submitted chemical-specific monitoring data in permit applications, then these data must be used to calculate the percent contribution from stormwater. One way to calculate the flow rates from stormwater runoff is the Rational Method. In this method, flow rates, Q, can be estimated by multiplying the land area of the facility, A, by the runoff coefficient, C, and then multiplying that figure by the annual rainfall intensity, I. The rainfall intensity, I, is specific to the geographical area of the country where the facility is located, and may be obtained from most standard engineering manuals for hydrology. The flow rate, Q, will have volumetric dimensions per unit time, and will have to be converted to units of pounds per year.

Equation 2

$Q = A \times C \times I$

where:

Q = flow rate
A = land area of the facility
C = runoff coefficient (see Equation 3)
I = rainfall intensity

The runoff coefficient represents the fraction of rainfall that does not seep into the ground but runs off as stormwater. The runoff coefficient is directly related to how the land in the drainage area is used. (See table below).

Description of Land Area	Runoff Coefficient
Business	
Downtown areas	0.70-0.95
Neighborhood areas	0.50-0.70
Industrial	
Light areas	0.50-0.80
Heavy areas	0.60-0.90
Industrial	
Railroad yard areas	0.20-0.40
Unimproved areas	0.10-0.30
Streets	
Asphaltic	0.70-0.95
Concrete	0.80-0.95
Brick	0.70-0.85
Drives and walks	0.70-0.85
Roofs	0.75-0.95
Lawns: Sandy Soil	
Flat, 2%	0.05-0.10
Average, 2% - 7%	0.10-0.15
Steep, 7%	0.15-0.20
Lawns: Heavy Soil	
Flat, 2%	0.13-0.17
Average, 2% - 7%	0.18-0.22
Steep, 7%	0.25-0.35

You should choose the most appropriate runoff coefficient for your site or calculate a weighted-average coefficient, which takes into account different types of land use at your facility:

Equation 3

Weighted-average runoff coefficient =

(Area 1 % of total)(C1) + (Area 2 % of total)(C2) + (Area 3 % of total)(C3) + ... + (Area i % of total)(Ci)

where:

Ci = runoff coefficient for a specific land use of Area i.

Example 16: Stormwater Runoff

Your facility is located in a semi-arid region of the United States that has an annual precipitation (including snowfall) of 12 inches of rain. (Snowfall should be converted to the equivalent inches of rain; assume one foot of snow is equivalent to one inch of rain.) The total area covered by your facility is 42 acres (about 170,000 square meters or 1,829,520 square feet). The area of your facility is 50% unimproved area, 10% asphaltic streets, and 40% concrete pavement.

The total stormwater runoff from your facility is therefore calculated as follows:

Land Use	% Total Area	Runoff Coefficient
Unimproved area	50	0.20
Asphaltic streets	10	0.85
Concrete pavement	40	0.90

Weighted-average runoff coefficient = [(50%) × (0.20)] + [(10%) × (0.85)] + [(40%) x (0.90)] = 0.545

(Rainfall) × (land area) × (conversion factor) × (runoff coefficient) = stormwater runoff

(1 ft/year) × (1,829,520 ft^2) × (7.48 gal/ft^3) × (0.545) = 7,458,222 gallons/year

Total stormwater runoff = 7,458,222 gallons/year

Your stormwater monitoring data shows that the average concentration of zinc in the stormwater runoff from your facility from a biocide containing a zinc compound is 1.4 milligrams per liter. The total amount of zinc discharged to surface water through the plant wastewater discharge (non-stormwater) is 250 pounds per year. The total amount of zinc discharged with stormwater is:

(7,458,222 gallons stormwater) × (3.785 liters/gallon) = 28,229,370 liters stormwater

(28,229,370 liters stormwater) × (1.4 mg zinc/liter) × 10^3 g/mg × (1/454) lb/g = 87 lb zinc.

The total amount of zinc discharged from all sources of your facility is:

250 pounds zinc from wastewater discharged
+87 pounds zinc from stormwater runoff
337 pounds zinc total water discharged

The percentage of zinc discharge through stormwater reported in Section 5.3 column C on Form R is:

(87/337) × 100% = 26%

Section 5.5 Optional Waste Rock Piles Information

If you manage the EPCRA Section 313 chemical in waste rock that was disposed of on-site, you may elect to provide additional optional information. Waste rock refers to rock that contains insufficient metal concentration to economically process at any given time and is thus typically removed from the mine to allow access to the ore-grade rock. Waste rock does not refer to slag, tailings, or other beneficiated rock or ore. Check the optional box if you would like to indicate that your reported Section 5.5 quantities include management of the chemical in "waste rock piles." Additionally, you may enter the quantity of the chemical reported in Section 5.5 that was managed in waste rock piles. TRI-MEweb will allow for the inclusion of optional free text that a facility may use to further characterize its on-site management of waste rock. Any information provided in the free-text field will be added to Section 9.1 (Miscellaneous Information).

Section 6. Transfer(s) of the Toxic Chemical in Wastes to Off-Site Locations (Form R)

You must report in this section the total annual quantity of the EPCRA Section 313 chemical in wastes sent to any off-site facility for the purposes of disposal, treatment, energy recovery, or recycling. Report the total amount of the EPCRA Section 313 chemical transferred off-site after any on-site waste treatment, recycling, or removal is completed.

For all toxic chemicals (except the dioxin and dioxin-like compounds category), do not enter the values in Section 6 in gallons, tons, liters, or any measure other than pounds. You must also enter the values as whole numbers. Digits following a decimal point are not acceptable for toxic chemicals other than those designated as chemicals of special concern. For chemicals of special concern, facilities should report release and other waste management quantities greater than 0.1 pounds (except the dioxin and dioxin-like compounds category) provided the accuracy and the underlying data on which the estimate is based supports this level of precision.

Note that reporting for this section is chemical-specific. An amount reported should reflect the weight of the chemical, not the weight of the waste stream in which the chemical is located.

Dioxin and dioxin-like compounds category. Facilities should report at a level of precision supported by the accuracy of the underlying data and the estimation techniques on which the estimate is based. Notwithstanding the numeric precision used when determining reporting eligibility thresholds, facilities should report on Form R to the level of accuracy that their data supports, up to seven digits to the right of the decimal. TRI-MEweb and EPA's data management systems support data precision to seven digits to the right of the decimal. The smallest quantity that needs to be reported on the Form R for the dioxin and dioxin-like compounds category is 0.0001 grams (see Example 15).

NA vs. a Numeric Value (e.g., Zero). You must enter a numeric value if you transfer an EPCRA Section 313 chemical to a publicly owned treatment works (POTW) facility or transfer wastes containing that toxic chemical to other off-site locations. If the aggregate amount transferred was equal to or less than 0.5 pounds, then you should enter 0 (zero) (unless the chemical is classified as a chemical of special concern). Also enter 0 (zero) for transfers of listed mineral acids (i.e., hydrogen fluoride and nitric acid) if they have been neutralized to a pH of 6 or above prior to being transferred to a POTW; do not check "NA."

However, if you do not discharge or otherwise transfer wastewater containing the reported EPCRA Section 313 chemical to a POTW, you should check the "**NA**" box in Section 6.1. If you do not ship or transfer wastes containing the reported EPCRA Section 313 chemical to other off-site locations, you should check the "**NA**" box in Section 6.2. In TRI-MEweb, users may enter as many unique transfers as needed.

6.1 Discharges to Publicly Owned Treatment Works

In Section 6.1, facilities using TRI-MEweb can click "**Add New POTW"** to use a search tool to search POTWs by location or facility identifiers including EPA Registry ID (FRS ID, NPDES ID, or RCRA ID). If the receiving POTW cannot be identified using the search, the user may enter the POTW information manually by clicking "**Enter New POTW**," and then provide the receiving POTW's name and address.

Facilities should report for each POTW to which the facility discharges or otherwise transfers wastewater containing the reported EPCRA Section 313 chemical. The most common transfers of this type will be conveyances of the toxic chemical in facility wastewater through underground sewage pipes; however, materials may also be trucked or transferred via some other direct methods to a POTW.

If you do not discharge or otherwise transfer wastewater containing the reported EPCRA Section 313 chemical to a POTW, enter "**NA**" in the box in Section 6.1. (See discussion of NA vs. a Numeric Value (e.g., Zero) in the introduction of Section 6).

6.1[ ] Column A: Quantity Transferred to this POTW

Enter the total amount, in pounds, of the reported EPCRA Section 313 chemical that is contained in the wastewaters transferred to each POTW. Do not enter the total poundage of the wastewaters. If the total amount transferred is less than 1,000 pounds, you may report a range by entering the appropriate range code (range reporting in Section 6.1.[ ]_A. does not

apply to chemicals of special concern). The following reporting range codes are to be used:

Code	Reporting Range (in pounds)
A	1-10
B	11-499
C	500-999

If you enter a range code in column A, some TRI data tools used by the public will display the midpoint of the range (i.e., 5, 250, or 750 lb).

If you discharge or otherwise transfer the EPCRA Section 313 chemical in wastewater to an off-site POTW for further waste management, you must report POTW waste management activities for each off-site POTW, along with the quantity of the reported EPCRA Section 313 chemical associated with each waste management activity. These quantities and their associated waste management activity codes must be reported separately in Section 6.1. For example, if you transferred 100 lb of the chemical to a POTW and 30 lb were released to air, 40 lb were disposed of as sludge, and 30 lb were transformed into sludge and then incinerated, you would provide three separate lines using P codes P32, P33, and P38, respectively, with the corresponding quantities and the basis of estimate(s).

EPA provides default POTW distribution percentages and assumptions for TRI-listed chemicals to help you report this data element (Table III). If you believe you have more accurate and/or more representative information (data) on the final disposition of the chemical being transferred to the POTW, then use that information instead. If a reported EPCRA Section 313 chemical is sent to an off-site POTW for sequential activities, you should report the final waste management disposition of the toxic chemical.

6.1[ ] Column B: Basis of Estimate

You must identify the basis for your estimates of the quantities of the reported EPCRA Section 313 chemical in the wastewater transferred to each POTW. Enter one of the following letter codes that applies to the method by which the largest percentage of the estimate was derived.

M1 Estimate is based on continuous monitoring data or measurements for the EPCRA Section 313 chemical.

M2 Estimate is based on periodic or random monitoring data or measurements for the EPCRA Section 313 chemical.

C Estimate is based on mass balance calculations, such as calculation of the amount of the EPCRA Section 313 chemical in streams entering and leaving process equipment.

E1 Estimate is based on published emissions factors, such as those relating release quantity to through-put or equipment type (e.g., air emissions factors). This may include emissions factors in a trade association's publication or AP-42.

E2 Estimate is based on site-specific emissions factors, such as those relating release quantity to through-put or equipment type (e.g., air emissions factors). This may include emissions factors that are developed for a specific piece of equipment and that consider climate conditions on-site.

O Estimate is based on other approaches such as engineering calculations (e.g., estimating volatilization using published mathematical formulas) or best engineering judgment. This would include applying estimated removal efficiency to a waste stream, even if the composition of the stream before treatment was fully identified through monitoring data.

6.1[ ] Column C: Disposal/Treatment

You should enter one of the following P codes to identify the type of disposal or treatment method used by the POTW for the reported EPCRA Section 313 chemical. You must report separate P codes and transfer quantities for a single location when distinct quantities of the reported EPCRA Section 313 chemical are subject to different waste management activities. You must use the P code that represents the ultimate waste management disposition of the chemical.

Metals and Metal Category Compounds

Remember that the transfer and release quantities that you report for a metal category compound will be the total amount of the parent metal transferred or released and NOT the quantities of the entire metal category compound. The parent metal cannot be treated because it cannot be destroyed. Thus, transfers of metals and metal category compounds for further waste management should be reported as a

disposal. The applicable P codes for transfers of metals and metal category compounds in wastewater to a POTW for disposal include P30, P31, P32, P33, P34, P35, and P36.

Applicable codes for Part II, Section 6.1, column C are:

Disposal Codes:

P30 Discharged to Water Stream
P31 Discharged to Other Activities
P32 Released to Air
P33 Sludge to Disposal
P34 Metals and Metal Compounds Only – Sludge to Incineration
P35 Sludge to Agricultural Applications
P36 Other or Unknown Disposal

Treatment Codes:

P37 Other or Unknown Treatment
P38 Sludge to Incineration
P39 Experimental and Estimated Treatment Data (TRI provided)

Facilities should provide the ultimate waste management disposition of toxic chemicals at POTWs. For example, if the toxic chemical is:

- in the POTW's effluent and is discharged to surface waters/water stream – use P30
- discharged to other activities such as watering golf courses, agricultural land, etc. – use P31
- released to air – use P32
- in the POTW's sludge and is disposed via landfill disposal or land application – use P33
- incinerated – use P38 (P34 for metals and metal compounds)
- disposed via agricultural applications or other activities – use P35

If facilities do not have specific information about the fate of chemicals transferred to a POTW then use P36 and/or P37. If you use a treatment rate provided in Table III then use P39. (Table III provides default POTW distribution percentages and assumptions for toxic chemicals sent to POTWs that are based on experimental and estimated data compiled by EPA). P39 is also used for chemicals not included in Table III, when the default assumption is used that 100% of the chemical sent to the POTW is treated for destruction (except for metals and PFAS, for which the default assumption is that 100% of the chemical is released, using P36 for metals and P30 for PFAS). If you have better information on the final waste management disposition of the chemical readily available, then use that information instead.

In addition, TRI-MEweb will assist a facility in completing this section when the facility lacks data on the ultimate waste management disposition of a chemical transferred to a POTW by applying default distribution percentages and assumptions to quantities transferred to a POTW.

6.2 Transfers to Other Off-Site Locations

In Section 6.2, facilities using TRI-MEweb can click "**Add a New Location**" to access a form to search off-site transfer locations by location or RCRA ID to which the facility ships or transfers wastes containing the reported EPCRA Section 313 chemical for the purposes of disposal, treatment, energy recovery, or recycling. If the receiving off-site location cannot be identified using the search or is a non-U.S. transfer, the user may enter the off-site location information by clicking "**Enter New Location**," and then indicating the receiving off-site locations' name and address. Reporters must also indicate if the receiving location is under the control of the reporting facility or parent company.

In general, a RCRA ID number (also called an EPA Identification Number) will commonly be found on the Uniform Hazardous Waste Manifest, which is required by RCRA regulations for the transfer of hazardous wastes. However, please note that an off-site transfer of a non-hazardous waste containing a TRI chemical may be received by a facility with a RCRA ID. If the receiving facility's RCRA ID is known, even if it is not associated with the waste transfer that you are initiating, it should be provided in Section 6.2. The purpose of the RCRA ID number is for the identification of the off-site transfer facility and not just to indicate a hazardous waste transfer. If you ship or transfer wastes containing an EPCRA Section 313 chemical and the off-site location does not have an EPA Identification Number, enter "**NA**" in the box for the off-site location EPA Identification Number.

Specifically for other off-site transfers, facilities must also report the type of disposal, treatment, energy recovery, or recycling methods used by the off-site

location for the reported EPCRA Section 313 chemical (see Section 6.2 Column C). If appropriate, you must report multiple activities for each off-site location. For example, if your facility sends a reported EPCRA Section 313 chemical in a single waste stream to an off-site location where some of the EPCRA Section 313 chemical is to be recycled while the remainder of the quantity transferred is to be treated, you must report separate waste treatment and recycling activity codes, along with the quantity associated with each waste management activity.

If your facility transfers an EPCRA Section 313 chemical to an off-site location and that off-site location performs more than four activities on that chemical, multiple transfers may be listed by clicking "**+ Add Transfer.**"

If you do not ship or transfer wastes containing the EPCRA Section 313 chemical to other off-site locations, you should check the "NA" in Section 6.2, "Transfers to Other Off-Site Locations."

If you ship or transfer the reported EPCRA Section 313 chemical in wastes to another country, you do not need to report a RCRA ID for that waste. You should check "Not Applicable" for the RCRA ID field. Select the non-U.S. transfer location checkbox when adding a new off-site transfer site that is located outside the borders of the United States in Section 6.2. Enter the location information for the non-U.S. facility including: location name, address, city, province, country, and postal code. TRI-MEweb provides a dropdown for selecting a country.

6.2[ ] Column A: Total Transfers

For each off-site location, enter the total amount, in pounds (in grams for dioxin and dioxin-like compounds), of the EPCRA Section 313 chemical that is contained in the waste transferred to that location. ***Do not enter the total quantities of the waste.*** If you do not ship or transfer wastes containing the EPCRA Section 313 chemical to other off-site locations, you should enter "**NA**" (See discussion of NA vs. a Numeric Value (e.g., Zero) in the introduction of Section 6) in the box for the off-site location's EPA Identification Number (defined in 40 CFR 260.10 and therefore commonly referred to as the RCRA ID Number).

If the total amount transferred is less than 1,000 pounds, you may report a range by entering the appropriate range code (range reporting in Section 6.2 does not apply to chemicals of special concern). The following reporting range codes are to be used:

Code	Reporting Range (in pounds)
A	1-10
B	11-499
C	500-999

Note that if you enter a range code in column A, some TRI data tools used by the public will display the midpoint of the range (i.e., 5, 250, or 750 lb).

If you transfer the EPCRA Section 313 chemical in wastes to an off-site facility for distinct and multiple purposes, you must report those activities for each off-site location separately, along with the quantity of the reported EPCRA Section 313 chemical associated with each waste management activity. For example, your facility transfers a total of 15,000 pounds of toluene to an off-site location that will use 5,000 pounds for the purposes of energy recovery, will enter 7,500 pounds into a recovery process, and will dispose of the remaining 2,500 pounds. These quantities and the associated waste management activity codes must be reported separately in Section 6.2. (See Example 19 for a hypothetical Section 6.2 completed for two off-site locations, one of which receives the transfer of 15,000 pounds of toluene as detailed.)

If a reported EPCRA Section 313 chemical is sent to an off-site facility for sequential activities, you should report the final waste management disposition of the toxic chemical.

Summary of Residue Quantities From Pilot-Scale Experimental Study (weight percent of drum capacity)

Unloading Method	Vessel Type	Value	Material			
			Kerosene[a]	Water[b]	Motor Oil[c]	Surfactant Solution[d]
Pumping	Steel drum	Range Mean	1.93 - 3.08 2.48	1.84 - 2.61 2.29	1.97 - 2.23 2.06	3.06 3.06
Pumping	Plastic drum	Range Mean	1.69 - 4.08 2.61	2.54 - 4.67 3.28	1.70 - 3.48 2.30	Not Available
Pouring	Bung-top steel drum	Range Mean	0.244 - 0.472 0.404	0.266 - 0.458 0.403	0.677 - 0.787 0.737	0.485 0.485
Pouring	Open-top steel drum	Range Mean	0.032 - 0.080 0.054	0.026 - 0.039 0.034	0.328 - 0.368 0.350	0.089 0.089
Gravity Drain	Slope-bottom steel tank	Range Mean	0.020 - 0.039 0.033	0.016 - 0.024 0.019	0.100 - 0.121 0.111	0.048 0.048
Gravity Drain	Dish-bottom steel tank	Range Mean	0.031 - 0.042 0.038	0.033 - 0.034 0.034	0.133 - 0.191 0.161	0.058 0.058
Gravity Drain	Dish-bottom glass-lined tank	Range Mean	0.024 - 0.049 0.040	0.020 - 0.040 0.033	0.112 - 0.134 0.127	0.040 0.040

Source: From "Releases During Cleaning of Equipment." Prepared by PEI Associates, Inc., for the U.S. Environmental Protection Agency, Office of Pesticides and Toxic Substances, Washington DC, Contract No. 68-02-4248. June 30, 1988.

Note: The values listed in this table should only be applied to similar vessel types, unloading methods, and bulk fluid materials. At viscosities greater than 200 centipoise, the residue quantities can rise dramatically and the information on this table is not applicable.

[a] For kerosene, viscosity = 5 centipoise, surface tension = 29.3 dynes/cm^2

[b] For water, viscosity = 4 centipoise, surface tension = 77.3 dynes/cm^2

[c] For motor oil, viscosity = 94 centipoise, surface tension = 34.5 dynes/cm^2

[d] For surfactant solution, viscosity = 3 centipoise, surface tension = 31.4 dynes/cm^2

Example 17: Container Residue

You have determined that a Form R for an EPCRA Section 313 chemical must be submitted. The facility purchases and uses one thousand 55-gallon steel drums that contain a 10% solution of the chemical. Further, it is assumed that the physical properties of the solution are similar to water. The solution is pumped from the drums directly into a mixing vessel and the "empty" drums are triple-rinsed with water. The rinse water is indirectly discharged to a POTW and the cleaned drums are sent to a drum reclaimer.

In this example, it can be assumed that all of the residual solution in the drums was transferred to the rinse water. Therefore, the quantity transferred to the drum reclaimer should be reported as "zero." The annual quantity of residual solution that is transferred to the rinse water can be estimated by multiplying the mean weight percent of residual solution remaining in water from pumping a steel drum (2.29% from the preceding table, "Summary of Residue Quantities From Pilot-Scale Experimental Study") by the total annual weight of solution in the drum (density of solution multiplied by drum volume). If the density is not known, it may be appropriate to use the density of water (8.34 pounds per gallon):

(2.29%) × (8.34 pounds/gallon) × (55 gallons/drum) × (1,000 drums) = 10,504 pounds solution

The concentration of the EPCRA Section 313 chemical in the solution is only 10%.

(10,504 pounds solution) × (10%) = 1,050 pounds

Therefore, 1,050 pounds of the chemical are transferred to the POTW.

6.2[ ] Column B: Basis of Estimate

You must identify the basis for your estimates of the quantities of the reported EPCRA Section 313 chemical in waste transferred to each off-site location. Enter one of the following letter codes that applies to the method by which the largest percentage of the estimate was derived.

M1 Estimate is based on continuous monitoring data or measurements for the EPCRA Section 313 chemical.

M2 Estimate is based on periodic or random monitoring data or measurements for the EPCRA Section 313 chemical.

C Estimate is based on mass balance calculations, such as calculation of the amount of the EPCRA Section 313 chemical in streams entering and leaving process equipment.

E1 Estimate is based on published emissions factors, such as those relating release quantity to through-put or equipment type (e.g., air emissions factors). This may include emissions factors in a trade association's publication or AP-42.

E2 Estimate is based on site-specific emissions factors, such as those relating release quantity to through-put or equipment type (e.g., air emissions factors).

O Estimate is based on other approaches such as engineering calculations (e.g., estimating volatilization using published mathematical formulas) or best engineering judgment. This would include applying an estimated removal efficiency to a waste stream, even if the composition of the stream before treatment was fully identified through monitoring data.

6.2[ ] Column C: Type of Waste Management: Disposal/Treatment/Energy Recovery/ Recycling

You should enter one of the following M codes to identify the type of disposal, treatment, energy recovery, or recycling methods used by the off-site location for the reported EPCRA Section 313 chemical. You must use separate transfers and codes for a single location when distinct quantities of the reported EPCRA Section 313 chemical are subject to different waste management activities, including disposal, treatment, energy recovery, or recycling.

You must use the code that represents the ultimate waste management disposition of the chemical.

Reuse vs. Recycling

If the EPCRA Section 313 chemical is sent off-site for further direct reuse (e.g., an EPCRA Section 313 chemical in used solvent that will be used as a lubricant at another facility) without any reclamation or recovery step prior to that reuse, it is considered reused rather than recycled, and it should not be reported in Section 6.2 or Section 8. If the chemical waste is reused off-site, consider providing optional details in Section 8.11 under general environmental management.

If a waste that contains the EPCRA Section 313 chemical is sent off-site for recovery at the receiving facility before reuse at the receiving facility or elsewhere in commerce, the chemical is considered recycled and should be reported as off-site recycling in Section 6.2 and Section 8. Recovery would not include simple phase changing of the toxic chemical before reuse (e.g., simple remelting of scrap metal). Recovery would include changing the relative amounts of the chemicals in an alloy (which may occur when mixed scrap metal is melted together). Examples of recovery processes include distillation, filtration, and mechanical or physical separation.

Incineration vs. Energy Recovery

You must distinguish between incineration, which is waste treatment, and legitimate energy recovery. For you to claim that a reported EPCRA Section 313 chemical sent off-site is used for the purposes of energy recovery and not for treatment for destruction, the EPCRA Section 313 chemical must have a significant heating value and must be combusted in an energy recovery unit such as an industrial boiler, furnace, or kiln. In a situation where the reported EPCRA Section 313 chemical is in a waste that is combusted in an energy recovery unit, but the EPCRA Section 313 chemical does not have a significant heating value, e.g., CFCs, you should use code M54, Incineration/Insignificant Fuel Value, to indicate that the EPCRA Section 313 chemical was incinerated in an energy recovery unit but did not contribute to the heating value of the waste.

Metals and Metal Category Compounds

Metals and metal category compounds will be managed in waste either by being released (including disposed of) or by being recycled. Remember that the release and other waste management information that you report for metal category compounds will be the total amount of the parent metal released or recycled and NOT the whole metal category compound. The metal has no heat value and thus cannot be combusted for energy recovery and cannot be treated because it cannot be destroyed. Thus, transfers of metals and metal category compounds for further waste management should be reported as either a transfer for recycling or a transfer for disposal. The applicable waste management codes for transfers of metals and metal category compounds for recycling are M24 (metals recovery), M93 (waste broker – recycling), or M26 (other reuse/recovery). Applicable codes for transfers for disposal include M10, M41, M62, M64, M65, M66, M67, M73, M79, M81, M82, M90, M94, and M99. These codes are for off-site transfers for further waste management in which the waste stream may be treated but the metal contained in the waste stream is not treated and is ultimately released. For example, M41 should be used for a metal or metal category compound that is stabilized in preparation for disposal.

Applicable codes for Part II, Section 6.2, Column C are:

Disposal

M10	Storage Only
M41	Solidification/Stabilization - Metals and Metal Category Compounds only
M62	Wastewater Treatment (Excluding POTW) - Metals and Metal Category Compounds only
M64	Other Landfills
M65	RCRA Subtitle C Landfills
M66	Subtitle C Surface Impoundments
M67	Other Surface Impoundments
M73	Land Treatment
M79	Other Land Disposal
M81	Underground Injection to Class I Wells
M82	Underground Injection to Class II-V Wells
M90	Other Off-Site Management
M94	Transfer to Waste Broker - Disposal
M99	Management Method Unknown

Treatment
M40 Solidification/Stabilization
M50 Incineration/Thermal Treatment
M54 Incineration/Insignificant Fuel Value
M61 Wastewater Treatment (Excluding POTW)
M69 Other Waste Treatment
M95 Transfer to Waste Broker - Waste Treatment

Energy Recovery
M56 Energy Recovery

M92 Transfer to Waste Broker - Energy Recovery

Recycling
M20 Solvents/Organics Recovery
M24 Metals Recovery – Metals and Metal Category Compounds only
M26 Other Reuse or Recovery
M28 Acid Regeneration
M93 Transfer to Waste Broker - Recycling

Example 18: Reporting Metals and Metal Category Compounds that are sent Off-site

A facility manufactures a product containing elemental copper, exceeding the processing threshold for copper. Various metal fabrication operations for the process produce a wastewater stream that contains some residual copper and off-specification copper material.

- Transfer to POTW: The wastewater is collected and sent directly to a POTW. Periodic monitoring data show that 500 pounds of copper were transferred to the POTW in the reporting year. The POTW eventually releases these chemicals to a stream. The facility must report 500 pounds in Sections 6.1 (P30) and 8.1d for transfers to a POTW.
- Transfer to other off-site locations: The off-specification products (containing copper) are collected and sent off-site to a RCRA Subtitle C landfill. Sampling analyses of the product combined with hazardous waste manifests indicate that 1,200 pounds of copper in the off-spec product were sent to the off-site landfill. The facility reports 1,200 pounds in Sections 6.2 (waste code M65 (RCRA Subtitle C Landfill)) and 8.1c for transfers for disposal.

Note that for EPCRA Section 313 chemicals that are not metals or metal category compounds, the quantity sent for treatment at POTWs and to other off-site treatment locations must be reported in Section 8.7 (Quantity Treated Off-site). However, if you know that some or all of the chemical is not treated for destruction at the off-site location you must report that quantity in Section 8.1.

Example 19: Reporting Chemicals Sent Off-site for Waste Management

A facility transfers chemical waste to two off-site locations. 15,000 pounds of toluene are sent to Acme Waste Services, where 5,000 pounds will be combusted for the purposes of energy recovery (code M56), 7,500 pounds will enter into a recovery process (code M20), and the remaining 2,500 pounds will be disposed (code M65). The facility also transfers 12,500 pounds of toluene that is part of a waste to Combustion, Inc., where it is combusted for the purposes of energy recovery in an industrial furnace (code M54).

The top image represents the first transfer as reported in Part II, Section 6.2 of the TRI Form R.

SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS NA ☐								
6.2. 1 Off-Site EPA Identification Number (RCRA ID No.)	COD56616246							
Off-Site Location Name:	Acme Waste Services							
Off-Site Address:	5 Market Street							
City	Anywhere	County	Hill	State	CO	ZIP	80461	Country (non-US)
Is this location under control of reporting facility or parent company?	☐ Yes	☑ No						

SECTION 6.2. TRANSFERS TO OTHER OFF-SITE LOCATION (CONTINUED)		
A. Total Transfer (pounds/year*) (Enter a range code** or estimate)	**B. Basis of Estimate** (Enter code)	**C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery** (Enter code)
1. 5,000	**1.** O	**1.** M 56
2. 7,500	**2.** C	**2.** M 20
3. 2,500	**3.** O	**3.** M 65

The bottom image represents the second transfer as reported in Part II, Section 6.2 of the TRI Form R.

6.2 2 Off-Site EPA Identification Number (RCRA ID No.)	COD16772543							
Off-Site Location Name:	Combustion, Inc.							
Off-Site Address:	25 Facility Road							
City	Dumfry	County	Burns	State	CO	ZIP	80500	Country (non-US)
Is this location under control of reporting facility or parent company?	☐ Yes	☑ No						

A. Total Transfer (pounds/year*) (Enter a range code** or estimate)	**B. Basis of Estimate** (Enter code)	**C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery** (Enter code)
1. 12,500	**1.** O	**1.** M 54
2. NA	**2.**	**2.** M
3.	**3.**	**3.** M

Section 7. On-Site Waste Treatment, Energy Recovery, and Recycling Methods (Form R)

You must report in this section the methods of waste treatment, energy recovery, and recycling applied on site to the reported EPCRA Section 313 chemical in wastes. There are three separate sections for reporting such activities. Section 7A column c and Section 7A column e were deleted from Form R in 2005. Section 7A column d remained on the form until 2010. In 2011, column d was renamed column c, which is addressed below.

Section 7A: On-Site Waste Treatment Methods and Efficiency

Most of the chemical-specific information required by EPCRA Section 313 that is reported on Form R is specific to the EPCRA Section 313 chemical rather than the waste stream containing the EPCRA Section 313 chemical. However, EPCRA Section 313 does require that waste treatment methods applied on site to waste streams that contain the EPCRA Section 313 chemical be reported. This information is reportable regardless of whether the facility actively applies treatment or the treatment of the waste stream occurs passively. For example, methods include pollution control equipment used to remove EPCRA Section 313 chemicals from waste streams as well as those used to destroy EPCRA Section 313 chemicals in waste streams. This information is collected in Section 7A of Form R.

In Section 7A, you must provide the following information if you treat waste streams containing the reported EPCRA Section 313 chemical on site:

(a) The general waste stream types containing the EPCRA Section 313 chemical being reported;
(b) The waste treatment method(s) or sequence used on all waste streams containing the EPCRA Section 313 chemical; and
(c) The efficiency of each waste treatment method or waste treatment sequence in destroying or removing the EPCRA Section 313 chemical.

When entering on-site treatment data in TRI-MEweb, use a separate waste treatment profile in Section 7A for each general waste stream type. Enter a name for the profile and provide details including the general waste stream type, all waste treatment methods associated with that stream entered in sequence, and the waste treatment efficiency code for the profile. Enter any additional waste treatment profiles as appropriate. Each waste treatment profile generated for a facility is available to be used for other forms from the same facility for the same reporting year. Report only information about treatment of waste streams at your facility, not information about off-site waste treatment. The quantity treated for destruction on site for the current reporting year for this chemical is entered in Section 8.6. You should report quantities of the EPCRA Section 313 chemical removed from the waste stream, rather than destroyed, based on the final disposition of the chemical.

You may provide optional information to describe the on-site waste treatment processes at your facility. Any information reported will display in Section 8.11.

If you do not perform on-site treatment of waste streams containing the reported EPCRA Section 313 chemical, check the "**NA**" checkbox for Section 7A.

7A Column a: General Waste Stream

For each waste treatment method, indicate the type of waste stream containing the EPCRA Section 313 chemical that is treated. Select the letter code that corresponds to the general waste stream type:

Waste Stream Type

A Gaseous (gases, vapors, airborne particulates)
W Wastewater (aqueous waste)
L Liquid waste streams (non-aqueous waste)
S Solid waste streams (including sludges and slurries)

If a waste is a combination of water and organic liquid and the organic content is less than 50%, report it as a wastewater (W). Slurries and sludges containing water should be reported as solid waste if they contain appreciable amounts of dissolved solids, or solids that may settle, such that the viscosity or density of the waste is considerably different from that of process wastewater.

7A Column b: Waste Treatment Method(s) Sequence

Enter the appropriate waste treatment code from the list below for each on-site waste treatment method used on a waste stream containing the EPCRA Section 313 chemical, regardless of whether the

waste treatment method actually removes the specific EPCRA Section 313 chemical being reported. Waste treatment methods must be reported for each type of waste stream being treated (i.e., gaseous waste streams, aqueous waste streams, liquid non-aqueous waste streams, and solids). Except for the air emission treatment codes, the waste treatment codes are not restricted to any medium.

Waste streams containing the EPCRA Section 313 chemical may have a single source or may be aggregates of many sources. For example, process water from several pieces of equipment at your facility may be combined prior to waste treatment. Report waste treatment methods that apply to the aggregate waste stream, as well as waste treatment methods that apply to individual waste streams. If your facility treats various wastewater streams containing the EPCRA Section 313 chemical in different ways, the different waste treatment methods must be listed separately.

If your facility has several pieces of equipment performing a similar service in a waste treatment sequence, you may combine the reporting for such equipment. It is not necessary to enter four codes to cover four scrubber units, for example, if all four are treating waste streams of similar character (e.g., sulfuric acid mist emissions), have similar influent concentrations, and have similar removal efficiencies. If, however, any of these parameters differs from one unit to the next, each scrubber should be listed separately.

Applicable codes for Part II, Section 7A, column B are:

Air Emissions Treatment

A01	Flare
A02	Condenser
A03	Scrubber
A04	Absorber
A05	Electrostatic Precipitator
A06	Mechanical Separation
A07	Other Air Emission Treatment

Chemical Treatment

H040	Incineration--thermal destruction other than use as a fuel
H071	Chemical reduction with or without precipitation
H073	Cyanide destruction with or without precipitation
H075	Chemical oxidation
H076	Wet air oxidation
H077	Other chemical precipitation with or without pre-treatment

Biological Treatment

H081	Biological treatment with or without precipitation

Physical Treatment

H082	Adsorption
H083	Air or steam stripping
H101	Sludge treatment and/or dewatering
H103	Absorption
H111	Stabilization or chemical fixation prior to disposal
H112	Macro-encapsulation prior to disposal
H121	Neutralization
H122	Evaporation
H123	Settling or clarification
H124	Phase separation
H129	Other treatment

Example 20: Calculating Releases and Other Waste Management Quantities

Your facility disposes of 14,000 pounds of lead chromate ($PbCrO_4 \cdot PbO$) in an on-site landfill and transfers 16,000 pounds of lead selenite ($PbSeO_4$) to an off-site land disposal facility. You would therefore be submitting three separate reports on the following: lead compounds, selenium compounds, and chromium compounds. However, the quantities you would be reporting would be the pounds of "parent" metal being released on site or transferred off site for further waste management. All quantities are based on mass balance calculations (See Section 5, Column B, for information on Basis of Estimate and Section 6.2, Column C, for waste management codes and information on transfers of EPCRA Section 313 chemicals in wastes). You would calculate releases of lead, chromium, and selenium by first determining the percentage by weight of these metals in the materials you use as follows:

Lead Chromate ($PbCrO_4 \cdot PbO$) Molecular weight = 546.37
Lead (2 Pb atoms) Atomic weight = 207.2 × 2 = 414.4
Chromium (1 Cr atom) Atomic weight = 51.996

Lead chromate is therefore (percent by weight):
(414.4/546.37) = 75.85% lead and
(51.996/546.37) = 9.52% chromium.

Lead Selenite ($PbSeO_4$) Molecular weight = 350.17

Lead (1 Pb atom) Atomic weight = 207.2
Selenium (1 Se atom) Atomic weight = 78.96

Lead selenite is therefore (percent by weight):
(207.2/350.17) = 59.17% lead and
(78.96/350.17) = 22.55% selenium.

The total pounds of lead, chromium, and selenium disposed of on or off site from your facility are as follows:

Lead
Disposal on-site: 0.7585 × 14,000 = 10,619 pounds from lead chromate
Transfer off-site for disposal: 0.5917 × 16,000 = 9,467 pounds from lead selenite

Chromium
Disposal on-site: 0.0952 × 14,000 = 1,333 pounds from lead chromate

Selenium
Transfer off-site for disposal: 0.2255 × 16,000 = 3,608 pounds from lead selenite

7A Column C: Waste Treatment Efficiency Estimate

In the space provided, enter the range code, based upon the codes listed below, indicating the percentage of the EPCRA Section 313 chemical removed from the waste stream through destruction, biological degradation, chemical conversion, or physical removal. The waste treatment efficiency (expressed as a range of percent removal) represents the percentage of the EPCRA Section 313 chemical destroyed or removed (based on amount or mass), not merely changes in volume or concentration of the EPCRA Section 313 chemical in the waste stream. The efficiency, which can reflect the overall removal from sequential treatment methods applied to the general waste stream, refers only to the percent destruction, degradation, conversion, or removal of the EPCRA Section 313 chemical from the waste stream; it does not refer to the percent conversion or removal of other constituents in the waste stream. The efficiency also does not refer to the general efficiency of the treatment method for any waste stream. For some waste treatment methods, the percent removal will represent removal by several mechanisms, as in an aeration basin, where an EPCRA Section 313 chemical may evaporate, biodegrade, or be physically removed from the sludge.

Percent removal can be calculated as follows:

Equation 4

$$\frac{(I - E)}{I} \times 100\%$$

where:

I = amount of the EPCRA Section 313 chemical in the influent waste stream (entering the waste treatment step or sequence) and

E = amount of the EPCRA Section 313 chemical in the effluent waste stream (exiting the waste treatment step or sequence).

Calculate the amount of the EPCRA Section 313 chemical in the influent waste stream by multiplying the concentration (by weight) of the EPCRA Section 313 chemical in the waste stream by the total amount or weight of the waste stream. In most cases, the percent removal compares the treated effluent to the influent for the particular type of waste stream. For solidification of wastewater, the waste treatment efficiency can be reported as code E1 (greater than 99.9999%) if no volatile EPCRA Section 313 chemicals were removed with the water or evaporated into the air. Percent removal does not apply to incineration because the waste stream, such as wastewater or liquids, may not exist in a comparable form after waste treatment and the purpose of incineration as a waste treatment is to destroy the EPCRA Section 313 chemical by converting it to carbon dioxide and water or other byproducts. In cases where the EPCRA Section 313 chemical is incinerated, the percent efficiency must be based on the amount of the EPCRA Section 313 chemical destroyed or combusted, except for metals or metal category compounds. In the cases in which a metal or metal category compound is incinerated, the efficiency is reported as code E6 (equal to or greater than 0%, but less than or equal to 50%).

Similarly, an efficiency of zero must be reported for any waste treatment method(s) that does not destroy, chemically convert, or physically remove the EPCRA Section 313 chemical from the waste stream.

For metal category compounds, the calculation of the reportable concentration and waste treatment efficiency must be based on the weight of the parent metal, not on the weight of the metal compound. Metals are not destroyed, only physically removed or chemically converted from one form into another. The waste treatment efficiency reported must represent only physical removal of the parent metal from the waste stream (except for incineration), not the percent chemical conversion of the metal compound. If a listed waste treatment method converts but does not remove a metal (e.g., chromium reduction), the method must be reported with a waste treatment efficiency of code E6 (equal to or greater than 0%, but less than or equal to 50%).

EPCRA Section 313 chemicals that are strong mineral acids neutralized to a pH of 6 or above are considered treated at 100% efficiency.

When calculating waste treatment efficiency, EPCRA Section 313(g)(2) requires a facility to use readily available data (including monitoring data) collected pursuant to other provisions of law, or, where such data are not readily available, "reasonable estimates" of the amounts involved.

Waste Treatment Efficiency Range Codes:

E1 = greater than 99.9999%
E2 = greater than 99.99%, but less than or equal to 99.9999%

E3 = greater than 99%, but less than or equal to 99.99%
E4 = greater than 95%, but less than or equal to 99%
E5 = greater than 50%, but less than or equal to 95%
E6 = equal to or greater than 0%, but less than or equal to 50%

Section 7B: On-Site Energy Recovery Processes

In Section 7B, you must indicate the on-site energy recovery methods used on the reported EPCRA Section 313 chemical.

EPA considers an EPCRA Section 313 chemical to be combusted for energy recovery if the toxic chemical has a significant heat value and is combusted in an energy recovery device. If a reported EPCRA Section 313 chemical is incinerated on-site but does not contribute energy to the process (e.g., chlorofluorocarbons (CFCs)), it must be considered waste treated on site and reported in Section 7A. Metals and metal category compounds cannot be combusted for energy recovery and should NOT be reported in this section. Do not include the combustion of fuel oils, such as fuel oil #6, in this section. Energy recovery may take place only in an industrial kiln, furnace, or boiler.

NA vs. a Numerical Value (e.g., Zero). If you do not perform on-site energy recovery for a waste stream that contains or contained the EPCRA Section 313 chemical, check the "**NA**" checkbox at the top of Section 7B. If you perform on-site energy recovery for the waste stream that contains or contained the EPCRA Section 313 chemical, enter the appropriate code and quantity used for energy recovery. If this quantity is less than or equal to 0.5 pounds, round to zero (unless the chemical is classified as a chemical of special concern) and enter 0 (zero). (Note: for metals and metal compounds, you should only report NA in Section 7B and Section 8.2.)

Energy Recovery Codes
U01 Industrial Kiln
U02 Industrial Furnace
U03 Industrial Boiler

If your facility uses more than one on-site energy recovery method for the reported EPCRA Section 313 chemical, list the methods used in descending order (greatest to least) based on the amount of the EPCRA Section 313 chemical entering such methods.

TRI-MEweb will also simultaneously collect total quantity used for energy recovery on site for the current reporting year for this chemical (see Section 8.2). You may provide optional information to describe the on-site energy recovery processes at your facility. Any information reported will display in Section 8.11.

Section 7C: On-Site Recycling Processes

In Section 7C, you must report the recycling methods used on-site to recover the EPCRA Section 313 chemical.

In summary, recycling is the recovery for reuse of a toxic chemical from a gaseous, aerosol, aqueous, liquid, or solid stream. For more information on recycling, direct reuse, and other related topics beyond what is discussed below, see the Interpretations of Waste Management Activities guidance document available in GuideME at: https://guideme.epa.gov/ords/guideme_ext/f?p=guideme:gd-title:::::title:waste_management.

EPA considers the direct recirculation of a toxic chemical within a process or between processes without any reclamation to be "reuse" of the toxic chemical rather than "recycling" and quantities directly reused are not reported in Section 7C.

Reuse vs Recycle examples of EPCRA Section 313 chemicals:

- Ethylene glycol is used in aqueous solution in a coolant system within a combustion engine. The ethylene glycol solution continuously circulates through the engine while the engine is operating to prevent overheating. Due to the continuous circulation, there is no recovery step, and the ethylene glycol is considered directly reused and **not** recycled each time the solution circulates through the engine.
    - If the spent aqueous solution containing ethylene glycol is drained from the engine, and distillation or some other process is used to remove the ethylene glycol from the spent aqueous solution, and the ethylene glycol is then incorporated to make a new aqueous

solution or used for some other purpose, the ethylene glycol has been recycled for TRI reporting purposes.

- *n*-Hexane is used as a solvent by oilseed processing facilities to extract oil and other raw ingredients from soybeans. During this extraction process, *n*-hexane is often recirculated without any recovery steps. Such recirculation constitutes direct reuse and is not recycling for TRI reporting purposes.
    - Following the completion of the extraction process, *n*-hexane is typically evaporated from the oil/hexane mixture and then condensed to recover *n*-hexane (i.e., recovery separates the *n*-hexane from the oil mixture). This *n*-hexane will then be returned to the extraction process or used for another purpose. Such recovery for reuse is considered recycling for TRI reporting purposes.

In this section, use the codes below to report only the recycling methods in place at your facility that are applied to the EPCRA Section 313 chemical. Do not list in Section 7C any methods that are used off-site if you transferred the chemical to another facility to be recycled. (Information about off-site recycling must be reported in Part II, Section 6, "Transfers of the Toxic Chemical in Wastes to Off-site Locations.")

For the on-site recycling methods, report the total quantity of the chemical that is recycled on-site during the reporting year. If the chemical is recycled multiple times during the year, provide the sum of the quantities recycled each time recycling occurs. See Example 23 for how to report recycling quantities. TRI-MEweb will populate Section 8.4 with the quantity reported in Section 7C.

NA vs. a Numerical Value (e.g., Zero). If you do not perform recycling on site for the reported EPCRA Section 313 chemical, check the "**NA"** checkbox at the top of Section 7C. If you perform on-site recycling for the reported EPCRA Section 313 chemical, enter the appropriate code the quantity recycled. If this quantity is less than or equal to 0.5 pounds, round to zero (unless the chemical is classified as a chemical of special concern) and enter 0 (zero).

<u>On-Site Recycling Codes</u>

H10 Metal recovery (by retorting, smelting, or chemical or physical extraction) – Metals and Metal Category Compounds only

H20 Solvent recovery (including distillation, evaporation, fractionation or extraction)

H39 Other recovery or reclamation for reuse (including acid regeneration or other chemical reaction process)

If your facility uses more than one on-site recycling method for an EPCRA Section 313 chemical, enter the codes in the space provided in descending order (greatest to least) based on the volume of the reported EPCRA Section 313 chemical recovered by each process.

For multiple on-site recycling activities and associated quantities reported in Section 7C, TRI-MEweb will generate the total quantity recycled on-site for the current reporting year for this chemical (see Section 8.4). You may provide optional information to describe the on-site recycling processes at your facility. Any information reported will display in Section 8.11.

Example 21: On-Site Waste Treatment

A process at the facility generates a wastewater stream containing an EPCRA Section 313 chemical (chemical A). A second process generates a wastewater stream containing two EPCRA Section 313 chemicals, a metal (chemical B) and a mineral acid (chemical C). Thresholds for all three chemicals have been exceeded, and you are in the process of completing separate Form Rs for each chemical.

These two wastewater streams are combined and sent to an on-site wastewater treatment system before being discharged to a POTW. This system consists of an oil/water separator that removes 99% of chemical A; a neutralization tank in which the pH is adjusted to 7.5, thereby destroying 100% of the mineral acid (chemical C); and a settling tank where 95% of the metal (chemical B) is removed from the water (and eventually landfilled off-site).

Section 7A should be completed slightly differently when you file the Form R for each of the chemicals. The table accompanying this example shows how Section 7A should be completed for each chemical.

- Treatment Profile: Specify a profile name that describes the waste stream. Once created, the profile is available for use in other forms during the same reporting year. For this example, "Wastewater" is used.
- General Waste Stream Code: On each Form R, identify the type of general waste stream, which in this case is the code "W - Wastewater (aqueous wastes)".
- Waste Treatment Method(s) Sequence: On each Form R, list the code for each of the treatment steps applied in sequence to the entire waste stream, regardless of whether the operation affects the chemical for which you are completing the Form R. For instance, all three Form Rs should show three entries: "H124 - Phase separation", "H121 - Neutralization", and "H123 - Settling or clarification." Note that the treatment sequence is not chemical specific and applies to the entire waste stream being treated.
- Waste Treatment Efficiency %: Select the efficiency range that applies to the entire system in destroying and/or removing the chemical for which you are preparing the Form R. You should enter E4 when filing for chemical A, E5 for chemical B, and E1 for chemical C.

Form R	Treatment Profile	General Waste Stream Code	Waste Treatment Method(s) Sequence	Waste Treatment Efficiency %
Chemical A	Wastewater	W	1. H124 2. H121 3. H123	E4
Chemical B	Wastewater	W	1. H124 2. H121 3. H123	E5
Chemical C	Wastewater	W	1. H124 2. H121 3. H123	E1

Note that the *quantity* removed and/or destroyed is not reported in Section 7 and that the efficiency reported in Section 7A.1c refers to the amount of EPCRA Section 313 chemical destroyed *and/or removed* from the applicable waste stream. The amount actually destroyed should be reported in Section 8.6 (quantity treated on-site). For example, when completing the Form R for chemical B you should report "NA" in Section 8.6 because the metal has been removed from the wastewater stream, but not actually destroyed. The quantity of chemical B that is ultimately landfilled off-site should be reported in Sections 6.2 and 8.1c. However, when completing the Form R for chemical C, you should report the entire quantity in Section 8.6 because raising the pH to 7.5 will completely destroy the mineral acid.

Example 22: Reporting On-Site Energy Recovery

One waste stream generated by your facility contains, among other chemicals, toluene and Freon 113 (CFC-113). Threshold quantities are exceeded for both of these EPCRA Section 313 chemicals, and you would, therefore, submit two separate Form R reports. This waste stream is sent to an on-site industrial furnace that uses the heat generated in a thermal hydrocarbon cracking process at your facility. Because toluene has a significant heat value (17,440 BTU/pound) and the energy is recovered in an industrial furnace, the code "U02 - Industrial Furnace" would be selected for the energy recovery method in Section 7B for the Form R submitted for toluene.

However, as Freon 113 (CFC-113) does not contribute any value for energy recovery purposes, the combustion of Freon 113 (CFC-113) in the industrial furnace is considered waste treatment, not energy recovery. You would report Freon 113 (CFC-113) as entering a waste treatment step (i.e., incineration), in Section 7A, column b. In Section 7B the facility should report "NA".

Example 23: Reporting On-Site Recycling

A surface coating facility uses toluene, an EPCRA Section 313-listed chemical, as a solvent to clean paint guns when changing paints or at the end of a shift. Once used, the toluene is recycled via distillation in a distillation unit that heats and separates toluene from any solid paint waste. Between the efficiency of the distillation unit and evaporative losses, the facility recovers 80% of the toluene each time it is distilled, and it can be recycled up to four times before it becomes unusable.

During the reporting year, the facility used 20,000 pounds of virgin toluene. To determine the quantity of toluene recycled on-site during the reporting year, the facility considers the quantity of toluene each time it was recycled and reports the aggregate quantity.

The quantity of toluene recycled is calculated as the sum of the quantity recycled each of the four times that recycling occurred:

Recycling pass	Quantity of toluene entering the distillation unit	Quantity of toluene recycled at 80% efficiency
First	20,000 lb	20,000 lb × 80% = 16,000 lb
Second	16,000 lb	16,000 lb × 80% = 12,800 lb
Third	12,800 lb	12,800 lb × 80% = 10,240 lb
Fourth	10,240 lb	10,240 lb × 80% = 8,192 lb
Total quantity of toluene recycled		= 47,232 lb

In Section 7C of the Form R, the facility selects "H20 – Solvents/Organics Recovery" and enters 47,232 lb as the "Quantity Recycled On-site". TRI-MEweb will populate the quantity entered, 47,232 lb, as the quantity recycled on-site in the current reporting year in Section 8.4. Note that the facility would also report any associated waste stream treatment information in Section 7A and any release or transfer information in Section(s) 5 and/or 6.

Section 8. Source Reduction and Waste Management (Form R)

This section includes the data elements mandated by Section 6607 of the Pollution Prevention Act of 1990 (PPA). The PPA calls for pollution to be prevented or reduced at the source whenever feasible and released to the environment only as a last resort, as shown in Figure 6.

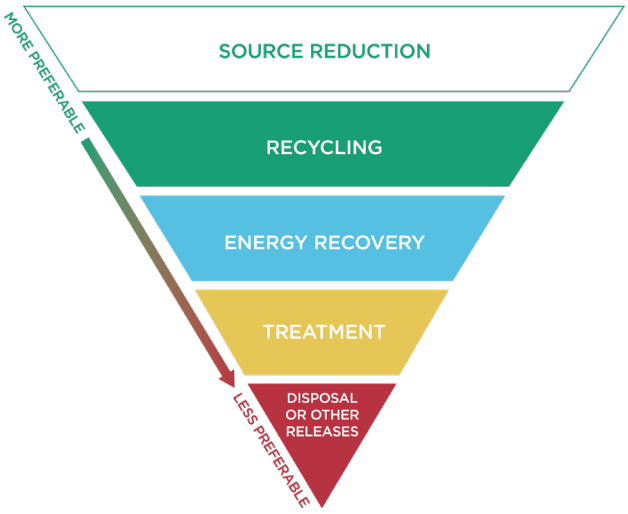


Figure 6. Waste Management Hierarchy

TRI collects information to track industry progress in reducing waste generation and moving toward safer waste management alternatives. Many facilities take action to prevent pollution and reduce the amount of toxic chemicals entering the environment, and report their actions as required to TRI. As a result, TRI serves as a tool for identifying effective environmental practices and highlighting pollution prevention successes.

Sections 8.1 through 8.9 must be completed for each EPCRA Section 313 chemical. Section 8.10 must be completed only if a source reduction activity was newly implemented specifically (in whole or in part) for the reported EPCRA Section 313 chemical during the reporting year. If applicable, in Section 8.10, you must provide information about source reduction activities to reduce or prevent the generation of waste, as well as reduce quantities of the EPCRA Section 313 chemicals managed as waste. Section 8.11 allows you to submit additional optional information on source reduction or waste management methods including recycling, or pollution control measures related to the EPCRA Section 313 chemical at any time at your facility. For example, you may provide additional information on new or on-going practices.

Sections 8.1 through 8.7 require reporting of production-related waste management quantities for the current reporting year, the prior year, and quantities anticipated in both the first year immediately following the reporting year and the second year following the reporting year (future estimates).

TRI-MEweb automatically populates current reporting year column B quantities based on the amounts reported in Sections 5, 6 and 7. You should review the aggregated quantities for accuracy and if necessary, edit values.

For prior year (column A), TRI-MEweb prepopulates the column if your facility reported the previous year. If better information is available, changes may be made by revising the prior year report. For future year (columns C and D) estimates, EPA expects reasonable future quantity estimates using a logical basis.

For all quantities reported in Section 8 only estimate in pounds (or, for the dioxin and dioxin-like compounds category, in grams) for the reported EPCRA Section 313 chemical itself. Quantities should not include the weight of water, soil, or other waste constituents. When reporting on the metal category compounds, only report the amount of the metal portion of the compound.

Accuracy of Estimated Quantities. Do not enter the values in Section 8 in gallons, tons, liters, or any unit of measure other than pounds (or, for the dioxin and dioxin-like compounds category, grams). For EPCRA Section 313 chemicals not classified as chemicals of special concern, you must generally enter the values as whole numbers; digits following a decimal point are not acceptable except as noted in the instructions for Sections 8.1c-d and 8.7. For chemicals of special concern (except the dioxin and dioxin-like compounds category), facilities should report release and other waste management quantities greater than 0.1 pounds provided that the accuracy and the underlying data on which the estimate is based support this level of precision.

For the dioxin and dioxin-like compounds category, facilities should report at a level of precision

supported by the accuracy of the underlying data and the estimation techniques on which the estimate is based. However, the smallest quantity that needs to be reported on the Form R for the dioxin and dioxin-like compounds category is 0.0001 grams (see Example 15). Notwithstanding the numeric precision used when determining reporting eligibility thresholds, facilities should report on Form R to the level of accuracy that their data supports, up to seven digits to the right of the decimal. EPA's reporting software and data management systems support data precision to seven digits to the right of the decimal.

NA vs. a Numeric Value (e.g., Zero). TRI-Meweb automatically populates current reporting year quantities based on the amounts reported in Sections 5, 6 and 7. If you entered a quantity for any relevant sections corresponding to the aggregated quantities, you should see a numeric value in Section 8, representing any quantities your facility has released, treated, combusted for energy recovery, or recycled any quantity of an EPCRA Section 313 chemical during the reporting year.

Rounding to 0 (zero) is possible under the following scenarios. Note that the accuracy of the underlying data on which the estimate is based on must support the specified level of precision described below in order to round to zero.

- If the aggregate quantity of that toxic chemical was equal to or less than 0.5 pounds for a particular waste management method, 0 (zero) (unless the chemical is a chemical of special concern) may display in the relevant section.
- In the case of chemicals of special concern (excluding the dioxin and dioxin-like chemicals category), if the aggregate quantity of the toxic chemical is equal to or less than 0.1 pounds for a particular waste management method, 0 (zero) may display in the relevant section.
- For the dioxin and dioxin-like chemicals category, if the aggregate quantity is equal to or less than 0.0001 grams for a particular waste management method, 0 (zero) may display in the relevant section.

If there has been no on-site or off-site release or disposal, treatment, combustion for energy recovery, or recycling of the waste stream containing the EPCRA Section 313 chemical, then "**NA**" may display in the relevant section. (Note: for metals and metal category compounds, "**NA**" is typical in Sections 8.2, 8.3, 8.6, and 8.7, as treatment and combustion for energy recovery generally are not applicable waste management methods for metals and metal compounds.) For Section 8.1b, other on-site disposal or releases, "**NA**" generally is not appropriate recognizing the potential for spills, leaks, or fugitive emissions of the EPCRA Section 313 chemical.

Section 8.8 is not automatically populated and you should enter "**NA**" if there were no remedial actions; catastrophic events such as earthquakes, fires, or floods; or one-time events not associated with normal or routine production processes for that toxic chemical. If there was a catastrophic event at your facility, but you were able to prevent any releases from occurring, then enter 0 (zero) in Section 8.8.

When estimating prior year and future year estimates, consider the NA and numeric value guidance provided.

Relationship to Other Laws. The reporting categories for quantities recycled, used for energy recovery, treated, and disposed of apply to completing Section 8 of Form R as well as to the rest of Form R. These categories are to be used only for TRI reporting. They are not intended for use in determining, under the Resource Conservation and Recovery Act (RCRA) Subtitle C regulations, whether a secondary material is a waste when recycled. These categories also do not apply to the information that may be submitted in the Biennial Report required under RCRA. In addition, these categories do not imply any future redefinition of RCRA terms and do not affect EPA's RCRA authority or authority under any other statute administered by EPA.

Differences in terminology and reporting requirements for EPCRA Section 313 chemicals and for hazardous wastes regulated under RCRA occur because EPCRA and the PPA focus on specific chemicals, while the RCRA regulations and the Biennial Report focus on waste streams that may include more than one chemical. For example, assume that a RCRA hazardous waste containing an EPCRA Section 313 chemical is recycled to recover certain constituents of that waste, but not the toxic chemical reported under EPCRA Section 313. The

EPCRA Section 313 chemical simply passes through the recycling process and remains in the residual from the recycling process, which is disposed of. While the waste may be considered recycled under RCRA, for TRI purposes, the EPCRA Section 313 chemical constituent would be considered to be disposed of (as part of the residual from the recycling process).

An EPCRA Section 313 chemical or an EPCRA Section 313 chemical in a mixture that is a waste under RCRA must be reported in Sections 8.1 through 8.8.

Sections 8.1 – 8.7: Production-Related Waste Managed

Column A: Prior Year. Quantities for Sections 8.1 through 8.7 must be reported for the year immediately preceding the reporting year in column A. For reports due July 1, 2023 (reporting year 2022), the prior year is 2021. Information available at the facility that may be used to estimate the prior year's quantities including the prior year's Form R submission; supporting documentation; and recycling, energy recovery, treatment, or disposal operating logs or invoices. When reporting prior year estimates, facilities are not required to use quantities reported on the previous year's form if better information is available. TRI-MEweb prepopulates this column on the TRI form if the facility reported the previous year. If the facility wants to change data that was certified and submitted to EPA for the prior year, then the prior year's reporting form must be revised and submitted. Facilities will not be allowed to make prior year changes in the current year form. Only new reporting facilities or those with a lapse in reporting may enter quantities within the prior year column.

Column B: Current Reporting Year. Quantities for Sections 8.1 through 8.7 must be reported for the current reporting year in column B. TRI-MEweb automatically populates the current reporting year quantities based on the amounts reported in Sections 5, 6 and 7. You should review the aggregated quantities for accuracy and if necessary, edit values using the worksheet.

Columns C and D: Following Year and Second Following Year. Quantities for Sections 8.1 through 8.7 must be estimated for the following two years. EPA expects reasonable future quantity estimates using a logical basis. Information available at the facility to estimate quantities of the chemical expected during these years include (but are not limited to) planned source reduction activities, market projections, expected contracts, anticipated new product lines, company growth projections, and production capacity figures. See Example 24 for more guidance.

Example 24: Reporting Future Estimates

A pharmaceutical manufacturing facility uses an EPCRA Section 313 chemical in the manufacture of a prescription drug. During the reporting year (2022), the company received approval from the Food and Drug Administration to begin marketing their product as an over-the-counter drug beginning in 2023. This approval is publicly known and does not constitute confidential business information (CBI). As a result of this expanded market, the company estimates that sales and subsequent production of this drug will increase their use of the reported EPCRA Section 313 chemical by 30% per year for the two years following the reporting year. The facility treats the EPCRA Section 313 chemical on-site, and the quantity treated is directly proportional to production activity. The facility thus estimates the total quantity of the reported EPCRA Section 313 chemical treated for the following year (2023) by adding 30% to the amount in column B (the amount for the current reporting year). The second following year (2024) figure can be calculated by adding an additional 30% to the amount reported in column C (the amount for the following year (2023) projection).

Quantities Reportable in Sections 8.1 - 8.7

Section 8 of Form R uses data collected from Sections 5 through 7. For this reason, Section 8 should be completed last. The relationship between Sections 5, 6, 7 and 8.8 to Sections 8.1, 8.3, 8.5, and 8.7 is summarized below in a table (Relationship between Form R Sections 8.1-8.7 and Sections 5, 6, and 7) and explicitly described in equation form in the text. For column B (current year), TRI-MEweb will use these equations to complete these sections automatically.

Note on Equations. Where an equation includes a value followed by a parenthetical, this means that the

equation is referring only to the portion of that value described by the parenthetical. For example, "**Section 6.2 (off-site recycling)**" refers to the portion of the value for Section 6.2 that is recycled off-site, while "**Section 6.2 (off-site treatment)**" refers to the portion of the value for Section 6.2 that is treated off-site.

Relationship between Form R Sections 8.1-8.7 and Sections 5, 6, and 7

Category	Section 8 Subsection	Corresponding Section 5, 6 or 7 Subsection
Disposal and Other Releases	**Section 8.1a:** Total on-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	Production-related on-site disposal to: • **Section 5.4.1** (on-site Class I wells) • **Section 5.5.1A** (on-site RCRA Subtitle C landfills) • **Section 5.5.1B** (on-site other landfills)
	Section 8.1b: Total other on-site disposal or other releases	Production-related on-site releases and disposal to: • **Section 5.1** (Fugitive emissions) • **Section 5.2** (Stack or point emissions) • **Section 5.3** (Discharges to water bodies) • **Section 5.4.2** (Class II-V wells) • **Section 5.5.2** (Land treatment) • **Section 5.5.3A** (Subtitle C surface impoundments) • **Section 5.5.3B** (Other surface impoundments) • **Section 5.5.4** (Other disposal)
	Section 8.1c: Total off-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	Production-related off-site transfers to: • **Section 6.1** (quantities associated with P codes P33 and P34) • **Section 6.2** (quantities associated with M codes M64, M65, and M81)
	Section 8.1d: Total other off-site disposal or other releases	Production-related transfers to: • **Section 6.1** (quantities associated with P codes P30, P31, P32, P35, and P36) • **Section 6.2** (quantities associated with M codes M10, M41, M62, M66, M67, M73, M79, M82, M90, M94, and M99)
Energy Recovery	**Section 8.2:** Quantity used for energy recovery on-site	Production-related on-site energy recovery: • **Section 7B** (total energy recovery quantity associated with U01, U02, and U03)
	Section 8.3: Quantity used for energy recovery off-site	Production-related off-site transfers to: • **Section 6.2** (quantities associated with M codes M56 and M92)
Recycling	**Section 8.4:** Quantity recycled on-site	Production-related on-site recycling: • **Section 7C** (total recycling quantity associated with H10, H20, and H39)
	Section 8.5: Quantity recycled off-site	Production-related off-site transfers to: • **Section 6.2** (quantities associated with M codes M20, M24, M26, M28, and M93)
Treatment	**Section 8.6:** Quantity treated on-site	Production-related on-site waste treatment: • **Section 7A** (waste treatment methods and efficiencies for the purposes of destruction). Note Section 7A may include treatment methods not associated with destruction. Total quantity treated for destruction is reported in Section 8.6
	Section 8.7: Quantity treated off-site	Production-related off-site transfers to: • **Section 6.1** (quantities associated with P codes P37, P38, and P39) • **Section 6.2** (quantities associated with M codes M40, M50, M54, M61, M69, and M95)

8.1 On- and Off-Site Disposal and Other Releases

In Section 8.1, facilities report disposal and other releases. TRI-MEweb automatically generates 8.1 quantities based on production-related on-site disposal and other releases reported in Section 5 and off-site disposal and other releases reported in Section 6, but excludes quantities due to remedial actions; catastrophic events; or non-production-related, one-time events reported in Section 5 and 6 (see the discussion on Section 8.8). Note that EPCRA Section 329(8) defines release as "any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment of barrels, containers, and other closed receptacles)."

Metals and metal category compounds reported in (1) Section 6.2 as sent off-site for stabilization/ solidification (M41) or wastewater treatment (excluding POTWs) (M62) and/or (2) Section 6.1 – transfers to POTWs, should be reported in Section 8.1. TRI-MEweb has rules in place based on guidance and assumptions to generate chemical specific aggregations.

Beginning in the 2003 reporting year, Section 8.1 was divided into four subsections (8.1a, 8.1b, 8.1c, and 8.1d). Please refer to the following equations that show the relationship between Sections 5, 6, 8.8, and 8.1a through 8.1d.

Sections 8.1a and 8.1b. Toxic chemicals disposed of or otherwise released on-site are reported in 8.1a or 8.1b as appropriate. Toxic chemicals sent off-site and then disposed of or otherwise released are reported in 8.1c or 8.1d.

Equation 5

Section 8.1a (Total on-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills) = Section 5.4.1 + Section 5.5.1A + Section 5.5.1B – Section 8.8 (on-site disposal to landfills or UIC Class I Wells, not related to production) [1]

Equation 6

Section 8.1b (Total other on-site disposal or other releases) = Section 5.1 + Section 5.2 + Section 5.3 + Section 5.4.2 + Section 5.5.2 + Section 5.5.3A + Section 5.5.3B + Section 5.5.4 – Section 8.8 (on-site disposal or other releases, other than disposal to landfills or UIC Class I Wells, not related to production) [1]

Sections 8.1c and 8.1d. Toxic chemicals transferred off-site to POTWs or other off-site locations and then disposed of or otherwise released should be reported in 8.1c or 8.1d as appropriate. For example, quantities of a toxic chemical sent to a landfill, or sent to a POTW and subsequently sent to a landfill are reported in Section 8.1c, while quantities of a toxic chemical sent to a surface impoundment, or sent to a POTW and subsequently released to a stream, are reported in Section 8.1d. Metals and metal category compounds sent to POTWs should be reported in 8.1c or 8.1d and generally should not be reported as treated for destruction in Section 8.7.

Equation 7

Section 8.1c (Total off-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills) = Section 6.1 (quantities associated with P codes P33 and P34) + Section 6.2 (quantities associated with M codes M64, M65 and M81) – Section 8.8 (off-site disposal to landfills or UIC Class I Wells, not related to production) [1]

Equation 8

Section 8.1d (Total other off-site disposal or other releases) = Section 6.1 (quantities associated with P codes P30, P31, P32, P35, and P36) + Section 6.2 (quantities associated with M codes M10, M41, M62, M66, M67, M73, M79, M82, M90, M94, and M99) – Section 8.8 (off-site disposal or other releases, other than disposal to landfills or UIC Class I Wells, not related to production) [1]

Some chemicals in addition to metals and metal category compounds might not be treated for destruction at a POTW. If you know that some or all of a chemical is not treated for destruction at the POTW, you should report that quantity in Section 8.1c or 8.1d (as indicated in the equations above)

[1] Section 8.8 includes quantities of toxic chemicals disposed of or otherwise released on-site or managed as a waste off-site due to remedial actions, catastrophic events, or one-time events not associated with the production process. In each equation, the parenthetical following "Section 8.8" indicates which portion of Section 8.8 is subtracted.

instead of Section 8.7 (which is the quantity treated off-site). In such cases, you may report using up to two decimal places.

Default POTW distribution percentages and assumptions for TRI chemicals sent to POTWs, which are based on experimental and estimated data, can be found in Table III. These assumptions are used by TRI-MEweb to generate chemical specific aggregations.

Sections 8.2 and 8.3: Energy Recovery

In Sections 8.2 and 8.3, facilities report an EPCRA Section 313 chemical or a mixture containing an EPCRA Section 313 chemical that is used for energy recovery on-site or is sent off-site for energy recovery, unless it is a commercially available fuel (e.g., fuel oil no. 6). TRI-MEweb automatically generates 8.2 and 8.3 quantities based on production-related energy recovery reported in Section 7 (on site) or Section 6 (off site). For TRI reporting purposes, on-site and off-site energy recovery is the combustion of a waste stream containing an EPCRA Section 313 chemical when:

(a) The combustion unit is integrated into an energy recovery system (i.e., industrial furnaces, kilns, and boilers); and

(b) The EPCRA Section 313 chemical is combustible and has a significant heating value (e.g., 5,000 BTU/lb)

Note: Metals and metal category compounds cannot be combusted for energy recovery. For metals and metal category compounds, you should enter NA in Sections 8.2 and 8.3.

Quantities used for energy recovery off-site that are reported in Section 8.8 are excluded from Section 8.3.

Equation 9

Section 8.2 (Energy recovery on-site) = Section 7B quantity reported for on-site energy recovery (associated with on-site energy recovery methods, U codes) – Section 8.8 (on-site energy recovery, not related to production) [1]

Section 8.2 is not related to Sections 5 or 6.

Equation 10

Section 8.3 (Energy recovery off-site) = Section 6.2 (quantities associated with M codes M56 and M92) – Section 8.8 (off-site energy recovery, not related to production) [1]

Sections 8.4 and 8.5: Recycling

In Sections 8.4 and 8.5, facilities report an EPCRA Section 313 chemical in a waste that is recycled on-site or is sent off-site for recycling. TRI-MEweb automatically generates 8.4 and 8.5 quantities based on production-related recycling reported in Section 7 (on site) or Section 6 (off site). For quantities recycled off-site that are reported in Section 8.8, TRI-MEweb excludes these from Section 8.5.

In summary, recycling is the recovery for reuse of a toxic chemical from a gaseous, aerosol, aqueous, liquid, or solid stream. For TRI reporting purposes, on-site recycling involves on-site recovery of the EPCRA Section 313 chemical, and off-site recycling involves recovery at the receiving facility before reuse at either facility or elsewhere in commerce. If recycling occurs, you must report the total quantity of the chemical that is recycled during the reporting year.

EPA considers the direct recirculation of a toxic chemical within a process or between processes without any reclamation to be "reuse" of the toxic chemical rather than "recycling." For more information on recycling, direct reuse, and other related topics, see the Interpretations of Waste Management Activities guidance document available in GuideME at: https://guideme.epa.gov/ords/guideme_ext/f?p=guideme:gd-title:::::title:waste_management.

Also note that if you reclaim this chemical on-site and then reuse it, this is considered recycling for TRI reporting purposes and you must include the quantity of the chemical that is recycled on-site each time it is recycled in the total quantity reported as recycled for the year.

Equation 11

Section 8.4 (Recycling on-site) = Section 7C quantity reported for on-site recycling (associated

[1] Section 8.8 includes quantities of toxic chemicals disposed of or otherwise released on-site or managed as a waste off-site due to remedial actions, catastrophic events, or one-time events not associated with the production process. In each equation, the parenthetical following "Section 8.8" indicates which portion of Section 8.8 is subtracted.

with on-site recycling methods, H codes) – Section 8.8 (on-site recycling, not related to production) [1]

Section 8.4 is not related to Sections 5 or 6.

Equation 12
Section 8.5 (Recycling off-site) = Section 6.2 (quantities associated with M codes M20, M24, M28, and M93) - Section 8.8 (off-site recycling, not related to production) [1]

Sections 8.6 and 8.7: Treatment

In Sections 8.6 and 8.7, facilities report an EPCRA Section 313 chemical (except for most metals and metal category compounds) or a waste containing an EPCRA Section 313 chemical that is treated for destruction on site or is sent to a POTW or other off-site location for treatment for destruction. TRI-MEweb automatically generates 8.7 quantities based on production-related treatment reported in Section 6 (off site). You must enter the quantity treated for destruction on site in Section 8.6; TRIME-web does not generate this quantity. Note that chemicals removed from a waste stream but not destroyed should not be reported in this section. Most metal and metal category compounds are not reported in this section because they cannot be destroyed (see the Form R and Form A Certification Statement Reporting Codes and Instructions for Reporting Metals guidance document). Quantities treated off-site that are reported in Section 8.8 are excluded from Section 8.7.

Equation 13
Section 8.6 (Treatment on-site) = Total quantity treated for destruction on-site associated with corresponding methods reported in Section 7A (on-site waste treatment methods and efficiency for the purposes of destruction) – Section 8.8 (on-site treatment, not related to production) [1]

Section 8.6 is not related to Sections 5 or 6.

Equation 14
Section 8.7 (Treatment off-site) = Section 6.1 (quantities associated with P codes P37, P38, and P39) + Section 6.2 (quantities associated with M codes M40, M50, M61, M69, and M95) – Section 8.8 (off-site treatment, not related to production) [1]

Some chemicals in addition to metals and metal category compounds might not be treated for destruction at a POTW. If you know that some or all of a chemical is not treated for destruction at the POTW, you should report that quantity in Section 8.1c or 8.1d instead of Section 8.7. Facilities should use their best readily available information to determine the final waste management disposition of the toxic chemical sent to the POTW, and then distribute the amount reported in Section 6.1 among Sections 8.1c, 8.1d, and 8.7, as appropriate. Default POTW distribution percentages and assumptions for TRI chemicals sent to POTWs, which are based on experimental and estimated data, can be found in Table III.

Example 25: Avoiding Double-Counting Quantities in Sections 8.1 through 8.7

Five thousand pounds of an EPCRA Section 313 chemical enters a treatment operation. Three thousand pounds of the EPCRA Section 313 chemical exits the treatment operation and then enters a recycling operation. Five hundred pounds of the EPCRA Section 313 chemical are in residues from the recycling operation that is subsequently sent off-site to a landfill for disposal. These quantities would be reported as follows in Section 8:

Section 8.1c: 500 pounds disposed of

Section 8.4: 2,500 pounds recycled

Section 8.6: 2,000 pounds treated (5,000 that initially entered - 3,000 that subsequently entered recycling)

To report that 5,000 pounds were treated, 3,000 pounds were recycled, and 500 pounds were sent off-site for disposal would result in over-counting the quantities of the EPCRA Section 313 chemical recycled, treated, and disposed of by 3,500 pounds.

8.8 Non-Production-Related Waste Managed

In Section 8.8, enter the total quantity of the EPCRA Section 313 chemical disposed of or released directly into the environment or sent off-site for recycling, energy recovery, treatment, or disposal during the reporting year due to any of the following events:

(1) remedial actions;
(2) catastrophic events such as earthquakes, fires, or floods; or

(3) other one-time events not associated with normal or routine production processes.

These quantities should not be included in Sections 8.1, 8.3, 8.5, or 8.7.

The purpose of this section is to separate quantities recycled, used for energy recovery, treated, or released (including disposals) that are associated with normal or routine production operations from those that are not. While all quantities released, recycled, combusted for energy recovery, or treated may ultimately be preventable, this section separates the quantities that are more likely to be reduced or eliminated by process-oriented source reduction activities from those releases that are largely unpredictable and are less amenable to such source reduction activities. For example, spills that occur as a routine part of production operations and could be reduced or eliminated by improved handling, loading, or unloading procedures are included in the quantities reported in Section 8.1 through 8.7 as appropriate. A total loss of containment resulting from a tank rupture caused by a tornado would be included in the quantity reported in Section 8.8.

If your facility's operations were impacted by COVID-19 during RY 2022, note that the waste management quantities due to such operational changes may not necessarily be considered "non-production-related waste." In circumstances where non-production activities occurred (e.g., a facility shutdown was required due to COVID-19, and certain waste management activities had to be shut down), those associated waste management quantities would be reported in Section 8.8. Any production-related waste management activities, including those in which production operations or quantities were changed due to COVID-19, must continue to be reported in the appropriate part of Sections 8.1-8.7.

Similarly, the amount of an EPCRA Section 313 chemical cleaned up from spills resulting from normal operations during the reporting year would not be included in Section 8.8. However, the quantity of the reported EPCRA Section 313 chemical disposed of from a remedial action (e.g., RCRA corrective action) to clean up the environmental contamination resulting from past practices should be reported in Section 8.8 because they cannot currently be addressed by source reduction methods. A remedial action for purposes of Section 8.8 is a waste cleanup (including RCRA and CERCLA operations) within the facility boundary. Most remedial activities involve collecting and treating contaminated material.

Also, releases caused by catastrophic events are to be incorporated into the quantity reported in Section 8.8. Such releases may be caused by natural disasters (e.g., hurricanes and earthquakes) or by large scale accidents (e.g., fires and explosions). In addition, releases due to other one-time events not associated with production (e.g., terrorist bombing) are to be included in Section 8.8. These amounts are generally unanticipated and cannot be addressed by routine, process-oriented accident prevention techniques. Checking your documentation for calculating estimates made for Part II, Section 5, "Quantity of the Toxic Chemical Entering Each Environmental Medium On-site," may help you to identify environmental release amounts. Emergency notifications under CERCLA and EPCRA as well as accident histories required under the Clean Air Act may provide useful information. You should also check facility incident reports and maintenance records to identify one-time or catastrophic events.

Note: While the information reported in Section 8.8 represents only remedial, catastrophic, or other one-time events not associated with production processes, Section 5 of Form R (on-site disposal and other releases to the environment) and Section 6 (off-site transfers for further waste management) must include all on-site disposal and other releases and transfers for disposal as appropriate, regardless of whether they arise from catastrophic, remedial, or routine process operations.

Avoid Double-Counting in Sections 8.1 Through 8.8

Do not double- or multiple-count quantities in Sections 8.1 through 8.8. The quantities reported in each of those sections should be mutually exclusive. In TRI-MEweb, any amounts that you designate as non-production-related waste (Section 8.8) will be automatically excluded from production-related waste managed (Sections 8.1-8.7).

Example 26: Non-Production-Related Waste Managed (Quantity Released to the Environment or Transferred Off Site as a Result of Remedial Actions, Catastrophic Events, or Other One-Time Events Not Associated with Production Processes)

A chemical manufacturer produces an EPCRA Section 313 chemical in a reactor that operates at low pressure. The reactants and the EPCRA Section 313 chemical product are piped in and out of the reactor at monitored and controlled temperatures. During normal operations, small amounts of fugitive emissions occur from the valves and flanges in the pipelines.

Due to a malfunction in the control panel (which is state-of-the-art and undergoes routine inspection and maintenance), the temperature and pressure in the reactor increase, the reactor ruptures, and the EPCRA Section 313 chemical is released. Because the malfunction could not be anticipated and, therefore, could not be reasonably addressed by specific source reduction activities, the amount released is included in Section 8.8. In this case, much of the EPCRA Section 313 chemical is released as a liquid and pools on the ground.

It is estimated that:

- 1,000 pounds of the EPCRA Section 313 chemical pooled on the ground and was subsequently collected and sent off-site for treatment.

- another 200 pounds of the EPCRA Section 313 chemical vaporized directly to the air from the rupture.

A total of 1,200 pounds were reported in Section 8.8: the 1,000 pounds that pooled on the ground (and was subsequently sent off-site), plus the 200 pounds that vaporized into the air.

The quantity sent off site (1,000 pounds) must also be reported in Section 6 (but not in Section 8.7), and the quantity that vaporized (200 pounds) must be reported as a fugitive emission in Section 5 (but not in Section 8.1b).

8.9 Production Ratio or Activity Ratio

For Section 8.9, you must provide either a production or activity ratio and indicate which type of ratio you reported using the checkboxes provided. An "**NA**" checkbox is available for unique circumstances (e.g., new production lines) when production ratio or activity ratio are not available. The production or activity ratio allows year-to-year changes in release and other waste management quantities to be viewed within the context of production. For example, your production ratio lets data users know whether your releases per unit of output have gone up or down.

What Variable is Used to Calculate the Production or Activity Ratio?

To calculate a production or activity ratio, you must first select the variable(s) on which the ratio will be based. In all cases, the production or activity ratio must be based on the variable(s) that best reflect the output or outcome of the process(es) in which the EPCRA Section 313 chemical is involved. Examples of production or activity variables selected by various industries can be found in Example 27. Instructions for calculating a production or activity ratio based on either a single variable or multiple variables can be found below.

Production Ratio

A production ratio is a ratio of reporting year production to prior year production. Calculate a production ratio when the chemical is involved in production processes. The equation for production ratio is as follows:

Equation 15

$$\text{Production Ratio} = \frac{[\text{Production Variable}]_{\text{Current Year}}}{[\text{Production Variable}]_{\text{Prior Year}}}$$

A production ratio may be based on production levels for either the facility's end product or on the intermediate product of the process in which the chemical is manufactured, processed, or otherwise used. If an EPCRA Section 313 chemical is used in the production of refrigerators, for example, the production ratio would be based on the number of refrigerators produced. This is shown in Example 28 and in the sample equation below:

$$\text{Example P.R.} = \frac{\#\text{of Refrigerators Produced}_{\text{Current Year}}}{\#\text{ of Refrigerators Produced}_{\text{Prior Year}}}$$

If the EPCRA Section 313 chemical is itself the final product, the production ratio would be based on the amount of the chemical manufactured. Generally, however, the production ratio would be based on a variable other than the quantity of the EPCRA Section 313 chemical manufactured, processed, or otherwise used.

Activity Ratio

An activity ratio is also a ratio of current year to prior year values but is reported when a chemical is involved in an activity not directly related to production or production levels. An activity ratio is appropriate if a chemical is used in an auxiliary activity such as cleaning or pollution control, for example, and is calculated as follows:

Equation 16

$$\text{Activity Ratio} = \frac{[\text{Activity Variable}]_{\text{Current Year}}}{[\text{Activity Variable}]_{\text{Prior Year}}}$$

In all cases, the variable used to calculate an activity ratio should represent the intended outcome of the activity in which the chemical is used or produced, not the inputs of throughputs for the activity. If the EPCRA Section 313 chemical is used to clean molds, for example, the activity ratio could be based on the number of cleanings or the number of molds cleaned. It would not be based on the usage of the EPCRA Section 313 chemical or the total volume of cleaning solution used. This is shown in Example 29 and in the sample equation below:

$$\text{Example A.R.} = \frac{\#\text{ of Molds Cleaned}_{\text{Current Year}}}{\#\text{ of Molds Cleaned}_{\text{Prior Year}}}$$

Production or Activity Ratios Based on Multiple Variables

In some cases, your facility may use the same EPCRA Section 313 chemical in more than one process. If there is no single variable that adequately reflects the output or outcome of the process(es) in which the reported EPCRA Section 313 chemical is involved, a production or activity ratio can be calculated by weighting the different production or activity variables for the different processes in which the chemical is involved. The procedure for this calculation is described in Example 31.

If the reported value is based on both production and activity variables, you would report the final value as a "production ratio" if the production ratio(s) were weighted more heavily than the activity ratio(s) in the calculations (and as an "activity ratio" if the opposite were true).

Reporting Tips:

- TRI-MEweb includes a production or activity ratio wizard to help you calculate your ratio automatically.
- The ratio must be reported to the nearest tenths or hundredths place (i.e., one or two digits to the right of the decimal point) for all EPCRA Section 313 chemicals, including chemicals of special concern. A 0 (zero) is not an acceptable response unless the calculated value is less than 0.005, which can be rounded to 0 (zero).
- If the manufacture, processing, or otherwise use of the reported EPCRA Section 313 chemical began during the current reporting year, select the not applicable checkbox, "**NA**" as the production or activity ratio. See Example 30 for a situation where "**NA**" is the appropriate selection. Otherwise, you must enter a value even if your facility did not exceed a reporting threshold for the chemical in the previous reporting year.
- The ratio is not to be reported as a percent change between years (i.e., for a 10% increase, you would report the ratio 1.10, not 10% or 10). A production ratio of 1 indicates no change in production from the prior year.
- It is important to note that if your facility reports more than one reported EPCRA Section 313 chemical, the production or activity ratio may vary for different chemicals if the chemicals are used in different processes with different outputs.
- Details regarding the method used to calculate the Production or Activity Ratio can be included in Section 9.1, "Additional Information." This information will provide context for the production or activity ratio and may help TRI data users better understand changes in releases or other waste management quantities. In Example 28, the facility could report, "Used the number of refrigerators painted as the production variable, because our facility uses toluene to paint refrigerators" in order to provide more information in Section 9.1.

Example 27: Selecting a Production or Activity Variable

The table below provides examples of production or activity variables used by facilities in various industries to calculate a production ratio or activity ratio.

Industry	Sample Production / Activity Variable
Agriculture, Construction, and Mining Machinery Manufacturing	Drill rigs produced
Cement and Concrete Product Manufacturing	Tons of clinker produced
Clay Product and Refractory Manufacturing	Tons of brick manufactured
Chemical and Allied Products Merchant Wholesalers	Total gallons of glycol ethers packaged
Coal Mining	Mine production in tons of coal
Fossil Fuel Electric Power Generation	Number of megawatt-hours of electricity produced
National Security and International Affairs	Man-days of training per year
Nitrogenous Fertilizer Manufacturing	Ammonium thiosulfate product produced (in tons)
Plastics Product Manufacturing	Pounds extruded
Synthetic Dye and Pigment Manufacturing	Number of color changeovers
Waste Treatment and Disposal	Tons of waste landfilled on-site
Petroleum Refineries	Gallons of gasoline repackaged

Example 28: Determining a Production Ratio

Your facility's only use of toluene is as a paint carrier for a painting operation. You painted 12,000 refrigerators in the current reporting year and 10,000 refrigerators during the preceding year. The production ratio for toluene in this case is 1.2 ($\frac{12,000}{10,000}$) because refrigerator production levels best reflect the output of the processes in which toluene is used.

A facility manufactures inorganic pigments, including titanium dioxide. Hydrochloric acid (acid aerosols) is produced as a waste byproduct during the production process. An appropriate production ratio for hydrochloric acid (acid aerosols) is the annual titanium dioxide production, not the amount of byproduct generated. If the facility produced 20,000 pounds of titanium dioxide during the reporting year and 26,000 pounds in the preceding year, the production ratio would be 0.77 ($\frac{20,000}{26,000}$).

Example 29: Determining an Activity Ratio

Your facility manufactures organic dyes in a batch process. Different colors of dyes are manufactured, and between color changes, all equipment must be thoroughly cleaned with solvent containing glycol ethers to reduce color carryover. During the preceding year, the facility produced 2,000 pounds of yellow dye in January, 9,000 pounds of green dye for February through September, 2,000 pounds of red dye in November, and another 2,000 pounds of yellow dye in December. This adds up to a total of 15,000 pounds and four color changeovers. During the reporting year, the facility produced 10,000 pounds of green dye during the first half of the year and 10,000 pounds of red dye in the second half. If your facility uses glycol ethers in this cleaning process only, an activity ratio of 0.5 (based on two color changeovers for the reporting year divided by four changeovers for the preceding year) is more appropriate than a production ratio of 1.33 (based on 20,000 pounds of dye produced in the current year divided by 15,000 pounds in the preceding year). In this case, an activity ratio is more appropriate than a production ratio because the process in which the glycol ethers are used is not directly related to production or to production levels.

A facility that manufactures thermoplastic composite parts for aircraft uses toluene as a wipe solvent to clean molds. The solvent is stored in 55-gallon drums and is transferred to 1-gallon dispensers. The molds

are cleaned on an as-needed basis that is not necessarily a function of the parts production rate. Operators cleaned 5,200 molds during the reporting year, but only cleaned 2,000 molds in the previous year. An activity ratio of 2.6 ($\frac{5,200}{2,000}$) represents the outcome of the activities involving toluene usage in the facility.

A facility manufactures surgical instruments and cleans the metal parts with 1,1,1-trichloromethane in a vapor degreaser. The degreasing unit is operated in a batch mode, and the metal parts are cleaned according to an irregular schedule. The activity ratio can be based upon the total time the metal parts are in the degreasing operation. If the degreasing unit operated 3,900 hours during the reporting year and 3,000 hours the prior year, the activity ratio is 1.3 ($\frac{3,900}{3,000}$).

Example 30: "NA" is Entered Instead of a Production Ratio or Activity Ratio

Your facility began production of semiconductor chips during this reporting year. Perchloroethylene is used as a cleaning solvent for this operation and this is the only use of the EPCRA Section 313 chemical in your facility. You would select the checkbox, "**NA**" in Section 8.9 because you have no basis of comparison in the prior year for the purposes of developing the activity ratio. You may use the comment text box to explain changes in production and why information is not available.

Example 31: Determining the Production Ratio Based on a Weighted Average

At many facilities, a reported EPCRA Section 313 chemical is used in more than one production process. In these cases, a production ratio or activity ratio can be estimated by weighting the production ratio for each process based on the respective contribution of each process to the quantity of the reported EPCRA Section 313 chemical managed as waste (recycled, used for energy recovery, treated, or disposed of).

Your facility paints bicycles with paint containing toluene. Sixteen thousand bicycles were produced in the reporting year, and 14,500 were produced in the prior year. There were no significant design modifications that changed the total surface area to be painted for each bike. The production ratio for bicycles is 1.1 (16,000/14,500). You estimate 12,500 pounds of toluene was managed as waste (recycled, used for energy recovery, treated, disposed of, or released) as a result of bicycle production processes.

Your facility also uses toluene as a solvent in a glue that is used to make components and add-on equipment for the bicycles. Thirteen thousand components were manufactured in the reporting year as compared to 15,000 during the prior year. The production ratio for the components using toluene is 0.87 (13,000/15,000). You estimate 1,000 pounds of toluene was managed as wasted as a result of components production processes. The reported production ratio can be calculated by weighting the ratios for the different variables based on the relative contribution each has to the total quantity of toluene managed as waste during the reporting year (13,500 pounds). The production ratio is calculated as follows:

Production ratio = $1.1 \times \frac{12,500}{13,500} + 0.87 \times \frac{1,000}{13,500} = 1.08$

8.10 Did Your Facility Engage in Any Newly Implemented Source Reduction Activities for This Chemical During the Reporting Year?

Section 8.10 must be completed if a source reduction activity involving the reported EPCRA Section 313 chemical was newly implemented at your facility. A source reduction activity is considered newly implemented if it went into effect, in whole or in part, during this reporting year. Some activities may be multi-faceted or multi-phased and impact different facility processes or span across multiple years. For those activities, report on the discrete projects that went into effect entirely or in part during the reporting year. Accordingly, in successive reporting years, you may report on later facets or phases of the activity. Refer to Example 32 for additional guidance.

What Is Source Reduction?

Source reduction, as defined by the PPA, means any practice that:

- Reduces the amount of any hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, energy recovery, treatment, or disposal
- Reduces the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants

The term "source reduction" does not include any practice that alters the physical, chemical, or biological characteristics or the volume of a hazardous substance, pollutant, or contaminant through a process or activity that itself is not integral to and necessary for the production of a product or the providing of a service. For example, source reduction does not include the installation of pollution control devices or efficiency improvements to capture waste generated.

Source reduction activities include substitution of raw materials; reformulation or redesign of products; equipment or technology modifications; process or procedure modifications; and improvements in inventory control, housekeeping, maintenance, or training. Newly implemented source reduction activities include activities that were implemented, in whole or in part, during the reporting year (e.g., improved loading procedures and substituting to a non-TRI chemical).

How Does Source Reduction Relate to the Quantities Reported in Sections 8.1-8.8?

Source reduction activities reduce the amount of the reported EPCRA Section 313 chemical disposed of or otherwise released (as reported in Section 8.1), used for energy recovery (as reported in Sections 8.2–8.3), recycled (as reported in Sections 8.4–8.5), or treated (as reported in Sections 8.6–8.7). Recycling, energy recovery, and treatment are not themselves considered source reduction activities because these practices occur *after* the chemical has entered a waste stream.

The focus of the section includes only those activities that are applied to prevent or reduce routine or reasonably anticipated releases or other quantities of the reported EPCRA Section 313 chemical managed as waste. Thus, you do not report in this section any activities taken to reduce or eliminate the non-production related quantities (e.g., quantities associated with remedial or catastrophic events) reported in Section 8.8.

Why Is Reporting on Source Reduction Activities Required?

The PPA established the national policy "that pollution should be prevented or reduced at the source whenever feasible...". Additionally, the PPA requires that facilities report newly implemented source reduction activities to the TRI. Reporting on source reduction activities provides important information for assessing progress toward this goal.

To promote the adoption of pollution prevention practices, EPA has increased the prominence and accessibility of the pollution prevention information reported in Sections 8.10 and 8.11 of the Form R. For example, reported source reduction activities are viewable in the TRI Pollution Prevention (P2) Search Tool at https://enviro.epa.gov/facts/tri/p2.html. Additionally, companies that have implemented source reduction practices may be featured in the annual TRI National Analysis. To learn more, visit: https://www.epa.gov/tri/p2.

How Do I Report Source Reduction Activities and Methods?

In Section 8.10 report any implemented source reduction activities (as defined above) and the methods used to identify such activities.

New Source Reduction Activities

If your facility implemented a new source reduction activity for the reported EPCRA Section 313 chemical during the reporting year, report the activity or activities that were implemented by selecting the most relevant activity code(s) from the dropdown list in TRI-MEweb. The activity codes (S codes) are grouped in five source reduction categories.

8.10 Source Reduction Activity Codes

Source reduction category descriptions along with the activity codes corresponding to each category are listed below. Refer to the descriptions to aid with selection of the category and code that best describe the source reduction activity implemented at your facility to prevent the generation or reduce the use of the reported EPCRA Section 313 chemical. See section above on *What Is Source Reduction?,* which describes activities that are considered as source reduction and those that are not for TRI reporting purposes. In recent years many facilities have implemented green chemistry and green engineering practices to prevent pollution. To more closely represent these practices, there are ten green chemistry/green engineering source reduction codes (S01, S02, S03, S04, S05, S11, S21, S22, S23, and S43) included in the list of codes. Scenarios as to how to report source reduction activities are provided in Example 33.

Material Substitutions and Modifications refer to changing input purity or dimensions, or replacing a raw material, feedstock, reagent, or other substance with environmentally preferable alternatives.

S01 Substituted a fuel
S02 Substituted an organic solvent
S03 Substituted raw materials, feedstock, or reactant chemical
S04 Substituted manufacturing aid, processing aid, or other ancillary chemical
S05 Modified content, grade, or purity of a chemical input
S06 Other material modifications made

Product Modifications refer to changing the end product through design, composition, formulation, or packaging changes, as well as full final product replacements that reduce the generation of waste.

S11 Reformulated or developed new product line
S12 Altered dimensions, components, or final design of product
S13 Modified product packaging
S14 Other product modifications made

Process and Equipment Modifications refer to improvements to industrial processes and/or associated equipment including implementation of new processes that produce less waste, direct reuse of chemicals, or technological changes impacting synthesis, formulation, fabrication, and assembly, and surface treatment such as cleaning, degreasing, surface preparation, and finishing.

S21 Optimized process conditions to increase efficiency
S22 Instituted recirculation within a process
S23 Implemented new technology, technique, or process
S24 Modified or updated equipment or layout
S25 Other process modifications made

Inventory and Material Management refers to improvements in procurement, inventory tracking, preventative monitoring, and storage and handling of chemicals and materials as they move through a facility to optimize their use and prevent spills and leaks during operation.

S31 Instituted better labeling, testing, or other inventory management practices
S32 Changed size or type of containers procured
S33 Improved containment or material handling operations
S34 Improved monitoring practices of potential spill or leak sources
S35 Other improvements to inventory and material management

Operating Practices and Training refers to improvements in maintenance, production scheduling, process monitoring, and other practices

that enhance operator expertise and housekeeping measures that eliminate or minimize waste.

S41 Improved scheduling, record keeping, or procedures for operations, cleaning, and maintenance
S42 Changed production schedule to minimize equipment and material changeovers
S43 Introduced in-line product quality monitoring or other process analysis system
S44 Other improvements to operating practices or operator training

Source Reduction Activity Optional Information

For each source reduction activity you select in TRI-MEweb, a text box allows you to provide additional details on that source reduction practice. Optional additional information about source reduction provided via these text boxes is displayed in the next section of the Form R (Section 8.11, Optional Pollution Prevention Information) preceded by the S code to which it relates.

Reporting Tips:

The following tips can help you provide specific and meaningful additional information.

- Which processes and products were affected?
- Which technologies and materials were used?
- How did release (e.g., air, water, land) or waste management (e.g., recycling, treatment) quantities change?
- What other benefits (e.g., cost savings, energy savings, improved product quality) were attained?
- Why did you implement this activity?

If available, share useful URLs for equipment manufacturers or to company webpages or other information sources related to the activity described.

Additional guidance and sample entries can be found at: https://guideme.epa.gov/ords/guideme_ext/f?p=guideme:gd:::::gd:p2-reporting-tip-sheet.

8.10 a-c Methods to Identify Source Reduction Activities Facilities explore source reduction opportunities through a variety of methods. Methods include, for example, the use of materials balance audits, employee recommendation, and vendor assistance to identify reduction opportunities. For each source reduction activity reported, you must select the method (T codes) used to identify the source reduction activity.

Method to Identify Source Reduction Activity Codes

T01 Internal pollution prevention opportunity audit(s)
T02 External pollution prevention opportunity audit(s)
T03 Materials balance audits
T04 Participative team management
T05 Employee recommendation (independent of a formal company program)
T06 Employee recommendation (under a formal company program)
T07 State government technical assistance program
T08 Federal government technical assistance program
T09 Trade association/industry technical assistance program
T10 Vendor assistance
T11 Other

To describe how each source reduction practice was identified, a text box allows you to enter additional information on the identification method(s) you selected. For example, consider describing who provided the idea or assisted with implementation. Optional additional information about methods used to identify the source reduction activity via these text boxes is displayed in the next section of the Form R (Section 8.11, Optional Pollution Prevention Information) preceded by the T code to which it relates.

8.10 d Estimated Annual Reduction of Source Reduction Activities

For each "Source Reduction Activity" reported, you have the option to provide an estimate of the resulting or expected reduction in the annual amount of the chemical managed as waste (i.e., released, treated, used for energy recovery, or recycled). The estimated annual reduction is the percent reduction in waste following implementation of the source reduction activity. Report the percent estimated annual reduction using the range codes listed in the dropdown in TRI-MEweb. For example, a 100%

reduction indicates that waste is expected to be eliminated (code R1).

Estimated Annual Reduction Range Codes

R1 = 100% (elimination of the chemical)
R2 = greater than or equal to 50%, but less than 100%
R3 = greater than or equal to 25%, but less than 50%
R4 = greater than or equal to 15%, but less than 25%
R5 = greater than or equal to 5%, but less than 15%
R6 = greater than 0%, but less than 5%

Reporting Tips:

This estimate is based on the facility's best readily available information at the time the activity is reported and will not necessarily reflect the actual reduction once implementation of the activity is completed.

The estimated annual reduction only accounts for the impact of the particular source reduction activity and should not consider other factors such as changes in production. For example, if a facility implements a source reduction activity that is expected to reduce the waste generated by 50%, the facility reports code R2 (reduction greater than or equal to 50%, but less than 100%). Even if a production increase is anticipated, the reduction per unit of product will still be 50% and the estimated annual reduction should still be reported as code R2.

No Newly Implemented Source Reduction Activities

If your facility did not implement any new source reduction activity for the reported EPCRA Section 313 chemical, check the "**NA**" checkbox in Section 8.10.

TRI-MEweb then provides you with the option of selecting from one or more possible **barriers** that your facility might be facing with regard to the implementation of source reduction activities. A list of barrier codes is provided below. For each code, you also have the option to provide additional information in a text box. (This information is added to your entry in Section 8.11; see Section 8.11 instructions for additional information on barriers to P2.)

Barrier Codes

B1 Insufficient capital to install new source reduction equipment or implement new source reduction activities/initiatives
B2 Require technical information on pollution prevention techniques applicable to specific production processes
B3 Concern that product quality may decline as a result of source reduction
B4 Source reduction activities were implemented but were unsuccessful
B5 Specific regulatory/permit burdens
B6 Pollution prevention previously implemented; additional reduction does not appear technically or economically feasible
B7 No known substitutes or alternative technologies
B8 Reduction does not appear to be technically feasible
B99 Other barriers

Example 32: Source Reduction

At a facility that manufactures and paints wood furniture, various processes involve EPCRA Section 313 chemicals. Below are examples of the activities considered for reporting in Section 8.10.

A. *Source Reduction initiated during the reporting year*. By examining the gluing process, the facility discovered that a new drum of glue is opened at the beginning of each shift, whether or not the old drum is empty. By adding a mechanism that prevents the drum from being changed before it is empty, the facility eliminated the need for disposing of unused glue (S33). This activity eliminates the glue at its source and is considered source reduction.

B. *Source Reduction implemented over multiple years*. With the assistance of a vendor and through a team assessment of the processes and chemicals used, the facility identified several changes and planned for their implementation over a three-year span. The first year the facility installed internal stop-loss valves and leak detection for finishing processes (S34); the second year they substituted coating materials for a table top finish from an acetone to a water based finish (S03); and the third year they modified their in-line product quality monitoring system (S43). The activities all reduce or eliminate quantities of a chemical entering the waste stream and released into the environment and are considered source reduction; each should be reported for the year implementation commenced.

C. *An activity that is NOT considered Source Reduction*. The painting process at the facility generates a solvent waste that is collected and recovered. The recovered solvent is recycled and used to clean the painting equipment. This activity does not reduce the amount of EPCRA Section 313 chemical from entering the waste stream, and therefore is not considered a source reduction activity.

Example 33: Reporting Source Reduction Activities

Below are examples for how to report newly implemented source reduction activities. Details are organized by the five source reduction categories.

Material Substitutions and Modifications refer to changing input purity or dimensions, or replacing a raw material, feedstock, reagent, or other substance with environmentally preferable alternatives.

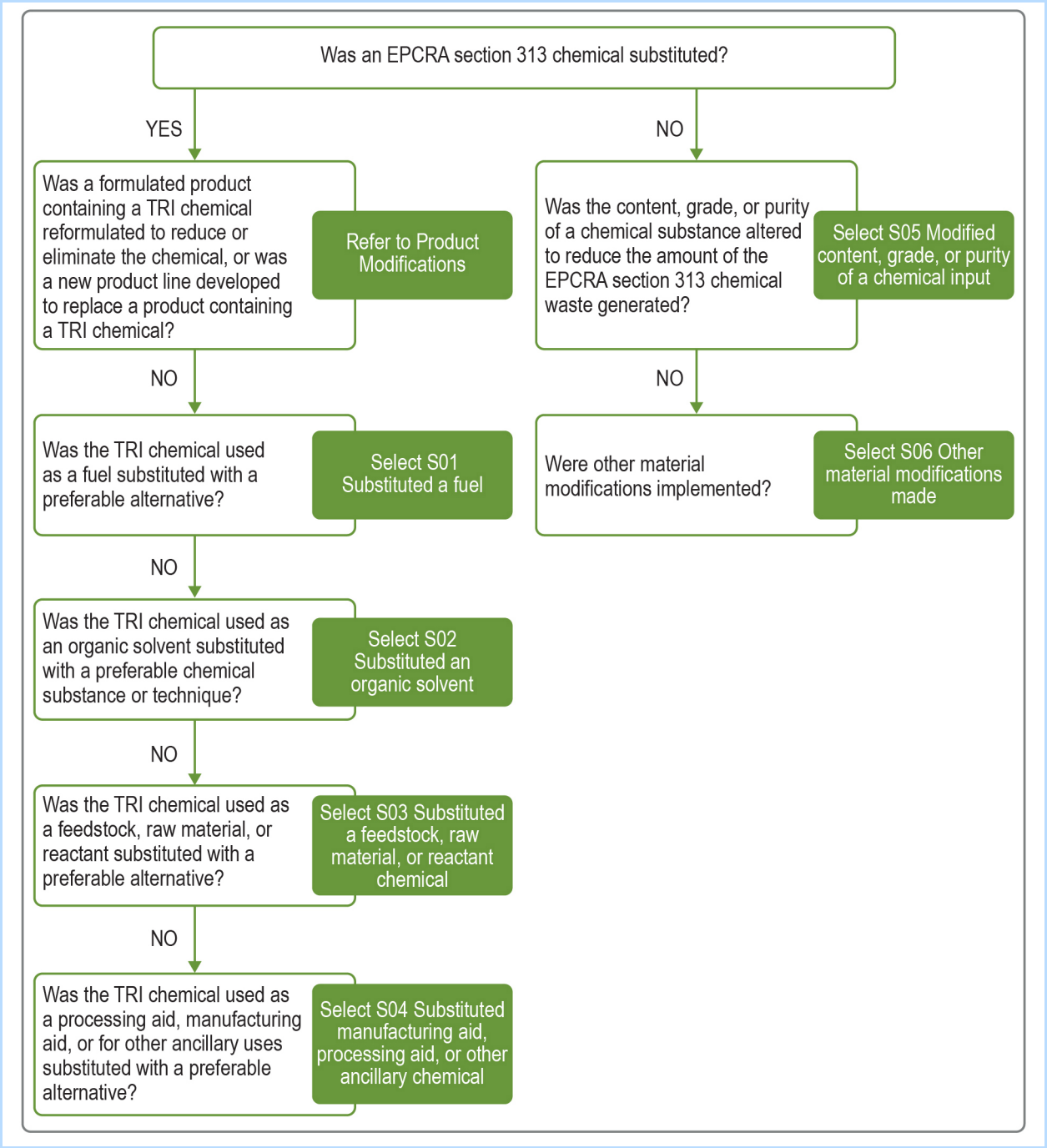
Note: Where substitutions require concurrent implementation of new techniques or installation of new equipment, facilities should also report these changes using codes in the *Process and Equipment Modifications* category.

Substitutions of a chemical that falls under a TRI chemical category with another chemical in that same category may qualify as source reduction, provided the substitution reduces the overall toxicity or quantity of the chemical category managed as waste. Facilities are encouraged to report substitutions of toxic chemicals with less toxic alternatives (even substitutions within the same TRI chemical category – changes from chromium (VI) compounds to chromium (III) compounds, for instance). To obtain information on chemical toxicity to aid in determining whether substitutions are preferable alternatives, several resources are available including EPA's Risk-Screening Environmental Indicators (RSEI) toxicity weights (https://www.epa.gov/rsei) and EPA's Safer Chemical Ingredients List (SCIL) (https://www.epa.gov/saferchoice/safer-ingredients).

Material Substitutions and Modifications Decision Tree

The material substitutions and modifications decision tree is structured from specific to broad chemical use functions. First, identify the primary function of the chemical in the context for which it is being

substituted and then, use the decision tree to select the first applicable code (as the codes are ordered from most to least specific). For example, if a TRI-listed organic chemical is used as a solvent within a facility and is substituted with another chemical or technique, the facility should report S02 ("Substituted an organic solvent") even if the same chemical is used for a different purpose elsewhere in the facility. If the material substitution or modification also requires a process modification, refer to the category *Process and Equipment Modifications* to report related source reduction activities.



- **S01 Substituted a fuel** covers activities such as changing grades of fuel or switching from one type of fuel to another. Fuel types include natural gas, oil, or coal which are used to produce energy or electricity necessary for a manufacturing process. Ex. Switching from coal to natural gas to eliminate releases of mercury and lead compounds. [Green chemistry code]
- **S02 Substituted an organic solvent** refers to substituting an organic TRI chemical used as a solvent with another substance, or implementing a technique that obviates the need for the TRI chemical. This code covers most uses of TRI organic solvent chemicals (cleaning, degreasing, process solvents, extraction solvents, carrier solvents, etc.), except for instances where a facility produces a formulated product which contains a solvent. Ex. Replacing methyl isobutyl ketone as a solvent for degreasing with a semi-aqueous cleaning solvent containing limonene, thereby eliminating fugitive emissions of methyl isobutyl ketone. [Green chemistry code]
- **S03 Substituted raw materials, feedstock, or reactant chemical** refers to the substitution of starting materials, commonly referred to as raw materials, feedstocks, reagents, or reactants, and used in a process. This code also covers the substitution of intermediate materials (e.g., coatings, solder). These materials are consumed during chemical reactions and/or are typically incorporated into the final product. Ex. Substituting solvent-based photochemical coatings (e.g., methylene chloride, 1,1,1-trichlorethane, or perchloroethylene) with aqueous base coating of 1% sodium carbonate. [Green chemistry code]
- **S04 Substituted manufacturing aid, processing aid, or other ancillary chemical** refers to the substitution of chemicals used to aid the manufacturing process but not incorporated or intended to become part of the product. Ex. Replacing TRI-listed perfluorinated surfactants used for chrome plating with non-perfluorinated alternatives. [Green chemistry code]
- **S05 Modified content, grade, or purity of a chemical input** refers to using a chemical input with a lower

Definitions

Raw Material is a crude, unprocessed, or partially processed material used as a basic input material in a process; examples include materials extracted or harvested, such as minerals, tars (e.g., coal, tar), metals, grain, and forest resources.

Feedstock is a raw material or starting material (chemical) needed in an industrial process. The terms ***feedstock*** and ***raw material*** are often used interchangeably, and what is considered a raw material or feedstock may vary significantly from industry to industry.

A ***reactant*** is a natural or synthetic chemical that undergoes a chemical transformation and is consumed during a reaction. A ***reagent*** is any chemical which participates in a chemical reaction but is not necessarily consumed. ***Reactant*** and ***reagent*** are often used interchangeably to mean a substance which undergoes a chemical reaction.

Chemical processing aid is a chemical added to a reaction mixture to aid in the manufacture or synthesis of another chemical substance but is not intended to remain in or become part of the product or product mixture.

Manufacturing aid is a chemical that aids the manufacturing process but does not become part of the resulting product and is not added to the reaction mixture during the manufacture or synthesis of another chemical substance.

Ancillary or other use is a chemical used for purposes other than aiding chemical processing or manufacturing.

concentration of impurities or unwanted components. Ex. Switching from zinc that has 1% lead content to a higher-grade zinc with 0.003% lead content to reduce the amount of lead waste generated. [Green chemistry code]

- **S06 Other material modifications made** refers to modifications not covered by other codes in the category. Activities may relate to physical material changes such as changing dimension of sheet blanks introduced in machining to reduce scrap metal.

Product Modifications refer to changing the end product through design, composition, formulation, or packaging changes, as well as full final product replacements that reduce the generation of waste.

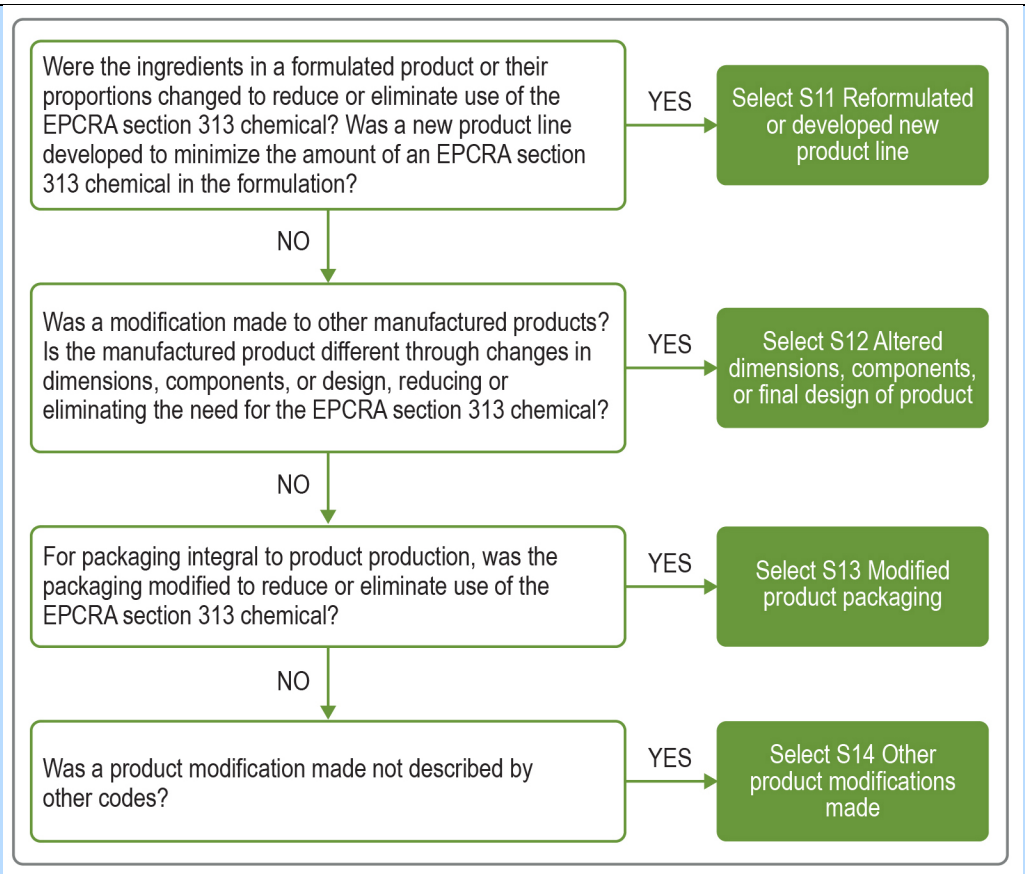
- **S11 Reformulated or developed new product line** refers to changes to the ingredients or their proportions in a formulated product or development of a completely new product line marketed as such to customers. Ex. Reviewing a formula to reduce and only use the least amount of a chemical before product quality suffers, e.g., reduced amount of zinc added to compound master by studying when the product quality changed.
- **S12 Altered dimensions, components, or final design of product** refers to changes to manufactured end products; examples include textiles, food, automobiles, or metal parts. Changes may involve altering dimensions, components used in the product, or design specifications. This category is intended to capture activities other than those focused on chemicals or allied product manufacture. Ex. Altering the dimensions of a part to generate less scrap during production. [Green chemistry code]
- **S13 Modified product packaging** refers to changes in packaging integral to the final product. Examples include the container used to hold the product, product labels, caps, foils, and wrapping. Note that this code is only intended to capture changes to packaging which affect waste management quantities of the chemical reported to TRI. Facility initiatives to reduce packaging which do not impact quantities of TRI chemicals should not be reported as source reduction. Ex. Switching the ethylene-vinyl acetate adhesive used to seal food packaging to formulations containing less vinyl acetate.

Definitions

A ***formulated product*** is a mixture of different chemicals combined in specific ratios to give the mixture desirable properties. Examples include paints, detergents, personal care products, adhesives, and insecticides.

Reformulation refers to changes in the ingredients or their proportions in a formulated product.

Product line refers to a product or group of products with distinct branding.



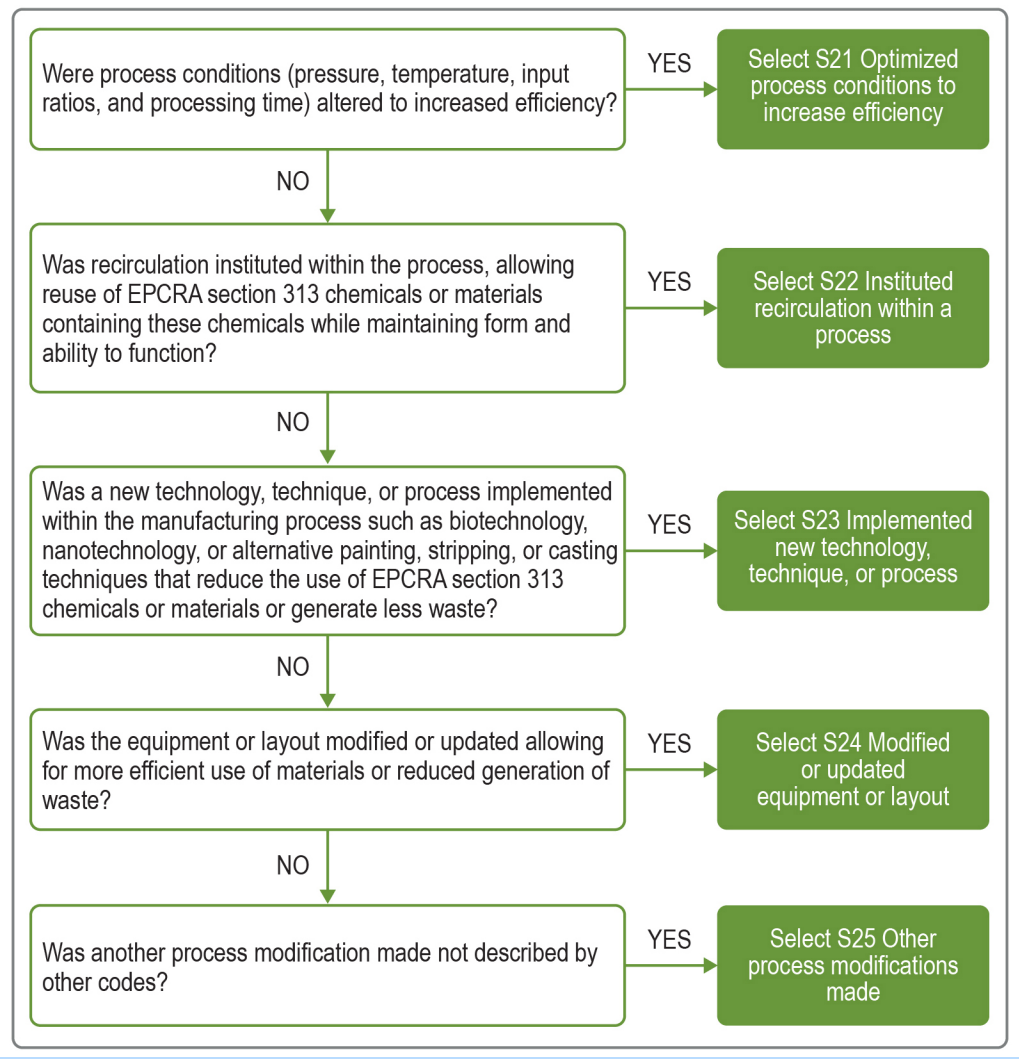
Process and Equipment Modifications refer to improvements to industrial processes and/or associated equipment including implementation of new processes that produce less waste, direct reuse of chemicals, or technological changes impacting synthesis, formulation, fabrication, assembly, and surface treatment such as cleaning, degreasing, surface preparation, and finishing.

- **S21 Optimized process conditions to increase efficiency** refers to adjustments to process conditions, such as pressure, temperature, input ratios, and processing time, to positively influence process efficiency (e.g., improved product yield while decreasing production related waste). Ex. Increasing dyeing time, resulting in greater fixation of copper metallized dyes, and a decrease in the amount of copper compounds managed as waste. [Green chemistry code]
- **S22 Instituted recirculation within a process** refers to the introduction of a direct re-circulation system in the process that extends the utility of chemicals (products or component parts) used during manufacturing. Chemicals or materials containing EPCRA Section 313 chemicals used within the process are returned for direct reuse while maintaining form and ability to function. *Note that to qualify as source reduction, re-circulation should be integral to the process and would not involve mechanical, chemical, or other reclamation steps to allow for reuse.* Ex. Installing a distillation column to condense unreacted methanol and return it directly to the reaction vessel for the production of biodiesel from used cooking oil. [Green chemistry code]

Definition

Re-circulation refers to the direct return of a chemical (product or component part) within a process or between processes, while maintaining its form and ability to function for reuse.

- **S23 Implemented new technology, technique, or process** refers to the use of new technology, techniques, or processes within the manufacturing process that reduce use of TRI chemicals or production of wastes that contain TRI chemicals. Examples include use of biotechnology that utilizes biological systems, living organisms, or processes to develop or create different products; nanotechnology; or new painting or stripping techniques. *Note that the use of biotechnology for waste treatment should not be reported as a source reduction activity.* Ex. Implementing a thermal stripping technique to replace solvent stripping when removing hydrocarbons from engines, eliminating the use of 1,1,1-trichloroethane for engine cleaning. [Green chemistry code]
- **S24 Modified or updated equipment or layout** refers to equipment or layout improvements that optimize the efficiency of processing steps and reduce waste generation. Ex. Changing computer numerical control (CNC) machinery resulted in more accurate tooling, reducing scrap generated.



Inventory and Material Management refers to improvements in procurement, inventory tracking, preventative monitoring, and storage and handling of chemicals and/or materials while on-site at a facility to optimize their use and prevent spills and leaks during operation.

- **S31 Instituted better labeling, testing, or other inventory management practices** refers to more efficient management of chemicals and materials through labeling, material testing, material exchange programs, or other inventory management practices. Ex. Implementing a system to track quantities of custom-mixed resin formulations in inventory to avoid expiration on shelves and minimize generation of formaldehyde-containing waste when expired resin is discarded.
- **S32 Changed size or type of containers procured** refers to changes to the size, volume, or dimension of containers procured, or ordering materials in a different kind of container. Ex. Ordering smaller volumes of resins containing diisocyanates to avoid material expiring while in inventory and subsequently managed as waste.
- **S33 Improved containment or material handling operations** includes changes to handling techniques or equipment, as well as changes to containment of chemicals while in inventory, process equipment, or during movement throughout the facility. Ex. Installing lids (e.g., roll-type covers) on all cold cleaning tanks and dip tanks to reduce fugitive releases of methanol during cleaning of metal parts.
- **S34 Improved monitoring practices of potential spill or leak sources** refers to changing procedures or equipment used to examine or monitor potential spill or leak sources, as well as methods for detecting spill and leaks anywhere they might occur. Ex. Installing additional high-level storage tank alarms on storage tanks of cresol used for the manufacture of pesticide intermediates.

Operating Practices and Training refer to improvements in maintenance, production scheduling, process monitoring, and other practices that enhance operator expertise and housekeeping measures that eliminate or minimize waste.

- **S41 Improved scheduling, record keeping, or procedures for operations, cleaning, and maintenance** refers to improvements related to maintenance, typically reflected in new or revised written standard operating procedures. Ex. Installing a preventative maintenance program, including scheduled sump and machine cleaning, and periodic inspections of wipers and oil seals, to postpone contamination of waste fluids and reduce waste generation.
- **S42 Changed production schedule to minimize equipment and chemical changeovers** refers to planning and sequencing production so that only necessary operations are performed, and that no operation is needlessly undone by a following operation. Ex. Switching changeout of aluminum etch baths from time-based to throughput-based, ensuring better bath exhaustion and reducing the amount of nitric acid managed as waste.
- **S43 Introduced in-line product quality monitoring or other process analysis system** refers to the use of manual or automated process analysis or quality analysis. Ex. Monitoring cyanide baths used in copper plating to ensure the minimum amount of cyanide compounds are added, resulting in smaller amounts of cyanide and copper compounds managed as waste. [Green chemistry code]

Example 34: Source Reduction Activity Scenarios

Scenario 1. Changing solvent-borne coating to powder coating on cabinets
A facility uses a spray system to apply paint to metal parts, which are then assembled into cabinets. The paint formulation contains toluene, an organic solvent chemical included on the TRI chemical list. In order to reduce toluene emissions, the facility switches from spray coating the metal parts to applying a powder coating which cures in an oven and does not contain or require the use of toluene or any other TRI solvent chemical. The switch to the powder coating necessitates a new system for coating application and curing, in addition to the new powder coating material.

How should the facility report this source reduction activity?

1. Since the facility must make significant changes to its equipment, the facility should select code S23 (*Implemented new technology, technique, or process*) under *Process and Equipment Modifications* to report implementing a new technique- powder coating – at the facility.

2. Since the facility substituted the solvent-borne coating material for powder coat, the facility should select S03 (*Substituted raw materials, feedstock, or reagent chemical*) under *Material Substitutions and Modifications*. While the coating substitution resulted in the elimination of an organic solvent, the facility should report S03 because this was achieved through the substitution of the entire coating material, not just the individual organic solvent.

Scenario 2. Using a mechanical process to replace solvent-based paint stripping
A facility that reconstructs aircraft uses a paint stripping solution to remove paint from aircraft parts during the repair process. The stripping solution contains dichloromethane (methylene chloride) and formic acid, both of which are TRI-listed chemicals. To reduce quantities of these chemicals that will inevitably need to be managed as waste, the facility installs and uses sand blasting equipment for most paint stripping, which dramatically reduces the need for and use of the dichloromethane-formic acid solution.

How should the facility report this source reduction activity?

1. Since the facility must make significant changes to its equipment, the facility should select code S23 (*Implemented new technology, technique, or process*) under *Process and Equipment Modifications* to report implementing the sand blasting technique for paint stripping. This source reduction activity should be reported on the Form Rs for formic acid and dichloromethane.

2. The facility substituted use of a chemical with a mechanical technique.

    a. On the Form R for dichloromethane, the facility should select S02 (*Substituted an organic solvent*) because the facility substituted the use of a solution containing an organic solvent with a new technique.

    b. On the Form R for formic acid, the facility should select S04 (*Substituted manufacturing aid, processing aid, or other ancillary chemical*) because it replaced the solution containing formic acid (a chemical "otherwise used" for an "ancillary or other use") with a new technique.

Facilities are encouraged to provide additional details about the source reduction activities implemented including estimated return on investment, anticipated reductions, benefits of change, extent of implementation (pilot, single manufacturing line, or plant-wide).

8.11 Optional Pollution Prevention Information

In Section 8.11, you can provide more detail about activities your facility undertook to reduce releases of the EPCRA Section 313 chemical, including source reduction; waste management methods such as recycling, energy recovery, or treatment; or other pollution prevention activities such as climate change adaptation strategies. EPA encourages you to provide detail in Section 8.11, as it offers your organization the opportunity to showcase its achievements in preventing pollution.

While EPA welcomes submissions about recycling and pollution control measures, the agency is most interested in collecting information about innovative and effective source reduction activities, such as green chemistry or green engineering practices. The EPA encourages reporters to provide enough detailed information about their most effective source reduction activities to spur other facilities to adopt similar practices, as well as to inform the public about such activities being implemented in industry and in their communities.

To encourage submissions with additional pollution prevention information, EPA is increasing the prominence and accessibility of this information. The Agency also uses information provided in 8.11 entries to select and highlight effective efforts to improve environmental performance. Visit https://www.epa.gov/tri/p2 to learn how to access this information (e.g., through the TRI P2 Search Tool at https://enviro.epa.gov/facts/tri/p2.html) and to view examples of optional pollution prevention information highlighted in EPA's annual TRI National Analysis report or other communication materials.

The following tips can help you provide meaningful additional information:

- Which processes and products were affected?
- Which technologies and materials were used?
- How did release (e.g., air, water, land) or waste management (e.g., recycling, treatment) quantities change?
- What other benefits (e.g., cost savings, energy savings, improved product quality) were attained?
- Who provided the idea or assisted with implementation?
- Why did you implement this activity?

If available, share useful URLs for equipment manufacturers or to company web pages or other information sources related to the activity described.

Additional guidance and sample pollution prevention entries can be found at https://www.epa.gov/sites/production/files/documents/tri_p2_tipsheet.pdf.

EPA also encourages you to provide details on any barriers your facility faces in implementing additional source reduction or waste management practices, including recycling or pollution control measures. EPA believes this information is valuable in giving a full picture of the environmental management activities your facility engages in and what barriers you face in the implementation of source reduction or waste management activities. EPA also believes this information may allow for an exchange between those that have knowledge of source reduction practices, such as the EPA P2 Program, and those that are seeking additional help. In addition, it will better enable EPA to identify those technological areas for which EPA can support basic research to identify alternative technologies that are less polluting.

Optional information provided in earlier report sections will display in Section 8.11. You have the option to review and edit previously reported text. You can also use the checkboxes in TRI-MEweb to provide additional information on your source reduction activities, waste management activities, or other pollution prevention measures. For example, you may use the General Environmental Management checkbox to provide details about efforts to reduce, repurpose, or re-use waste that does not contain TRI-reportable chemicals, such as packaging materials (e.g., plastic) that are used for transfer of products along the value chain (subsequent manufacturing, distribution, retail).

Optional Information Topics

- Source Reduction
- Barriers to Source Reduction
- Recycling
- Energy Recovery
- Waste Treatment

- Methods for Identifying Waste Management Opportunities
- Barriers to Waste Management Activities
- General Environmental Management
- Climate Adaptation Strategies
- Other Optional Pollution Prevention Information

Each topic you have selected will be included in your Section 8.11 entry, followed by the information you have provided about that topic. If you wish to provide additional information that is not related to pollution prevention or other environmentally friendly practices, use Section 9.1.

Section 9. Miscellaneous Information (Form R & A)

9.1 Miscellaneous, Optional, and Additional Information for Your Form R Report

Your facility may provide additional information pertaining to any portion of your Form R submission in the box provided in the free text box provided in TRI-MEweb. Your submissions to Section 9.1 regarding miscellaneous, additional, optional information may provide EPA and/or the public with useful data that help explain why your facility submitted data in one or more data elements that might appear unusual or inconsistent with previous TRI Form R submissions or with other data supplied by your facility during the reporting year. Such additional data may help EPA reduce the need for additional data quality control as well as additional TRI-related enforcement and compliance efforts. **Do not submit information you consider to be CBI or otherwise protected on your Form R.**

When completing this section in TRI-MEweb, you may indicate that you have submitted information pertaining to one or more of the following topics by checking a box next to the topic to which your information pertains:

- Changes in Production Levels
- Calculation Methods (e.g., Emissions Factors)
- One-time or Intermittent Events Impacting Reported Quantities
- Issues or Difficulties Encountered in Submitting Form
- Other Regulatory Requirements Related to This Chemical
- No TRI Reports Expected for This TRIFID Next Year
- No TRI Report Expected for This Chemical Next Year

If you do so, each topic you have selected will be included in your Section 9.1 entry, followed by the information you have provided about that topic (if any). Using these checkboxes will ensure that EPA and other TRI data users understand the factors that have contributed to any apparent data quality issues. Note that if you select one of the last two topics above, it is helpful to include the reason you will not be submitting a report next year (e.g., facility closure, move, temporary shutdown).

9.2 Optional Pollution Prevention and Additional Information for This Toxic Chemical on Your Form A Certification Statement

Your facility may provide additional information pertaining to pollution prevention or other topics for each toxic chemical or mixture component included on your Form A Certification Statement submission. Information provided in this section may provide EPA and/or the public with useful data that helps explain your use of the Form A Certification Statement. For example, your facility could include information on steps it has taken to reduce its manufacture, processing, or otherwise use of the chemical. Do not submit information you consider to be CBI or otherwise protected.

TRI-MEweb allows you to categorize optional information provided by checking a box next to the topic to which your information pertains:

- Changes in Production Levels
- Source Reduction Activity Reduced Activity Involving this Chemical
- One-Time or Intermittent Events Involving this Chemical
- No TRI Report Expected for this Chemical Next Year

If you do so, each topic you have selected will be included in your Section 9.2 entry, followed by the information you have provided about that topic (if any). Using these checkboxes will ensure that EPA and other TRI data users understand useful factors

related to how your facility deals with any chemicals included on the Form A Certification Statement. Note that if you select the last topic listed above, it is helpful to include the reason you will not be submitting a report next year (e.g., facility closure, move, temporary shutdown).

E. Instructions for Completing Form R Schedule 1 (Dioxin and Dioxin-like Compounds)

E.1 What Is the Form R Schedule 1?

The Form R Schedule 1 is an adjunct to the Form R that mirrors the data elements from Form R Part II Chemical-Specific Information Sections 5, 6, and 8 (current year only) and requires the reporting of the individual quantity in grams for each member of the dioxin and dioxin-like compounds category present. Facilities that file Form R reports for the dioxin and dioxin-like compounds category are required to determine if they have any of the information required by the Form R Schedule 1. Facilities that have any of the information required by Form R Schedule 1 must submit individual member data via the Form R Schedule 1 *in addition to* the Form R.

E.2 Who Is Required to File a Form R Schedule 1?

Only facilities that file reports for the dioxin and dioxin-like compounds category may be required to file a Form R Schedule 1. Facilities that have any of the data required by Form R Schedule 1 for the individual members of the dioxin and dioxin-like compounds category must submit a Form R Schedule 1, in addition to the Form R. EPA notes that dioxin and dioxin-like compounds are not measured as a total quantity; the measurements are based on the individual compounds within the category. Emissions factors for dioxin and dioxin-like compounds are also based on emissions factors for the individual compounds within the category. EPA's TRI reporting guidance document for dioxin and dioxin-like compounds is available in GuideME at: https://guideme.epa.gov/ords/guideme_ext/f?p=guideme:gd:::::gd:dioxin. This resource includes tables that contain the emissions factors for the individual members of the dioxin and dioxin-like compounds category. Since measured data and emissions factor data are based upon data for the individual members of the dioxin and dioxin-like compounds category, the information required by Form R Schedule 1 should be available to facilities that file Form R reports for the dioxin and dioxin-like compounds category.

E.3 What Information Is Reported on the Form R Schedule 1?

The only data reported on the Form R Schedule 1 is the mass quantity information required in Sections 5, 6, and 8 (current year only) of the Form R. All of the other information required in Sections 5, 6, and 8 of the Form R (e.g., off-site location names, stream or water body names) would be the same, so this information is not duplicated on Form R Schedule 1. For example, if a facility reported 5.3306 grams on Form R Section 5.1 for fugitive or non-point air emissions for the dioxin and dioxin-like compounds category then the facility would report on the Form R Schedule 1 the quantity in grams for each individual member of the category that contributed to the 5.3306-gram total. The sum of the quantities reported for each individual member of the category should equal the total quantity in grams reported for the category on Form R for each data element (see examples in Figure 7). The "**NA**" checkbox has the same meaning on Form R Schedule 1 as it does on the Form R and should only be marked if it is marked on the Form R.

It is extremely important that facilities enter the quantity in grams for the individual members of the category based on the order shown in the **Individual Members of the Dioxin and Dioxin-like Compounds Category** table that follows Figure 7. This information will be used to calculate toxic equivalency values using toxic equivalency factors that are specific to each member of the category. As with reporting on the Form R, facilities should report on the Form R Schedule 1 to the level of accuracy that their data supports, up to seven digits to the right of the decimal. EPA's reporting software and data management systems support data precision to seven digits to the right of the decimal.

Form R Section 5 Example

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ON-SITE					
			A. Total Release (pounds/year*) (Enter a range code** or estimate)	B. Basis of Estimate (Enter code)	C. Percent from Stormwater
5.1	Fugitive or non-point air emissions	NA ☐	5.3306	M2	

Form R Schedule 1 Section 5 Example

SECTION 5. QUANTITY OF DIOXIN AND DIOXIN-LIKE COMPOUNDS ENTERING EACH ENVIRONMENTAL MEDIUM ON-SITE								
		5.1 NA ☐		5.2 NA ☐		5.3 Discharges to receiving streams or water bodies (Enter data for one stream or water body per box) NA ☐		
		Fugitive or non-point air emissions		Stack or point air emissions		5.3.1	5.3.2	5.3.3
D. Mass (grams) of each compound in the category (1-17)	1	0.0035						
	2	0.0059						
	3	0.0071						
	4	0.0008						
	5	0.0065						
	6	0.0923						
	7	0.5720						
	8	0.0723						
	9	0.0695						
	10	0.0399						
	11	0.3562						
	12	0.1309						
	13	0.0132						
	14	0.0815						
	15	1.4625						
	16	0.3126						
	17	2.1039						
If additional pages of Section 5.3 are attached, indicate the total number of pages in this box ☐ and indicate the Section 5.3 page number in this box ☐ (Example: 1, 2, 3, etc.)								

Figure 7. Hypothetical Form R, Section 5.1 and Form R Schedule 1, Section 5.1

The Form R Schedule 1 provides boxes for recording the quantities in grams for all 17 individual members of the dioxin and dioxin-like compounds category. The boxes on the Form R Schedule 1 for each release type are divided into 17 boxes. Each of the boxes (1-17) corresponds to the individual members of the dioxin category as presented in the table below.

Individual Members of the Dioxin and Dioxin-like Compounds Category

Box #	CAS#	Chemical Name	Abbreviation
1.	1746–01–6	2,3,7,8-Tetrachlorodibenzo-*p*-dioxin	2,3,7,8-TCDD
2.	40321–76–4	1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin	1,2,3,7,8-PeCDD
3.	39227–28–6	1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin	1,2,3,4,7,8-HxCDD
4.	57653–85–7	1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin	1,2,3,6,7,8-HxCDD
5.	19408–74–3	1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin	1,2,3,7,8,9-HxCDD
6.	35822–46–9	1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin	1,2,3,4,6,7,8-HpCDD
7.	3268–87–9	1,2,3,4,6,7,8,9-Octachlorodibenzo-*p*-dioxin	1,2,3,4,6,7,8,9-OCDD
8.	51207–31–9	2,3,7,8-Tetrachlorodibenzofuran	2,3,7,8-TCDF
9.	57117–41–6	1,2,3,7,8-Pentachlorodibenzofuran	1,2,3,7,8-PeCDF
10.	57117–31–4	2,3,4,7,8-Pentachlorodibenzofuran	2,3,4,7,8-PeCDF
11.	70648–26–9	1,2,3,4,7,8-Hexachlorodibenzofuran	1,2,3,4,7,8-HxCDF
12.	57117–44–9	1,2,3,6,7,8-Hexachlorodibenzofuran	1,2,3,6,7,8-HxCDF
13.	72918–21–9	1,2,3,7,8,9-Hexachlorodibenzofuran	1,2,3,7,8,9-HxCDF
14.	60851–34–5	2,3,4,6,7,8-Hexachlorodibenzofuran	2,3,4,6,7,8-HxCDF
15.	67562–39–4	1,2,3,4,6,7,8-Heptachlorodibenzofuran	1,2,3,4,6,7,8-HpCDF
16.	55673–89–7	1,2,3,4,7,8,9-Heptachlorodibenzofuran	1,2,3,4,7,8,9-HpCDF
17.	39001–02–0	1,2,3,4,6,7,8,9-Octachlorodibenzofuran	1,2,3,4,6,7,8,9-OCDF

E.4 How Do I Report Form R Schedule 1 Data?

The Electronic Reporting of Toxics Release Inventory Data rule requires that all dioxin and dioxin-like compound data must be submitted electronically via TRI-MEweb. For each data element in Sections 5, 6, and 8, TRI-MEweb has a button labeled "**Enter Schedule 1 Quantities**" that loads a separate "**Member-Specific Quantities**" page. In this page, you can enter the individual quantities for each category member. TRI-MEweb will automatically calculate the category total. If any releases or transfers were due to non-production-related wastes (see Chapter 2, Part II, Section 8.8), enter those values on the same page. If your facility does not have individual member data, you can select the checkbox labeled "**No, I do not have member-specific quantities available**" to enter a total quantity.

F. Optional Facility-Level Information and Non-Reporting

Although there is no requirement to inform EPA of updates to a facility's contact and location information outside of what is required on a TRI reporting form, each year some facilities voluntarily elect to provide this information to EPA. Additionally, each reporting year some facilities contact EPA to indicate that they will no longer be reporting to TRI or will not be submitting a form for one or more specific TRI-listed chemicals.

Facilities can use TRI-MEweb to provide optional facility-level information for the following categories:

- Facility name has changed
- Facility Technical Contact has changed
- Facility Public Contact has changed
- Facility has relocated to a new physical address
- Facility merged with another location
- Facility has closed
- Facility was temporarily shut down
- Facility did not have 10 or more full-time employee equivalents
- Facility is not in a covered NAICS sector
- Facility fell below reporting threshold for one or more chemicals due to source reduction/pollution prevention
- Facility fell below reporting threshold for one or more chemicals due to exemption (e.g., *de minimis*, articles, laboratories, etc.)
- Facility fell below reporting threshold for one or more chemicals due to reasons other than source reduction or use of an exemption (e.g., change in source materials, decrease in business activity, etc.)

Table I. NAICS Codes

1.1 NAICS codes that correspond to SIC codes 20 through 39:

111	**Crop Production**
111998	All Other Miscellaneous Crop Farming (limited to facilities previously classified under SIC 2099, Food Preparations, Not Elsewhere Classified)
113	**Logging**
113310	Logging
211	**Oil and Gas Extraction**
211130	Natural Gas Extraction (limited to facilities classified under SIC 1321, Natural Gas Liquids and facilities that recover sulfur from natural gas previously classified under SIC 2819, Industrial Inorganic Chemicals, Not Elsewhere Classified)
212	**Mining (except Oil and Gas)**
212323	Kaolin, Clay, and Ceramic and Refractory Minerals Mining (limited to facilities operating without a mine or quarry and previously classified under SIC 3295, Minerals and Earths, Ground or Otherwise Treated)
212390	Other Nonmetallic Mineral Mining and Quarrying (limited to facilities previously classified under SIC 3295, Minerals and Earths, Ground or Otherwise Treated)
311	**Food Manufacturing**
311111	Dog and Cat Food Manufacturing
311119	Other Animal Food Manufacturing (except facilities previously classified under SIC 0723, Crop Preparation Services for Market, Except Cotton Ginning)
311211	Flour Milling
311212	Rice Milling
311213	Malt Manufacturing
311221	Wet Corn Milling
311224	Soybean and Other Oilseed Processing
311225	Fats and Oils Refining and Blending
311230	Breakfast Cereal Manufacturing
311313	Beet Sugar Manufacturing
311314	Cane Sugar Manufacturing
311340	Nonchocolate Confectionery Manufacturing (except facilities previously classified under SIC 5441, Candy, Nut, and Confectionery Stores)
311351	Chocolate and Confectionery Manufacturing from Cacao Beans
311352	Confectionery Manufacturing from Purchased Chocolate (except facilities previously classified under SIC 5441, Candy, Nut, and Confectionery Stores)
311411	Frozen Fruit, Juice, and Vegetable Manufacturing
311412	Frozen Specialty Food Manufacturing
311421	Fruit and Vegetable Canning
311422	Specialty Canning
311423	Dried and Dehydrated Food Manufacturing
311511	Fluid Milk Manufacturing
311512	Creamery Butter Manufacturing
311513	Cheese Manufacturing
311514	Dry, Condensed, and Evaporated Dairy Product Manufacturing
311520	Ice Cream and Frozen Dessert Manufacturing
311611	Animal (except Poultry) Slaughtering (except for facilities previously classified under SIC 0751, Livestock Services, Except Veterinary)
311612	Meat Processed from Carcasses (except for facilities previously classified under SIC 5147, Meats and Meat Products)
311613	Rendering and Meat Byproduct Processing
311615	Poultry Processing
311710	Seafood Product Preparation and Packaging
311811	Retail Bakeries (except facilities previously classified under SIC 5461, Retail Bakeries)
311812	Commercial Bakeries
311813	Frozen Cakes, Pies, and Other Pastries Manufacturing
311821	Cookie and Cracker Manufacturing
311824	Dry Pasta, Dough, and Flour Mixes Manufacturing from Purchased Flour
311830	Tortilla Manufacturing
311911	Roasted Nuts and Peanut Butter Manufacturing
311919	Other Snack Food Manufacturing
311920	Coffee and Tea Manufacturing
311930	Flavoring Syrup and Concentrate Manufacturing
311941	Mayonnaise, Dressing, and Other Prepared Sauce Manufacturing
311942	Spice and Extract Manufacturing
311991	Perishable Prepared Food Manufacturing

311999	All Other Miscellaneous Food Manufacturing
312	**Beverage and Tobacco Product Manufacturing**
312111	Soft Drink Manufacturing
312112	Bottled Water Manufacturing (except facilities previously classified under SIC 5149, Groceries and Related Products, Not Elsewhere Classified)
312113	Ice Manufacturing
312120	Breweries
312130	Wineries
312140	Distilleries
312210	Tobacco Stemming and Redrying
312230	Tobacco Manufacturing (except facilities previously classified under SIC 7389, Business Services, Not Elsewhere Classified. This exception does not apply to facilities primarily engaged in solvent recovery services on a contract or fee basis)
313	**Textile Mills**
313110	Fiber, Yarn, and Thread Mills
313210	Broadwoven Fabric Mills
313220	Narrow Fabric Mills and Schiffli Machine Embroidery
313230	Nonwoven Fabric Mills
313241	Knit Fabric Mills
313310	Textile and Fabric Finishing Mills (except facilities previously classified under SIC 5131, Piece Goods, Notions, and Other Dry Goods; and facilities previously classified under SIC 7389, Business Services, Not Elsewhere Classified. This exception does not apply to facilities primarily engaged in solvent recovery services on a contract or fee basis)
313320	Fabric Coating Mills
314	**Textile Product Mills**
314110	Carpet and Rug Mills
314120	Curtain and Linen Mills (except facilities previously classified under SIC 5714, Drapery, Curtain, and Upholstery Stores)
314910	Textile Bag and Canvas Mills
314994	Rope, Cordage, Twine, Tire Cord, and Tire Fabric Mills
314999	All Other Miscellaneous Textile Product Mills (except facilities previously classified under SIC 7389, Business Services, Not Elsewhere Classified. This exception does not apply to facilities primarily engaged in solvent recovery services on a contract or fee basis.)
315	**Apparel Manufacturing**
315120	Apparel Knitting Mills
315210	Cut and Sew Apparel Contractors
315250	Cut and Sew Apparel Manufacturing (except Contractors)
315290	Other Cut and Sew Apparel Manufacturing (except facilities previously classified under SIC 5699, Miscellaneous Apparel and Accessory Stores)
315990	Apparel Accessories and Other Apparel Manufacturing
316	**Leather and Allied Product Manufacturing**
316110	Leather and Hide Tanning and Finishing
316210	Footwear Manufacturing
316990	Other Leather and Allied Product Manufacturing
321	**Wood Product Manufacturing**
321113	Sawmills
321114	Wood Preservation
321211	Hardwood Veneer and Plywood Manufacturing
321212	Softwood Veneer and Plywood Manufacturing
321215	Engineered Wood Member Manufacturing
321219	Reconstituted Wood Product Manufacturing
321911	Wood Window and Door Manufacturing
321912	Cut Stock, Resawing Lumber, and Planing
321918	Other Millwork (including Flooring)
321920	Wood Container and Pallet Manufacturing
321991	Manufactured Home (Mobile Home) Manufacturing
321992	Prefabricated Wood Building Manufacturing
321999	All Other Miscellaneous Wood Product Manufacturing
322	**Paper Manufacturing**
322110	Pulp Mills
322120	Paper Mills
322130	Paperboard Mills
322211	Corrugated and Solid Fiber Box Manufacturing

322212	Folding Paperboard Box Manufacturing
322219	Other Paperboard Container Manufacturing
322220	Paper Bag and Coated and Treated Paper Manufacturing
322230	Stationery Product Manufacturing
322291	Sanitary Paper Product Manufacturing
322299	All Other Converted Paper Product Manufacturing
323	**Printing and Related Support Activities**
323111	Commercial Printing (Except Screen and Books) (except facilities previously classified under SIC 7334, Photocopying and Duplicating Services)
323113	Commercial Screen Printing
323117	Books Printing
323120	Support Activities for Printing
324	**Petroleum and Coal Products Manufacturing**
324110	Petroleum Refineries
324121	Asphalt Paving Mixture and Block Manufacturing
324122	Asphalt Shingle and Coating Materials Manufacturing
324191	Petroleum Lubricating Oil and Grease Manufacturing
324199	All Other Petroleum and Coal Products Manufacturing
325	**Chemical Manufacturing**
325110	Petrochemical Manufacturing
325120	Industrial Gas Manufacturing
325130	Synthetic Dye and Pigment Manufacturing
325180	Other Basic Inorganic Chemical Manufacturing
325193	Ethyl Alcohol Manufacturing
325194	Cyclic Crude, Intermediate, and Gum and Wood Chemical Manufacturing
325199	All Other Basic Organic Chemical Manufacturing
325211	Plastics Material and Resin Manufacturing
325212	Synthetic Rubber Manufacturing
325220	Artificial and Synthetic Fibers and Filaments Manufacturing
325311	Nitrogenous Fertilizer Manufacturing
325312	Phosphatic Fertilizer Manufacturing
325314	Fertilizer (Mixing Only) Manufacturing
325315	Compost Manufacturing
325320	Pesticide and Other Agricultural Chemical Manufacturing
325411	Medicinal and Botanical Manufacturing
325412	Pharmaceutical Preparation Manufacturing
325413	In-Vitro Diagnostic Substance Manufacturing
325414	Biological Product (except Diagnostic) Manufacturing
325510	Paint and Coating Manufacturing
325520	Adhesive Manufacturing
325611	Soap and Other Detergent Manufacturing
325612	Polish and Other Sanitation Good Manufacturing
325613	Surface Active Agent Manufacturing
325620	Toilet Preparation Manufacturing
325910	Printing Ink Manufacturing
325920	Explosives Manufacturing
325991	Custom Compounding of Purchased Resins
325992	Photographic Film, Paper, Plate, and Chemical Manufacturing
325998	All Other Miscellaneous Chemical Product and Preparation Manufacturing (except facilities previously classified under SIC 7389, Business Services, Not Elsewhere Classified)
326	**Plastics and Rubber Products Manufacturing**
326111	Plastics Bag and Pouch Manufacturing
326112	Plastics Packaging Film and Sheet (including Laminated) Manufacturing
326113	Unlaminated Plastics Film and Sheet (except Packaging) Manufacturing
326121	Unlaminated Plastics Profile Shape Manufacturing
326122	Plastics Pipe and Pipe Fitting Manufacturing
326130	Laminated Plastics Plate, Sheet (except Packaging), and Shape Manufacturing
326140	Polystyrene Foam Product Manufacturing
326150	Urethane and Other Foam Product (except Polystyrene) Manufacturing
326160	Plastics Bottle Manufacturing
326191	Plastics Plumbing Fixture Manufacturing
326199	All Other Plastics Product Manufacturing
326211	Tire Manufacturing (except Retreading)
326212	Tire Retreading (except facilities previously classified under SIC 7534, Tire Retreading and Repair Shops)

326220	Rubber and Plastics Hoses and Belting Manufacturing
326291	Rubber Product Manufacturing for Mechanical Use
326299	All Other Rubber Product Manufacturing
327	**Nonmetallic Mineral Product Manufacturing**
327110	Pottery, Ceramics, and Plumbing Fixture Manufacturing (except facilities previously classified under SIC 5719, Miscellaneous Home Furnishings Stores)
327120	Clay Building Material and Refractories Manufacturing
327211	Flat Glass Manufacturing
327212	Other Pressed and Blown Glass and Glassware Manufacturing
327213	Glass Container Manufacturing
327215	Glass Product Manufacturing Made of Purchased Glass
327310	Cement Manufacturing
327320	Ready-Mix Concrete Manufacturing
327331	Concrete Block and Brick Manufacturing
327332	Concrete Pipe Manufacturing
327390	Other Concrete Product Manufacturing
327410	Lime Manufacturing
327420	Gypsum Product Manufacturing
327910	Abrasive Product Manufacturing
327991	Cut Stone and Stone Product Manufacturing
327992	Ground or Treated Mineral and Earth Manufacturing
327993	Mineral Wool Manufacturing
327999	All Other Miscellaneous Nonmetallic Mineral Product Manufacturing
331	**Primary Metal Manufacturing**
331110	Iron and Steel Mills and Ferroalloy Manufacturing
331210	Iron and Steel Pipe and Tube Manufacturing from Purchased Steel
331221	Rolled Steel Shape Manufacturing
331222	Steel Wire Drawing
331313	Alumina Refining and Primary Aluminum Production
331314	Secondary Smelting and Alloying of Aluminum
331315	Aluminum Sheet, Plate, and Foil Manufacturing
331318	Other Aluminum Rolling, Drawing, and Extruding
331410	Nonferrous Metal (except Aluminum) Smelting and Refining
331420	Copper Rolling, Drawing, Extruding, and Alloying
331491	Nonferrous Metal (except Copper and Aluminum) Rolling, Drawing, and Extruding
331492	Secondary Smelting, Refining, and Alloying of Nonferrous Metal (except Copper and Aluminum)
331511	Iron Foundries
331512	Steel Investment Foundries
331513	Steel Foundries (except Investment)
331523	Nonferrous Metal Die-Casting Foundries
331524	Aluminum Foundries (except Die-Casting)
331529	Other Nonferrous Metal Foundries (except Die-Casting)
332	**Fabricated Metal Product Manufacturing**
332111	Iron and Steel Forging
332112	Nonferrous Forging
332114	Custom Roll Forming
332117	Powder Metallurgy Part Manufacturing
332119	Metal Crown, Closure, and Other Metal Stamping (Except Automotive)
332215	Metal Kitchen Cookware, Utensil, Cutlery, and Flatware (except Precious) Manufacturing
332216	Saw Blade and Hand tool Manufacturing
332311	Prefabricated Metal Building and Component Manufacturing
332312	Fabricated Structural Metal Manufacturing
332313	Plate Work Manufacturing
332321	Metal Window and Door Manufacturing
332322	Sheet Metal Work Manufacturing
332323	Ornamental and Architectural Metal Work Manufacturing
332410	Power Boiler and Heat Exchanger Manufacturing
332420	Metal Tank (Heavy Gauge) Manufacturing
332431	Metal Can Manufacturing
332439	Other Metal Container Manufacturing
332510	Hardware Manufacturing
332613	Spring Manufacturing
332618	Other Fabricated Wire Product Manufacturing
332710	Machine Shops
332721	Precision Turned Product Manufacturing

332722	Bolt, Nut, Screw, Rivet, and Washer Manufacturing
332811	Metal Heat Treating
332812	Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers
332813	Electroplating, Plating, Polishing, Anodizing, and Coloring
332911	Industrial Valve Manufacturing
332912	Fluid Power Valve and Hose Fitting Manufacturing
332913	Plumbing Fixture Fitting and Trim Manufacturing
332919	Other Metal Valve and Pipe Fitting Manufacturing
332991	Ball and Roller Bearing Manufacturing
332992	Small Arms Ammunition Manufacturing
332993	Ammunition (except Small Arms) Manufacturing
332994	Small Arms, Ordnance, and Ordnance Accessories Manufacturing
332996	Fabricated Pipe and Pipe Fitting Manufacturing
332999	All Other Miscellaneous Fabricated Metal Product Manufacturing
333	**Machinery Manufacturing**
333111	Farm Machinery and Equipment Manufacturing
333112	Lawn and Garden Tractor and Home Lawn and Garden Equipment Manufacturing
333120	Construction Machinery Manufacturing
333131	Mining Machinery and Equipment Manufacturing
333132	Oil and Gas Field Machinery and Equipment Manufacturing
333241	Food Product Machinery Manufacturing
333242	Semiconductor Machinery Manufacturing
333243	Sawmill, Woodworking, and Paper Machinery Manufacturing
333248	All Other Industrial Machinery Manufacturing
333310	Commercial and Service Industry Machinery Manufacturing
333413	Industrial and Commercial Fan and Blower and Air Purification Equipment Manufacturing
333414	Heating Equipment (except Warm Air Furnaces) Manufacturing
333415	Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing
333511	Industrial Mold Manufacturing
333514	Special Die and Tool, Die Set, Jig, and Fixture Manufacturing
333515	Cutting Tool and Machine Tool Accessory Manufacturing
333517	Machine Tool Manufacturing
333519	Rolling Mill and Other Metalworking Machinery Manufacturing
333611	Turbine and Turbine Generator Set Units Manufacturing
333612	Speed Changer, Industrial High-Speed Drive, and Gear Manufacturing
333613	Mechanical Power Transmission Equipment Manufacturing
333618	Other Engine Equipment Manufacturing
333912	Air and Gas Compressor Manufacturing
333914	Measuring, Dispensing, and Other Pumping Equipment Manufacturing
333921	Elevator and Moving Stairway Manufacturing
333922	Conveyor and Conveying Equipment Manufacturing
333923	Overhead Traveling Crane, Hoist, and Monorail System Manufacturing
333924	Industrial Truck, Tractor, Trailer, and Stacker Machinery Manufacturing
333991	Power-Driven Handtool Manufacturing
333992	Welding and Soldering Equipment Manufacturing
333993	Packaging Machinery Manufacturing
333994	Industrial Process Furnace and Oven Manufacturing
333995	Fluid Power Cylinder and Actuator Manufacturing
333996	Fluid Power Pump and Motor Manufacturing
333998	All Other Miscellaneous General Purpose Machinery Manufacturing
334	**Computer and Electronic Product Manufacturing**
334111	Electronic Computer Manufacturing
334112	Computer Storage Device Manufacturing
334118	Computer Terminal and Other Computer Peripheral Equipment Manufacturing
334210	Telephone Apparatus Manufacturing
334220	Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing
334290	Other Communications Equipment Manufacturing

334310	Audio and Video Equipment Manufacturing
334412	Bare Printed Circuit Board Manufacturing
334413	Semiconductor and Related Device Manufacturing
334416	Capacitor, Resistor, Coil, Transformer, and Other Inductor Manufacturing
334417	Electronic Connector Manufacturing
334418	Printed Circuit Assembly (Electronic Assembly) Manufacturing
334419	Other Electronic Component Manufacturing
334510	Electromedical and Electrotherapeutic Apparatus Manufacturing
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing
334512	Automatic Environmental Control Manufacturing for Residential, Commercial, and Appliance Use
334513	Instruments and Related Products Manufacturing for Measuring, Displaying, and Controlling Industrial Process Variables
334514	Totalizing Fluid Meter and Counting Device Manufacturing
334515	Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals
334516	Analytical Laboratory Instrument Manufacturing
334517	Irradiation Apparatus Manufacturing
334519	Other Measuring and Controlling Device Manufacturing
334610	Manufacturing and Reproducing Magnetic and Optical Media (except facilities previously classified under SIC 7372, Prepackaged Software; and to facilities previously classified under SIC 7819, Services Allied to Motion Picture Production)
335	**Electrical Equipment, Appliance, and Component Manufacturing**
335131	Residential Electric Lighting Fixture Manufacturing
335132	Commercial, Industrial, and Institutional Electric Lighting Fixture Manufacturing
335139	Electric Lamp Bulb and Other Lighting Equipment Manufacturing
335210	Small Electrical Appliance Manufacturing
335220	Major Household Appliance Manufacturing
335311	Power, Distribution, and Specialty Transformer Manufacturing
335312	Motor and Generator Manufacturing (except facilities previously classified under SIC 7694, Armature Rewinding Shops)
335313	Switchgear and Switchboard Apparatus Manufacturing
335314	Relay and Industrial Control Manufacturing
335910	Battery Manufacturing
335921	Fiber Optic Cable Manufacturing
335929	Other Communication and Energy Wire Manufacturing
335931	Current-Carrying Wiring Device Manufacturing
335932	Noncurrent-Carrying Wiring Device Manufacturing
335991	Carbon and Graphite Product Manufacturing
335999	All Other Miscellaneous Electrical Equipment and Component Manufacturing
336	**Transportation Equipment Manufacturing**
336110	Automobile and Light Duty Motor Vehicle Manufacturing
336120	Heavy Duty Truck Manufacturing
336211	Motor Vehicle Body Manufacturing
336212	Truck Trailer Manufacturing
336213	Motor Home Manufacturing
336214	Travel Trailer and Camper Manufacturing
336310	Motor Vehicle Gasoline Engine and Engine Parts Manufacturing
336320	Motor Vehicle Electrical and Electronic Equipment Manufacturing
336330	Motor Vehicle Steering and Suspension Components (except Spring) Manufacturing
336340	Motor Vehicle Brake System Manufacturing
336350	Motor Vehicle Transmission and Power Train Parts Manufacturing
336360	Motor Vehicle Seating and Interior Trim Manufacturing
336370	Motor Vehicle Metal Stamping
336390	Motor Vehicle Parts Manufacturing
336411	Aircraft Manufacturing
336412	Aircraft Engine and Engine Parts Manufacturing
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing

336414	Guided Missile and Space Vehicle Manufacturing
336415	Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing
336419	Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing
336510	Railroad Rolling Stock Manufacturing
336611	Ship Building and Repairing
336612	Boat Building
336991	Motorcycle, Bicycle, and Parts Manufacturing
336992	Military Armored Vehicle, Tank, and Tank Component Manufacturing
336999	All Other Transportation Equipment Manufacturing
337	**Furniture and Related Product Manufacturing**
337110	Wood Kitchen Cabinet and Countertop Manufacturing (except facilities previously classified under SIC 5712, Furniture Stores)
337121	Upholstered Household Furniture Manufacturing (except facilities previously classified under SIC 5712, Furniture Stores)
337122	Non-upholstered Wood Household Furniture Manufacturing (except facilities previously classified under SIC 5712, Furniture Stores)
337126	Household Furniture (except Wood and Upholstered) Manufacturing
337127	Institutional Furniture Manufacturing
337211	Wood Office Furniture Manufacturing
337212	Custom Architectural Woodwork and Millwork Manufacturing
337214	Office Furniture (except Wood) Manufacturing
337215	Showcase, Partition, Shelving, and Locker Manufacturing
337910	Mattress Manufacturing
337920	Blind and Shade Manufacturing
339	**Miscellaneous Manufacturing**
339112	Surgical and Medical Instrument Manufacturing
339113	Surgical Appliance and Supplies Manufacturing (except facilities previously classified under SIC 5999, Miscellaneous Retail Stores, Not Elsewhere Classified)
339114	Dental Equipment and Supplies Manufacturing
339115	Ophthalmic Goods Manufacturing (except lens grinding facilities previously classified under SIC 5995, Optical Goods Stores)
339116	Dental Laboratories (except facilities previously classified under SIC 8072, Dental Laboratories)
339910	Jewelry and Silverware Manufacturing
339912	Silverware and Hollowware Manufacturing
339913	Jewelers' Material and Lapidary Work Manufacturing
339914	Costume Jewelry and Novelty Manufacturing
339920	Sporting and Athletic Goods Manufacturing
339930	Doll Toy, and Game Manufacturing
339932	Game, Toy, and Children's Vehicle Manufacturing
339940	Office Supplies (except Paper) Manufacturing
339942	Lead Pencil and Art Goods Manufacturing
339943	Marking Device Manufacturing
339944	Carbon Paper and Inked Ribbon Manufacturing
339950	Sign Manufacturing
339991	Gasket, Packing, and Sealing Device Manufacturing
339992	Musical Instrument Manufacturing
339993	Fastener, Button, Needle, and Pin Manufacturing
339994	Broom, Brush, and Mop Manufacturing
339995	Burial Casket Manufacturing
339999	All Other Miscellaneous Manufacturing
488	**Support Activities for Transportation**
488390	Other Support Activities for Water Transportation (limited to facilities previously classified under SIC 3731, Shipbuilding and Repairing)
512	**Motion Picture and Sound Recording Industries**
512230	Music Publishers (except facilities previously classified under SIC 8999, Services, Not Elsewhere Classified)
512250	Record Production and Distribution (limited to facilities previously classified under SIC 3652, Phonograph Records and Prerecorded Audio Tapes and Disks)

5131	**Newspaper, Periodical, Book, and Directory Publishers**
513110	Newspaper Publishers (except for facilities primarily engaged in web search portals and except for facilities previously classified under SIC 7331, Direct Mail Advertising Services and SIC 8999, Services Not Elsewhere Classified)
513120	Periodical Publishers (except for facilities primarily engaged in web search portals and except for facilities previously classified under SIC 7331, Direct Mail Advertising Services and SIC 8999, Services Not Elsewhere Classified)
513130	Book Publishers (except for facilities primarily engaged in web search portals and except for facilities previously classified under SIC 7331, Direct Mail Advertising Services and SIC 8999, Services Not Elsewhere Classified)
513140	Directory and Mailing List Publishers (except for facilities primarily engaged in web search portals and except for facilities previously classified under SIC 7331, Direct Mail Advertising Services and SIC 8999, Services Not Elsewhere Classified)
513191	Greeting Card Publishers (except for facilities primarily engaged in web search portals and except for facilities previously classified under SIC 7331, Direct Mail Advertising Services and SIC 8999, Services Not Elsewhere Classified)
513199	All Other Publishers (except for facilities primarily engaged in web search portals and except for facilities previously classified under SIC 7331, Direct Mail Advertising Services and SIC 8999, Services Not Elsewhere Classified)
516	**Broadcasting and Content Providers**
516210	Media Streaming Distribution Services, Social Networks, and Other Media Networks and Content Providers (limited to Internet publishing facilities previously classified under SIC 2711, Newspapers: Publishing, or Publishing and Printing; facilities previously classified under SIC 2721, Periodicals: Publishing, or Publishing and Printing; facilities previously classified under SIC 2731, Books: Publishing, or Publishing and Printing; facilities previously classified under SIC 2741, Miscellaneous Publishing; facilities previously classified under SIC 2771, Greeting Cards; Except for facilities primarily engaged in web search portals)
519	**Web Search Portals, Libraries, Archives, and Other Information Services**
519290	Web Search Portals and All Other Information Services (limited to Internet publishing facilities previously classified under SIC 2711, Newspapers: Publishing, or Publishing and Printing; facilities previously classified under SIC 2721, Periodicals: Publishing, or Publishing and Printing; facilities previously classified under SIC 2731, Books: Publishing, or Publishing and Printing; facilities previously classified under SIC 2741, Miscellaneous Publishing; facilities previously classified under SIC 2771, Greeting Cards; Except for facilities primarily engaged in web search portals)
541	**Professional, Scientific, and Technical Services**
541713	Research and Development in Nanotechnology (limited to facilities previously classified under SIC 3764, Guided Missile and Space Vehicle Propulsion Units and Propulsion Unit Parts; and facilities previously classified under SIC 3769, Guided Missile and Space Vehicle Parts and Auxiliary Equipment, Not Elsewhere Classified.)

541715	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology) (limited to facilities previously classified under SIC 3764, Guided Missile and Space Vehicle Propulsion Units and Propulsion Unit Parts; and facilities previously classified under SIC 3769, Guided Missile and Space Vehicle Parts and Auxiliary Equipment, Not Elsewhere Classified)
811	**Repair and Maintenance**
811490	Other Personal and Household Goods Repair and Maintenance (limited to facilities previously classified under SIC 3732, Boat Building and Repairing.)

1.2 NAICS codes that correspond to SIC codes other than 20 through 39:

212	**Mining (except Oil and Gas)**
212114	Surface Coal Mining
212115	Underground Coal Mining
212220	Gold Ore and Silver Ore Mining
212230	Copper, Nickel, Lead, and Zinc Mining
212290	Other Metal Ore Mining (limited to facilities previously classified under SIC 1061, Ferroalloy Ores, Except Vanadium (nickel); and facilities previously classified under SIC 1099, Miscellaneous Metal Ores, Not Elsewhere Classified)
221	**Electric Utilities**
221111	Hydroelectric Power Generation (limited to facilities that combust coal and/or oil for the purpose of generating power for distribution in commerce)
221112	Fossil Fuel Electric Power Generation (limited to facilities that combust coal and/or oil for the purpose of generating power for distribution in commerce)
221113	Nuclear Electric Power Generation (limited to facilities that combust coal and/or oil for the purpose of generating power for distribution in commerce)
221114	Solar Electric Power Generation (limited to facilities that combust coal and/or oil for the purpose of generating power for distribution in commerce)
221115	Wind Electric Power Generation (limited to facilities that combust coal and/or oil for the purpose of generating power for distribution in commerce)
221116	Geothermal Electric Power Generation (limited to facilities that combust coal and/or oil for the purpose of generating power for distribution in commerce)
221117	Biomass Electric Power Generation (limited to facilities that combust coal and/or oil for the purpose of generating power for distribution in commerce)
221118	Other Electric Power Generation (limited to facilities that combust coal and/or oil for the purpose of generating power for distribution in commerce)
221121	Electric Bulk Power Transmission and Control (limited to facilities that combust coal and/or oil for the purpose of generating power for distribution in commerce)
221122	Electric Power Distribution (limited to facilities that combust coal and/or oil for the purpose of generating power for distribution in commerce)
221210	Natural Gas Distribution (limited to facilities previously classified under SIC 4931, Electric and Other Services Combined and facilities previously classified under SIC 4939, Combination Utilities, Not Elsewhere Classified)
221330	Steam and Air Conditioning Supply (limited to facilities previously classified under SIC 4939, Combination Utilities, Not Elsewhere Classified.)
424	**Merchant Wholesalers, Nondurable Goods**
424690	Other Chemical and Allied Products Merchant Wholesalers
424710	Petroleum Bulk Stations and Terminals
425	**Wholesale Trade Agents and Brokers**
425120	Wholesale Trade Agents and Brokers (limited to facilities previously classified in 5169, Chemicals and Allied Products, NEC)
562	**Waste Management and Remediation Services**
562112	Hazardous Waste Collection (limited to facilities primarily engaged in solvent recovery services on a contract or fee basis, which were previously classified under SIC 7389, Business Services, Not Elsewhere Classified)
562211	Hazardous Waste Treatment and Disposal (limited to facilities regulated under the Resource Conservation and Recovery Act, subtitle C, 42 U.S.C. 6921, *et seq*.)
562212	Solid Waste Landfill (limited to facilities regulated under the Resource Conservation and Recovery Act, subtitle C, 42 U.S.C. 6921, *et seq*.)
562213	Solid Waste Combustors and Incinerators (limited to facilities regulated under the Resource Conservation and Recovery Act, subtitle C, 42 U.S.C. 6921, *et seq*.)
562219	Other Nonhazardous Waste Treatment and Disposal (limited to facilities regulated under the Resource Conservation and Recovery Act, subtitle C, 42 U.S.C. 6921, *et seq*.)
562920	Materials Recovery Facilities (limited to facilities regulated under the Resource Conservation and Recovery Act, subtitle C, 42 U.S.C. 6921, *et seq*.)

Table II. EPCRA Section 313 Chemical List for Reporting Year 2022
(including Toxic Chemical Categories)

The EPCRA Section 313 chemicals are listed beginning on page II-4. The chemicals are broken out into five sections, sections a and b list the individually-listed non-PFAS chemicals alphabetically and then by CASRN order. Section c lists the chemical categories. Sections d and e list the PFAS chemicals alphabetically and then by CASRN order. EPCRA Section 313 chemicals may also be found using the basic search (https://guideme.epa.gov/ords/guideme_ext/F?p=guideme:chemical-list-basic-search) and advanced search (https://guideme.epa.gov/ords/guideme_ext/f?p=guideme:chemical-list-advanced-search) via GuideME.

See section B.3.d of the instructions for more information on the *de minimis* % limits listed below. The *de minimis* concentration for each individually listed chemical is listed under the "*De minimis* % Limit" column; for chemical categories, the *de minimis* level is in parenthesis. The *de minimis* exemption is not available for chemicals of special concern, therefore an asterisk (*) appears where a *de minimis* limit would otherwise appear. However, for purposes of the supplier notification requirement only, such limits are listed in the Supplier Notification Requirements guidance document and can be found here: https://guideme.epa.gov/ords/guideme_ext/f?p=guideme:gd-title:::::title:supplier_notification.

Note: Chemicals may be added to or deleted from the list. The TRI website (https://www.epa.gov/toxics-release-inventory-tri-program/tri-listed-chemicals) provides up-to-date information on the status of changes.

Chemical Qualifiers

Certain EPCRA Section 313 chemicals listed in Table II have parenthetic "qualifiers." These qualifiers indicate that these EPCRA Section 313 chemicals are subject to the Section 313 reporting requirements if manufactured, processed, or otherwise used in a specific form or when a certain activity is performed. An EPCRA Section 313 chemical that is listed without a qualifier is subject to reporting in all forms in which it is manufactured, processed, and otherwise used. The following chemicals are reportable only if they are manufactured, processed, and/or otherwise used in the specific form(s) listed below:

Chemical/ Chemical Category	CASRN/ Category Code	Qualifier
Aluminum (fume or dust)	7429-90-5	**Only** if it is a fume or dust form.
Aluminum oxide (fibrous forms)	1344-28-1	**Only** if it is a fibrous form.
Ammonia (includes anhydrous ammonia and aqueous ammonia from water dissociable ammonium salts and other sources; 10 percent of total aqueous ammonia is reportable under this listing)	7664-41-7	**Only** 10% of aqueous forms. 100% of anhydrous forms.
Asbestos (friable)	1332-21-4	**Only** if it is a friable form.
Hydrochloric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)	7647-01-0	**Only** if it is an aerosol form as defined.
Nitrate compounds (water dissociable; reportable only when in aqueous solution)	N511	**Only** if in aqueous solution.
Phosphorus (yellow or white)	12185-10-3	**Only** if it is a yellow or white form.
Sulfuric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)	7664-93-9	**Only** if it is an aerosol form as defined.
Vanadium (except when contained in an alloy)	7440-62-2	**Except** if it is contained in an alloy.
Zinc (fume or dust)	7440-66-6	**Only** if it is in a fume or dust form.

The qualifier for the following three chemicals is based on the chemical activity rather than the form of the chemical. These chemicals are subject to EPCRA Section 313 reporting requirements only when the indicated activity is performed.

Table II. EPCRA Section 313 Chemical List for Reporting Year 2022

Chemical/ Chemical Category	CASRN/ Category Code	Qualifier
Dioxin and dioxin-like compounds (manufacturing; and the processing or otherwise use of dioxin and dioxin-like compounds if the dioxin and dioxin-like compounds are present as contaminants in a chemical and if they were created during the manufacture of that chemical.)	N150	**Only** if they are manufactured at the facility; or are processed or otherwise used when present as contaminants in a chemical, but only if they were created during the manufacture of that chemical.
Isopropyl alcohol (only persons who manufacture by the strong acid process are subject, no supplier notification)	67-63-0	**Only** if it is being manufactured by the strong acid process. Facilities that process or otherwise use isopropyl alcohol are not covered and should not file a report.
Saccharin (only persons who manufacture are subject, no supplier notification)	81-07-2	**Only** if it is being manufactured.

Supplier Notification Implications

There are no supplier notification requirements for isopropyl alcohol and saccharin since the processors and users of these chemicals are not required to report. Manufacturers of these chemicals do not need to notify their customers that these are reportable EPCRA Section 313 chemicals.

Qualifier Definitions

Fume or dust. Two of the metals on the list (aluminum and zinc) contain the qualifier "fume or dust." Fume or dust refers to dry forms of these metals but does not refer to "wet" forms such as solutions or slurries. As explained in Section B.3.a of these instructions, the term manufacture includes the generation of an EPCRA Section 313 chemical as a byproduct or impurity. In such cases, a facility should determine if, for example, it generated more than 25,000 pounds of aluminum fume or dust in the reporting year as a result of its activities. If so, the facility must report that it manufactures "aluminum (fume or dust)." Similarly, there may be certain technologies in which one of these metals is processed in the form of a fume or dust to make other EPCRA Section 313 chemicals or other products for distribution in commerce. In reporting releases, the facility would only report releases of the fume or dust.

EPA considers dusts to consist of solid particles generated by any mechanical processing of materials including crushing, grinding, rapid impact, handling, detonation, and decrepitation of organic and inorganic materials such as rock, ore, and metal. Dusts do not tend to flocculate, except under electrostatic forces.

EPA considers a fume to be an airborne dispersion consisting of small solid particles created by condensation from a gaseous state, in distinction to a gas or vapor. Fumes arise from the heating of solids such as lead. The condensation is often accompanied by a chemical reaction, such as oxidation. Fumes flocculate and sometimes coalesce.

Manufacturing qualifiers. Two of the entries in the EPCRA Section 313 chemical list contain a qualifier relating to manufacture. For isopropyl alcohol, the qualifier is "only persons who manufacture by the strong acid process are subject, no supplier notification." For saccharin, the qualifier is "only persons who manufacture are subject, no supplier notification." For isopropyl alcohol, the qualifier means that only facilities manufacturing isopropyl alcohol by the strong acid process are required to report. In the case of saccharin, only manufacturers of the EPCRA Section 313 chemical are subject to the reporting requirements. A facility that only processes or otherwise uses either of these EPCRA Section 313 chemicals is not required to report for these EPCRA Section 313 chemicals. In both cases, supplier notification does not apply because only manufacturers, not processors or users, of these two EPCRA Section 313 chemicals must report.

Ammonia (includes anhydrous ammonia and aqueous ammonia from water dissociable ammonium salts and other sources; 10 percent of total aqueous ammonia is reportable under this listing). The qualifier for ammonia means that anhydrous forms of ammonia are 100% reportable and aqueous forms are limited to 10% of total aqueous ammonia. Therefore, when determining thresholds, releases, and other waste management quantities, all anhydrous ammonia is included but only 10% of total aqueous ammonia is included. Any evaporation of

ammonia from aqueous ammonia solutions is considered anhydrous ammonia and should be included in threshold determinations and release and other waste management calculations.

Sulfuric acid and Hydrochloric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size). The qualifier for sulfuric acid and hydrochloric acid means that the only forms of these chemicals that are reportable are airborne forms. Aqueous solutions are not covered by this listing but aerosols generated from aqueous solutions are.

Nitrate compounds (water dissociable; reportable only when in aqueous solution). The qualifier for the nitrate compounds category limits the reporting to nitrate compounds that dissociate in water, generating nitrate ion. For the purposes of threshold determinations, the entire weight of the nitrate compound must be included in all calculations. For the purposes of reporting releases and other waste management quantities only the weight of the nitrate ion should be included in the calculations of these quantities.

Phosphorus (yellow or white). The listing for phosphorus is qualified by the term "yellow or white." This means that only manufacturing, processing, or otherwise use of phosphorus in the yellow or white chemical form triggers reporting. Conversely, manufacturing, processing, or otherwise use of "black" or "red" phosphorus does not trigger reporting. Supplier notification also applies only to distribution of yellow or white phosphorus.

Asbestos (friable). The listing for asbestos is qualified by the term "friable," referring to the physical characteristic of being able to be crumbled, pulverized, or reducible to a powder with hand pressure. Only manufacturing, processing, or otherwise use of asbestos in the friable form triggers reporting. Supplier notification applies only to distribution of mixtures or other trade name products containing friable asbestos.

Aluminum oxide (fibrous forms). The listing for aluminum oxide is qualified by the term "fibrous forms." Fibrous refers to a man-made form of aluminum oxide that is processed to produce strands or filaments which can be cut to various lengths depending on the application. Only manufacturing, processing, or otherwise use of aluminum oxide in the fibrous form triggers reporting. Supplier notification applies only to distribution of mixtures or other trade name products containing fibrous forms of aluminum oxide.

Chemical Categories with Exemptions

The four EPCRA section 313 chemical categories listed below have specific chemical exemptions.

Chemical Category	Category Code	Exempted Chemical(s)
Barium Compounds	N040	Barium sulfate (7727-43-7)
Chromium Compounds	N090	Chromite ore mined in the Transvaal Region of South Africa and the unreacted ore component of the chromite ore processing residue (COPR). COPR is the solid waste remaining after aqueous extraction of oxidized chromite ore that has been combined with soda ash and kiln roasted at approximately 2,000 °F.
Copper Compounds	N100	Copper phthalocyanine compounds that are substituted with only hydrogen, and/or chlorine, and/or bromine.
Cyanide Compounds	N106	Hydrogen cyanide (74-90-8)[1]

[1] Hydrogen cyanide is an individually-listed chemical

Notes for sections a and b of the following list of TRI chemicals:

"Color Index" indicated by "C.I."

* There is no *de minimis* % limit for chemicals of special concern, except for supplier notification purposes (see: https://guideme.epa.gov/ords/guideme_ext/f?p=guideme:gd-title:::::title:supplier_notification).

The *de minimis* % limit for lead when contained in stainless steel, brass, or bronze alloys is 0.1%. For lead not in such alloys there is no *de minimis* level.

a. Individually-Listed Toxic Chemicals Arranged Alphabetically

CASRN	Chemical Name	*De minimis* % Limit
71751-41-2	Abamectin	1
30560-19-1	Acephate	1
75-07-0	Acetaldehyde	0.1
60-35-5	Acetamide	0.1
75-05-8	Acetonitrile	1
98-86-2	Acetophenone	1
53-96-3	2-Acetylaminofluorene	0.1
62476-59-9	Acifluorfen, sodium salt	1
107-02-8	Acrolein	0.1
79-06-1	Acrylamide	0.1
79-10-7	Acrylic acid	1
107-13-1	Acrylonitrile	0.1
15972-60-8	Alachlor	1
116-06-3	Aldicarb	1
309-00-2	Aldrin	*
28434-00-6	*d-trans*-Allethrin	1
107-18-6	Allyl alcohol	1
107-11-9	Allylamine	1
107-05-1	Allyl chloride	1
7429-90-5	Aluminum (fume or dust)	1
1344-28-1	Aluminum oxide (fibrous forms) (Alumina)	1
20859-73-8	Aluminum phosphide	1
834-12-8	Ametryn	1
117-79-3	2-Aminoanthraquinone	0.1
60-09-3	4-Aminoazobenzene	0.1
92-67-1	4-Aminobiphenyl	0.1
81-49-2	1-Amino-2,4-dibromoanthraquinone	0.1
82-28-0	1-Amino-2-methylanthraquinone	0.1
33089-61-1	Amitraz	1
61-82-5	Amitrole	0.1
7664-41-7	Ammonia (includes anhydrous ammonia and aqueous ammonia from water dissociable ammonium salts and other sources; 10 percent of total aqueous ammonia is reportable under this listing)	1
101-05-3	Anilazine	1
62-53-3	Aniline	0.1
90-04-0	*o*-Anisidine	0.1
104-94-9	*p*-Anisidine	1
134-29-2	*o*-Anisidine hydrochloride	0.1
120-12-7	Anthracene	1
7440-36-0	Antimony	1
7440-38-2	Arsenic	0.1
1332-21-4	Asbestos (friable)	0.1
1912-24-9	Atrazine	1
7440-39-3	Barium	1
22781-23-3	Bendiocarb	1
1861-40-1	Benfluralin	1
17804-35-2	Benomyl	1
98-87-3	Benzal chloride	1
55-21-0	Benzamide	1
71-43-2	Benzene	0.1
92-87-5	Benzidine	0.1
98-07-7	Benzoic trichloride (Benzotrichloride)	0.1
191-24-2	Benzo[g,h,i]perylene	*
98-88-4	Benzoyl chloride	1
94-36-0	Benzoyl peroxide	1
100-44-7	Benzyl chloride	1
7440-41-7	Beryllium	0.1
82657-04-3	Bifenthrin	1
92-52-4	Biphenyl	1
3296-90-0	2,2-Bis(bromomethyl)-1,3-propanediol	0.1
111-91-1	Bis(2-chloroethoxy)methane	1
111-44-4	Bis(2-chloroethyl) ether	1
542-88-1	Bis(chloromethyl) ether	0.1
108-60-1	Bis(2-chloro-1-methylethyl) ether	1
56-35-9	Bis(tributyltin) oxide	1
10294-34-5	Boron trichloride	1
7637-07-2	Boron trifluoride	1
314-40-9	Bromacil	1
53404-19-6	Bromacil, lithium salt	1
7726-95-6	Bromine	1
35691-65-7	1-Bromo-1-(bromomethyl)-1,3-propanedicarbonitrile	1
353-59-3	Bromochlorodifluoromethane (Halon 1211)	1
75-25-2	Bromoform (Tribromomethane)	1

Table II. EPCRA Section 313 Chemical List for Reporting Year 2022

CASRN	Chemical Name	*De minimis* % Limit
74-83-9	Bromomethane (Methyl bromide)	1
106-94-5	1-Bromopropane	0.1
75-63-8	Bromotrifluoromethane (Halon 1301)	1
1689-84-5	Bromoxynil	1
1689-99-2	Bromoxynil octanoate	1
357-57-3	Brucine	1
106-99-0	1,3-Butadiene	0.1
141-32-2	Butyl acrylate	1
71-36-3	*n*-Butyl alcohol (1-Butanol)	1
78-92-2	*sec*-Butyl alcohol (2-Butanol)	1
75-65-0	*tert*-Butyl alcohol (tert-Butanol)	1
106-88-7	1,2-Butylene oxide	0.1
123-72-8	Butyraldehyde	1
4680-78-8	C.I. Acid Green 3	1
6459-94-5	C.I. Acid Red 114	0.1
569-64-2	C.I. Basic Green 4 (Malachite green)	1
989-38-8	C.I. Basic Red 1	1
1937-37-7	C.I. Direct Black 38	0.1
2602-46-2	C.I. Direct Blue 6	0.1
28407-37-6	C.I. Direct Blue 218	1
16071-86-6	C.I. Direct Brown 95	0.1
2832-40-8	C.I. Disperse Yellow 3	1
3761-53-3	C.I. Food Red 5	0.1
81-88-9	C.I. Food Red 15 (Rhodamine B)	1
3118-97-6	C.I. Solvent Orange 7	1
97-56-3	C.I. Solvent Yellow 3	0.1
842-07-9	C.I. Solvent Yellow 14	1
492-80-8	C.I. Solvent Yellow 34 (Auramine)	0.1
128-66-5	C.I. Vat Yellow 4	1
7440-43-9	Cadmium	0.1
156-62-7	Calcium cyanamide	1
133-06-2	Captan	1
63-25-2	Carbaryl	1
1563-66-2	Carbofuran	1
75-15-0	Carbon disulfide	1
56-23-5	Carbon tetrachloride	0.1
463-58-1	Carbonyl sulfide	1
5234-68-4	Carboxin	1
120-80-9	Catechol	0.1
2439-01-2	Chinomethionate	1
133-90-4	Chloramben	1
57-74-9	Chlordane	*
115-28-6	Chlorendic acid	0.1
90982-32-4	Chlorimuron-ethyl	1
7782-50-5	Chlorine	1
10049-04-4	Chlorine dioxide	1
79-11-8	Chloroacetic acid	1
532-27-4	2-Chloroacetophenone	1
4080-31-3	1-(3-Chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride	1
106-47-8	*p*-Chloroaniline	0.1
108-90-7	Chlorobenzene	1
510-15-6	Chlorobenzilate	1
75-68-3	1-Chloro-1,1-difluoroethane (HCFC-142b)	1
75-45-6	Chlorodifluoromethane (HCFC-22)	1
75-00-3	Chloroethane	1
67-66-3	Chloroform	0.1
74-87-3	Chloromethane	1
107-30-2	Chloromethyl methyl ether	0.1
563-47-3	3-Chloro-2-methyl-1-propene	0.1
104-12-1	*p*-Chlorophenyl isocyanate	1
76-06-2	Chloropicrin	1
126-99-8	Chloroprene	0.1
542-76-7	3-Chloropropionitrile	1
63938-10-3	Chlorotetrafluoroethane	1
354-25-6	1-Chloro-1,1,2,2-tetrafluoroethane (HCFC-124a)	1
2837-89-0	2-Chloro-1,1,1,2-tetrafluoroethane (HCFC-124)	1
1897-45-6	Chlorothalonil	0.1
95-69-2	*p*-Chloro-*o*-toluidine (4-Chloro-2-methylaniline)	0.1
75-88-7	2-Chloro-1,1,1-trifluoroethane (HCFC-133a)	1
75-72-9	Chlorotrifluoromethane (CFC-13)	1
460-35-5	3-Chloro-1,1,1-trifluoropropane (HCFC-253fb)	1
5598-13-0	Chlorpyrifos-methyl	1
64902-72-3	Chlorsulfuron	1
7440-47-3	Chromium	1
7440-48-4	Cobalt	0.1
7440-50-8	Copper	1
8001-58-9	Creosote	0.1
120-71-8	*p*-Cresidine	0.1
108-39-4	*m*-Cresol	1
95-48-7	*o*-Cresol	1
106-44-5	*p*-Cresol	1
1319-77-3	Cresol (mixed isomers)	1
4170-30-3	Crotonaldehyde	1
98-82-8	Cumene	0.1
80-15-9	Cumene hydroperoxide	1
135-20-6	Cupferron	0.1
21725-46-2	Cyanazine	1
1134-23-2	Cycloate	1
110-82-7	Cyclohexane	1

CASRN	Chemical Name	*De minimis* % Limit
108-93-0	Cyclohexanol	1
68359-37-5	Cyfluthrin	1
68085-85-8	Cyhalothrin	1
94-75-7	2,4-D	0.1
533-74-4	Dazomet	1
53404-60-7	Dazomet, sodium salt	1
94-82-6	2,4-DB	1
1929-73-3	2,4-D 2-butoxyethyl ester	0.1
94-80-4	2,4-D butyl ester	0.1
2971-38-2	2,4-D chlorocrotyl ester	0.1
1163-19-5	Decabromodiphenyl oxide	1
13684-56-5	Desmedipham	1
1928-43-4	2,4-D 2-ethylhexyl ester	0.1
53404-37-8	2,4-D 2-ethyl-4-methylpentyl ester	0.1
2303-16-4	Diallate	1
615-05-4	2,4-Diaminoanisole	0.1
39156-41-7	2,4-Diaminoanisole sulfate	0.1
101-80-4	4,4'-Diaminodiphenyl ether	0.1
95-80-7	2,4-Diaminotoluene (2,4-Toluenediamine)	0.1
25376-45-8	Diaminotoluene (mixed isomers) (Toluenediamine)	0.1
333-41-5	Diazinon	0.1
334-88-3	Diazomethane	1
132-64-9	Dibenzofuran	1
96-12-8	1,2-Dibromo-3-chloropropane	0.1
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	0.1
124-73-2	Dibromotetrafluoroethane (1,2-Dibromo-1,1,2,2-tetrafluoroethane)	1
84-74-2	Dibutyl phthalate	1
1918-00-9	Dicamba	1
99-30-9	Dichloran	1
95-50-1	1,2-Dichlorobenzene (*o*-Dichlorobenzene)	1
541-73-1	1,3-Dichlorobenzene (*m*-Dichlorobenzene)	1
106-46-7	1,4-Dichlorobenzene (*p*-Dichlorobenzene)	0.1
25321-22-6	Dichlorobenzene (mixed isomers)	0.1
91-94-1	3,3'-Dichlorobenzidine	0.1
612-83-9	3,3'-Dichlorobenzidine dihydrochloride	0.1
64969-34-2	3,3'-Dichlorobenzidine sulfate	0.1
75-27-4	Dichlorobromomethane	0.1
764-41-0	1,4-Dichloro-2-butene	1
110-57-6	*trans*-1,4-Dichloro-2-butene	1
1649-08-7	1,2-Dichloro-1,1-difluoroethane (HCFC-132b)	1

CASRN	Chemical Name	*De minimis* % Limit
75-71-8	Dichlorodifluoromethane (CFC-12)	1
107-06-2	1,2-Dichloroethane	0.1
540-59-0	1,2-Dichloroethylene	1
1717-00-6	1,1-Dichloro-1-fluoroethane (HCFC-141b)	1
75-43-4	Dichlorofluoromethane (HCFC-21)	1
75-09-2	Dichloromethane (Methylene chloride)	0.1
127564-92-5	Dichloropentafluoropropane	1
13474-88-9	1,1-Dichloro-1,2,2,3,3-pentafluoropropane (HCFC-225cc)	1
111512-56-2	1,1-Dichloro-1,2,3,3,3-pentafluoropropane (HCFC-225eb)	1
422-44-6	1,2-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225bb)	1
431-86-7	1,2-Dichloro-1,1,3,3,3-pentafluoropropane (HCFC-225da)	1
507-55-1	1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)	1
136013-79-1	1,3-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225ea)	1
128903-21-9	2,2-Dichloro-1,1,1,3,3-pentafluoropropane (HCFC-225aa)	1
422-48-0	2,3-Dichloro-1,1,1,2,3-pentafluoropropane (HCFC-225ba)	1
422-56-0	3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)	1
97-23-4	Dichlorophene	1
120-83-2	2,4-Dichlorophenol	1
78-87-5	1,2-Dichloropropane	0.1
10061-02-6	*trans*-1,3-Dichloropropene	0.1
78-88-6	2,3-Dichloropropene	1
542-75-6	1,3-Dichloropropylene (1,3-Dichloropropene)	0.1
76-14-2	Dichlorotetrafluoroethane (CFC-114)	1
34077-87-7	Dichlorotrifluoroethane	1
90454-18-5	Dichloro-1,1,2-trifluoroethane	1
812-04-4	1,1-Dichloro-1,2,2-trifluoroethane (HCFC-123b)	1
354-23-4	1,2-Dichloro-1,1,2-trifluoroethane (HCFC-123a)	1

Table II. EPCRA Section 313 Chemical List for Reporting Year 2022

CASRN	Chemical Name	*De minimis* % Limit
306-83-2	2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123)	1
62-73-7	Dichlorvos	0.1
51338-27-3	Diclofop methyl	1
115-32-2	Dicofol	1
77-73-6	Dicyclopentadiene	1
1464-53-5	Diepoxybutane	0.1
111-42-2	Diethanolamine	1
38727-55-8	Diethatyl ethyl	1
117-81-7	Di(2-ethylhexyl) phthalate	0.1
64-67-5	Diethyl sulfate	0.1
35367-38-5	Diflubenzuron	1
101-90-6	Diglycidyl resorcinol ether	0.1
94-58-6	Dihydrosafrole	0.1
55290-64-7	Dimethipin	1
60-51-5	Dimethoate	1
119-90-4	3,3'-Dimethoxybenzidine	0.1
20325-40-0	3,3'-Dimethoxybenzidine dihydrochloride	0.1
111984-09-9	3,3'-Dimethoxybenzidine monohydrochloride	0.1
124-40-3	Dimethylamine	1
2300-66-5	Dimethylamine dicamba	1
60-11-7	4-Dimethylaminoazobenzene	0.1
121-69-7	*N,N*-Dimethylaniline	1
119-93-7	3,3'-Dimethylbenzidine	0.1
612-82-8	3,3'-Dimethylbenzidine dihydrochloride	0.1
41766-75-0	3,3'-Dimethylbenzidine dihydrofluoride	0.1
79-44-7	Dimethylcarbamoyl chloride	0.1
2524-03-0	Dimethyl chlorothiophosphate	1
68-12-2	*N,N*-Dimethylformamide	0.1
57-14-7	1,1-Dimethylhydrazine	0.1
105-67-9	2,4-Dimethylphenol	1
131-11-3	Dimethyl phthalate	1
77-78-1	Dimethyl sulfate	0.1
99-65-0	*m*-Dinitrobenzene	1
528-29-0	*o*-Dinitrobenzene	1
100-25-4	*p*-Dinitrobenzene	1
88-85-7	Dinitrobutyl phenol (Dinoseb)	1
534-52-1	4,6-Dinitro-*o*-cresol	1
51-28-5	2,4-Dinitrophenol	1
121-14-2	2,4-Dinitrotoluene	0.1
606-20-2	2,6-Dinitrotoluene	0.1
25321-14-6	Dinitrotoluene (mixed isomers)	1
39300-45-3	Dinocap	1
123-91-1	1,4-Dioxane	0.1
957-51-7	Diphenamid	1
122-39-4	Diphenylamine	1
122-66-7	1,2-Diphenylhydrazine	0.1
2164-07-0	Dipotassium endothall	1
136-45-8	Dipropyl isocinchomeronate	1
138-93-2	Disodium cyanodithioimidocarbonate	1
94-11-1	2,4-D isopropyl ester	0.1
541-53-7	2,4-Dithiobiuret (Dithiobiuret)	1
330-54-1	Diuron	1
2439-10-3	Dodine	1
120-36-5	2,4-DP (Dichlorprop)	0.1
1320-18-9	2,4-D propylene glycol butyl ether ester (2,4-D 2-butoxymethylethyl ester)	0.1
2702-72-9	2,4-D sodium salt	0.1
106-89-8	Epichlorohydrin	0.1
13194-48-4	Ethoprop	1
110-80-5	2-Ethoxyethanol	1
140-88-5	Ethyl acrylate	0.1
100-41-4	Ethylbenzene	0.1
541-41-3	Ethyl chloroformate	1
759-94-4	*S*-Ethyl dipropylthiocarbamate	1
74-85-1	Ethylene	1
107-21-1	Ethylene glycol	1
151-56-4	Ethyleneimine (Aziridine)	0.1
75-21-8	Ethylene oxide	0.1
96-45-7	Ethylene thiourea	0.1
75-34-3	Ethylidene dichloride (1,1-Dichloroethane)	1
52-85-7	Famphur	1
60168-88-9	Fenarimol	1
13356-08-6	Fenbutatin oxide	1
66441-23-4	Fenoxaprop-ethyl	1
72490-01-8	Fenoxycarb	1
39515-41-8	Fenpropathrin	1
55-38-9	Fenthion	1
51630-58-1	Fenvalerate	1
14484-64-1	Ferbam	1
69806-50-4	Fluazifop-butyl	1
2164-17-2	Fluometuron	1
7782-41-4	Fluorine	1
51-21-8	Fluorouracil (5-Fluorouracil)	1
69409-94-5	Fluvalinate	1
133-07-3	Folpet	1
72178-02-0	Fomesafen	1
50-00-0	Formaldehyde	0.1
64-18-6	Formic acid	1
76-13-1	Freon 113 (CFC-113)	1
110-00-9	Furan	0.1
556-52-5	Glycidol	0.1
76-44-8	Heptachlor	*
118-74-1	Hexachlorobenzene	*
87-68-3	Hexachloro-1,3-butadiene (Hexachlorobutadiene)	1
319-84-6	*alpha*-Hexachlorocyclohexane	0.1
77-47-4	Hexachlorocyclopentadiene	1

CASRN	Chemical Name	*De minimis* % Limit
67-72-1	Hexachloroethane	0.1
1335-87-1	Hexachloronaphthalene	1
70-30-4	Hexachlorophene	1
680-31-9	Hexamethylphosphoramide	0.1
110-54-3	*n*-Hexane (Hexane)	1
51235-04-2	Hexazinone	1
67485-29-4	Hydramethylnon	1
302-01-2	Hydrazine	0.1
10034-93-2	Hydrazine sulfate (1:1)	0.1
7647-01-0	Hydrochloric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)	1
74-90-8	Hydrogen cyanide	1
7664-39-3	Hydrogen fluoride (Hydrofluoric acid)	1
7783-06-4	Hydrogen sulfide	1
123-31-9	Hydroquinone	1
35554-44-0	Imazalil	1
55406-53-6	3-Iodo-2-propynyl butylcarbamate	1
13463-40-6	Iron pentacarbonyl	1
78-84-2	Isobutyraldehyde	1
465-73-6	Isodrin	*
25311-71-1	Isofenphos	1
78-79-5	Isoprene	0.1
67-63-0	Isopropyl alcohol (Isopropanol) (only persons who manufacture by the strong acid process are subject, no supplier notification)	1
80-05-7	4,4'-Isopropylidenediphenol	1
120-58-1	Isosafrole	1
77501-63-4	Lactofen	1
7439-92-1	Lead	* see notes
58-89-9	Lindane	0.1
330-55-2	Linuron	1
554-13-2	Lithium carbonate	1
121-75-5	Malathion	0.1
108-31-6	Maleic anhydride	1
109-77-3	Malononitrile	1
12427-38-2	Maneb	1
7439-96-5	Manganese	1
93-65-2	Mecoprop	0.1
149-30-4	2-Mercaptobenzothiazole	0.1
7439-97-6	Mercury	*
150-50-5	Merphos	1
126-98-7	Methacrylonitrile	1
137-42-8	Metham sodium (Sodium methyldithiocarbamate)	1
67-56-1	Methanol	1
20354-26-1	Methazole	1
2032-65-7	Methiocarb	1
94-74-6	Methoxone (MCPA)	0.1
3653-48-3	Methoxone sodium salt	0.1
72-43-5	Methoxychlor	*
109-86-4	2-Methoxyethanol	1
96-33-3	Methyl acrylate	0.1
1634-04-4	Methyl tert-butyl ether	1
79-22-1	Methyl chlorocarbonate	1
101-14-4	4,4'-Methylenebis(2-chloroaniline)	0.1
101-61-1	4,4'-Methylenebis(*N,N*-dimethyl)benzenamine (4,4'-Methylenebis[*N,N*-dimethylaniline])	0.1
74-95-3	Methylene bromide (Dibromomethane)	1
101-77-9	4,4'-Methylenedianiline	0.1
93-15-2	Methyleugenol	0.1
60-34-4	Methyl hydrazine	1
74-88-4	Methyl iodide	1
108-10-1	Methyl isobutyl ketone	0.1
624-83-9	Methyl isocyanate	1
556-61-6	Methyl isothiocyanate	1
75-86-5	2-Methyllactonitrile (Acetone cyanohydrin)	1
80-62-6	Methyl methacrylate	1
924-42-5	*N*-Methylolacrylamide	1
298-00-0	Methyl parathion	1
109-06-8	2-Methylpyridine	1
872-50-4	*N*-Methyl-2-pyrrolidone	1
9006-42-2	Metiram	1
21087-64-9	Metribuzin	1
7786-34-7	Mevinphos	1
90-94-8	Michler's ketone	0.1
2212-67-1	Molinate	1
1313-27-5	Molybdenum trioxide	0.1
76-15-3	Monochloropentafluoroethane (CFC-115)	1
150-68-5	Monuron	1
505-60-2	Mustard gas	0.1
88671-89-0	Myclobutanil	1
142-59-6	Nabam	1
300-76-5	Naled	1
91-20-3	Naphthalene	0.1
134-32-7	*alpha*-Naphthylamine (1-Naphthalenamine)	0.1
91-59-8	*beta*-Naphthylamine (2-Naphthalenamine)	0.1
7440-02-0	Nickel	0.1
1929-82-4	Nitrapyrin	1
7697-37-2	Nitric acid	1

Table II. EPCRA Section 313 Chemical List for Reporting Year 2022

CASRN	Chemical Name	*De minimis* % Limit
139-13-9	Nitrilotriacetic acid	0.1
100-01-6	*p*-Nitroaniline	1
99-59-2	5-Nitro-*o*-anisidine (2-Methoxy-5-nitroaniline)	1
91-23-6	*o*-Nitroanisole	0.1
98-95-3	Nitrobenzene	0.1
92-93-3	4-Nitrobiphenyl	0.1
1836-75-5	Nitrofen	0.1
51-75-2	Nitrogen mustard (HN-2)	0.1
55-63-0	Nitroglycerin	1
75-52-5	Nitromethane	0.1
88-75-5	2-Nitrophenol (*o*-Nitrophenol)	1
100-02-7	4-Nitrophenol (*p*-Nitrophenol)	1
79-46-9	2-Nitropropane	0.1
924-16-3	*N*-Nitrosodi-*n*-butylamine	0.1
55-18-5	*N*-Nitrosodiethylamine	0.1
62-75-9	*N*-Nitrosodimethylamine	0.1
86-30-6	*N*-Nitrosodiphenylamine	1
156-10-5	*p*-Nitrosodiphenylamine	1
621-64-7	*N*-Nitrosodi-*n*-propylamine	0.1
759-73-9	*N*-Nitroso-*N*-ethylurea	0.1
684-93-5	*N*-Nitroso-*N*-methylurea	0.1
4549-40-0	*N*-Nitrosomethylvinylamine	0.1
59-89-2	*N*-Nitrosomorpholine	0.1
16543-55-8	*N*-Nitrosonornicotine	0.1
100-75-4	*N*-Nitrosopiperidine	0.1
88-72-2	*o*-Nitrotoluene	0.1
99-55-8	5-Nitro-*o*-toluidine (2-Methyl-5-nitroaniline)	1
27314-13-2	Norflurazon	1
2234-13-1	Octachloronaphthalene	1
29082-74-4	Octachlorostyrene	*
19044-88-3	Oryzalin	1
20816-12-0	Osmium tetroxide	1
19666-30-9	Oxadiazon	1
301-12-2	Oxydemeton-methyl	1
42874-03-3	Oxyfluorfen	1
10028-15-6	Ozone	1
123-63-7	Paraldehyde	1
1910-42-5	Paraquat dichloride	1
56-38-2	Parathion	0.1
1114-71-2	Pebulate	1
40487-42-1	Pendimethalin	*
608-93-5	Pentachlorobenzene	*
76-01-7	Pentachloroethane	1
87-86-5	Pentachlorophenol	0.1
57-33-0	Pentobarbital sodium	1
79-21-0	Peracetic acid	1
594-42-3	Perchloromethyl mercaptan	1
52645-53-1	Permethrin	1
85-01-8	Phenanthrene	1
108-95-2	Phenol	1

CASRN	Chemical Name	*De minimis* % Limit
77-09-8	Phenolphthalein (3,3-Bis(4-hydroxyphenyl)phthalide)	0.1
26002-80-2	Phenothrin	1
95-54-5	1,2-Phenylenediamine	0.1
108-45-2	1,3-Phenylenediamine	1
106-50-3	*p*-Phenylenediamine	1
615-28-1	1,2-Phenylenediamine dihydrochloride	0.1
624-18-0	1,4-Phenylenediamine dihydrochloride	1
90-43-7	2-Phenylphenol	1
57-41-0	Phenytoin	0.1
75-44-5	Phosgene	1
7803-51-2	Phosphine	1
12185-10-3	Phosphorus (yellow or white)	1
85-44-9	Phthalic anhydride	1
1918-02-1	Picloram	1
88-89-1	Picric acid	1
51-03-6	Piperonyl butoxide	1
29232-93-7	Pirimiphos-methyl	1
1336-36-3	Polychlorinated biphenyls	*
7758-01-2	Potassium bromate	0.1
128-03-0	Potassium dimethyldithiocarbamate	1
137-41-7	Potassium *N*-methyldithiocarbamate	1
41198-08-7	Profenofos	1
7287-19-6	Prometryn	1
23950-58-5	Pronamide	1
1918-16-7	Propachlor	1
1120-71-4	1,3-Propane sultone	0.1
709-98-8	Propanil	1
2312-35-8	Propargite	1
107-19-7	Propargyl alcohol	1
31218-83-4	Propetamphos	1
60207-90-1	Propiconazole	1
57-57-8	*beta*-Propiolactone	0.1
123-38-6	Propionaldehyde	1
114-26-1	Propoxur	1
115-07-1	Propylene	1
75-55-8	Propyleneimine	0.1
75-56-9	Propylene oxide	0.1
110-86-1	Pyridine	0.1
91-22-5	Quinoline	0.1
106-51-4	Quinone	1
82-68-8	Quintozene (Pentachloronitrobenzene)	1
76578-14-8	Quizalofop-ethyl	1
10453-86-8	Resmethrin	1
81-07-2	Saccharin (only persons who manufacture are subject, no supplier notification)	1
94-59-7	Safrole	0.1

Table II. EPCRA Section 313 Chemical List for Reporting Year 2022

CASRN	Chemical Name	*De minimis* % Limit
7782-49-2	Selenium	1
74051-80-2	Sethoxydim	1
7440-22-4	Silver	1
122-34-9	Simazine	1
26628-22-8	Sodium azide	1
1982-69-0	Sodium dicamba	1
128-04-1	Sodium dimethyldithiocarbamate	1
62-74-8	Sodium fluoroacetate	1
7632-00-0	Sodium nitrite	1
131-52-2	Sodium pentachlorophenate	0.1
132-27-4	Sodium *o*-phenylphenoxide	0.1
100-42-5	Styrene	0.1
96-09-3	Styrene oxide	0.1
7664-93-9	Sulfuric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)	1
2699-79-8	Sulfuryl fluoride	1
35400-43-2	Sulprofos	1
34014-18-1	Tebuthiuron	1
3383-96-8	Temephos	1
5902-51-2	Terbacil	1
79-94-7	Tetrabromobisphenol A	*
630-20-6	1,1,1,2-Tetrachloroethane	0.1
79-34-5	1,1,2,2-Tetrachloroethane	0.1
127-18-4	Tetrachloroethylene	0.1
354-11-0	1,1,1,2-Tetrachloro-2-fluoroethane (HCFC-121a)	1
354-14-3	1,1,2,2-Tetrachloro-1-fluoroethane (HCFC-121)	1
961-11-5	Tetrachlorvinphos	0.1
64-75-5	Tetracycline hydrochloride	1
116-14-3	Tetrafluoroethylene (Tetrafluoroethene)	0.1
7696-12-0	Tetramethrin	1
509-14-8	Tetranitromethane	0.1
7440-28-0	Thallium	1
148-79-8	Thiabendazole	1
62-55-5	Thioacetamide	0.1
28249-77-6	Thiobencarb	1
139-65-1	4,4'-Thiodianiline	0.1
59669-26-0	Thiodicarb	1
23564-06-9	Thiophanate-ethyl	1
23564-05-8	Thiophanate-methyl	1
79-19-6	Thiosemicarbazide	1
62-56-6	Thiourea	0.1
137-26-8	Thiram	1
1314-20-1	Thorium dioxide	1
7550-45-0	Titanium tetrachloride	1
108-88-3	Toluene	1
584-84-9	Toluene-2,4-diisocyanate	0.1
91-08-7	Toluene-2,6-diisocyanate	0.1
26471-62-5	Toluene diisocyanate (mixed isomers)	0.1
95-53-4	*o*-Toluidine	0.1
636-21-5	*o*-Toluidine hydrochloride	0.1
8001-35-2	Toxaphene	*
43121-43-3	Triadimefon	1
2303-17-5	Triallate	1
68-76-8	Triaziquone	1
101200-48-0	Tribenuron-methyl	1
1983-10-4	Tributyltin fluoride	1
2155-70-6	Tributyltin methacrylate	1
78-48-8	*S,S,S*-Tributyltrithiophosphate (Tribufos)	1
52-68-6	Trichlorfon	1
76-02-8	Trichloroacetyl chloride	1
120-82-1	1,2,4-Trichlorobenzene	1
71-55-6	1,1,1-Trichloroethane	1
79-00-5	1,1,2-Trichloroethane	1
79-01-6	Trichloroethylene	0.1
75-69-4	Trichlorofluoromethane (CFC-11)	1
95-95-4	2,4,5-Trichlorophenol	1
88-06-2	2,4,6-Trichlorophenol	0.1
96-18-4	1,2,3-Trichloropropane	0.1
57213-69-1	Triclopyr-triethylammonium salt	1
121-44-8	Triethylamine	1
1582-09-8	Trifluralin	*
26644-46-2	Triforine	1
95-63-6	1,2,4-Trimethylbenzene	1
2655-15-4	2,3,5-Trimethylphenyl methylcarbamate	1
639-58-7	Triphenyltin chloride	1
76-87-9	Triphenyltin hydroxide	1
126-72-7	Tris(2,3-dibromopropyl) phosphate	0.1
72-57-1	Trypan blue	0.1
51-79-6	Urethane	0.1
7440-62-2	Vanadium (except when contained in an alloy)	1
50471-44-8	Vinclozolin	1
108-05-4	Vinyl acetate	0.1
593-60-2	Vinyl bromide	0.1
75-01-4	Vinyl chloride	0.1
75-02-5	Vinyl fluoride	0.1
75-35-4	Vinylidene chloride (1,1-Dichloroethylene)	0.1
108-38-3	*m*-Xylene	1
95-47-6	*o*-Xylene	1
106-42-3	*p*-Xylene	1
1330-20-7	Xylene (mixed isomers)	1
87-62-7	2,6-Xylidine	0.1
7440-66-6	Zinc (fume or dust)	1

CASRN	Chemical Name	*De minimis* % Limit
12122-67-7	Zineb	1

b. Individually-Listed Toxic Chemicals Arranged by CASRN

CASRN	Chemical Name	*De minimis* % Limit
50-00-0	Formaldehyde	0.1
51-03-6	Piperonyl butoxide	1
51-21-8	Fluorouracil (5-Fluorouracil)	1
51-28-5	2,4-Dinitrophenol	1
51-75-2	Nitrogen mustard (HN-2)	0.1
51-79-6	Urethane	0.1
52-68-6	Trichlorfon	1
52-85-7	Famphur	1
53-96-3	2-Acetylaminofluorene	0.1
55-18-5	*N*-Nitrosodiethylamine	0.1
55-21-0	Benzamide	1
55-38-9	Fenthion	1
55-63-0	Nitroglycerin	1
56-23-5	Carbon tetrachloride	0.1
56-35-9	Bis(tributyltin) oxide	1
56-38-2	Parathion	0.1
57-14-7	1,1-Dimethylhydrazine	0.1
57-33-0	Pentobarbital sodium	1
57-41-0	Phenytoin	0.1
57-57-8	*beta*-Propiolactone	0.1
57-74-9	Chlordane	*
58-89-9	Lindane	0.1
59-89-2	*N*-Nitrosomorpholine	0.1
60-09-3	4-Aminoazobenzene	0.1
60-11-7	4-Dimethylaminoazobenzene	0.1
60-34-4	Methyl hydrazine	1
60-35-5	Acetamide	0.1
60-51-5	Dimethoate	1
61-82-5	Amitrole	0.1
62-53-3	Aniline	0.1
62-55-5	Thioacetamide	0.1
62-56-6	Thiourea	0.1
62-73-7	Dichlorvos	0.1
62-74-8	Sodium fluoroacetate	1
62-75-9	*N*-Nitrosodimethylamine	0.1
63-25-2	Carbaryl	1
64-18-6	Formic acid	1
64-67-5	Diethyl sulfate	0.1
64-75-5	Tetracycline hydrochloride	1
67-56-1	Methanol	1
67-63-0	Isopropyl alcohol (Isopropanol) (only persons who manufacture by the strong acid process are subject, no supplier notification)	1
67-66-3	Chloroform	0.1
67-72-1	Hexachloroethane	0.1
68-12-2	*N,N*-Dimethylformamide	0.1
68-76-8	Triaziquone	1
70-30-4	Hexachlorophene	1
71-36-3	*n*-Butyl alcohol (1-Butanol)	1
71-43-2	Benzene	0.1
71-55-6	1,1,1-Trichloroethane	1
72-43-5	Methoxychlor	*
72-57-1	Trypan blue	0.1
74-83-9	Bromomethane (Methyl bromide)	1
74-85-1	Ethylene	1
74-87-3	Chloromethane	1
74-88-4	Methyl iodide	1
74-90-8	Hydrogen cyanide	1
74-95-3	Methylene bromide (Dibromomethane)	1
75-00-3	Chloroethane	1
75-01-4	Vinyl chloride	0.1
75-02-5	Vinyl fluoride	0.1
75-05-8	Acetonitrile	1
75-07-0	Acetaldehyde	0.1
75-09-2	Dichloromethane (Methylene chloride)	0.1
75-15-0	Carbon disulfide	1
75-21-8	Ethylene oxide	0.1
75-25-2	Bromoform (Tribromomethane)	1
75-27-4	Dichlorobromomethane	0.1
75-34-3	Ethylidene dichloride (1,1-Dichloroethane)	1
75-35-4	Vinylidene chloride (1,1-Dichloroethylene)	0.1
75-43-4	Dichlorofluoromethane (HCFC-21)	1
75-44-5	Phosgene	1
75-45-6	Chlorodifluoromethane (HCFC-22)	1
75-52-5	Nitromethane	0.1
75-55-8	Propyleneimine	0.1
75-56-9	Propylene oxide	0.1
75-63-8	Bromotrifluoromethane (Halon 1301)	1
75-65-0	*tert*-Butyl alcohol (tert-Butanol)	1

CASRN	Chemical Name	*De minimis* % Limit
75-68-3	1-Chloro-1,1-difluoroethane (HCFC-142b)	1
75-69-4	Trichlorofluoromethane (CFC-11)	1
75-71-8	Dichlorodifluoromethane (CFC-12)	1
75-72-9	Chlorotrifluoromethane (CFC-13)	1
75-86-5	2-Methyllactonitrile (Acetone cyanohydrin)	1
75-88-7	2-Chloro-1,1,1-trifluoroethane (HCFC-133a)	1
76-01-7	Pentachloroethane	1
76-02-8	Trichloroacetyl chloride	1
76-06-2	Chloropicrin	1
76-13-1	Freon 113 (CFC-113)	1
76-14-2	Dichlorotetrafluoroethane (CFC-114)	1
76-15-3	Monochloropentafluoroethane (CFC-115)	1
76-44-8	Heptachlor	*
76-87-9	Triphenyltin hydroxide	1
77-09-8	Phenolphthalein (3,3-Bis(4-hydroxyphenyl)phthalide)	0.1
77-47-4	Hexachlorocyclopentadiene	1
77-73-6	Dicyclopentadiene	1
77-78-1	Dimethyl sulfate	0.1
78-48-8	*S,S,S*-Tributyltrithiophosphate (Tribufos)	1
78-79-5	Isoprene	0.1
78-84-2	Isobutyraldehyde	1
78-87-5	1,2-Dichloropropane	0.1
78-88-6	2,3-Dichloropropene	1
78-92-2	*sec*-Butyl alcohol (2-Butanol)	1
79-00-5	1,1,2-Trichloroethane	1
79-01-6	Trichloroethylene	0.1
79-06-1	Acrylamide	0.1
79-10-7	Acrylic acid	1
79-11-8	Chloroacetic acid	1
79-19-6	Thiosemicarbazide	1
79-21-0	Peracetic acid	1
79-22-1	Methyl chlorocarbonate	1
79-34-5	1,1,2,2-Tetrachloroethane	0.1
79-44-7	Dimethylcarbamoyl chloride	0.1
79-46-9	2-Nitropropane	0.1
79-94-7	Tetrabromobisphenol A	*
80-05-7	4,4'-Isopropylidenediphenol	1
80-15-9	Cumene hydroperoxide	1
80-62-6	Methyl methacrylate	1
81-07-2	Saccharin (only persons who manufacture are subject, no supplier notification)	1
81-49-2	1-Amino-2,4-dibromoanthraquinone	0.1
81-88-9	C.I. Food Red 15 (Rhodamine B)	1
82-28-0	1-Amino-2-methylanthraquinone	0.1
82-68-8	Quintozene (Pentachloronitrobenzene)	1
84-74-2	Dibutyl phthalate	1
85-01-8	Phenanthrene	1
85-44-9	Phthalic anhydride	1
86-30-6	*N*-Nitrosodiphenylamine	1
87-62-7	2,6-Xylidine	0.1
87-68-3	Hexachloro-1,3-butadiene (Hexachlorobutadiene)	1
87-86-5	Pentachlorophenol	0.1
88-06-2	2,4,6-Trichlorophenol	0.1
88-72-2	*o*-Nitrotoluene	0.1
88-75-5	2-Nitrophenol (*o*-Nitrophenol)	1
88-85-7	Dinitrobutyl phenol (Dinoseb)	1
88-89-1	Picric acid	1
90-04-0	*o*-Anisidine	0.1
90-43-7	2-Phenylphenol	1
90-94-8	Michler's ketone	0.1
91-08-7	Toluene-2,6-diisocyanate	0.1
91-20-3	Naphthalene	0.1
91-22-5	Quinoline	0.1
91-23-6	*o*-Nitroanisole	0.1
91-59-8	*beta*-Naphthylamine (2-Naphthalenamine)	0.1
91-94-1	3,3'-Dichlorobenzidine	0.1
92-52-4	Biphenyl	1
92-67-1	4-Aminobiphenyl	0.1
92-87-5	Benzidine	0.1
92-93-3	4-Nitrobiphenyl	0.1
93-15-2	Methyleugenol	0.1
93-65-2	Mecoprop	0.1
94-11-1	2,4-D isopropyl ester	0.1
94-36-0	Benzoyl peroxide	1
94-58-6	Dihydrosafrole	0.1
94-59-7	Safrole	0.1
94-74-6	Methoxone (MCPA)	0.1
94-75-7	2,4-D	0.1
94-80-4	2,4-D butyl ester	0.1
94-82-6	2,4-DB	1
95-47-6	*o*-Xylene	1
95-48-7	*o*-Cresol	1
95-50-1	1,2-Dichlorobenzene (*o*-Dichlorobenzene)	1
95-53-4	*o*-Toluidine	0.1
95-54-5	1,2-Phenylenediamine	0.1
95-63-6	1,2,4-Trimethylbenzene	1

CASRN	Chemical Name	*De minimis* % Limit
95-69-2	*p*-Chloro-*o*-toluidine (4-Chloro-2-methylaniline)	0.1
95-80-7	2,4-Diaminotoluene (2,4-Toluenediamine)	0.1
95-95-4	2,4,5-Trichlorophenol	1
96-09-3	Styrene oxide	0.1
96-12-8	1,2-Dibromo-3-chloropropane	0.1
96-18-4	1,2,3-Trichloropropane	0.1
96-33-3	Methyl acrylate	0.1
96-45-7	Ethylene thiourea	0.1
97-23-4	Dichlorophene	1
97-56-3	C.I. Solvent Yellow 3	0.1
98-07-7	Benzoic trichloride (Benzotrichloride)	0.1
98-82-8	Cumene	0.1
98-86-2	Acetophenone	1
98-87-3	Benzal chloride	1
98-88-4	Benzoyl chloride	1
98-95-3	Nitrobenzene	0.1
99-30-9	Dichloran	1
99-55-8	5-Nitro-*o*-toluidine (2-Methyl-5-nitroaniline)	1
99-59-2	5-Nitro-*o*-anisidine (2-Methoxy-5-nitroaniline)	1
99-65-0	*m*-Dinitrobenzene	1
100-01-6	*p*-Nitroaniline	1
100-02-7	4-Nitrophenol (*p*-Nitrophenol)	1
100-25-4	*p*-Dinitrobenzene	1
100-41-4	Ethylbenzene	0.1
100-42-5	Styrene	0.1
100-44-7	Benzyl chloride	1
100-75-4	*N*-Nitrosopiperidine	0.1
101-05-3	Anilazine	1
101-14-4	4,4'-Methylenebis(2-chloroaniline)	0.1
101-61-1	4,4'-Methylenebis(*N,N*-dimethyl)benzenamine (4,4'-Methylenebis[*N,N*-dimethylaniline])	0.1
101-77-9	4,4'-Methylenedianiline	0.1
101-80-4	4,4'-Diaminodiphenyl ether	0.1
101-90-6	Diglycidyl resorcinol ether	0.1
104-12-1	*p*-Chlorophenyl isocyanate	1
104-94-9	*p*-Anisidine	1
105-67-9	2,4-Dimethylphenol	1
106-42-3	*p*-Xylene	1
106-44-5	*p*-Cresol	1
106-46-7	1,4-Dichlorobenzene (*p*-Dichlorobenzene)	0.1
106-47-8	*p*-Chloroaniline	0.1
106-50-3	*p*-Phenylenediamine	1
106-51-4	Quinone	1
106-88-7	1,2-Butylene oxide	0.1
106-89-8	Epichlorohydrin	0.1
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	0.1
106-94-5	1-Bromopropane	0.1
106-99-0	1,3-Butadiene	0.1
107-02-8	Acrolein	0.1
107-05-1	Allyl chloride	1
107-06-2	1,2-Dichloroethane	0.1
107-11-9	Allylamine	1
107-13-1	Acrylonitrile	0.1
107-18-6	Allyl alcohol	1
107-19-7	Propargyl alcohol	1
107-21-1	Ethylene glycol	1
107-30-2	Chloromethyl methyl ether	0.1
108-05-4	Vinyl acetate	0.1
108-10-1	Methyl isobutyl ketone	0.1
108-31-6	Maleic anhydride	1
108-38-3	*m*-Xylene	1
108-39-4	*m*-Cresol	1
108-45-2	1,3-Phenylenediamine	1
108-60-1	Bis(2-chloro-1-methylethyl) ether	1
108-88-3	Toluene	1
108-90-7	Chlorobenzene	1
108-93-0	Cyclohexanol	1
108-95-2	Phenol	1
109-06-8	2-Methylpyridine	1
109-77-3	Malononitrile	1
109-86-4	2-Methoxyethanol	1
110-00-9	Furan	0.1
110-54-3	*n*-Hexane (Hexane)	1
110-57-6	*trans*-1,4-Dichloro-2-butene	1
110-80-5	2-Ethoxyethanol	1
110-82-7	Cyclohexane	1
110-86-1	Pyridine	0.1
111-42-2	Diethanolamine	1
111-44-4	Bis(2-chloroethyl) ether	1
111-91-1	Bis(2-chloroethoxy)methane	1
114-26-1	Propoxur	1
115-07-1	Propylene	1
115-28-6	Chlorendic acid	0.1
115-32-2	Dicofol	1
116-06-3	Aldicarb	1
116-14-3	Tetrafluoroethylene (Tetrafluoroethene)	0.1
117-79-3	2-Aminoanthraquinone	0.1
117-81-7	Di(2-ethylhexyl) phthalate	0.1
118-74-1	Hexachlorobenzene	*
119-90-4	3,3'-Dimethoxybenzidine	0.1
119-93-7	3,3'-Dimethylbenzidine	0.1
120-12-7	Anthracene	1
120-36-5	2,4-DP (Dichlorprop)	0.1
120-58-1	Isosafrole	1

CASRN	Chemical Name	*De minimis* % Limit
120-71-8	*p*-Cresidine	0.1
120-80-9	Catechol	0.1
120-82-1	1,2,4-Trichlorobenzene	1
120-83-2	2,4-Dichlorophenol	1
121-14-2	2,4-Dinitrotoluene	0.1
121-44-8	Triethylamine	1
121-69-7	*N,N*-Dimethylaniline	1
121-75-5	Malathion	0.1
122-34-9	Simazine	1
122-39-4	Diphenylamine	1
122-66-7	1,2-Diphenylhydrazine	0.1
123-31-9	Hydroquinone	1
123-38-6	Propionaldehyde	1
123-63-7	Paraldehyde	1
123-72-8	Butyraldehyde	1
123-91-1	1,4-Dioxane	0.1
124-40-3	Dimethylamine	1
124-73-2	Dibromotetrafluoroethane (1,2-Dibromo-1,1,2,2-tetrafluoroethane)	1
126-72-7	Tris(2,3-dibromopropyl) phosphate	0.1
126-98-7	Methacrylonitrile	1
126-99-8	Chloroprene	0.1
127-18-4	Tetrachloroethylene	0.1
128-03-0	Potassium dimethyldithiocarbamate	1
128-04-1	Sodium dimethyldithiocarbamate	1
128-66-5	C.I. Vat Yellow 4	1
131-11-3	Dimethyl phthalate	1
131-52-2	Sodium pentachlorophenate	0.1
132-27-4	Sodium *o*-phenylphenoxide	0.1
132-64-9	Dibenzofuran	1
133-06-2	Captan	1
133-07-3	Folpet	1
133-90-4	Chloramben	1
134-29-2	*o*-Anisidine hydrochloride	0.1
134-32-7	*alpha*-Naphthylamine (1-Naphthalenamine)	0.1
135-20-6	Cupferron	0.1
136-45-8	Dipropyl isocinchomeronate	1
137-26-8	Thiram	1
137-41-7	Potassium *N*-methyldithiocarbamate	1
137-42-8	Metham sodium (Sodium methyldithiocarbamate)	1
138-93-2	Disodium cyanodithioimidocarbonate	1
139-13-9	Nitrilotriacetic acid	0.1
139-65-1	4,4'-Thiodianiline	0.1
140-88-5	Ethyl acrylate	0.1
141-32-2	Butyl acrylate	1
142-59-6	Nabam	1
148-79-8	Thiabendazole	1
149-30-4	2-Mercaptobenzothiazole	0.1
150-50-5	Merphos	1
150-68-5	Monuron	1
151-56-4	Ethyleneimine (Aziridine)	0.1
156-10-5	*p*-Nitrosodiphenylamine	1
156-62-7	Calcium cyanamide	1
191-24-2	Benzo[g,h,i]perylene	*
298-00-0	Methyl parathion	1
300-76-5	Naled	1
301-12-2	Oxydemeton-methyl	1
302-01-2	Hydrazine	0.1
306-83-2	2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123)	1
309-00-2	Aldrin	*
314-40-9	Bromacil	1
319-84-6	*alpha*-Hexachlorocyclohexane	0.1
330-54-1	Diuron	1
330-55-2	Linuron	1
333-41-5	Diazinon	0.1
334-88-3	Diazomethane	1
353-59-3	Bromochlorodifluoromethane (Halon 1211)	1
354-11-0	1,1,1,2-Tetrachloro-2-fluoroethane (HCFC-121a)	1
354-14-3	1,1,2,2-Tetrachloro-1-fluoroethane (HCFC-121)	1
354-23-4	1,2-Dichloro-1,1,2-trifluoroethane (HCFC-123a)	1
354-25-6	1-Chloro-1,1,2,2-tetrafluoroethane (HCFC-124a)	1
357-57-3	Brucine	1
422-44-6	1,2-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225bb)	1
422-48-0	2,3-Dichloro-1,1,1,2,3-pentafluoropropane (HCFC-225ba)	1
422-56-0	3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)	1
431-86-7	1,2-Dichloro-1,1,3,3,3-pentafluoropropane (HCFC-225da)	1
460-35-5	3-Chloro-1,1,1-trifluoropropane (HCFC-253fb)	1
463-58-1	Carbonyl sulfide	1
465-73-6	Isodrin	*
492-80-8	C.I. Solvent Yellow 34 (Auramine)	0.1

Table II. EPCRA Section 313 Chemical List for Reporting Year 2022

CASRN	Chemical Name	*De minimis* % Limit
505-60-2	Mustard gas	0.1
507-55-1	1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)	1
509-14-8	Tetranitromethane	0.1
510-15-6	Chlorobenzilate	1
528-29-0	*o*-Dinitrobenzene	1
532-27-4	2-Chloroacetophenone	1
533-74-4	Dazomet	1
534-52-1	4,6-Dinitro-*o*-cresol	1
540-59-0	1,2-Dichloroethylene	1
541-41-3	Ethyl chloroformate	1
541-53-7	2,4-Dithiobiuret (Dithiobiuret)	1
541-73-1	1,3-Dichlorobenzene (*m*-Dichlorobenzene)	1
542-75-6	1,3-Dichloropropylene (1,3-Dichloropropene)	0.1
542-76-7	3-Chloropropionitrile	1
542-88-1	Bis(chloromethyl) ether	0.1
554-13-2	Lithium carbonate	1
556-52-5	Glycidol	0.1
556-61-6	Methyl isothiocyanate	1
563-47-3	3-Chloro-2-methyl-1-propene	0.1
569-64-2	C.I. Basic Green 4 (Malachite green)	1
584-84-9	Toluene-2,4-diisocyanate	0.1
593-60-2	Vinyl bromide	0.1
594-42-3	Perchloromethyl mercaptan	1
606-20-2	2,6-Dinitrotoluene	0.1
608-93-5	Pentachlorobenzene	*
612-82-8	3,3'-Dimethylbenzidine dihydrochloride	0.1
612-83-9	3,3'-Dichlorobenzidine dihydrochloride	0.1
615-05-4	2,4-Diaminoanisole	0.1
615-28-1	1,2-Phenylenediamine dihydrochloride	0.1
621-64-7	*N*-Nitrosodi-*n*-propylamine	0.1
624-18-0	1,4-Phenylenediamine dihydrochloride	1
624-83-9	Methyl isocyanate	1
630-20-6	1,1,1,2-Tetrachloroethane	0.1
636-21-5	*o*-Toluidine hydrochloride	0.1
639-58-7	Triphenyltin chloride	1
680-31-9	Hexamethylphosphoramide	0.1
684-93-5	*N*-Nitroso-*N*-methylurea	0.1
709-98-8	Propanil	1
759-73-9	*N*-Nitroso-*N*-ethylurea	0.1
759-94-4	*S*-Ethyl dipropylthiocarbamate	1
764-41-0	1,4-Dichloro-2-butene	1
812-04-4	1,1-Dichloro-1,2,2-trifluoroethane (HCFC-123b)	1
834-12-8	Ametryn	1
842-07-9	C.I. Solvent Yellow 14	1
872-50-4	*N*-Methyl-2-pyrrolidone	1
924-16-3	*N*-Nitrosodi-*n*-butylamine	0.1
924-42-5	*N*-Methylolacrylamide	1
957-51-7	Diphenamid	1
961-11-5	Tetrachlorvinphos	0.1
989-38-8	C.I. Basic Red 1	1
1114-71-2	Pebulate	1
1120-71-4	1,3-Propane sultone	0.1
1134-23-2	Cycloate	1
1163-19-5	Decabromodiphenyl oxide	1
1313-27-5	Molybdenum trioxide	0.1
1314-20-1	Thorium dioxide	1
1319-77-3	Cresol (mixed isomers)	1
1320-18-9	2,4-D propylene glycol butyl ether ester (2,4-D 2-butoxymethylethyl ester)	0.1
1330-20-7	Xylene (mixed isomers)	1
1332-21-4	Asbestos (friable)	0.1
1335-87-1	Hexachloronaphthalene	1
1336-36-3	Polychlorinated biphenyls	*
1344-28-1	Aluminum oxide (fibrous forms) (Alumina)	1
1464-53-5	Diepoxybutane	0.1
1563-66-2	Carbofuran	1
1582-09-8	Trifluralin	*
1634-04-4	Methyl tert-butyl ether	1
1649-08-7	1,2-Dichloro-1,1-difluoroethane (HCFC-132b)	1
1689-84-5	Bromoxynil	1
1689-99-2	Bromoxynil octanoate	1
1717-00-6	1,1-Dichloro-1-fluoroethane (HCFC-141b)	1
1836-75-5	Nitrofen	0.1
1861-40-1	Benfluralin	1
1897-45-6	Chlorothalonil	0.1
1910-42-5	Paraquat dichloride	1
1912-24-9	Atrazine	1
1918-00-9	Dicamba	1
1918-02-1	Picloram	1
1918-16-7	Propachlor	1
1928-43-4	2,4-D 2-ethylhexyl ester	0.1
1929-73-3	2,4-D 2-butoxyethyl ester	0.1
1929-82-4	Nitrapyrin	1
1937-37-7	C.I. Direct Black 38	0.1
1982-69-0	Sodium dicamba	1
1983-10-4	Tributyltin fluoride	1
2032-65-7	Methiocarb	1
2155-70-6	Tributyltin methacrylate	1
2164-07-0	Dipotassium endothall	1
2164-17-2	Fluometuron	1
2212-67-1	Molinate	1
2234-13-1	Octachloronaphthalene	1

Table II. EPCRA Section 313 Chemical List for Reporting Year 2022

CASRN	Chemical Name	*De minimis* % Limit
2300-66-5	Dimethylamine dicamba	1
2303-16-4	Diallate	1
2303-17-5	Triallate	1
2312-35-8	Propargite	1
2439-01-2	Chinomethionate	1
2439-10-3	Dodine	1
2524-03-0	Dimethyl chlorothiophosphate	1
2602-46-2	C.I. Direct Blue 6	0.1
2655-15-4	2,3,5-Trimethylphenyl methylcarbamate	1
2699-79-8	Sulfuryl fluoride	1
2702-72-9	2,4-D sodium salt	0.1
2832-40-8	C.I. Disperse Yellow 3	1
2837-89-0	2-Chloro-1,1,1,2-tetrafluoroethane (HCFC-124)	1
2971-38-2	2,4-D chlorocrotyl ester	0.1
3118-97-6	C.I. Solvent Orange 7	1
3296-90-0	2,2-Bis(bromomethyl)-1,3-propanediol	0.1
3383-96-8	Temephos	1
3653-48-3	Methoxone sodium salt	0.1
3761-53-3	C.I. Food Red 5	0.1
4080-31-3	1-(3-Chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride	1
4170-30-3	Crotonaldehyde	1
4549-40-0	*N*-Nitrosomethylvinylamine	0.1
4680-78-8	C.I. Acid Green 3	1
5234-68-4	Carboxin	1
5598-13-0	Chlorpyrifos-methyl	1
5902-51-2	Terbacil	1
6459-94-5	C.I. Acid Red 114	0.1
7287-19-6	Prometryn	1
7429-90-5	Aluminum (fume or dust)	1
7439-92-1	Lead	* see notes
7439-96-5	Manganese	1
7439-97-6	Mercury	*
7440-02-0	Nickel	0.1
7440-22-4	Silver	1
7440-28-0	Thallium	1
7440-36-0	Antimony	1
7440-38-2	Arsenic	0.1
7440-39-3	Barium	1
7440-41-7	Beryllium	0.1
7440-43-9	Cadmium	0.1
7440-47-3	Chromium	1
7440-48-4	Cobalt	0.1
7440-50-8	Copper	1
7440-62-2	Vanadium (except when contained in an alloy)	1
7440-66-6	Zinc (fume or dust)	1
7550-45-0	Titanium tetrachloride	1
7632-00-0	Sodium nitrite	1
7637-07-2	Boron trifluoride	1
7647-01-0	Hydrochloric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)	1
7664-39-3	Hydrogen fluoride (Hydrofluoric acid)	1
7664-41-7	Ammonia (includes anhydrous ammonia and aqueous ammonia from water dissociable ammonium salts and other sources; 10 percent of total aqueous ammonia is reportable under this listing)	1
7664-93-9	Sulfuric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)	1
7696-12-0	Tetramethrin	1
7697-37-2	Nitric acid	1
7726-95-6	Bromine	1
7758-01-2	Potassium bromate	0.1
7782-41-4	Fluorine	1
7782-49-2	Selenium	1
7782-50-5	Chlorine	1
7783-06-4	Hydrogen sulfide	1
7786-34-7	Mevinphos	1
7803-51-2	Phosphine	1
8001-35-2	Toxaphene	*
8001-58-9	Creosote	0.1
9006-42-2	Metiram	1
10028-15-6	Ozone	1
10034-93-2	Hydrazine sulfate (1:1)	0.1
10049-04-4	Chlorine dioxide	1
10061-02-6	*trans*-1,3-Dichloropropene	0.1
10294-34-5	Boron trichloride	1
10453-86-8	Resmethrin	1
12122-67-7	Zineb	1
12185-10-3	Phosphorus (yellow or white)	1
12427-38-2	Maneb	1
13194-48-4	Ethoprop	1
13356-08-6	Fenbutatin oxide	1
13463-40-6	Iron pentacarbonyl	1
13474-88-9	1,1-Dichloro-1,2,2,3,3-pentafluoropropane (HCFC-225cc)	1
13684-56-5	Desmedipham	1
14484-64-1	Ferbam	1
15972-60-8	Alachlor	1
16071-86-6	C.I. Direct Brown 95	0.1
16543-55-8	*N*-Nitrosonornicotine	0.1
17804-35-2	Benomyl	1

CASRN	Chemical Name	*De minimis* % Limit
19044-88-3	Oryzalin	1
19666-30-9	Oxadiazon	1
20325-40-0	3,3'-Dimethoxybenzidine dihydrochloride	0.1
20354-26-1	Methazole	1
20816-12-0	Osmium tetroxide	1
20859-73-8	Aluminum phosphide	1
21087-64-9	Metribuzin	1
21725-46-2	Cyanazine	1
22781-23-3	Bendiocarb	1
23564-05-8	Thiophanate-methyl	1
23564-06-9	Thiophanate-ethyl	1
23950-58-5	Pronamide	1
25311-71-1	Isofenphos	1
25321-14-6	Dinitrotoluene (mixed isomers)	1
25321-22-6	Dichlorobenzene (mixed isomers)	0.1
25376-45-8	Diaminotoluene (mixed isomers) (Toluenediamine)	0.1
26002-80-2	Phenothrin	1
26471-62-5	Toluene diisocyanate (mixed isomers)	0.1
26628-22-8	Sodium azide	1
26644-46-2	Triforine	1
27314-13-2	Norflurazon	1
28249-77-6	Thiobencarb	1
28407-37-6	C.I. Direct Blue 218	1
28434-00-6	*d-trans*-Allethrin	1
29082-74-4	Octachlorostyrene	*
29232-93-7	Pirimiphos-methyl	1
30560-19-1	Acephate	1
31218-83-4	Propetamphos	1
33089-61-1	Amitraz	1
34014-18-1	Tebuthiuron	1
34077-87-7	Dichlorotrifluoroethane	1
35367-38-5	Diflubenzuron	1
35400-43-2	Sulprofos	1
35554-44-0	Imazalil	1
35691-65-7	1-Bromo-1-(bromomethyl)-1,3-propanedicarbonitrile	1
38727-55-8	Diethatyl ethyl	1
39156-41-7	2,4-Diaminoanisole sulfate	0.1
39300-45-3	Dinocap	1
39515-41-8	Fenpropathrin	1
40487-42-1	Pendimethalin	*
41198-08-7	Profenofos	1
41766-75-0	3,3'-Dimethylbenzidine dihydrofluoride	0.1
42874-03-3	Oxyfluorfen	1
43121-43-3	Triadimefon	1
50471-44-8	Vinclozolin	1
51235-04-2	Hexazinone	1
51338-27-3	Diclofop methyl	1
51630-58-1	Fenvalerate	1
52645-53-1	Permethrin	1
53404-19-6	Bromacil, lithium salt	1
53404-37-8	2,4-D 2-ethyl-4-methylpentyl ester	0.1
53404-60-7	Dazomet, sodium salt	1
55290-64-7	Dimethipin	1
55406-53-6	3-Iodo-2-propynyl butylcarbamate	1
57213-69-1	Triclopyr-triethylammonium salt	1
59669-26-0	Thiodicarb	1
60168-88-9	Fenarimol	1
60207-90-1	Propiconazole	1
62476-59-9	Acifluorfen, sodium salt	1
63938-10-3	Chlorotetrafluoroethane	1
64902-72-3	Chlorsulfuron	1
64969-34-2	3,3'-Dichlorobenzidine sulfate	0.1
66441-23-4	Fenoxaprop-ethyl	1
67485-29-4	Hydramethylnon	1
68085-85-8	Cyhalothrin	1
68359-37-5	Cyfluthrin	1
69409-94-5	Fluvalinate	1
69806-50-4	Fluazifop-butyl	1
71751-41-2	Abamectin	1
72178-02-0	Fomesafen	1
72490-01-8	Fenoxycarb	1
74051-80-2	Sethoxydim	1
76578-14-8	Quizalofop-ethyl	1
77501-63-4	Lactofen	1
82657-04-3	Bifenthrin	1
88671-89-0	Myclobutanil	1
90454-18-5	Dichloro-1,1,2-trifluoroethane	1
90982-32-4	Chlorimuron-ethyl	1
101200-48-0	Tribenuron-methyl	1
111512-56-2	1,1-Dichloro-1,2,3,3,3-pentafluoropropane (HCFC-225eb)	1
111984-09-9	3,3'-Dimethoxybenzidine monohydrochloride	0.1
127564-92-5	Dichloropentafluoropropane	1
128903-21-9	2,2-Dichloro-1,1,1,3,3-pentafluoropropane (HCFC-225aa)	1
136013-79-1	1,3-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225ea)	1

c. Chemical Categories

Section 313 requires reporting on the EPCRA Section 313 chemical categories listed below, in addition to the specific EPCRA Section 313 chemicals listed above.

The metal compound categories listed below, unless otherwise specified, are defined as including any unique chemical substance that contains the named metal (e.g., antimony, nickel, etc.) as part of that chemical's structure.

EPCRA Section 313 chemical categories are subject to the 1% *de minimis* concentration unless the substance involved meets the definition of an OSHA carcinogen in which case the 0.1% *de minimis* concentration applies. The *de minimis* concentration for each category is provided in parentheses.

N010 Antimony Compounds (1.0)
Includes any unique chemical substance that contains antimony as part of that chemical's infrastructure.

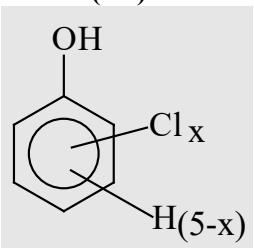
N020 Arsenic Compounds (inorganic compounds: 0.1; organic compounds: 1.0)
Includes any unique chemical substance that contains arsenic as part of that chemical's infrastructure.

N040 Barium Compounds (1.0)
Includes any unique chemical substance that contains barium as part of that chemical's infrastructure. This category does not include: Barium sulfate CAS Number 7727-43-7.

N050 Beryllium Compounds (0.1)
Includes any unique chemical substance that contains beryllium as part of that chemical's infrastructure.

N078 Cadmium Compounds (0.1)
Includes any unique chemical substance that contains cadmium as part of that chemical's infrastructure.

N084 Chlorophenols (0.1)



Where x = 1 to 5

N090 Chromium Compounds (except for chromite ore mined in the Transvaal Region of South Africa and the unreacted ore component of the chromite ore processing residue (COPR). COPR is the solid waste remaining after aqueous extraction of oxidized chromite ore that has been combined with soda ash and kiln roasted at approximately 2,000 °F.) (chromium VI compounds: 0.1; other chromium compounds: 1.0)
Includes any unique chemical substance that contains chromium as part of that chemical's infrastructure.

N096 Cobalt Compounds (cobalt compounds that release cobalt ions *in vivo*: 0.1, all other cobalt compounds: 1.0)
Includes any unique chemical substance that contains cobalt as part of that chemical's infrastructure.

N100 Copper Compounds (1.0)
Includes any unique chemical substance that contains copper as part of that chemical's infrastructure. This category does not include copper phthalocyanine compounds that are substituted with only hydrogen, and/or chlorine, and/or bromine.

N106 Cyanide Compounds (1.0)
X^+CN^- where X^+ = any group (except H^+) where a formal dissociation can be made. For example, KCN or $Ca(CN)_2$

N120 Diisocyanates (1.0)
This category includes only those chemicals listed below.

CASRN	Chemical Name
38661-72-2	1,3-Bis(methylisocyanate)cyclohexane
10347-54-3	1,4-Bis(methylisocyanate)cyclohexane (1,4-Bis(isocyanatomethyl)cyclohexane)
2556-36-7	1,4-Cyclohexane diisocyanate
134190-37-7	Diethyldiisocyanatobenzene
4128-73-8	4,4'-Diisocyanatodiphenyl ether
75790-87-3	2,4'-Diisocyanatodiphenyl sulfide
91-93-0	3,3'-Dimethoxybenzidine-4,4'-diisocyanate
91-97-4	3,3'-Dimethyl-4,4'-diphenylene diisocyanate
139-25-3	3,3'-Dimethyldiphenylmethane-4,4'-diisocyanate
822-06-0	Hexamethylene-1,6-diisocyanate
4098-71-9	Isophorone diisocyanate
75790-84-0	4-Methyldiphenylmethane-3,4-diisocyanate
5124-30-1	1,1-Methylenebis(4-isocyanatocyclohexane)
101-68-8	4,4'-Methylenedi(phenyl isocyanate)
3173-72-6	1,5-Naphthalene diisocyanate
123-61-5	1,3-Phenylene diisocyanate
104-49-4	1,4-Phenylene diisocyanate
9016-87-9	Polymeric diphenylmethane diisocyanate
16938-22-0	2,2,4-Trimethylhexamethylene diisocyanate
15646-96-5	2,4,4-Trimethylhexamethylene diisocyanate

N150 Dioxin and dioxin-like compounds (Manufacturing; and the processing or otherwise use of dioxin and dioxin-like compounds if the dioxin and dioxin-like compounds are present as contaminants in a chemical and if they were created during the manufacturing of that chemical.) (*)
This category includes only those chemicals listed below. [Note: When completing the Form R Schedule 1, enter the data for each member of the category in the order they are listed here (i.e., 1-17).]

Box #	CASRN	Chemical Name
1	1746-01-6	2,3,7,8-Tetrachlorodibenzo-*p*-dioxin
2	40321-76-4	1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin
3	39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin
4	57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin
5	19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin
6	35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin
7	3268-87-9	1,2,3,4,6,7,8,9-Octachlorodibenzo-*p*-dioxin
8	51207-31-9	2,3,7,8-Tetrachlorodibenzofuran
9	57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran
10	57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran
11	70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran
12	57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran
13	72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran
14	60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran
15	67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran
16	55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran
17	39001-02-0	1,2,3,4,6,7,8,9-Octachlorodibenzofuran

N171 Ethylenebisdithiocarbamic acid, salts and esters (EBDCs) (1.0)
Includes any unique chemical substance that contains an EBDC or an EBDC salt as part of that chemical's infrastructure.

N230 Certain Glycol Ethers (1.0)
R - $(OCH_2CH_2)_n$ - OR'
where:
n = 1, 2, or 3;
R = Alkyl C7 or less; or
R = phenyl or alkyl substituted phenyl;
R' = H or alkyl C7 or less; or
OR' consisting of carboxylic acid ester, sulfate, phosphate, nitrate, or sulfonate.

N270 Hexabromocyclododecane (*)
(This category includes only those chemicals covered by the CAS numbers listed below)

CASRN	Chemical Name
3194-55-6	1,2,5,6,9,10-Hexabromocyclododecane
25637-99-4	Hexabromocyclododecane

N420 Lead Compounds (*)
Includes any unique chemical substance that contains lead as part of that chemical's infrastructure.

N450 Manganese Compounds (1.0)
Includes any unique chemical substance that contains manganese as part of that chemical's infrastructure.

N458 Mercury Compounds (*)
Includes any unique chemical substance that contains mercury as part of that chemical's infrastructure.

N495 Nickel Compounds (0.1)
Includes any unique chemical substance that contains nickel as part of that chemical's infrastructure.

N503 Nicotine and salts (1.0)
Includes any unique chemical substance that contains nicotine or a nicotine salt as part of that chemical's infrastructure.

N511 Nitrate compounds (water dissociable; reportable only when in aqueous solution) (1.0)

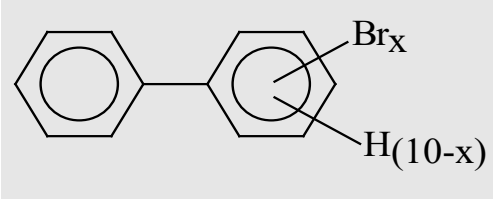
N530 Nonylphenol (1.0)
This category includes only those chemicals listed below.

CASRN	Chemical Name
104-40-5	4-Nonylphenol (*p*-Nonylphenol)
11066-49-2	Isononylphenol
25154-52-3	Nonylphenol
26543-97-5	4-Isononylphenol
84852-15-3	4-Nonylphenol, branched (Branched *p*-nonylphenol)
90481-04-2	Nonylphenol, branched

N535 Nonylphenol Ethoxylates (1.0)
This category includes only those chemicals listed below.

CASRN	Chemical Name
7311-27-5	Ethanol, 2-[2-[2-[2-(4-nonylphenoxy)ethoxy]ethoxy]ethoxy]-
9016-45-9	Poly(oxy-1,2-ethanediyl), α-(nonylphenyl)-ω-hydroxy-; (Polyethylene glycol nonylphenyl ether)
20427-84-3	Ethanol, 2-[2-(4-nonylphenoxy)ethoxy]-; (2-[2-(4-Nonylphenoxy)ethoxy]ethanol)
26027-38-3	Poly(oxy-1,2-ethanediyl), α-(4-nonylphenyl)-ω-hydroxy-; (*p*-Nonylphenol polyethylene glycol ether)
26571-11-9	3,6,9,12,15,18,21,24-Octaoxahexacosan-1-ol, 26-(nonylphenoxy)-
27176-93-8	Ethanol, 2-[2-(nonylphenoxy)ethoxy]-; (Diethylene glycol nonylphenol ether)
27177-05-5	3,6,9,12,15,18,21-Heptaoxatricosan-1-ol, 23-(nonylphenoxy)-
27177-08-8	3,6,9,12,15,18,21,24,27-Nonaoxanonacosan-1-ol, 29-(nonylphenoxy)-
27986-36-3	Ethanol, 2-(nonylphenoxy)-; (2-(Nonylphenoxy)ethanol)
37205-87-1	Poly(oxy-1,2-ethanediyl), α-(isononylphenyl)-ω-hydroxy-
51938-25-1	Poly(oxy-1,2-ethanediyl), α (2-nonylphenyl)-ω-hydroxy-
68412-54-4	Poly(oxy-1,2-ethanediyl), α-(nonylphenyl)-ω-hydroxy-, branched; (Polyethylene glycol mono(branched nonylphenyl) ether)
127087-87-0	Poly(oxy-1,2-ethanediyl), α-(4-nonylphenyl)-ω-hydroxy-, branched; (Polyethylene glycol mono(branched *p*-nonylphenyl) ether)

N575 Polybrominated Biphenyls (PBBs) (0.1)



where x = 1 to 10

N583 Polychlorinated alkanes (C_{10} to C_{13}) (1.0, except for those members of the category that have an average chain length of 12 carbons and contain an average chlorine content of 60% by weight which are subject to the 0.1% *de minimis*)
Includes those chemicals defined by the following formula:

$$C_xH_{2x-y+2}Cl_y$$

Where x = 10 to 13;
y = 3 to 12; and
where the average chlorine content ranges from 40-70% with the limiting molecular formulas $C_{10}H_{19}Cl_3$ and $C_{13}H_{16}Cl_{12}$

N590 Polycyclic aromatic compounds (PACs) (*)
This category includes the chemicals listed below.

CASRN	Chemical Name
56-55-3	Benz[a]anthracene
205-99-2	Benzo[b]fluoranthene
205-82-3	Benzo[j]fluoranthene
207-08-9	Benzo[k]fluoranthene
206-44-0	Benzo[j,k]fluorine (Fluoranthene)
189-55-9	Benzo[r,s,t]pentaphene (Dibenzo[a,i]pyrene)
218-01-9	Benzo[a]phenanthrene (Chrysene)
50-32-8	Benzo[a]pyrene
226-36-8	Dibenz[a,h]acridine
224-42-0	Dibenz[a,j]acridine
53-70-3	Dibenzo[a,h]anthracene (Dibenz[a,h]anthracene)
194-59-2	7H-Dibenzo[c,g]carbazole
5385-75-1	Dibenzo[a,e]fluoranthene
192-65-4	Dibenzo[a,e]pyrene
189-64-0	Dibenzo[a,h]pyrene
191-30-0	Dibenzo[a,l]pyrene
57-97-6	7,12-Dimethylbenz[a]anthracene
42397-64-8	1,6-Dinitropyrene
42397-65-9	1,8-Dinitropyrene
193-39-5	Indeno[1,2,3-cd]pyrene
56-49-5	3-Methylcholanthrene
3697-24-3	5-Methylchrysene
7496-02-8	6-Nitrochrysene
5522-43-0	1-Nitropyrene
57835-92-4	4-Nitropyrene

N725 Selenium Compounds (1.0)
Includes any unique chemical substance that contains selenium as part of that chemical's infrastructure.

N740 Silver Compounds (1.0)
Includes any unique chemical substance that contains silver as part of that chemical's infrastructure.

N746 Strychnine and salts (1.0)
Includes any unique chemical substance that contains strychnine or a strychnine salt as part of that chemical's infrastructure.

N760 Thallium Compounds (1.0)
Includes any unique chemical substance that contains thallium as part of that chemical's infrastructure.

N770 Vanadium Compounds (1.0)
Includes any unique chemical substance that contains vanadium as part of that chemical's infrastructure.

N874 Warfarin and salts (1.0)
Includes any unique chemical substance that contains warfarin or a warfarin salt as part of that chemical's infrastructure.

N982 Zinc Compounds (1.0)
Includes any unique chemical substance that contains zinc as part of that chemical's infrastructure.

d. Individually-Listed PFAS Arranged Alphabetically

CASRN	Chemical Name	*De minimis* % Limit
68391-08-2	Alcohols, C8-14, γ-ω-perfluoro	1.0
97659-47-7	Alkenes, C8-14 α-, δ-ω-perfluoro	1.0
68188-12-5	Alkyl iodides, C4-20, γ-ω-perfluoro	1.0
3825-26-1	Ammonium perfluorooctanoate	1.0
68515-62-8	1,4-Benzenedicarboxylic acid, dimethyl ester, reaction products with bis(2-hydroxyethyl)terephthalate, ethylene glycol, α-fluoro-ω-(2-hydroxyethyl)poly(difluoromethylene), hexakis(methoxymethyl)melamine and polyethylene glycol	1.0
68187-25-7	Butanoic acid, 4-[[3-(dimethylamino)propyl]amino]-4-oxo-, 2(or 3)-[(γ-ω-perfluoro-C6-20-alkyl)thio] derivs.	1.0
383-07-3	2-[Butyl[(heptadecafluorooctyl)sulfonyl]amino]ethyl acrylate	1.0
68141-02-6	Chromium(III) perfluorooctanoate	1.0
67584-42-3	Cyclohexanesulfonic acid, decafluoro(pentafluoroethyl)-, potassium salt	1.0
68156-07-0	Cyclohexanesulfonic acid, decafluoro(trifluoromethyl)-, potassium salt	1.0
68156-01-4	Cyclohexanesulfonic acid, nonafluorobis(trifluoromethyl)-, potassium salt	1.0
3107-18-4	Cyclohexanesulfonic acid, undecafluoro-, potassium salt	1.0
2043-53-0	Decane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-heptadecafluoro-10-iodo-	1.0
67906-42-7	1-Decanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heneicosafluoro-, ammonium salt	1.0
27619-90-5	1-Decanesulfonyl chloride, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-	1.0
678-39-7	1-Decanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-	1.0
118400-71-8	Disulfides, bis(γ-ω-perfluoro-C6-20-alkyl)	1.0
2043-54-1	Dodecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10-heneicosafluoro-12-iodo-	1.0
27619-91-6	1-Dodecanesulfonyl chloride, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluoro-	1.0
865-86-1	1-Dodecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluoro-	1.0
65104-65-6	1-Eicosanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,20-heptatriacontafluoro-	1.0
65636-35-3	Ethanaminium, *N,N*-diethyl-*N*-methyl-2-[(2-methyl-1-oxo-2-propenyl)oxy]-, methyl sulfate, polymer with 2-ethylhexyl 2-methyl-2-propenoate, α-fluoro-ω-[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl]poly(difluoromethylene), 2-hydroxyethyl 2-methyl-2-propenoate and *N*-(hydroxymethyl)-2-propenamide	1.0
56773-42-3	Ethanaminium, *N,N,N*-triethyl-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid (1:1)	1.0
182176-52-9	Ethaneperoxoic acid, reaction products with 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl thiocyanate and 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl thiocyanate	1.0
65530-74-7	Ethanol, 2,2'-iminobis-, compd. with α-fluoro-ω-[2-(phosphonooxy)ethyl]poly(difluoromethylene) (1:1)	1.0
65530-63-4	Ethanol, 2,2'-iminobis-, compd. with α-fluoro-ω-[2-(phosphonooxy)ethyl]poly(difluoromethylene) (2:1)	1.0
65530-64-5	Ethanol, 2,2'-iminobis-, compd. with α,α'-[phosphinicobis(oxy-2,1-ethanediyl)]bis[ω-fluoropoly(difluoromethylene)] (1:1)	1.0
423-82-5	2-[Ethyl[(heptadecafluorooctyl)sulfonyl]amino]ethyl acrylate	1.0
376-14-7	2-[Ethyl[(heptadecafluorooctyl)sulfonyl]amino]ethyl methacrylate	1.0
1691-99-2	*N*-Ethyl-*N*-(2-hydroxyethyl)perfluorooctanesulfonamide	1.0
72623-77-9	Fatty acids, C6-18, perfluoro, ammonium salts	1.0
72968-38-8	Fatty acids, C7-13, perfluoro, ammonium salts	1.0
178535-23-4	Fatty acids, linseed-oil, γ-ω-perfluoro-C8-14-alkyl esters	1.0

CASRN	Chemical Name	*De minimis* % Limit
2991-51-7	Glycine, *N*-ethyl-*N*-[(heptadecafluorooctyl)sulfonyl]-, potassium salt	1.0
67584-62-7	Glycine, *N*-ethyl-*N*-[(pentadecafluoroheptyl)sulfonyl]-, potassium salt	1.0
67584-53-6	Glycine, *N*-ethyl-*N*-[(tridecafluorohexyl)sulfonyl]-, potassium salt	1.0
67584-52-5	Glycine, *N*-ethyl-*N*-[(undecafluoropentyl)sulfonyl]-, potassium salt	1.0
55910-10-6	Glycine, *N*-[(heptadecafluorooctyl)sulfonyl]-*N*-propyl-, potassium salt	1.0
1652-63-7	3-[[(Heptadecafluorooctyl)sulfonyl]amino]-*N,N,N*-trimethyl-1-propanaminium iodide	1.0
25268-77-3	2-[[(Heptadecafluorooctyl)sulfonyl]methylamino]ethyl acrylate	1.0
68957-62-0	1-Heptanesulfonamide, *N*-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-pentadecafluoro-	1.0
68555-76-0	1-Heptanesulfonamide, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-pentadecafluoro-*N*-(2-hydroxyethyl)-*N*-methyl-	1.0
68259-07-4	1-Heptanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-pentadecafluoro-, ammonium salt	1.0
70225-15-9	1-Heptanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-pentadecafluoro-, compd. with 2,2'-iminobis[ethanol] (1:1)	1.0
60270-55-5	1-Heptanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-pentadecafluoro-, potassium salt	1.0
335-71-7	1-Heptanesulfonyl fluoride, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-pentadecafluoro-	1.0
65510-55-6	Hexadecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14-nonacosafluoro-16-iodo-	1.0
60699-51-6	1-Hexadecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,16-nonacosafluoro-	1.0
13252-13-6	Hexafluoropropylene oxide dimer acid	1.0
62037-80-3	Hexafluoropropylene oxide dimer acid ammonium salt	1.0
135228-60-3	Hexane, 1,6-diisocyanato-, homopolymer, γ-ω-perfluoro-C6-20-alc.-blocked	1.0
68555-75-9	1-Hexanesulfonamide, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-*N*-(2-hydroxyethyl)-*N*-methyl-	1.0
68259-08-5	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, ammonium salt	1.0
70225-16-0	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, compd. with 2,2'-iminobis[ethanol] (1:1)	1.0
3871-99-6	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, potassium salt	1.0
29457-72-5	Lithium (perfluorooctane)sulfonate	1.0
376-27-2	Methyl perfluorooctanoate	1.0
17202-41-4	1-Nonanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,9-nonadecafluoro-, ammonium salt	1.0
16517-11-6	Octadecanoic acid, pentatriacontafluoro-	1.0
65104-67-8	1-Octadecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,18-tritriacontafluoro-	1.0
2263-09-4	1-Octanesulfonamide, N-butyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-(2-hydroxyethyl)-	1.0
178094-69-4	1-Octanesulfonamide, *N*-[3-(dimethyloxidoamino)propyl]-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, potassium salt	1.0
67969-69-1	1-Octanesulfonamide, *N*-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-*N*-[2-(phosphonooxy)ethyl]-, diammonium salt	1.0
61660-12-6	1-Octanesulfonamide, *N*-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-*N*-[3-(trimethoxysilyl)propyl]-	1.0
24448-09-7	1-Octanesulfonamide, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-*N*-(2-hydroxyethyl)-*N*-methyl-	1.0
31506-32-8	1-Octanesulfonamide, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-*N*-methyl-	1.0
29081-56-9	1-Octanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, ammonium salt	1.0
70225-14-8	1-Octanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, compd. with 2,2'-iminobis[ethanol] (1:1)	1.0
335-66-0	Octanoyl fluoride, pentadecafluoro-	1.0

CASRN	Chemical Name	*De minimis* % Limit
68555-74-8	1-Pentanesulfonamide, 1,1,2,2,3,3,4,4,5,5,5-undecafluoro-*N*-(2-hydroxyethyl)-*N*-methyl-	1.0
68259-09-6	1-Pentanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,5-undecafluoro-, ammonium salt	1.0
70225-17-1	1-Pentanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,5-undecafluoro-, compd. with 2,2'-iminobis[ethanol] (1:1)	1.0
3872-25-1	1-Pentanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,5-undecafluoro-, potassium salt	1.0
71608-60-1	Pentanoic acid, 4,4-bis[(γ-ω-perfluoro-C8-20-alkyl)thio] derivs.	1.0
45187-15-3	Perfluorobutanesulfonate	1.0
375-73-5	Perfluorobutane sulfonic acid	1.0
335-76-2	Perfluorodecanoic acid	1.0
307-55-1	Perfluorododecanoic acid	1.0
355-46-4	Perfluorohexanesulfonic acid	1.0
375-95-1	Perfluorononanoic acid	1.0
1763-23-1	Perfluorooctane sulfonic acid	1.0
335-67-1	Perfluorooctanoic acid	0.1
21652-58-4	Perfluorooctyl ethylene	1.0
507-63-1	Perfluorooctyl iodide	1.0
307-35-7	Perfluorooctylsulfonyl fluoride	1.0
67905-19-5	Perfluoropalmitic acid	1.0
376-06-7	Perfluorotetradecanoic acid	1.0
68412-69-1	Phosphinic acid, bis(perfluoro-C6-12-alkyl) derivs.	1.0
68412-68-0	Phosphonic acid, perfluoro-C6-12-alkyl derivs.	1.0
74499-44-8	Phosphoric acid, γ-ω-perfluoro-C8-16-alkyl esters, compds. with diethanolamine	1.0
123171-68-6	Poly(difluoromethylene), α-[2-(acetyloxy)-3-[(carboxymethyl)dimethylammonio]propyl]-ω-fluoro-, inner salt	1.0
65530-83-8	Poly(difluoromethylene), α-[2-[(2-carboxyethyl)thio]ethyl]-ω-fluoro-	1.0
65530-69-0	Poly(difluoromethylene), α-[2-[(2-carboxyethyl)thio]ethyl]-ω-fluoro-, lithium salt	1.0
65605-56-3	Poly(difluoromethylene), α-fluoro-ω-(2-hydroxyethyl)-, dihydrogen 2-hydroxy-1,2,3-propanetricarboxylate	1.0
65605-57-4	Poly(difluoromethylene), α-fluoro-ω-(2-hydroxyethyl)-, hydrogen 2-hydroxy-1,2,3-propanetricarboxylate	1.0
65530-59-8	Poly(difluoromethylene), α-fluoro-ω-(2-hydroxyethyl)-, 2-hydroxy-1,2,3-propanetricarboxylate (3:1)	1.0
65530-66-7	Poly(difluoromethylene), α-fluoro-ω-[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl]-	1.0
65530-65-6	Poly(difluoromethylene), α-fluoro-ω-[2-[(1-oxooctadecyl)oxy]ethyl]-	1.0
65605-73-4	Poly(difluoromethylene), α-fluoro-ω-[2-[(1-oxo-2-propenyl)oxy]ethyl]-, homopolymer	1.0
65530-61-2	Poly(difluoromethylene), α-fluoro-ω-[2-(phosphonooxy)ethyl]-	1.0
95144-12-0	Poly(difluoromethylene), α-fluoro-ω-[2-(phosphonooxy)ethyl]-, ammonium salt	1.0
65530-72-5	Poly(difluoromethylene), α-fluoro-ω-[2-(phosphonooxy)ethyl]-, diammonium salt	1.0
65530-71-4	Poly(difluoromethylene), α-fluoro-ω-[2-(phosphonooxy)ethyl]-, monoammonium salt	1.0
80010-37-3	Poly(difluoromethylene), α-fluoro-ω-[2-sulphoethyl)-	1.0
65530-62-3	Poly(difluoromethylene), α,α'-[phosphinicobis(oxy-2,1-ethanediyl)]bis[ω-fluoro-	1.0
65530-70-3	Poly(difluoromethylene), α,α'-[phosphinicobis(oxy-2,1-ethanediyl)]bis[ω-fluoro-, ammonium salt	1.0
29117-08-6	Poly(oxy-1,2-ethanediyl), α-[2-[ethyl[(heptadecafluorooctyl)sulfonyl]amino]ethyl]-ω-hydroxy-	1.0
68958-61-2	Poly(oxy-1,2-ethanediyl), α-[2-[ethyl[(heptadecafluorooctyl)sulfonyl]amino]ethyl]-ω-methoxy-	1.0
68298-81-7	Poly(oxy-1,2-ethanediyl), α-[2-[ethyl[(pentadecafluoroheptyl)sulfonyl]amino]ethyl]-ω-hydroxy-	1.0
68958-60-1	Poly(oxy-1,2-ethanediyl), α-[2-[ethyl[(pentadecafluoroheptyl)sulfonyl]amino]ethyl]-ω-methoxy-	1.0

CASRN	Chemical Name	*De minimis* % Limit
56372-23-7	Poly(oxy-1,2-ethanediyl), α-[2-[ethyl[(tridecafluorohexyl)sulfonyl]amino]ethyl]-ω-hydroxy-	1.0
68298-80-6	Poly(oxy-1,2-ethanediyl), α-[2-[ethyl[(undecafluoropentyl)sulfonyl]amino]ethyl]-ω-hydroxy-	1.0
65545-80-4	Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy-, ether with α-fluoro-ω-(2-hydroxyethyl)poly(difluoromethylene) (1:1)	1.0
70983-59-4	Poly(oxy-1,2-ethanediyl), α-methyl-ω-hydroxy-, 2-hydroxy-3-[(γ-ω-perfluoro-C6-20-alkyl)thio]propyl ethers	1.0
37338-48-0	Poly[oxy(methyl-1,2-ethanediyl)], α-[2-[ethyl[(heptadecafluorooctyl)sulfonyl]amino]ethyl]-ω-hydroxy-	1.0
68259-39-2	Poly[oxy(methyl-1,2-ethanediyl)], α-[2-[ethyl[(pentadecafluoroheptyl)sulfonyl]amino]ethyl]-ω-hydroxy-	1.0
68259-38-1	Poly[oxy(methyl-1,2-ethanediyl)], α-[2-[ethyl[(tridecafluorohexyl)sulfonyl]amino]ethyl]-ω-hydroxy-	1.0
68310-17-8	Poly[oxy(methyl-1,2-ethanediyl)], α-[2-[ethyl[(undecafluoropentyl)sulfonyl]amino]ethyl]-ω-hydroxy-	1.0
29420-49-3	Potassium perfluorobutane sulfonate	1.0
2795-39-3	Potassium perfluorooctanesulfonate	1.0
2395-00-8	Potassium perfluorooctanoate	1.0
1078715-61-3	1-Propanaminium, 3-amino-*N*-(carboxymethyl)-*N,N*-dimethyl-, *N*-[2-[(γ-ω-perfluoro-C4-20-alkyl)thio]acetyl] derivs., inner salts	1.0
38006-74-5	1-Propanaminium, 3-[[(heptadecafluorooctyl)sulfonyl]amino]-*N,N,N*-trimethyl-, chloride	1.0
70983-60-7	1-Propanaminium, 2-hydroxy-*N,N,N*-trimethyl-, 3-[(γ-ω-perfluoro-C6-20-alkyl)thio] derivs., chlorides	1.0
68555-81-7	1-Propanaminium, *N,N,N*-trimethyl-3-[[(pentadecafluoroheptyl)sulfonyl]amino]-, chloride	1.0
67584-58-1	1-Propanaminium, *N,N,N*-trimethyl-3-[[(pentadecafluoroheptyl)sulfonyl]amino]-, iodide	1.0
52166-82-2	1-Propanaminium, *N,N,N*-trimethyl-3-[[(tridecafluorohexyl)sulfonyl]amino]-, chloride	1.0
68957-58-4	1-Propanaminium, *N,N,N*-trimethyl-3-[[(tridecafluorohexyl)sulfonyl]amino]-, iodide	1.0
68957-55-1	1-Propanaminium, *N,N,N*-trimethyl-3-[[(undecafluoropentyl)sulfonyl]amino]-, chloride	1.0
68957-57-3	1-Propanaminium, *N,N,N*-trimethyl-3-[[(undecafluoropentyl)sulfonyl]amino]-, iodide	1.0
238420-80-9	Propanedioic acid, mono(γ-ω-perfluoro-C8-12-alkyl) derivs., bis[4-(ethenyloxy)butyl] esters	1.0
238420-68-3	Propanedioic acid, mono(γ-ω-perfluoro-C8-12-alkyl) derivs., di-me esters	1.0
148240-85-1	1,3-Propanediol, 2,2-bis[[(γ-ω-perfluoro-C4-10-alkyl)thio]methyl] derivs., phosphates, ammonium salts	1.0
148240-87-3	1,3-Propanediol, 2,2-bis[[(γ-ω-perfluoro-C6-12-alkyl)thio]methyl] derivs., phosphates, ammonium salts	1.0
1078142-10-5	1,3-Propanediol, 2,2-bis[[(γ-ω-perfluoro-C6-12-alkyl)thio]methyl] derivs., polymers with 2,2-bis[[(γ-ω-perfluoro-C10-20-alkyl)thio]methyl]-1,3-propanediol, 1,6-diisocyanato-2,2,4(or 2,4,4)-trimethylhexane, 2-heptyl-3,4-bis(9-isocyanatononyl)-1-pentylcyclohexane and 2,2'-(methylimino)bis[ethanol]	1.0
148240-89-5	1,3-Propanediol, 2,2-bis[[(γ-ω-perfluoro-C10-20-alkyl)thio]methyl] derivs., phosphates, ammonium salts	1.0
68187-47-3	1-Propanesulfonic acid, 2-methyl-, 2-[[1-oxo-3-[(γ-ω-perfluoro-C4-16-alkyl)thio]propyl]amino] derivs., sodium salts	1.0

CASRN	Chemical Name	*De minimis* % Limit
68227-96-3	2-Propenoic acid, butyl ester, telomer with 2-[[(heptadecafluorooctyl)sulfonyl]methylamino]ethyl 2-propenoate, 2-[methyl[(nonafluorobutyl)sulfonyl]amino]ethyl 2-propenoate, α-(2-methyl-1-oxo-2-propenyl)-ω-hydroxypoly(oxy-1,4-butanediyl), α-(2-methyl-1-oxo-2-propenyl)-ω-[(2-methyl-1-oxo-2-propenyl)oxy]poly(oxy-1,4-butanediyl), 2-[methyl[(pentadecafluoroheptyl)sulfonyl]amino]ethyl 2-propenoate, 2-[methyl[(tridecafluorohexyl)sulfonyl]amino]ethyl 2-propenoate, 2-[methyl[(undecafluoropentyl)sulfonyl]amino]ethyl 2-propenoate and 1-octanethiol	1.0
68298-62-4	2-Propenoic acid, 2-[butyl[(heptadecafluorooctyl)sulfonyl]amino]ethyl ester, telomer with 2-[butyl[(pentadecafluoroheptyl)sulfonyl]amino]ethyl 2-propenoate, methyloxirane polymer with oxirane di-2-propenoate, methyloxirane polymer with oxirane mono-2-propenoate and 1-octanethiol	1.0
65605-58-5	2-Propenoic acid, esters, 2-methyl-, dodecyl ester, polymer with α-fluoro-ω-[2-[(2-methyl-1-oxo-2-propen-1-yl)oxy]ethyl]poly(difluoromethylene)	1.0
59071-10-2	2-Propenoic acid, 2-[ethyl[(pentadecafluoroheptyl)sulfonyl]amino]ethyl ester	1.0
68867-60-7	2-Propenoic acid, 2-[[(heptadecafluorooctyl)sulfonyl]methylamino]ethyl ester, polymer with 2-[methyl[(nonafluorobutyl)sulfonyl]amino]ethyl 2-propenoate, 2-[methyl[(pentadecafluoroheptyl)sulfonyl]amino]ethyl 2-propenoate, 2-[methyl[(tridecafluorohexyl)sulfonyl]amino]ethyl 2-propenoate, 2-[methyl[(undecafluoropentyl)sulfonyl]amino]ethyl 2-propenoate and α-(1-oxo-2-propenyl)-ω-methoxypoly(oxy-1,2-ethanediyl)	1.0
150135-57-2	2-Propenoic acid, 2-methyl-, 2-(dimethylamino)ethyl ester, polymers with Bu acrylate, γ-ω-perfluoro-C8-14-alkyl acrylate and polyethylene glycol monomethacrylate, 2,2'-azobis[2,4-dimethylpentanenitrile]-initiated	1.0
196316-34-4	2-Propenoic acid, 2-methyl-, 2-(dimethylamino)ethyl ester, polymers with γ-ω-perfluoro-C10-16-alkyl acrylate and vinyl acetate, acetates	1.0
65605-59-6	2-Propenoic acid, 2-methyl-, dodecyl ester, polymer with α-fluoro-ω-[2-[(2-methyl-1-oxo-2-propen-1-yl)oxy]ethyl]poly(difluoromethylene) and *N*-(hydroxymethyl)-2-propenamide	1.0
68555-91-9	2-Propenoic acid, 2-methyl-, 2-[ethyl[(heptadecafluorooctyl)sulfonyl]amino]ethyl ester, polymer with 2-[ethyl[(nonafluorobutyl)sulfonyl]amino]ethyl 2-methyl-2-propenoate, 2-[ethyl[(pentadecafluoroheptyl)sulfonyl]amino]ethyl 2-methyl-2-propenoate, 2-[ethyl[(tridecafluorohexyl)sulfonyl]amino]ethyl 2-methyl-2-propenoate, 2-[ethyl[(undecafluoropentyl)sulfonyl]amino]ethyl 2-methyl-2-propenoate and octadecyl 2-methyl-2-propenoate	1.0
68239-43-0	2-Propenoic acid, 2-methyl-, 2-ethylhexyl ester, polymer with α-fluoro-ω-[2-[(2-methyl-1-oxo-2-propen-1-yl)oxy]ethyl]poly(difluoromethylene), 2-hydroxyethyl 2-methyl-2-propenoate and *N*-(hydroxymethyl)-2-propenamide	1.0
2144-54-9	2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluorododecyl ester	1.0
65104-45-2	2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluorododecyl ester, polymer with 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl 2-methyl-2-propenoate, methyl 2-methyl-2-propenoate, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosafluorotetradecyl 2-methyl-2-propenoate and 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl 2-methyl-2-propenoate	1.0
1996-88-9	2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl ester	1.0
203743-03-7	2-Propenoic acid, 2-methyl-, hexadecyl ester, polymers with 2-hydroxyethyl methacrylate, γ-ω-perfluoro-C10-16-alkyl acrylate and stearyl methacrylate	1.0
4980-53-4	2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,16-nonacosafluorohexadecyl ester	1.0

CASRN	Chemical Name	*De minimis* % Limit
142636-88-2	2-Propenoic acid, 2-methyl-, octadecyl ester, polymer with 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluorododecyl 2-propenoate, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl 2-propenoate and 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosafluorotetradecyl 2-propenoate	1.0
6014-75-1	2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosafluorotetradecyl ester	1.0
68084-62-8	2-Propenoic acid, 2-[methyl[(pentadecafluoroheptyl)sulfonyl]amino]ethyl ester	1.0
200513-42-4	2-Propenoic acid, 2-methyl-, polymer with butyl 2-methyl-2-propenoate, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl 2-propenoate, 2-hydroxyethyl 2-methyl-2-propenoate and methyl 2-methyl-2-propenoate	1.0
67584-57-0	2-Propenoic acid, 2-[methyl[(tridecafluorohexyl)sulfonyl]amino]ethyl ester	1.0
67584-56-9	2-Propenoic acid, 2-[methyl[(undecafluoropentyl)sulfonyl]amino]ethyl ester	1.0
61798-68-3	Pyridinium, 1-(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)-, salt with 4-methylbenzenesulfonic acid (1:1)	1.0
83048-65-1	Silane, (3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)trimethoxy-	1.0
78560-44-8	Silane, trichloro(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)-	1.0
125476-71-3	Silicic acid (H_4SiO_4), disodium salt, reaction products with chlorotrimethylsilane and 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-1-decanol	1.0
143372-54-7	Siloxanes and Silicones, (3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)oxy Me, hydroxy Me, Me octyl, ethers with polyethylene glycol mono-Me ether	1.0
335-93-3	Silver(I) perfluorooctanoate	1.0
335-95-5	Sodium perfluorooctanoate	1.0
4151-50-2	Sulfluramid	1.0
180582-79-0	Sulfonic acids, C6-12-alkane, γ-ω-perfluoro, ammonium salts	1.0
30046-31-2	Tetradecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12-pentacosafluoro-14-iodo-	1.0
68758-57-6	1-Tetradecanesulfonyl chloride, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosafluoro-	1.0
39239-77-5	1-Tetradecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosafluoro-	1.0
27905-45-9	1,1,2,2-Tetrahydroperfluorodecyl acrylate	1.0
17741-60-5	1,1,2,2-Tetrahydroperfluorododecyl acrylate	1.0
34362-49-7	1,1,2,2-Tetrahydroperfluorohexadecyl acrylate	1.0
34395-24-9	1,1,2,2-Tetrahydroperfluorotetradecyl acrylate	1.0
97553-95-2	Thiocyanic acid, γ-ω-perfluoro-C4-20-alkyl esters	1.0
68140-18-1	Thiols, C4-10, γ-ω-perfluoro	1.0
1078712-88-5	Thiols, C4-20, γ-ω-perfluoro, telomers with acrylamide and acrylic acid, sodium salts	1.0
68140-20-5	Thiols, C6-12, γ-ω-perfluoro	1.0
70969-47-0	Thiols, C8-20, γ-ω-perfluoro, telomers with acrylamide	1.0
68140-21-6	Thiols, C10-20, γ-ω-perfluoro	1.0

e. Individually-Listed PFAS Arranged by CASRN

CASRN	Chemical Name	*De minimis* % Limit
307-35-7	Perfluorooctylsulfonyl fluoride	1.0
307-55-1	Perfluorododecanoic acid	1.0
335-66-0	Octanoyl fluoride, pentadecafluoro-	1.0
335-67-1	Perfluorooctanoic acid	0.1
335-71-7	1-Heptanesulfonyl fluoride, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-pentadecafluoro-	1.0

CASRN	Chemical Name	*De minimis* % Limit
335-76-2	Perfluorodecanoic acid	1.0
335-93-3	Silver(I) perfluorooctanoate	1.0
335-95-5	Sodium perfluorooctanoate	1.0
355-46-4	Perfluorohexanesulfonic acid	1.0
375-73-5	Perfluorobutane sulfonic acid	1.0
375-95-1	Perfluorononanoic acid	1.0
376-06-7	Perfluorotetradecanoic acid	1.0
376-14-7	2-[Ethyl[(heptadecafluorooctyl)sulfonyl]amino]ethyl methacrylate	1.0
376-27-2	Methyl perfluorooctanoate	1.0
383-07-3	2-[Butyl[(heptadecafluorooctyl)sulfonyl]amino]ethyl acrylate	1.0
423-82-5	2-[Ethyl[(heptadecafluorooctyl)sulfonyl]amino]ethyl acrylate	1.0
507-63-1	Perfluorooctyl iodide	1.0
678-39-7	1-Decanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-	1.0
865-86-1	1-Dodecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluoro-	1.0
1652-63-7	3-[[(Heptadecafluorooctyl)sulfonyl]amino]-*N,N,N*-trimethyl-1-propanaminium iodide	1.0
1691-99-2	*N*-Ethyl-*N*-(2-hydroxyethyl)perfluorooctanesulfonamide	1.0
1763-23-1	Perfluorooctane sulfonic acid	1.0
1996-88-9	2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl ester	1.0
2043-53-0	Decane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-heptadecafluoro-10-iodo-	1.0
2043-54-1	Dodecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10-heneicosafluoro-12-iodo-	1.0
2144-54-9	2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluorododecyl ester	1.0
2263-09-4	1-Octanesulfonamide, N-butyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-(2-hydroxyethyl)-	1.0
2395-00-8	Potassium perfluorooctanoate	1.0
2795-39-3	Potassium perfluorooctanesulfonate	1.0
2991-51-7	Glycine, *N*-ethyl-*N*-[(heptadecafluorooctyl)sulfonyl]-, potassium salt	1.0
3107-18-4	Cyclohexanesulfonic acid, undecafluoro-, potassium salt	1.0
3825-26-1	Ammonium perfluorooctanoate	1.0
3871-99-6	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, potassium salt	1.0
3872-25-1	1-Pentanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,5-undecafluoro-, potassium salt	1.0
4151-50-2	Sulfluramid	1.0
4980-53-4	2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,16-nonacosafluorohexadecyl ester	1.0
6014-75-1	2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosafluorotetradecyl ester	1.0
13252-13-6	Hexafluoropropylene oxide dimer acid	1.0
16517-11-6	Octadecanoic acid, pentatriacontafluoro-	1.0
17202-41-4	1-Nonanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,9-nonadecafluoro-, ammonium salt	1.0
17741-60-5	1,1,2,2-Tetrahydroperfluorododecyl acrylate	1.0
21652-58-4	Perfluorooctyl ethylene	1.0
24448-09-7	1-Octanesulfonamide, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-*N*-(2-hydroxyethyl)-*N*-methyl-	1.0
25268-77-3	2-[[(Heptadecafluorooctyl)sulfonyl]methylamino]ethyl acrylate	1.0
27619-90-5	1-Decanesulfonyl chloride, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-	1.0
27619-91-6	1-Dodecanesulfonyl chloride, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluoro-	1.0
27905-45-9	1,1,2,2-Tetrahydroperfluorodecyl acrylate	1.0

CASRN	Chemical Name	*De minimis* % Limit
29081-56-9	1-Octanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, ammonium salt	1.0
29117-08-6	Poly(oxy-1,2-ethanediyl), α-[2-[ethyl[(heptadecafluorooctyl)sulfonyl]amino]ethyl]-ω-hydroxy-	1.0
29420-49-3	Potassium perfluorobutane sulfonate	1.0
29457-72-5	Lithium (perfluorooctane)sulfonate	1.0
30046-31-2	Tetradecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12-pentacosafluoro-14-iodo-	1.0
31506-32-8	1-Octanesulfonamide, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-*N*-methyl-	1.0
34362-49-7	1,1,2,2-Tetrahydroperfluorohexadecyl acrylate	1.0
34395-24-9	1,1,2,2-Tetrahydroperfluorotetradecyl acrylate	1.0
37338-48-0	Poly[oxy(methyl-1,2-ethanediyl)], α-[2-[ethyl[(heptadecafluorooctyl)sulfonyl]amino]ethyl]-ω-hydroxy-	1.0
38006-74-5	1-Propanaminium, 3-[[(heptadecafluorooctyl)sulfonyl]amino]-*N,N,N*-trimethyl-, chloride	1.0
39239-77-5	1-Tetradecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosafluoro-	1.0
45187-15-3	Perfluorobutanesulfonate	1.0
52166-82-2	1-Propanaminium, *N,N,N*-trimethyl-3-[[(tridecafluorohexyl)sulfonyl]amino]-, chloride	1.0
55910-10-6	Glycine, *N*-[(heptadecafluorooctyl)sulfonyl]-*N*-propyl-, potassium salt	1.0
56372-23-7	Poly(oxy-1,2-ethanediyl), α-[2-[ethyl[(tridecafluorohexyl)sulfonyl]amino]ethyl]-ω-hydroxy-	1.0
56773-42-3	Ethanaminium, *N,N,N*-triethyl-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid (1:1)	1.0
59071-10-2	2-Propenoic acid, 2-[ethyl[(pentadecafluoroheptyl)sulfonyl]amino]ethyl ester	1.0
60270-55-5	1-Heptanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-pentadecafluoro-, potassium salt	1.0
60699-51-6	1-Hexadecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,16-nonacosafluoro-	1.0
61660-12-6	1-Octanesulfonamide, *N*-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-*N*-[3-(trimethoxysilyl)propyl]-	1.0
61798-68-3	Pyridinium, 1-(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)-, salt with 4-methylbenzenesulfonic acid (1:1)	1.0
62037-80-3	Hexafluoropropylene oxide dimer acid ammonium salt	1.0
65104-45-2	2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluorododecyl ester, polymer with 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl 2-methyl-2-propenoate, methyl 2-methyl-2-propenoate, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosafluorotetradecyl 2-methyl-2-propenoate and 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl 2-methyl-2-propenoate	1.0
65104-65-6	1-Eicosanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,20-heptatriacontafluoro-	1.0
65104-67-8	1-Octadecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,18-tritriacontafluoro-	1.0
65510-55-6	Hexadecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14-nonacosafluoro-16-iodo-	1.0
65530-59-8	Poly(difluoromethylene), α-fluoro-ω-(2-hydroxyethyl)-, 2-hydroxy-1,2,3-propanetricarboxylate (3:1)	1.0
65530-61-2	Poly(difluoromethylene), α-fluoro-ω-[2-(phosphonooxy)ethyl]-	1.0
65530-62-3	Poly(difluoromethylene), α,α'-[phosphinicobis(oxy-2,1-ethanediyl)]bis[ω-fluoro-	1.0
65530-63-4	Ethanol, 2,2'-iminobis-, compd. with α-fluoro-ω-[2-(phosphonooxy)ethyl]poly(difluoromethylene) (2:1)	1.0

CASRN	Chemical Name	*De minimis* % Limit
65530-64-5	Ethanol, 2,2'-iminobis-, compd. with α,α'-[phosphinicobis(oxy-2,1-ethanediyl)]bis[ω-fluoropoly(difluoromethylene)] (1:1)	1.0
65530-65-6	Poly(difluoromethylene), α-fluoro-ω-[2-[(1-oxooctadecyl)oxy]ethyl]-	1.0
65530-66-7	Poly(difluoromethylene), α-fluoro-ω-[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl]-	1.0
65530-69-0	Poly(difluoromethylene), α-[2-[(2-carboxyethyl)thio]ethyl]-ω-fluoro-, lithium salt	1.0
65530-70-3	Poly(difluoromethylene), α,α'-[phosphinicobis(oxy-2,1-ethanediyl)]bis[ω-fluoro-, ammonium salt	1.0
65530-71-4	Poly(difluoromethylene), α-fluoro-ω-[2-(phosphonooxy)ethyl]-, monoammonium salt	1.0
65530-72-5	Poly(difluoromethylene), α-fluoro-ω-[2-(phosphonooxy)ethyl]-, diammonium salt	1.0
65530-74-7	Ethanol, 2,2'-iminobis-, compd. with α-fluoro-ω-[2-(phosphonooxy)ethyl]poly(difluoromethylene) (1:1)	1.0
65530-83-8	Poly(difluoromethylene), α-[2-[(2-carboxyethyl)thio]ethyl]-ω-fluoro-	1.0
65545-80-4	Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy-, ether with α-fluoro-ω-(2-hydroxyethyl)poly(difluoromethylene) (1:1)	1.0
65605-56-3	Poly(difluoromethylene), α-fluoro-ω-(2-hydroxyethyl)-, dihydrogen 2-hydroxy-1,2,3-propanetricarboxylate	1.0
65605-57-4	Poly(difluoromethylene), α-fluoro-ω-(2-hydroxyethyl)-, hydrogen 2-hydroxy-1,2,3-propanetricarboxylate	1.0
65605-58-5	2-Propenoic acid, esters, 2-methyl-, dodecyl ester, polymer with α-fluoro-ω-[2-[(2-methyl-1-oxo-2-propen-1-yl)oxy]ethyl]poly(difluoromethylene)	1.0
65605-59-6	2-Propenoic acid, 2-methyl-, dodecyl ester, polymer with α-fluoro-ω-[2-[(2-methyl-1-oxo-2-propen-1-yl)oxy]ethyl]poly(difluoromethylene) and *N*-(hydroxymethyl)-2-propenamide	1.0
65605-73-4	Poly(difluoromethylene), α-fluoro-ω-[2-[(1-oxo-2-propenyl)oxy]ethyl]-, homopolymer	1.0
65636-35-3	Ethanaminium, *N,N*-diethyl-*N*-methyl-2-[(2-methyl-1-oxo-2-propenyl)oxy]-, methyl sulfate, polymer with 2-ethylhexyl 2-methyl-2-propenoate, α-fluoro-ω-[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl]poly(difluoromethylene), 2-hydroxyethyl 2-methyl-2-propenoate and *N*-(hydroxymethyl)-2-propenamide	1.0
67584-42-3	Cyclohexanesulfonic acid, decafluoro(pentafluoroethyl)-, potassium salt	1.0
67584-52-5	Glycine, *N*-ethyl-*N*-[(undecafluoropentyl)sulfonyl]-, potassium salt	1.0
67584-53-6	Glycine, *N*-ethyl-*N*-[(tridecafluorohexyl)sulfonyl]-, potassium salt	1.0
67584-56-9	2-Propenoic acid, 2-[methyl[(undecafluoropentyl)sulfonyl]amino]ethyl ester	1.0
67584-57-0	2-Propenoic acid, 2-[methyl[(tridecafluorohexyl)sulfonyl]amino]ethyl ester	1.0
67584-58-1	1-Propanaminium, *N,N,N*-trimethyl-3-[[(pentadecafluoroheptyl)sulfonyl]amino]-, iodide	1.0
67584-62-7	Glycine, *N*-ethyl-*N*-[(pentadecafluoroheptyl)sulfonyl]-, potassium salt	1.0
67905-19-5	Perfluoropalmitic acid	1.0
67906-42-7	1-Decanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heneicosafluoro-, ammonium salt	1.0
67969-69-1	1-Octanesulfonamide, *N*-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-*N*-[2-(phosphonooxy)ethyl]-, diammonium salt	1.0
68084-62-8	2-Propenoic acid, 2-[methyl[(pentadecafluoroheptyl)sulfonyl]amino]ethyl ester	1.0
68140-18-1	Thiols, C4-10, γ-ω-perfluoro	1.0
68140-20-5	Thiols, C6-12, γ-ω-perfluoro	1.0
68140-21-6	Thiols, C10-20, γ-ω-perfluoro	1.0
68141-02-6	Chromium(III) perfluorooctanoate	1.0
68156-01-4	Cyclohexanesulfonic acid, nonafluorobis(trifluoromethyl)-, potassium salt	1.0
68156-07-0	Cyclohexanesulfonic acid, decafluoro(trifluoromethyl)-, potassium salt	1.0
68187-25-7	Butanoic acid, 4-[[3-(dimethylamino)propyl]amino]-4-oxo-, 2(or 3)-[(γ-ω-perfluoro-C6-20-alkyl)thio] derivs.	1.0
68187-47-3	1-Propanesulfonic acid, 2-methyl-, 2-[[1-oxo-3-[(γ-ω-perfluoro-C4-16-alkyl)thio]propyl]amino] derivs., sodium salts	1.0
68188-12-5	Alkyl iodides, C4-20, γ-ω-perfluoro	1.0

CASRN	Chemical Name	*De minimis* % Limit
68227-96-3	2-Propenoic acid, butyl ester, telomer with 2-[[(heptadecafluorooctyl)sulfonyl]methylamino]ethyl 2-propenoate, 2-[methyl[(nonafluorobutyl)sulfonyl]amino]ethyl 2-propenoate, α-(2-methyl-1-oxo-2-propenyl)-ω-hydroxypoly(oxy-1,4-butanediyl), α-(2-methyl-1-oxo-2-propenyl)-ω-[(2-methyl-1-oxo-2-propenyl)oxy]poly(oxy-1,4-butanediyl), 2-[methyl[(pentadecafluoroheptyl)sulfonyl]amino]ethyl 2-propenoate, 2-[methyl[(tridecafluorohexyl)sulfonyl]amino]ethyl 2-propenoate, 2-[methyl[(undecafluoropentyl)sulfonyl]amino]ethyl 2-propenoate and 1-octanethiol	1.0
68239-43-0	2-Propenoic acid, 2-methyl-, 2-ethylhexyl ester, polymer with α-fluoro-ω-[2-[(2-methyl-1-oxo-2-propen-1-yl)oxy]ethyl]poly(difluoromethylene), 2-hydroxyethyl 2-methyl-2-propenoate and *N*-(hydroxymethyl)-2-propenamide	1.0
68259-07-4	1-Heptanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-pentadecafluoro-, ammonium salt	1.0
68259-08-5	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, ammonium salt	1.0
68259-09-6	1-Pentanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,5-undecafluoro-, ammonium salt	1.0
68259-38-1	Poly[oxy(methyl-1,2-ethanediyl)], α-[2-[ethyl[(tridecafluorohexyl)sulfonyl]amino]ethyl]-ω-hydroxy-	1.0
68259-39-2	Poly[oxy(methyl-1,2-ethanediyl)], α-[2-[ethyl[(pentadecafluoroheptyl)sulfonyl]amino]ethyl]-ω-hydroxy-	1.0
68298-62-4	2-Propenoic acid, 2-[butyl[(heptadecafluorooctyl)sulfonyl]amino]ethyl ester, telomer with 2-[butyl[(pentadecafluoroheptyl)sulfonyl]amino]ethyl 2-propenoate, methyloxirane polymer with oxirane di-2-propenoate, methyloxirane polymer with oxirane mono-2-propenoate and 1-octanethiol	1.0
68298-80-6	Poly(oxy-1,2-ethanediyl), α-[2-[ethyl[(undecafluoropentyl)sulfonyl]amino]ethyl]-ω-hydroxy-	1.0
68298-81-7	Poly(oxy-1,2-ethanediyl), α-[2-[ethyl[(pentadecafluoroheptyl)sulfonyl]amino]ethyl]-ω-hydroxy-	1.0
68310-17-8	Poly[oxy(methyl-1,2-ethanediyl)], α-[2-[ethyl[(undecafluoropentyl)sulfonyl]amino]ethyl]-ω-hydroxy-	1.0
68391-08-2	Alcohols, C8-14, γ-ω-perfluoro	1.0
68412-68-0	Phosphonic acid, perfluoro-C6-12-alkyl derivs.	1.0
68412-69-1	Phosphinic acid, bis(perfluoro-C6-12-alkyl) derivs.	1.0
68515-62-8	1,4-Benzenedicarboxylic acid, dimethyl ester, reaction products with bis(2-hydroxyethyl)terephthalate, ethylene glycol, α-fluoro-ω-(2-hydroxyethyl)poly(difluoromethylene), hexakis(methoxymethyl)melamine and polyethylene glycol	1.0
68555-74-8	1-Pentanesulfonamide, 1,1,2,2,3,3,4,4,5,5,5-undecafluoro-*N*-(2-hydroxyethyl)-*N*-methyl-	1.0
68555-75-9	1-Hexanesulfonamide, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-*N*-(2-hydroxyethyl)-*N*-methyl-	1.0
68555-76-0	1-Heptanesulfonamide, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-pentadecafluoro-*N*-(2-hydroxyethyl)-*N*-methyl-	1.0
68555-81-7	1-Propanaminium, *N,N,N*-trimethyl-3-[[(pentadecafluoroheptyl)sulfonyl]amino]-, chloride	1.0
68555-91-9	2-Propenoic acid, 2-methyl-, 2-[ethyl[(heptadecafluorooctyl)sulfonyl]amino]ethyl ester, polymer with 2-[ethyl[(nonafluorobutyl)sulfonyl]amino]ethyl 2-methyl-2-propenoate, 2-[ethyl[(pentadecafluoroheptyl)sulfonyl]amino]ethyl 2-methyl-2-propenoate, 2-[ethyl[(tridecafluorohexyl)sulfonyl]amino]ethyl 2-methyl-2-propenoate, 2-[ethyl[(undecafluoropentyl)sulfonyl]amino]ethyl 2-methyl-2-propenoate and octadecyl 2-methyl-2-propenoate	1.0
68758-57-6	1-Tetradecanesulfonyl chloride, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosafluoro-	1.0

CASRN	Chemical Name	*De minimis* % Limit
68867-60-7	2-Propenoic acid, 2-[[(heptadecafluorooctyl)sulfonyl]methylamino]ethyl ester, polymer with 2-[methyl[(nonafluorobutyl)sulfonyl]amino]ethyl 2-propenoate, 2-[methyl[(pentadecafluoroheptyl)sulfonyl]amino]ethyl 2-propenoate, 2-[methyl[(tridecafluorohexyl)sulfonyl]amino]ethyl 2-propenoate, 2-[methyl[(undecafluoropentyl)sulfonyl]amino]ethyl 2-propenoate and α-(1-oxo-2-propenyl)-ω-methoxypoly(oxy-1,2-ethanediyl)	1.0
68957-55-1	1-Propanaminium, *N,N,N*-trimethyl-3-[[(undecafluoropentyl)sulfonyl]amino]-, chloride	1.0
68957-57-3	1-Propanaminium, *N,N,N*-trimethyl-3-[[(undecafluoropentyl)sulfonyl]amino]-, iodide	1.0
68957-58-4	1-Propanaminium, *N,N,N*-trimethyl-3-[[(tridecafluorohexyl)sulfonyl]amino]-, iodide	1.0
68957-62-0	1-Heptanesulfonamide, *N*-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-pentadecafluoro-	1.0
68958-60-1	Poly(oxy-1,2-ethanediyl), α-[2-[ethyl[(pentadecafluoroheptyl)sulfonyl]amino]ethyl]-ω-methoxy-	1.0
68958-61-2	Poly(oxy-1,2-ethanediyl), α-[2-[ethyl[(heptadecafluorooctyl)sulfonyl]amino]ethyl]-ω-methoxy-	1.0
70225-14-8	1-Octanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, compd. with 2,2'-iminobis[ethanol] (1:1)	1.0
70225-15-9	1-Heptanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-pentadecafluoro-, compd. with 2,2'-iminobis[ethanol] (1:1)	1.0
70225-16-0	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, compd. with 2,2'-iminobis[ethanol] (1:1)	1.0
70225-17-1	1-Pentanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,5-undecafluoro-, compd. with 2,2'-iminobis[ethanol] (1:1)	1.0
70969-47-0	Thiols, C8-20, γ-ω-perfluoro, telomers with acrylamide	1.0
70983-59-4	Poly(oxy-1,2-ethanediyl), α-methyl-ω-hydroxy-, 2-hydroxy-3-[(γ-ω-perfluoro-C6-20-alkyl)thio]propyl ethers	1.0
70983-60-7	1-Propanaminium, 2-hydroxy-*N,N,N*-trimethyl-, 3-[(γ-ω-perfluoro-C6-20-alkyl)thio] derivs., chlorides	1.0
71608-60-1	Pentanoic acid, 4,4-bis[(γ-ω-perfluoro-C8-20-alkyl)thio] derivs.	1.0
72623-77-9	Fatty acids, C6-18, perfluoro, ammonium salts	1.0
72968-38-8	Fatty acids, C7-13, perfluoro, ammonium salts	1.0
74499-44-8	Phosphoric acid, γ-ω-perfluoro-C8-16-alkyl esters, compds. with diethanolamine	1.0
78560-44-8	Silane, trichloro(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)-	1.0
80010-37-3	Poly(difluoromethylene), α-fluoro-ω-[2-sulphoethyl)-	1.0
83048-65-1	Silane, (3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)trimethoxy-	1.0
95144-12-0	Poly(difluoromethylene), α-fluoro-ω-[2-(phosphonooxy)ethyl]-, ammonium salt	1.0
97553-95-2	Thiocyanic acid, γ-ω-perfluoro-C4-20-alkyl esters	1.0
97659-47-7	Alkenes, C8-14 α-, δ-ω-perfluoro	1.0
118400-71-8	Disulfides, bis(γ-ω-perfluoro-C6-20-alkyl)	1.0
123171-68-6	Poly(difluoromethylene), α-[2-(acetyloxy)-3-[(carboxymethyl)dimethylammonio]propyl]-ω-fluoro-, inner salt	1.0
125476-71-3	Silicic acid (H_4SiO_4), disodium salt, reaction products with chlorotrimethylsilane and 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-1-decanol	1.0
135228-60-3	Hexane, 1,6-diisocyanato-, homopolymer, γ-ω-perfluoro-C6-20-alc.-blocked	1.0
142636-88-2	2-Propenoic acid, 2-methyl-, octadecyl ester, polymer with 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluorododecyl 2-propenoate, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl 2-propenoate and 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosafluorotetradecyl 2-propenoate	1.0
143372-54-7	Siloxanes and Silicones, (3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)oxy Me, hydroxy Me, Me octyl, ethers with polyethylene glycol mono-Me ether	1.0
148240-85-1	1,3-Propanediol, 2,2-bis[[(γ-ω-perfluoro-C4-10-alkyl)thio]methyl] derivs., phosphates, ammonium salts	1.0
148240-87-3	1,3-Propanediol, 2,2-bis[[(γ-ω-perfluoro-C6-12-alkyl)thio]methyl] derivs., phosphates, ammonium salts	1.0

CASRN	Chemical Name	*De minimis* % Limit
148240-89-5	1,3-Propanediol, 2,2-bis[[(γ-ω-perfluoro-C10-20-alkyl)thio]methyl] derivs., phosphates, ammonium salts	1.0
150135-57-2	2-Propenoic acid, 2-methyl-, 2-(dimethylamino)ethyl ester, polymers with Bu acrylate, γ-ω-perfluoro-C8-14-alkyl acrylate and polyethylene glycol monomethacrylate, 2,2'-azobis[2,4-dimethylpentanenitrile]-initiated	1.0
178094-69-4	1-Octanesulfonamide, *N*-[3-(dimethyloxidoamino)propyl]-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, potassium salt	1.0
178535-23-4	Fatty acids, linseed-oil, γ-ω-perfluoro-C8-14-alkyl esters	1.0
180582-79-0	Sulfonic acids, C6-12-alkane, γ-ω-perfluoro, ammonium salts	1.0
182176-52-9	Ethaneperoxoic acid, reaction products with 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl thiocyanate and 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl thiocyanate	1.0
196316-34-4	2-Propenoic acid, 2-methyl-, 2-(dimethylamino)ethyl ester, polymers with γ-ω-perfluoro-C10-16-alkyl acrylate and vinyl acetate, acetates	1.0
200513-42-4	2-Propenoic acid, 2-methyl-, polymer with butyl 2-methyl-2-propenoate, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl 2-propenoate, 2-hydroxyethyl 2-methyl-2-propenoate and methyl 2-methyl-2-propenoate	1.0
203743-03-7	2-Propenoic acid, 2-methyl-, hexadecyl ester, polymers with 2-hydroxyethyl methacrylate, γ-ω-perfluoro-C10-16-alkyl acrylate and stearyl methacrylate	1.0
238420-68-3	Propanedioic acid, mono(γ-ω-perfluoro-C8-12-alkyl) derivs., di-me esters	1.0
238420-80-9	Propanedioic acid, mono(γ-ω-perfluoro-C8-12-alkyl) derivs., bis[4-(ethenyloxy)butyl] esters	1.0
1078142-10-5	1,3-Propanediol, 2,2-bis[[(γ-ω-perfluoro-C6-12-alkyl)thio]methyl] derivs., polymers with 2,2-bis[[(γ-ω-perfluoro-C10-20-alkyl)thio]methyl]-1,3-propanediol, 1,6-diisocyanato-2,2,4(or 2,4,4)-trimethylhexane, 2-heptyl-3,4-bis(9-isocyanatononyl)-1-pentylcyclohexane and 2,2'-(methylimino)bis[ethanol]	1.0
1078712-88-5	Thiols, C4-20, γ-ω-perfluoro, telomers with acrylamide and acrylic acid, sodium salts	1.0
1078715-61-3	1-Propanaminium, 3-amino-*N*-(carboxymethyl)-*N,N*-dimethyl-, *N*-[2-[(γ-ω-perfluoro-C4-20-alkyl)thio]acetyl] derivs., inner salts	1.0

Table III. Default Percentages for Section 6.1 Transfers

Section 6.1 of the Form R requires the reporting of the quantities of TRI-listed chemicals transferred off site to publicly owned treatment works (POTW) facilities during a given reporting year. Section 8 of the Form R requires subject facilities to use their best readily available information to determine the final waste management disposition of TRI chemicals initially sent to POTWs and then distribute the quantities reported in Section 6.1 among Sections 8.1c, 8.1d, and 8.7 of the Form R, as appropriate. If subject facilities have accurate information readily available on the final waste management disposition of a given TRI chemical following transfer to a particular POTW, then they should use this information to calculate and report Section 6.1 and 8 quantities. If subject facilities, however, do not have information on the final waste management disposition of a given TRI chemical transferred to a particular POTW, then they may use EPA-provided chemical-specific default POTW distribution percentages, as provided in the table below, to assist with Section 8 reportable quantity calculations.

The TRI chemical-specific default POTW distribution percentages provided by EPA are based on and derived from experimental and estimated POTW removal (treatment) and partitioning rate data collected by the Agency and used in EPA's Risk-Screening Environmental Indicators (RSEI) model. To predict the environmental fate of TRI-listed chemicals transferred to POTWs, EPA uses data on chemical removal efficiencies at POTWs and of the ultimate fate of the chemical removed. The amount of the chemical removed by POTWs is divided into the percentages removed by (1) sorbing to sludge, (2) volatilizing into the air, or (3) degradation. The below table assigns the portion of the influent diverted to sludge to Section 8.1c (Total off-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills), the portion volatilizing into the air to Section 8.1d (Total other off-site disposal or other releases), and the portion degraded to Section 8.7 (Quantity treated off-site). The percentage of the influent chemical that passes through the POTW (i.e., that is not removed/treated) and remains in effluent discharges is also assigned to Section 8.1d.

These default POTW distribution percentages that EPA provides are automatically pre-loaded in TRI-MEweb and are applied to quantities provided in Section 6.1 to assist with Section 8 calculations for users who do not know the ultimate waste management disposition of their off-site transfers to POTWs. Note that the below table does not contain default POTW distribution percentages for all TRI-listed chemicals and chemical categories. For chemicals and chemical categories not included in the table, the default assumption is that 100% of the chemical or chemical category transferred to a POTW is treated for destruction (i.e., 100% to Section 8.7), with the exception of elemental metals, metal category compounds, and PFAS, for which the default assumption is that 100% of the chemical or chemical category is released to the environment (including disposed of) (i.e., 100% to Section 8.1d).

POTW removal efficiencies are a function of many factors, including the treatment technology in place at a particular POTW. Therefore, information about the final waste management disposition of TRI chemicals at the specific POTW in question should be used in place of the default POTW distribution percentages provided by EPA in the table below, if available. EPA's understanding is that these default POTW distribution percentages and assumptions are realistic expectations for typical POTWs treating TRI chemicals and that EPA will incorporate more precise default POTW distribution percentages and assumptions when it learns of more accurate data.

CASRN/ Category Code	Chemical Name	% of §6.1 to §:		
		8.1c	**8.1d**	**8.7**
Arranged by CASRN				
50-00-0	Formaldehyde	0	8	92
51-03-6	Piperonyl butoxide	39	3	58
51-21-8	Fluorouracil	1	55	44
51-28-5	2,4-Dinitrophenol	1	24	75
51-79-6	Urethane	1	55	44
52-68-6	Trichlorfon	0	8	92
53-96-3	2-Acetylaminofluorene	5	42	53
55-63-0	Nitroglycerin	1	24	75
56-23-5	Carbon tetrachloride	2	88	10
56-38-2	Parathion	9	2	89
57-14-7	1,1-Dimethylhydrazine	1	25	74
57-33-0	Pentobarbital sodium	2	53	45
57-41-0	Phenytoin	2	51	47
57-74-9	Chlordane	61	1	38
58-89-9	Lindane	13	24	63
60-09-3	4-Aminoazobenzene	8	35	57
60-11-7	4-Dimethylaminoazobenzene	35	5	60
60-34-4	Methyl hydrazine	1	25	74

Table III. Default Percentages for Section 6.1 Transfers

CASRN/ Category Code	Chemical Name	% of §6.1 to §:		
		8.1c	**8.1d**	**8.7**
60-35-5	Acetamide	0	8	92
60-51-5	Dimethoate	1	55	44
61-82-5	Amitrole	1	55	44
62-53-3	Aniline	0	8	92
62-55-5	Thioacetamide	1	55	44
62-56-6	Thiourea	1	25	74
62-73-7	Dichlorvos	1	25	74
62-74-8	Sodium fluoroacetate	1	25	74
63-25-2	Carbaryl	1	12	87
64-18-6	Formic acid	0	8	92
64-67-5	Diethyl sulfate	0	5	95
64-75-5	Tetracycline hydrochloride	1	55	44
67-56-1	Methanol	0	8	92
67-66-3	Chloroform	1	73	26
67-72-1	Hexachloroethane	18	56	26
68-12-2	*N,N*-Dimethylformamide	0	8	92
70-30-4	Hexachlorophene	62	1	37
71-36-3	*n*-Butyl alcohol	0	8	92
71-43-2	Benzene	1	23	76
71-55-6	1,1,1-Trichloroethane	1	95	4
72-43-5	Methoxychlor	45	2	53
72-57-1	Trypan blue	1	55	44
74-83-9	Bromomethane	0	80	20
74-85-1	Ethylene	0	92	8
74-87-3	Chloromethane	1	59	40
74-88-4	Methyl iodide	1	78	21
74-90-8	Hydrogen cyanide	2	98	0
74-95-3	Methylene bromide	1	61	38
75-00-3	Chloroethane	1	85	14
75-01-4	Vinyl chloride	0	92	8
75-05-8	Acetonitrile	1	25	74
75-07-0	Acetaldehyde	0	9	91
75-09-2	Dichloromethane	1	44	55
75-15-0	Carbon disulfide	1	87	12
75-21-8	Ethylene oxide	0	9	91
75-25-2	Bromoform	2	57	41
75-27-4	Dichlorobromomethane	1	68	31
75-34-3	Ethylidene dichloride	1	78	21
75-35-4	Vinylidene chloride	1	91	8
75-43-4	Dichlorofluoromethane (HCFC-21)	1	91	8
75-44-5	Phosgene	0	0	100
75-45-6	Chlorodifluoromethane (HCFC-22)	1	88	11
75-55-8	Propyleneimine	1	25	74
75-56-9	Propylene oxide	0	9	91
75-63-8	Bromotrifluoromethane (Halon 1301)	0	99	1

CASRN/ Category Code	Chemical Name	% of §6.1 to §:		
		8.1c	**8.1d**	**8.7**
75-65-0	*tert*-Butyl alcohol	1	55	44
75-68-3	1-Chloro-1,1-difluoroethane (HCFC-142b)	1	98	1
75-69-4	Trichlorofluoromethane (CFC-11)	1	98	1
75-71-8	Dichlorodifluoromethane (CFC-12)	0	99	1
75-72-9	Chlorotrifluoromethane (CFC-13)	0	99	1
75-86-5	2-Methyllactonitrile	0	0	100
75-88-7	2-Chloro-1,1,1-trifluoroethane (HCFC-133a)	0	99	1
76-01-7	Pentachloroethane	6	75	19
76-06-2	Chloropicrin	1	88	11
76-13-1	Freon 113 (CFC-113)	3	96	1
76-14-2	Dichlorotetrafluoroethane (CFC-114)	2	97	1
76-15-3	Monochloropentafluoroethane (CFC-115)	1	98	1
76-44-8	Heptachlor	50	1	49
76-87-9	Triphenyltin hydroxide	14	86	0
77-47-4	Hexachlorocyclopentadiene	44	11	45
77-73-6	Dicyclopentadiene	7	84	9
77-78-1	Dimethyl sulfate	0	3	97
78-48-8	*S,S,S*-Tributyltrithiophosphate	37	0	63
78-84-2	Isobutyraldehyde	0	9	91
78-87-5	1,2-Dichloropropane	1	70	29
78-88-6	2,3-Dichloropropene	1	67	32
78-92-2	*sec*-Butyl alcohol	0	8	92
79-00-5	1,1,2-Trichloroethane	1	82	17
79-01-6	Trichloroethylene	1	93	6
79-06-1	Acrylamide	0	8	92
79-10-7	Acrylic acid	0	8	92
79-11-8	Chloroacetic acid	0	8	92
79-19-6	Thiosemicarbazide	1	55	44
79-21-0	Peracetic acid	0	8	92
79-22-1	Methyl chlorocarbonate	0	1	99
79-34-5	1,1,2,2-Tetrachloroethane	2	78	20
79-44-7	Dimethylcarbamoyl chloride	0	0	100
79-46-9	2-Nitropropane	1	26	73
80-05-7	4,4'-Isopropylidenediphenol	5	14	81
80-15-9	Cumene hydroperoxide	1	24	75
80-62-6	Methyl methacrylate	0	10	90

Table III. Default Percentages for Section 6.1 Transfers

CASRN/ Category Code	Chemical Name	% of §6.1 to §:		
		8.1c	**8.1d**	**8.7**
81-07-2	Saccharin (only persons who manufacture are subject, no supplier notification)	1	25	74
82-68-8	Quintozene	43	11	46
84-74-2	Dibutyl phthalate	29	1	70
85-01-8	Phenanthrene	32	6	62
85-44-9	Phthalic anhydride	0	1	99
86-30-6	*N*-Nitrosodiphenylamine	5	42	53
87-62-7	2,6-Xylidine	2	53	45
87-68-3	Hexachloro-1,3-butadiene	45	23	32
87-86-5	Pentachlorophenol	54	4	42
88-06-2	2,4,6-Trichlorophenol	9	9	82
88-75-5	2-Nitrophenol	1	59	40
88-85-7	Dinitrobutyl phenol	12	54	34
88-89-1	Picric acid	1	78	21
90-04-0	*o*-Anisidine	1	25	74
90-43-7	2-Phenylphenol	3	5	92
91-08-7	Toluene-2,6-diisocyanate	2	1	97
91-20-3	Naphthalene	4	6	90
91-22-5	Quinoline	1	24	75
91-59-8	*beta*-Naphthylamine	1	23	76
91-94-1	3,3'-Dichlorobenzidine	9	32	59
92-52-4	Biphenyl	10	2	88
92-67-1	4-Aminobiphenyl	3	47	50
92-87-5	Benzidine	1	25	74
93-65-2	Mecoprop	5	42	53
94-11-1	2,4-D isopropyl ester	8	2	90
94-36-0	Benzoyl peroxide	5	3	92
94-58-6	Dihydrosafrole	10	30	60
94-59-7	Safrole	8	34	58
94-74-6	Methoxone	6	39	55
94-75-7	2,4-D	2	6	92
94-80-4	2,4-D butyl ester	15	1	84
95-47-6	*o*-Xylene	3	16	81
95-48-7	*o*-Cresol	0	8	92
95-50-1	1,2-Dichlorobenzene	7	47	46
95-53-4	*o*-Toluidine	0	94	6
95-54-5	1,2-Phenylenediamine	1	55	44
95-63-6	1,2,4-Trimethylbenzene	11	21	68
95-80-7	2,4-Diaminotoluene	1	55	44
95-95-4	2,4,5-Trichlorophenol	13	25	62
96-09-3	Styrene oxide	1	25	74
96-12-8	1,2-Dibromo-3-chloropropane	4	72	24
96-18-4	1,2,3-Trichloropropane	2	56	42
96-33-3	Methyl acrylate	0	9	91
96-45-7	Ethylene thiourea	1	55	44

CASRN/ Category Code	Chemical Name	% of §6.1 to §:		
		8.1c	**8.1d**	**8.7**
98-07-7	Benzoic trichloride	0	0	100
98-82-8	Cumene	7	13	80
98-86-2	Acetophenone	0	8	92
98-87-3	Benzal chloride	0	0	100
98-88-4	Benzoyl chloride	0	0	100
98-95-3	Nitrobenzene	0	8	92
99-55-8	5-Nitro-*o*-toluidine	1	54	45
99-65-0	*m*-Dinitrobenzene	1	54	45
100-01-6	*p*-Nitroaniline	1	54	45
100-02-7	4-Nitrophenol	0	93	7
100-25-4	*p*-Dinitrobenzene	1	54	45
100-41-4	Ethylbenzene	3	45	52
100-42-5	Styrene	2	13	85
100-44-7	Benzyl chloride	1	27	72
100-75-4	*N*-Nitrosopiperidine	1	55	44
101-05-3	Anilazine	16	19	65
101-14-4	4,4'-Methylenebis(2-chloroaniline)	17	18	65
101-77-9	4,4'-Methylenedianiline	1	24	75
101-80-4	4,4'-Diaminodiphenyl ether	1	24	75
101-90-6	Diglycidyl resorcinol ether	1	25	74
105-67-9	2,4-Dimethylphenol	1	23	76
106-42-3	*p*-Xylene	3	19	78
106-44-5	*p*-Cresol	0	8	92
106-46-7	1,4-Dichlorobenzene	7	49	44
106-47-8	*p*-Chloroaniline	1	54	45
106-50-3	*p*-Phenylenediamine	1	55	44
106-51-4	Quinone	1	59	40
106-88-7	1,2-Butylene oxide	0	27	73
106-89-8	Epichlorohydrin	1	55	44
106-93-4	1,2-Dibromoethane	1	60	39
106-94-5	1-Bromopropane	1	70	29
106-99-0	1,3-Butadiene	1	86	13
107-02-8	Acrolein	0	9	91
107-05-1	Allyl chloride	1	85	14
107-06-2	1,2-Dichloroethane	1	64	35
107-11-9	Allylamine	1	25	74
107-13-1	Acrylonitrile	0	9	91
107-18-6	Allyl alcohol	0	8	92
107-19-7	Propargyl alcohol	0	8	92
107-21-1	Ethylene glycol	0	8	92
107-30-2	Chloromethyl methyl ether	0	0	100
108-05-4	Vinyl acetate	0	11	89
108-10-1	Methyl isobutyl ketone	0	9	91
108-31-6	Maleic anhydride	0	0	100
108-38-3	*m*-Xylene	3	18	79
108-39-4	*m*-Cresol	0	8	92

Table III. Default Percentages for Section 6.1 Transfers

CASRN/ Category Code	Chemical Name	% of §6.1 to §:		
		8.1c	**8.1d**	**8.7**
108-45-2	1,3-Phenylenediamine	1	55	44
108-60-1	Bis(2-chloro-1-methylethyl) ether	2	53	45
108-88-3	Toluene	1	23	76
108-90-7	Chlorobenzene	2	39	59
108-93-0	Cyclohexanol	0	9	91
108-95-2	Phenol	0	8	92
109-06-8	2-Methylpyridine	0	8	92
109-77-3	Malononitrile	1	55	44
109-86-4	2-Methoxyethanol	0	8	92
110-54-3	*n*-Hexane	9	53	38
110-57-6	*trans*-1,4-Dichloro-2-butene	2	27	71
110-80-5	2-Ethoxyethanol	0	8	92
110-82-7	Cyclohexane	6	19	75
110-86-1	Pyridine	0	8	92
111-42-2	Diethanolamine	0	8	92
111-44-4	Bis(2-chloroethyl) ether	2	78	20
111-91-1	Bis(2-chloroethoxy)methane	1	78	21
114-26-1	Propoxur	0	8	92
115-07-1	Propylene	0	91	9
115-32-2	Dicofol	44	2	54
116-06-3	Aldicarb	1	54	45
117-79-3	2-Aminoanthraquinone	2	52	46
117-81-7	Di(2-ethylhexyl) phthalate	38	0	62
118-74-1	Hexachlorobenzene	60	2	38
119-90-4	3,3'-Dimethoxybenzidine	1	54	45
119-93-7	3,3'-Dimethylbenzidine	1	23	76
120-12-7	Anthracene	31	8	61
120-36-5	2,4-DP	8	34	58
120-58-1	Isosafrole	7	36	57
120-71-8	*p*-Cresidine	1	54	45
120-80-9	Catechol	0	8	92
120-82-1	1,2,4-Trichlorobenzene	19	22	59
120-83-2	2,4-Dichlorophenol	3	5	92
121-14-2	2,4-Dinitrotoluene	1	54	45
121-44-8	Triethylamine	1	56	43
121-69-7	*N,N*-Dimethylaniline	2	53	45
121-75-5	Malathion	1	7	92
122-34-9	Simazine	2	77	21
122-39-4	Diphenylamine	7	12	81
122-66-7	1,2-Diphenylhydrazine	4	46	50
123-31-9	Hydroquinone	0	8	92
123-38-6	Propionaldehyde	0	9	91
123-63-7	Paraldehyde	1	55	44
123-72-8	Butyraldehyde	0	9	91
123-91-1	1,4-Dioxane	1	55	44

CASRN/ Category Code	Chemical Name	% of §6.1 to §:		
		8.1c	**8.1d**	**8.7**
124-40-3	Dimethylamine	0	8	92
124-73-2	Dibromotetrafluoroethane	2	97	1
126-98-7	Methacrylonitrile	1	27	72
126-99-8	Chloroprene	1	93	6
127-18-4	Tetrachloroethylene	6	87	7
128-03-0	Potassium dimethyldithiocarbamate	1	28	71
128-04-1	Sodium dimethyldithiocarbamate	1	28	71
131-11-3	Dimethyl phthalate	0	8	92
132-64-9	Dibenzofuran	18	4	78
133-06-2	Captan	1	23	76
133-07-3	Folpet	2	20	78
134-32-7	*alpha*-Naphthylamine	1	24	75
136-45-8	Dipropyl isocinchomeronate	6	3	91
137-26-8	Thiram	1	24	75
137-41-7	Potassium *N*-methyldithiocarbamate	0	27	73
137-42-8	Metham sodium	0	27	73
139-13-9	Nitrilotriacetic acid	0	8	92
140-88-5	Ethyl acrylate	0	10	90
141-32-2	Butyl acrylate	1	9	90
142-59-6	Nabam	0	10	90
148-79-8	Thiabendazole	2	51	47
149-30-4	2-Mercaptobenzothiazole	2	52	46
150-50-5	Merphos	22	0	78
151-56-4	Ethyleneimine	1	55	44
156-62-7	Calcium cyanamide	2	98	0
298-00-0	Methyl parathion	2	6	92
300-76-5	Naled	1	25	74
302-01-2	Hydrazine	0	15	85
306-83-2	2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123)	1	98	1
309-00-2	Aldrin	62	1	37
314-40-9	Bromacil	2	53	45
330-54-1	Diuron	2	50	48
330-55-2	Linuron	5	41	54
333-41-5	Diazinon	12	7	81
353-59-3	Bromochlorodifluoromethane (Halon 1211)	1	98	1
354-11-0	1,1,1,2-Tetrachloro-2-fluoroethane (HCFC-121a)	3	84	13
354-14-3	1,1,2,2-Tetrachloro-1-fluoroethane (HCFC-121)	3	84	13
354-23-4	1,2-Dichloro-1,1,2-trifluoroethane (HCFC-123a)	1	98	1

Table III. Default Percentages for Section 6.1 Transfers

CASRN/ Category Code	Chemical Name	% of §6.1 to §:		
		8.1c	**8.1d**	**8.7**
354-25-6	1-Chloro-1,1,2,2-tetrafluoroethane (HCFC-124a)	0	99	1
357-57-3	Brucine	1	55	44
422-56-0	3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)	3	96	1
460-35-5	3-Chloro-1,1,1-trifluoropropane (HCFC-253fb)	1	98	1
463-58-1	Carbonyl sulfide	0	84	16
465-73-6	Isodrin	62	1	37
492-80-8	C.I. Solvent Yellow 34	2	50	48
505-60-2	Mustard gas	0	0	100
507-55-1	1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)	3	96	1
510-15-6	Chlorobenzilate	39	3	58
528-29-0	*o*-Dinitrobenzene	1	54	45
533-74-4	Dazomet	0	3	97
534-52-1	4,6-Dinitro-*o*-cresol	2	53	45
540-59-0	1,2-Dichloroethylene	1	74	25
541-41-3	Ethyl chloroformate	1	43	56
541-53-7	2,4-Dithiobiuret	1	51	48
541-73-1	1,3-Dichlorobenzene	8	47	45
542-75-6	1,3-Dichloropropylene	1	44	55
542-76-7	3-Chloropropionitrile	1	55	44
542-88-1	Bis(chloromethyl) ether	0	0	100
554-13-2	Lithium carbonate	2	98	0
556-61-6	Methyl isothiocyanate	0	0	100
563-47-3	3-Chloro-2-methyl-1-propene	1	93	6
584-84-9	Toluene-2,4-diisocyanate	2	1	97
606-20-2	2,6-Dinitrotoluene	2	53	45
612-83-9	3,3'-Dichlorobenzidine dihydrochloride	9	32	59
621-64-7	*N*-Nitrosodi-*n*-propylamine	1	54	45
624-83-9	Methyl isocyanate	0	0	100
630-20-6	1,1,1,2-Tetrachloroethane	3	82	15
636-21-5	*o*-Toluidine hydrochloride	1	54	45
684-93-5	*N*-Nitroso-*N*-methylurea	1	55	44
709-98-8	Propanil	4	44	52
759-73-9	*N*-Nitroso-*N*-ethylurea	1	55	44
759-94-4	*S*-Ethyl dipropylthiocarbamate	5	41	54
764-41-0	1,4-Dichloro-2-butene	1	84	15
834-12-8	Ametryn	4	45	51
872-50-4	*N*-Methyl-2-pyrrolidone	0	8	92
924-42-5	*N*-Methylolacrylamide	0	8	92
961-11-5	Tetrachlorvinphos	7	11	82
1120-71-4	1,3-Propane sultone	1	29	70
1163-19-5	Decabromodiphenyl oxide	62	1	37
1313-27-5	Molybdenum trioxide	2	98	0
1314-20-1	Thorium dioxide	90	10	0
1319-77-3	Cresol (mixed isomers)	0	8	92
1320-18-9	2,4-D propylene glycol butyl ether ester	15	0	85
1330-20-7	Xylene (mixed isomers)	3	17	80
1332-21-4	Asbestos (friable)	NA	NA	NA
1336-36-3	Polychlorinated biphenyls	61	1	38
1344-28-1	Aluminum oxide (fibrous forms)	2	98	0
1464-53-5	Diepoxybutane	1	25	74
1563-66-2	Carbofuran	1	7	92
1582-09-8	Trifluralin	57	3	40
1634-04-4	Methyl tert-butyl ether	1	60	39
1649-08-7	1,2-Dichloro-1,1-difluoroethane (HCFC-132b)	1	97	2
1689-84-5	Bromoxynil	6	13	81
1689-99-2	Bromoxynil octanoate	38	0	62
1717-00-6	1,1-Dichloro-1-fluoroethane (HCFC-141b)	1	96	3
1861-40-1	Benfluralin	56	3	41
1897-45-6	Chlorothalonil	3	18	79
1910-42-5	Paraquat dichloride	1	55	44
1912-24-9	Atrazine	3	74	23
1918-00-9	Dicamba	1	53	46
1918-02-1	Picloram	2	90	8
1918-16-7	Propachlor	1	24	75
1928-43-4	2,4-D 2-ethylhexyl ester	22	0	78
1929-73-3	2,4-D 2-butoxyethyl ester	12	1	87
1929-82-4	Nitrapyrin	7	36	57
1982-69-0	Sodium dicamba	1	53	46
2164-07-0	Dipotassium endothall	1	24	75
2164-17-2	Fluometuron	2	52	46
2234-13-1	Octachloronaphthalene	62	1	37
2300-66-5	Dimethylamine dicamba	1	54	45
2303-16-4	Diallate	21	14	65
2303-17-5	Triallate	35	5	60
2312-35-8	Propargite	42	44	14
2699-79-8	Sulfuryl fluoride	2	98	0
2702-72-9	2,4-D sodium salt	2	6	92
2837-89-0	2-Chloro-1,1,1,2-tetrafluoroethane (HCFC-124)	0	99	1
2971-38-2	2,4-D chlorocrotyl ester	16	0	84
3383-96-8	Temephos	38	0	62

Table III. Default Percentages for Section 6.1 Transfers

CASRN/ Category Code	Chemical Name	% of §6.1 to §:		
		8.1c	**8.1d**	**8.7**
3653-48-3	Methoxone sodium salt	1	25	74
4080-31-3	1-(3-Chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride	1	55	44
4170-30-3	Crotonaldehyde	0	10	90
4549-40-0	*N*-Nitrosomethylvinylamine	9	51	40
5234-68-4	Carboxin	1	24	75
7287-19-6	Prometryn	11	56	33
7429-90-5	Aluminum (fume or dust)	NA	NA	NA
7439-92-1	Lead	63	37	NA
7439-96-5	Manganese	39	61	NA
7439-97-6	Mercury	69	31	NA
7440-02-0	Nickel	38	62	NA
7440-22-4	Silver	66	34	NA
7440-28-0	Thallium	54	46	NA
7440-36-0	Antimony	32	68	NA
7440-38-2	Arsenic	49	51	NA
7440-39-3	Barium	69	31	NA
7440-41-7	Beryllium	37	63	NA
7440-43-9	Cadmium	68	32	NA
7440-47-3	Chromium	76	24	NA
7440-48-4	Cobalt	32	68	NA
7440-50-8	Copper	72	28	NA
7440-62-2	Vanadium (except when contained in an alloy)	32	68	NA
7440-66-6	Zinc (fume or dust)	NA	NA	NA
7550-45-0	Titanium tetrachloride	2	98	0
7632-00-0	Sodium nitrite	2	98	0
7637-07-2	Boron trifluoride	2	98	0
7647-01-0	Hydrochloric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)	NA	NA	NA
7664-39-3	Hydrogen fluoride	2	98	0
7664-41-7	Ammonia (includes anhydrous ammonia and aqueous ammonia from water dissociable ammonium salts and other sources; 10 percent of total aqueous ammonia is reportable under this listing)	0	40	60
7664-93-9	Sulfuric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)	NA	NA	NA
7697-37-2	Nitric acid	0	0	100
7726-95-6	Bromine	2	98	0
7758-01-2	Potassium bromate	2	98	0
7782-41-4	Fluorine	2	98	0
7782-49-2	Selenium	44	56	NA
7782-50-5	Chlorine	2	98	0
7803-51-2	Phosphine	2	98	0
8001-35-2	Toxaphene	62	1	37
10028-15-6	Ozone	2	98	0
10034-93-2	Hydrazine sulfate (1:1)	2	98	0
10049-04-4	Chlorine dioxide	2	98	0
10061-02-6	*trans*-1,3-Dichloropropene	1	31	68
10294-34-5	Boron trichloride	2	98	0
12122-67-7	Zineb	0	2	98
12185-10-3	Phosphorus (yellow or white)	60	40	0
12427-38-2	Maneb	2	98	0
13194-48-4	Ethoprop	10	29	61
13684-56-5	Desmedipham	5	9	86
15972-60-8	Alachlor	7	11	82
17804-35-2	Benomyl	1	49	50
19044-88-3	Oryzalin	3	49	48
19666-30-9	Oxadiazon	40	3	57
20325-40-0	3,3'-Dimethoxybenzidine dihydrochloride	1	55	44
20816-12-0	Osmium tetroxide	2	98	0
20859-73-8	Aluminum phosphide	2	98	0
21087-64-9	Metribuzin	1	54	45
21725-46-2	Cyanazine	2	76	22
22781-23-3	Bendiocarb	1	23	76
23564-05-8	Thiophanate-methyl	1	25	74
23950-58-5	Pronamide	10	30	60
25321-14-6	Dinitrotoluene (mixed isomers)	1	53	46
25321-22-6	Dichlorobenzene (mixed isomers)	8	47	45
25376-45-8	Diaminotoluene (mixed isomers)	1	78	21
26002-80-2	Phenothrin	38	0	62
26471-62-5	Toluene diisocyanate (mixed isomers)	2	1	97
26628-22-8	Sodium azide	2	98	0
28249-77-6	Thiobencarb	8	35	57
30560-19-1	Acephate	1	55	44
34014-18-1	Tebuthiuron	2	77	21
34077-87-7	Dichlorotrifluoroethane	1	98	1
35367-38-5	Diflubenzuron	13	6	81
35554-44-0	Imazalil	15	21	64
40487-42-1	Pendimethalin	47	1	52
42874-03-3	Oxyfluorfen	39	3	58

Table III. Default Percentages for Section 6.1 Transfers

CASRN/ Category Code	Chemical Name	% of §6.1 to §:		
		8.1c	**8.1d**	**8.7**
43121-43-3	Triadimefon	3	48	49
51235-04-2	Hexazinone	19	16	65
52645-53-1	Permethrin	38	0	62
53404-37-8	2,4-D 2-ethyl-4-methylpentyl ester	21	0	79
55290-64-7	Dimethipin	1	55	44
55406-53-6	3-Iodo-2-propynyl butylcarbamate	1	23	76
57213-69-1	Triclopyr-triethylammonium salt	1	25	74
59669-26-0	Thiodicarb	1	24	75
60207-90-1	Propiconazole	9	32	59
62476-59-9	Acifluorfen, sodium salt	12	25	63
64902-72-3	Chlorsulfuron	1	54	45
67485-29-4	Hydramethylnon	53	0	47
68359-37-5	Cyfluthrin	38	0	62
71751-41-2	Abamectin	44	2	54
72178-02-0	Fomesafen	3	47	50
77501-63-4	Lactofen	31	0	69
82657-04-3	Bifenthrin	38	0	62
88671-89-0	Myclobutanil	9	32	59
90982-32-4	Chlorimuron-ethyl	1	23	76
101200-48-0	Tribenuron-methyl	2	22	76
127564-92-5	Dichloropentafluoro-propane	3	96	1
N010	Antimony compounds	32	68	NA
N020	Arsenic compounds	49	51	NA
N040	Barium compounds (except for barium sulfate (CAS No. 7727-43-7))	69	31	NA
N050	Beryllium compounds	37	63	NA
N078	Cadmium compounds	68	32	NA
N084	Chlorophenols	54	4	42
N090	Chromium compounds (except for chromite ore mined in the Transvaal Region of South Africa and the unreacted ore component of the chromite ore processing residue (COPR). COPR is the solid waste remaining after aqueous extraction of oxidized chromite ore that has been combined with soda ash and kiln roasted at approximately 2,000 °F.)	76	24	NA
N096	Cobalt compounds	32	68	NA
N100	Copper compounds (this category does not include copper phthalocyanine compounds that are substituted with only hydrogen, and/or chlorine, and/or bromine.)	72	28	NA
N106	Cyanide compounds	2	98	0
N171	Ethylenebisdithiocarbamic acid, salts and esters	2	98	0
N230	Certain glycol ethers	0	8	92
N270	Hexabromocyclododecane	0	6	94
N420	Lead compounds	63	37	NA
N450	Manganese compounds	39	61	NA
N458	Mercury compounds	69	31	NA
N495	Nickel compounds	38	62	NA
N503	Nicotine and salts	2	98	0
N511[a]	Nitrate compounds (water dissociable; reportable only when in aqueous solution)	0	10	90
N530	Nonylphenol	60	2	38
N535	Nonylphenol ethoxylates	60	2	38
N590	Polycyclic aromatic compounds (PACs)	92	7	1
N725	Selenium compounds	44	56	NA
N740	Silver compounds	66	34	NA
N746	Strychnine and salts	2	98	0
N760	Thallium compounds	54	46	NA
N770	Vanadium compounds	32	68	NA
N874	Warfarin and salts	3	97	0
N982	Zinc compounds	66	34	NA

[a] N511: Nitrate compounds (water dissociable) are reportable only when in aqueous solution. Removal of nitrate compounds from wastewater and/or aqueous solution therefore constitutes treatment for destruction for TRI reporting purposes. The data source for the nitrate removal rate is *US EPA. [2012]. EPIWEB- Estimation Programs Interface Suite™ for Microsoft® Windows, v 4.11. Sewage Treatment Plant Model (STPWIN). United States Environmental Protection Agency, Washington, DC.*

Appendix A. Trade Secret Submissions

A.1 Instructions for Trade Secret Submissions

For any EPCRA Section 313 chemical whose identity is claimed as trade secret, two versions of the substantiation form must be submitted to EPA as prescribed in 40 CFR Part 350, published July 29, 1988, in the *Federal Register* (53 FR 28772) as well as two versions of the EPCRA Section 313 report. Trade secret reporting must be done via hard copy, paper reporting.

The current substantiation form is available at: https://www.epa.gov/epcra/epcra-trade-secret-forms-and-instructions. One set of reports, the unsanitized version, must provide the actual identity of the EPCRA Section 313 chemical. The other set of reports, i.e., the "sanitized" version, must provide a generic class or category for the chemical that is structurally descriptive of the EPCRA Section 313 chemical. If EPA deems the trade secret substantiation form valid, only the sanitized set of forms will be made available to the public.

Paper submissions must be sent to both EPA (sent to the address provided below, under the "Where to send your trade secret submission" heading) and the state or the designated official of an Indian tribe and follow the requirements for reporting trade secrets. If a report is not received by both EPA and the state (or the designated official of an Indian tribe), the submitter is considered out of compliance and subject to enforcement action. Facilities submitting paper forms must use the corresponding reporting year forms. These reporting forms can be found on the TRI website: https://guideme.epa.gov/ords/guideme_ext/f?p=guideme:rfi-home.

E-mailed submissions will not be accepted.

Form R Reporting

EPA requests that the EPCRA Section 313 chemical, chemical category, or generic name also be placed in the box marked "Toxic Chemical, Category, or Generic Name" in the upper right-hand corner on all pages of Form R. While this space is not a required data element, providing this information will help you in preparing a complete Form R report.

Form A Reporting

When making a trade secret claim on a Form A submission, EPA requires that a facility submit a unique Form A for each EPCRA Section 313 chemical meeting the conditions of the alternate threshold. Facilities may assert a trade secrecy claim for a chemical identity on the Form A as on the Form R. Reports submitted on a per chemical basis protect against the disclosure of trade secrets. Form As with trade secrecy claims, like Form Rs with similar claims, will be separately handled upon receipt to protect against disclosure. Commingling trade secret chemical identities with non-trade secret chemical identities on the same submission increases the risk of disclosure.

All Submissions

A complete report to EPA for an EPCRA Section 313 chemical claimed as a trade secret must include all of the following:

- A completed unsanitized version of Form R or Form A report including the EPCRA Section 313 chemical identity (staple the pages together); and
- A sanitized version of a completed Form R or Form A report in which the EPCRA Section 313 chemical identity items (Part II, Sections 1.1 and 1.2) have been left blank but in which a generic chemical name that is structurally descriptive has been supplied (Part II, Section 1.3) (staple the pages together); and
- A completed unsanitized version of a trade secret substantiation form (staple the pages together); and
- A sanitized version of a completed trade secret substantiation form (staple the pages together).

Securely fasten all four reports together.

Some states or tribes also require submission of both sanitized and unsanitized reports for EPCRA Section 313 chemicals whose identity is claimed as a trade secret. Others require only a sanitized version. Facilities may jeopardize the trade secret status of an EPCRA Section 313 chemical by submitting an unsanitized version of the EPCRA Section 313 report to a state agency or Indian tribe that does not require unsanitized forms. You may identify an individual state or tribe's submission requirements by contacting the appropriate state or tribe designated EPCRA Section 313 contact.

Where to send your trade secret submission

Please send only trade secret submissions to the P.O. Box below. Send trade secret submissions by *regular mail* to:

Attention: EPCRA Substantiation Packages
TRI Reporting Center
P.O. Box 10163
Fairfax, VA 22038

Send trade secret submissions by *certified mail or overnight mail* (i.e., Fed Ex, UPS, etc.) to:

Attention: EPCRA Substantiation Packages
CGI Federal, Inc.
c/o EPA Reporting Center
12601 Fair Lakes Circle
Fairfax, VA 22033

Revising or withdrawing trade secret submissions

Revisions and withdrawals must be performed using paper forms.

A.2 Supplemental Form R and Form A Instructions

The sections below are supplemental instructions to Chapters C and D for completing hard copy forms submitted with a trade secret submission.

Part I. Facility Identification Information

Section 2. Trade Secret Information

2.1 Are you claiming the EPCRA Section 313 chemical identified on Page 2 a trade secret?

The specific identity of the EPCRA Section 313 chemical being reported in Part II, Section 1 may be designated as a trade secret. If you are making a trade secret claim, mark "yes" and proceed to Section 2.2. Only check "yes" if you manufacture, process, or otherwise use the EPCRA Section 313 chemical whose identity is a trade secret. If you checked "no," you should submit your non-trade secret form data electronically using TRI-MEweb.

If facilities wish to report more than one eligible chemical on the same Form A, then all chemicals included must be non-trade secrecy claims. Any trade secrecy claims should be made on a separate form, and then the process is the same as using the Form R and as described in the following instructions.

2.2 If "yes" in 2.1, is this copy sanitized or unsanitized?

Answer this question only after you have completed the rest of the report. Check "sanitized" if this copy of the report is the public version that does not contain the EPCRA Section 313 chemical identity but does contain a generic name that is structurally descriptive in its place, and if you have claimed the EPCRA Section 313 chemical identity trade secret in Part I, Section 2.1. Otherwise, check "unsanitized."

4.1 Facility Name, Location, TRI Facility Identification Number and Tribal Country Name

Facilities filing a trade secret paper form should leave a blank in the BIA field if the facility is not located within tribal boundaries.

Location information for a facility that has previously submitted data to EPA.

Enter your TRIFID in Part I, Section 4.1.

Location information for a facility that has previously submitted data to EPA, but has changed physical location.

If your facility has moved, do not enter your previously assigned TRIFID, enter "New Facility". If you are filing a separate Form R or A for each establishment at your facility, you should use the same "New Facility" field for each establishment. If you are uncertain if a TRIFID has been assigned to your new facility location, use Envirofacts on the Web to look up the address or facility name at: https://www.epa.gov/enviro.

Location information for a facility that has changed ownership, but has not changed physical location.

The TRIFID will always stay with the physical location of a facility. If a new facility unit moves to this location it should use this TRIFID. Establishments of a facility (for facilities that report by part) that report separately should use the TRIFID of the primary facility.

Location reporting to TRI for the first time.

If you are preparing a hard copy TRI form for the first time for your facility's location and have never reported to TRI in previous years, you should enter "New Facility" in the space on the hard copy form designated for the TRI Facility Identification number (TRIFID).

Part II. Chemical Identification Information

Section 1. EPCRA Section 313 Chemical Identity (Form R & A)

1.1 CAS Number

You must report the CAS number or category code on your unsanitized Form R or A and unsanitized substantiation form. Enter the CAS registry number exactly as it appears in Table II of these instructions for the chemical being reported. CAS numbers are cross-referenced with an alphabetical list of chemical names in Table II. If you are reporting one of the EPCRA Section 313 chemical categories (e.g., chromium compounds), you should enter the applicable category code in the CAS number space. EPCRA Section 313 chemical category codes are listed below and can also be found in Table IIc.

Do not include the CAS number or category code on your sanitized Form R or A, or sanitized substantiation form.

1.2 EPCRA Section 313 Chemical or Chemical Category Name

You must report the specific EPCRA Section 313 chemical identity on your unsanitized Form R or A and unsanitized substantiation form. Enter the name of the EPCRA Section 313 chemical or chemical category exactly as it appears in Table II. If the EPCRA Section 313 chemical name is followed by a synonym in parentheses, report the chemical by the name that directly follows the CAS number (i.e., not the synonym). If the EPCRA Section 313 chemical identity is actually a product trade name (e.g., Dicofol), the *Chemical Abstracts 9th Collective Index* name is listed below it in brackets. You may report either name in this case.

Do not list the name of a chemical that does not appear in Table II, such as individual members of an EPCRA Section 313 chemical category. For example, if you use silver chloride, **do not** report silver chloride with its CAS number. Report this chemical as "silver compounds" with its category code, N740.

Do not report the name of the EPCRA Section 313 chemical on your sanitized Form R or A, or sanitized substantiation form. Include a generic name that is structurally descriptive in Part II, Section 1.3 of your sanitized Form R or A report.

1.3 Generic Chemical Name

Section 1.3 is used only when claiming the specific EPCRA Section 313 chemical identity of the EPCRA Section 313 chemical as a trade secret.

Enter a generic chemical name that is descriptive of the chemical structure. You should limit the generic name to 70 characters (e.g., numbers, letters, spaces, punctuation) or less. Do not enter mixture names in Section 1.3.

In-house plant codes and other substitute names that are not structurally descriptive of the EPCRA Section 313 chemical identity being withheld as a trade secret are not acceptable as a generic name. The generic name must appear on both sanitized and unsanitized Form Rs and As, and the name must be the same as that used on your substantiation forms.

Section 5. Quantity of the Toxic Chemical Entering Each Environmental Medium On-site (Form R)

5.3 Discharges to Receiving Streams or Water Bodies

Enter the receiving stream(s) and water body or bodies in Column A. A total of three spaces is provided on Page 2 of Form R. If you discharge the EPCRA Section 313 chemical to more than three streams or water bodies, you should photocopy Page 2 of Form R as many times as necessary and then number the boxes consecutively for each stream or water body. At the bottom of Page 2 you will find instructions for indicating the total number of Page 2s that you are submitting as part of the Form R as well as indicating the sequence of those pages.

Section 6. Transfer(s) of the Toxic Chemical in Wastes to Off-Site Locations (Form R)

Number the boxes for reporting the information for each sequential POTW or other off-site location in Sections 6.1 and 6.2. In the upper left hand corner of each box, the section number is either 6.1.[ ]._.or 6.2.[ ]. This section is required only for paper filers (trade secret submissions only); TRI-MEweb does this task automatically for the reporting facility.

If you report a transfer of the listed EPCRA Section 313 chemical to one or more off-site locations, POTWs, you should number the boxes in Section 6.1 as 6.1.1, 6.1.2, etc. If you transfer the EPCRA Section 313 chemical to more than one POTW, you should photocopy Page 3 of

Form R as many times as necessary and then number the boxes consecutively for each POTW (e.g., 6.1.2, 6.1.3, etc.). At the bottom of each page 3 that is submitted, indicate the total number of pages numbered "3" that you are submitting as part of Form R, as well as indicating the sequence of those pages. For example, your facility transfers the reported EPCRA Section 313 chemical in wastewaters to two POTWs. You would photocopy Page 3 once, indicate at the bottom of each Page 3 that there are a total of two pages numbered "3" and then indicate the first and second Page 3. The box for the first POTW on the first Page 3 should be numbered 6.1.1 and while the box for second POTW on the second Page 3 should be numbered 6.1.2.

If you report a transfer of the EPCRA Section 313 chemical to one or more other off-site locations, you should number the boxes in section 6.2 as 6.2.1, 6.2.2, etc. If you transfer the EPCRA Section 313 chemical to more than two other off-site locations, you should photocopy Page 4 of Form R as many times as necessary and then number the boxes consecutively for each off-site location. At the bottom of Page 4 you will find instructions for indicating the total number of Page 4s that you are submitting as part of the Form R as well as indicating the sequence of those pages. For example, your facility transfers the reported EPCRA Section 313 chemical to three other off-site locations. You should photocopy page 4 once, indicate at the bottom of Section 6.2 on each Page 4 that there are a total of two Page 4s and then indicate the first and second Page 4. The boxes for the two off-site locations on the first Page 4 would be numbered 6.2.1 and 6.2.2, while the box for the third off-site location on the second Page 4 should be numbered 6.2.3. Please note that section 6.2 starts on Page 3 and continues on Page 4.

Section 7. On-Site Waste Treatment, Energy Recovery, and Recycling Methods (Form R)

Section 7A: On-Site Waste Treatment Methods and Efficiency

If your facility performs more than eight sequential waste treatment methods on a single general waste stream, continue listing the methods in the next row and renumber appropriately those waste treatment method code boxes you used to continue the sequence. For example, if the general waste stream in box 7A.1a had nine treatment methods applied to it, the ninth method would be indicated in the first method box for row 7A.2a. The numeral "1" would be crossed out, and a "9" would be inserted.

Section 8. Source Reduction and Waste Management (Form R)

8.10 Did Your Facility Engage in Any Newly Implemented Source Reduction Activities for This Chemical During the Reporting Year?

Instructions on how to report source reduction activities on hard copy Form R are provided below.

If Your Facility Implemented Source Reduction Activities. Source reduction activity codes must be entered in the first column of Sections 8.10.1 through 8.10.4. Next, indicate any methods to identify the reported source reduction activity using the T-codes provided below.

If you have fewer than four source reduction codes in Section 8.10, enter "NA" in the first column of the first unused row to indicate the termination of the sequence. If all four rows are used, there is no need to terminate the sequence.

If Your Facility Did Not Implement Source Reduction Activities. If your facility did not implement any new source reduction activity for the reported EPCRA Section 313 chemical, check the "NA" box in Section 8.10 and, if possible, provide details about any barriers to source reduction implementation in Section 8.11.

8.11 Optional Pollution Prevention Information

Using the free text box in Section 8.11, you can provide more detail about activities your facility undertook to reduce releases of the EPCRA Section 313 chemical, including source reduction, waste management methods such as recycling, energy recovery, and treatment, or other pollution control measures.

Section 9. Miscellaneous Information (Form R)

9.1 Miscellaneous, Optional, and Additional Information for Your Form R Report

Using the free text box in Section 9.1 for the Form R, you may provide additional information pertaining to any portion of your Form R submission.

Do not submit information you consider to be CBI or otherwise protected on your Form R.

9.2 Optional Pollution Prevention and Additional Information for This Toxic Chemical on Your Form A Certification Statement

Using the free text box in Section 9.2 for the Form A Certification Statement, you may provide additional information pertaining to pollution prevention or other topics for each Toxic Chemical or Mixture Component included on your Form A Certification Statement submission.

Do not submit information you consider to be CBI or otherwise protected on your Form R.