

Supporting Information

A Fused [3.3.0] Neoglycoside Lactone Derived from Glucuronic Acid

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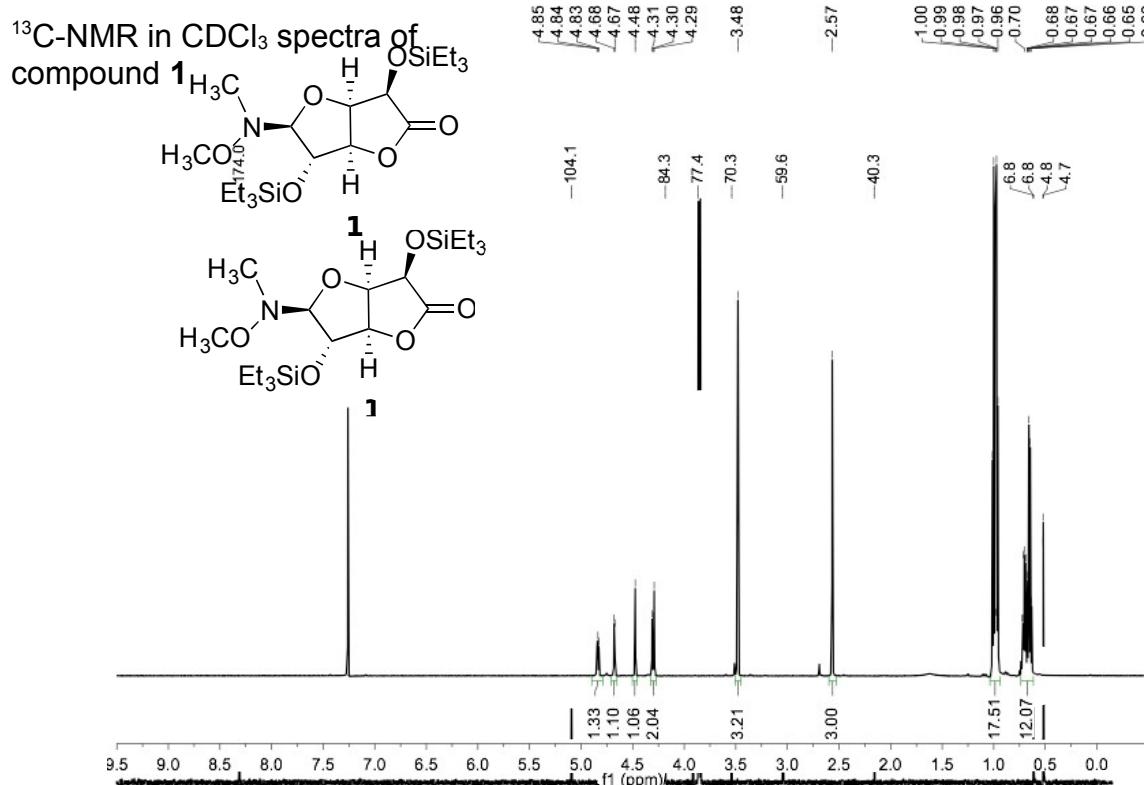
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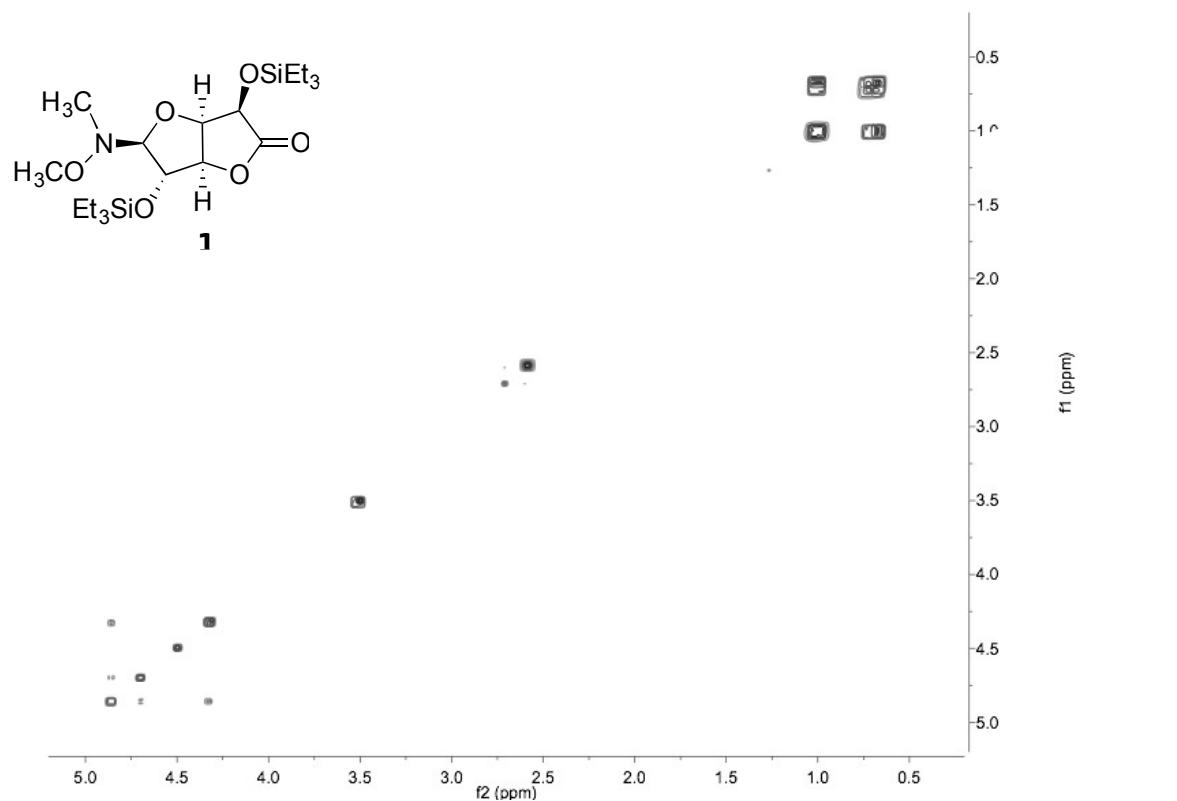
General Experimental

All reactions were conducted under a dried argon stream. The solvent (Dimethylformamide 99.8%) was purchased in capped DriSolv™ bottles, used without further purification and stored under argon. All other solvents and reagents were purchased from commercial sources and used without further purification. All glassware utilized was flame-dried before use. Glass-backed TLC plates (Silica Gel 60 with a 254 nm fluorescent indicator) were used without further manipulation and stored over desiccant. TLC plates were visualized using a short-wave UV lamp, stained with an I₂-SiO₂ mixture, and /or by heating plates that were dipped in a solution of ammonium molybdate/cerium (IV) sulfate. Flash column chromatography was performed using a silica gel (32-63 µm) stationary phase with a variable mobile phase correlated with TLC mobility. Optical rotations were measured at 598 nm using an Autopol IV automatic polarimeter, made by Rudolph Research Analytical, using a 100 mm cell. IR experiments were carried out on a Bruker Tensor 27 FT-IR. Melting point measurements were obtained on a Stanford Research Systems EZ-Melt instrument. NMR experiments were conducted on a Varian 600 MHz instrument using CDCl₃ (99.9% D) as the solvent. Chemical shifts are referenced to the appropriate deuterated solvent peak and are in parts per million (ppm). Samples were analyzed by electrospray ionization in both the negative and positive mode on a Thermo Fisher LTQ-Orbitrap (San Jose, CA) using flow-injection analysis on the IonMax source. Standard source conditions were employed and NaI was used as an additive when necessary for cation generation. All crystallographic calculations were performed on an iMac with 2.80 GHz quad core processor and 8 GB of extended memory.

¹H-NMR spectra in CDCl₃ of compound **1**



NMR spectra in CDCl₃ of compound **1**



HSQC-NMR spectra in CDCl₃ of compound 1

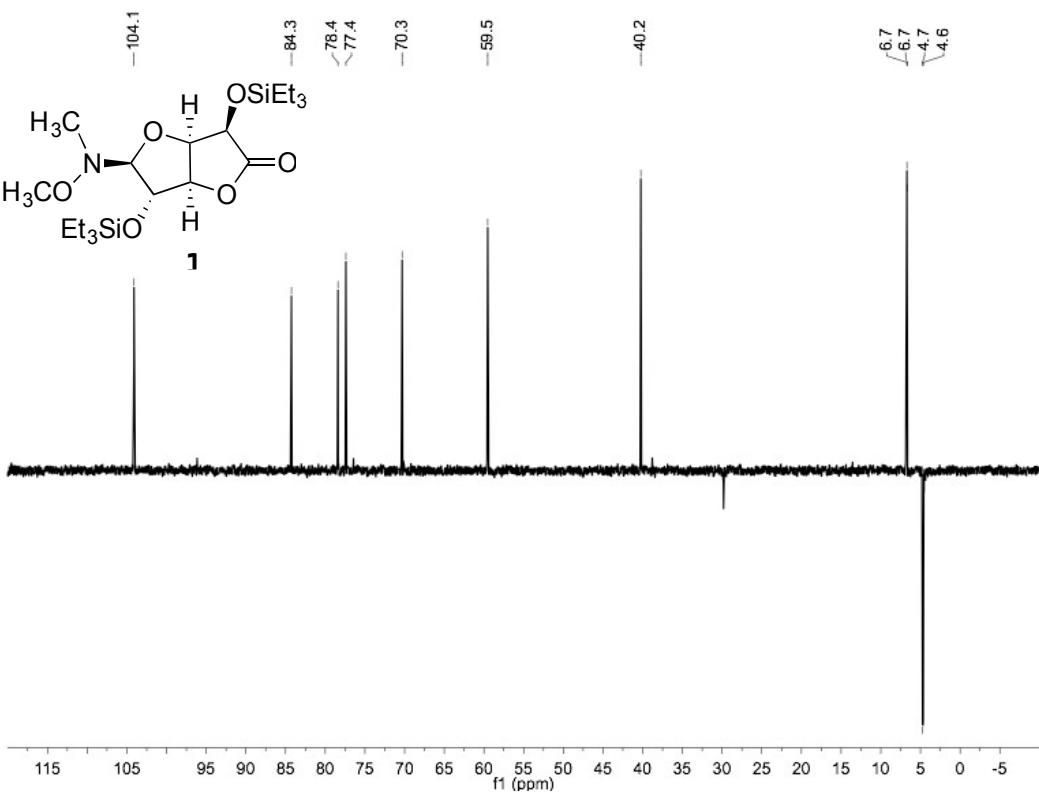
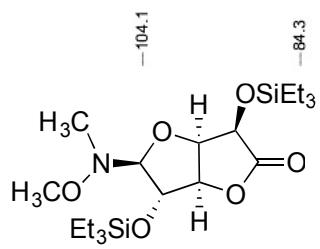
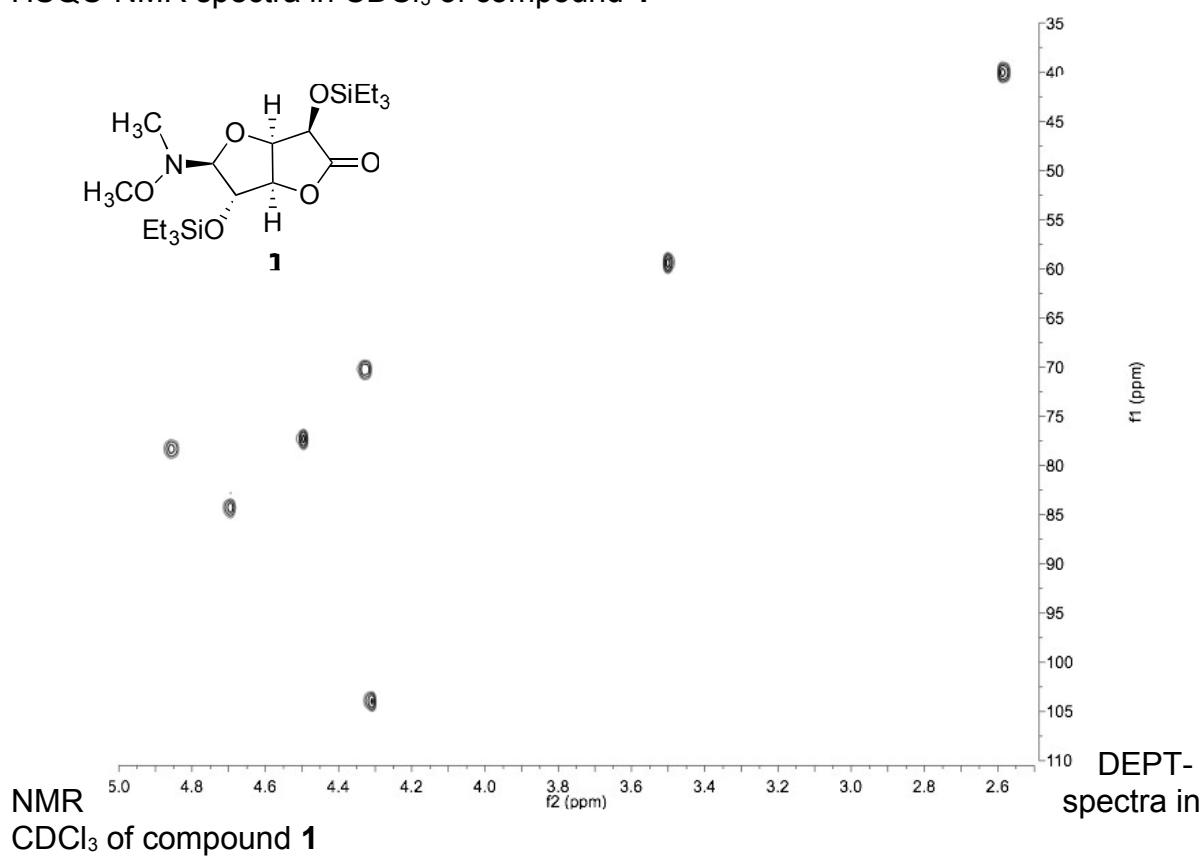
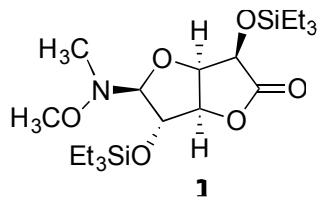


Table S1. Crystal data and structure refinement for compound **1**.

Identification code	1
Empirical formula	C20 H41 N O6 Si2
Formula weight	447.72
Temperature	90(2) K
Wavelength	1.54178 Å
Crystal system	Monoclinic
Space group	P 2 ₁
Unit cell dimensions	a = 12.0523(8) Å b = 28.1562(19) Å c = 14.5558(10) Å
	▪ = 90°. ▪ = 90.022(3)°. ▪ = 90°.
Volume	4939.5(6) Å ³
Z	8 (Z'=4)
Density (calculated)	1.204 Mg/m ³
Absorption coefficient	1.581 mm ⁻¹
F(000)	1952
Crystal size	0.60 x 0.28 x 0.10 mm ³
Crystal color and habit	Colorless Plate
Diffractometer	Bruker APEX-II CCD
Theta range for data collection	1.57 to 68.25°.
Index ranges	-14<=h<=14, -33<=k<=33, -17<=l<=17
Reflections collected	27457
Independent reflections	16785 [R(int) = 0.0369]
Observed reflections (I > 2sigma(I))	16549
Completeness to theta = 68.25°	99.6 %
Absorption correction	Semi-empirical from equivalents
Max. and min. transmission	0.8528 and 0.4510
Solution method	SHELXS-97 (Sheldrick, 2008)
Refinement method	SHELXL-97 (Sheldrick, 2008)
Data / restraints / parameters	16785 / 7 / 1085
Goodness-of-fit on F ²	1.043
Final R indices [I>2sigma(I)]	R1 = 0.0465, wR2 = 0.1158

R indices (all data)	R1 = 0.0470, wR2 = 0.1164
Absolute structure parameter	0.004(16)
Largest diff. peak and hole	1.030 and -0.295 e. \AA^{-3}

Table S2. Atomic coordinates ($\times 10^4$) and equivalent isotropic displacement parameters ($\text{\AA}^2 \times 10^3$) for compound **1**. U(eq) is defined as one third of the trace of the orthogonalized U^{ij} tensor.

	x	y	z	U(eq)
Si(1)	9773(1)	1813(1)	1733(1)	21(1)
Si(2)	9709(1)	4791(1)	1641(1)	19(1)
C(1)	10827(3)	3074(1)	2229(3)	15(1)
C(1A)	9360(3)	3477(1)	1543(3)	17(1)
N(1)	10973(2)	3302(1)	3133(2)	16(1)
O(1)	10535(2)	3424(1)	1579(2)	17(1)
C(2)	9850(3)	2730(1)	2273(3)	20(1)
C(2A)	8861(3)	3054(1)	2084(3)	18(1)
O(2)	8416(2)	3239(1)	2924(2)	19(1)
C(3)	8537(3)	3710(1)	2993(3)	20(1)
O(3)	11386(2)	2914(1)	3701(2)	25(1)
C(4)	8935(3)	3905(1)	2067(3)	20(1)
O(4)	9962(2)	2393(1)	1564(2)	22(1)
C(5)	11865(3)	3654(2)	3124(3)	25(1)
O(5)	8285(2)	3921(1)	3672(2)	29(1)
C(6)	10823(4)	2926(2)	4575(3)	33(1)
O(6)	9713(2)	4270(1)	2193(2)	20(1)
C(7)	10688(3)	1599(1)	2676(2)	31(1)
C(8)	11910(3)	1714(2)	2543(3)	39(1)
C(9)	10139(3)	1558(1)	591(3)	23(1)
C(10)	9806(4)	1025(2)	470(4)	40(1)
C(11)	8265(3)	1723(2)	2078(3)	37(1)
C(12)	8039(4)	1341(2)	2749(4)	62(1)
C(13)	8682(3)	5194(2)	2186(3)	33(1)
C(14)	7467(3)	5027(2)	2133(4)	49(1)
C(15)	11143(3)	5029(2)	1809(3)	31(1)
C(16)	11543(3)	5086(2)	2763(3)	30(1)
C(17)	9413(3)	4691(1)	397(3)	26(1)
C(18)	10319(3)	4432(2)	-106(3)	29(1)
Si(21)	5199(1)	5563(1)	4183(1)	22(1)
Si(22)	5371(1)	2582(1)	4189(1)	24(1)

C(21)	4199(3)	4310(2)	4760(3)	23(1)
C(21A)	5664(3)	3913(1)	4049(3)	19(1)
N(21)	4077(3)	4066(2)	5636(3)	26(1)
O(21)	4492(2)	3965(1)	4081(2)	20(1)
C(22)	5175(3)	4652(1)	4785(3)	20(1)
C(22A)	6168(3)	4334(2)	4571(3)	22(1)
O(22)	6619(2)	4146(1)	5432(2)	22(1)
C(23)	6505(3)	3664(2)	5485(3)	22(1)
O(23)	3697(2)	4442(1)	6241(2)	26(1)
C(24)	6094(3)	3466(1)	4573(3)	22(1)
O(24)	5060(2)	4985(1)	4053(2)	22(1)
C(25)	3173(3)	3715(2)	5598(3)	29(1)
O(25)	6752(2)	3449(1)	6161(2)	27(1)
C(26)	4300(4)	4405(2)	7064(3)	32(1)
O(26)	5319(2)	3107(1)	4702(2)	24(1)
C(27)	4242(3)	5777(1)	5113(3)	34(1)
C(28)	3050(3)	5644(2)	4988(3)	40(1)
C(29)	4835(3)	5809(2)	3025(3)	25(1)
C(30)	5101(4)	6324(2)	2874(4)	39(1)
C(31)	6679(3)	5726(2)	4501(3)	48(1)
C(32)	6995(5)	5696(2)	5456(4)	39(1)
C(32B)	6909(10)	6009(5)	5239(8)	38(2)
C(33)	6464(4)	2216(2)	4778(5)	52(2)
C(34)	7625(3)	2420(2)	4766(5)	49(1)
C(35)	3955(3)	2317(2)	4324(4)	32(1)
C(36)	3574(4)	2256(2)	5340(4)	49(1)
C(37)	5699(3)	2654(2)	2938(3)	28(1)
C(38)	4754(4)	2899(2)	2385(3)	40(1)
Si(41)	211(1)	1746(1)	6687(1)	19(1)
Si(42)	-279(1)	4738(1)	6727(1)	20(1)
C(41)	909(3)	3007(1)	7260(3)	18(1)
C(41A)	-544(3)	3402(1)	6556(3)	18(1)
N(41)	1010(2)	3248(1)	8160(2)	14(1)
O(41)	623(2)	3345(1)	6594(2)	18(1)
C(42)	-68(3)	2656(1)	7291(3)	19(1)
C(42A)	-1058(3)	2982(1)	7099(3)	19(1)

O(42)	-1506(2)	3169(1)	7937(2)	20(1)
C(43)	-1365(3)	3642(1)	8013(3)	19(1)
O(43)	1381(2)	2868(1)	8766(2)	21(1)
C(44)	-967(3)	3834(1)	7086(3)	19(1)
O(44)	44(2)	2331(1)	6562(2)	23(1)
C(45)	1911(3)	3598(1)	8148(3)	23(1)
O(45)	-1617(2)	3852(1)	8692(2)	29(1)
C(46)	791(4)	2904(2)	9618(3)	28(1)
O(46)	-190(2)	4203(1)	7205(2)	19(1)
C(47)	1577(3)	1595(1)	7225(3)	30(1)
C(48)	1647(3)	1618(1)	8268(2)	33(1)
C(49)	188(3)	1537(2)	5476(3)	27(1)
C(50)	76(3)	988(2)	5368(3)	30(1)
C(51)	-930(3)	1498(1)	7423(3)	28(1)
C(52)	-2091(3)	1610(2)	7070(4)	45(1)
C(53)	-1323(3)	5096(1)	7362(3)	27(1)
C(54)	-2494(3)	4878(1)	7374(3)	34(1)
C(55)	1143(3)	4994(2)	6860(3)	28(1)
C(56)	1598(4)	5028(2)	7817(3)	30(1)
C(57)	-644(3)	4679(2)	5483(3)	26(1)
C(58)	260(4)	4451(2)	4909(3)	34(1)
Si(61)	4892(1)	5576(1)	9158(1)	22(1)
Si(62)	5359(1)	2588(1)	9203(1)	21(1)
C(61)	4211(3)	4330(2)	9769(3)	22(1)
C(61A)	5664(3)	3922(1)	9057(3)	20(1)
N(61)	4086(3)	4083(1)	10648(3)	22(1)
O(61)	4491(2)	3981(1)	9089(2)	20(1)
C(62)	5185(3)	4667(1)	9786(2)	18(1)
C(62A)	6180(3)	4342(1)	9580(3)	18(1)
O(62)	6614(2)	4151(1)	10443(2)	22(1)
C(63)	6473(3)	3673(2)	10500(4)	24(1)
O(63)	3700(2)	4458(1)	11252(2)	23(1)
C(64)	6074(3)	3476(1)	9583(3)	22(1)
O(64)	5095(2)	4996(1)	9051(2)	20(1)
C(65)	3187(3)	3731(2)	10609(3)	24(1)
O(65)	6699(2)	3455(1)	11179(2)	27(1)

C(66)	4304(4)	4426(2)	12069(3)	32(1)
O(66)	5294(2)	3118(1)	9697(2)	24(1)
C(67)	3514(3)	5724(2)	9667(3)	33(1)
C(68)	3424(3)	5724(2)	10694(3)	40(1)
C(69)	4964(3)	5802(2)	7945(3)	29(1)
C(70)	4994(3)	6338(2)	7850(4)	35(1)
C(71)	6017(3)	5829(1)	9905(3)	31(1)
C(72)	7184(3)	5735(2)	9585(3)	37(1)
C(73)	6414(4)	2215(2)	9820(5)	52(2)
C(74)	7610(3)	2368(2)	9704(4)	50(1)
C(75)	3950(3)	2323(2)	9314(3)	28(1)
C(76)	3528(3)	2257(2)	10332(4)	37(1)
C(77)	5727(3)	2651(2)	7963(3)	27(1)
C(78)	4804(4)	2893(2)	7382(3)	41(1)

Table S3. Bond lengths [\AA] and angles [$^\circ$] for compound **1**.

Si(1)-O(4)	1.667(3)	C(6)-H(6C)	0.9800
Si(1)-C(7)	1.861(3)	C(7)-C(8)	1.520(5)
Si(1)-C(9)	1.864(4)	C(7)-H(7A)	0.9900
Si(1)-C(11)	1.902(4)	C(7)-H(7B)	0.9900
Si(2)-O(6)	1.672(3)	C(8)-H(8A)	0.9800
Si(2)-C(13)	1.857(4)	C(8)-H(8B)	0.9800
Si(2)-C(17)	1.867(4)	C(8)-H(8C)	0.9800
Si(2)-C(15)	1.870(4)	C(9)-C(10)	1.562(5)
C(1)-O(1)	1.409(4)	C(9)-H(9A)	0.9900
C(1)-N(1)	1.475(5)	C(9)-H(9B)	0.9900
C(1)-C(2)	1.526(5)	C(10)-H(10A)	0.9800
C(1)-H(1)	1.0000	C(10)-H(10B)	0.9800
C(1A)-O(1)	1.425(4)	C(10)-H(10C)	0.9800
C(1A)-C(4)	1.516(5)	C(11)-C(12)	1.479(6)
C(1A)-C(2A)	1.550(5)	C(11)-H(11A)	0.9900
C(1A)-H(1A)	1.0000	C(11)-H(11B)	0.9900
N(1)-O(3)	1.457(4)	C(12)-H(12A)	0.9800
N(1)-C(5)	1.463(5)	C(12)-H(12B)	0.9800
C(2)-O(4)	1.408(5)	C(12)-H(12C)	0.9800
C(2)-C(2A)	1.526(5)	C(13)-C(14)	1.540(6)
C(2)-H(2)	1.0000	C(13)-H(13A)	0.9900
C(2A)-O(2)	1.433(5)	C(13)-H(13B)	0.9900
C(2A)-H(2A)	1.0000	C(14)-H(14A)	0.9800
O(2)-C(3)	1.338(5)	C(14)-H(14B)	0.9800
C(3)-O(5)	1.193(5)	C(14)-H(14C)	0.9800
C(3)-C(4)	1.531(6)	C(15)-C(16)	1.479(6)
O(3)-C(6)	1.443(5)	C(15)-H(15A)	0.9900
C(4)-O(6)	1.403(4)	C(15)-H(15B)	0.9900
C(4)-H(4)	1.0000	C(16)-H(16A)	0.9800
C(5)-H(5A)	0.9800	C(16)-H(16B)	0.9800
C(5)-H(5B)	0.9800	C(16)-H(16C)	0.9800
C(5)-H(5C)	0.9800	C(17)-C(18)	1.504(6)
C(6)-H(6A)	0.9800	C(17)-H(17A)	0.9900
C(6)-H(6B)	0.9800	C(17)-H(17B)	0.9900

C(18)-H(18A)	0.9800	C(26)-H(26B)	0.9800
C(18)-H(18B)	0.9800	C(26)-H(26C)	0.9800
C(18)-H(18C)	0.9800	C(27)-C(28)	1.496(5)
Si(21)-O(24)	1.647(3)	C(27)-H(27A)	0.9900
Si(21)-C(29)	1.875(4)	C(27)-H(27B)	0.9900
Si(21)-C(27)	1.877(4)	C(28)-H(28A)	0.9800
Si(21)-C(31)	1.899(4)	C(28)-H(28B)	0.9800
Si(22)-O(26)	1.657(3)	C(28)-H(28C)	0.9800
Si(22)-C(35)	1.874(4)	C(29)-C(30)	1.502(6)
Si(22)-C(37)	1.875(5)	C(29)-H(29A)	0.9900
Si(22)-C(33)	1.880(5)	C(29)-H(29B)	0.9900
C(21)-O(21)	1.432(5)	C(30)-H(30A)	0.9800
C(21)-N(21)	1.457(6)	C(30)-H(30B)	0.9800
C(21)-C(22)	1.519(5)	C(30)-H(30C)	0.9800
C(21)-H(21)	1.0000	C(31)-C(32B)	1.366(13)
C(21A)-O(21)	1.420(4)	C(31)-C(32)	1.444(7)
C(21A)-C(22A)	1.533(6)	C(31)-H(31A)	0.9900
C(21A)-C(24)	1.560(5)	C(31)-H(31B)	0.9900
C(21A)-H(21A)	1.0000	C(31)-H(31C)	0.9900
N(21)-O(23)	1.451(5)	C(31)-H(31D)	0.9900
N(21)-C(25)	1.472(5)	C(32)-H(32A)	0.9800
C(22)-O(24)	1.427(4)	C(32)-H(32B)	0.9800
C(22)-C(22A)	1.526(5)	C(32)-H(32C)	0.9800
C(22)-H(22)	1.0000	C(32B)-H(32D)	0.9800
C(22A)-O(22)	1.465(5)	C(32B)-H(32E)	0.9800
C(22A)-H(22A)	1.0000	C(32B)-H(32F)	0.9800
O(22)-C(23)	1.366(5)	C(33)-C(34)	1.513(6)
C(23)-O(25)	1.193(5)	C(33)-H(33A)	0.9900
C(23)-C(24)	1.523(6)	C(33)-H(33B)	0.9900
O(23)-C(26)	1.406(5)	C(34)-H(34A)	0.9800
C(24)-O(26)	1.389(4)	C(34)-H(34B)	0.9800
C(24)-H(24)	1.0000	C(34)-H(34C)	0.9800
C(25)-H(25A)	0.9800	C(35)-C(36)	1.558(7)
C(25)-H(25B)	0.9800	C(35)-H(35A)	0.9900
C(25)-H(25C)	0.9800	C(35)-H(35B)	0.9900
C(26)-H(26A)	0.9800	C(36)-H(36A)	0.9800

C(36)-H(36B)	0.9800	C(44)-H(44)	1.0000
C(36)-H(36C)	0.9800	C(45)-H(45A)	0.9800
C(37)-C(38)	1.555(6)	C(45)-H(45B)	0.9800
C(37)-H(37A)	0.9900	C(45)-H(45C)	0.9800
C(37)-H(37B)	0.9900	C(46)-H(46A)	0.9800
C(38)-H(38A)	0.9800	C(46)-H(46B)	0.9800
C(38)-H(38B)	0.9800	C(46)-H(46C)	0.9800
C(38)-H(38C)	0.9800	C(47)-C(48)	1.521(5)
Si(41)-O(44)	1.669(3)	C(47)-H(47A)	0.9900
Si(41)-C(49)	1.858(4)	C(47)-H(47B)	0.9900
Si(41)-C(47)	1.872(4)	C(48)-H(48A)	0.9800
Si(41)-C(51)	1.878(4)	C(48)-H(48B)	0.9800
Si(42)-O(46)	1.664(3)	C(48)-H(48C)	0.9800
Si(42)-C(53)	1.859(4)	C(49)-C(50)	1.560(6)
Si(42)-C(55)	1.868(4)	C(49)-H(49A)	0.9900
Si(42)-C(57)	1.871(4)	C(49)-H(49B)	0.9900
C(41)-O(41)	1.400(5)	C(50)-H(50A)	0.9800
C(41)-N(41)	1.479(5)	C(50)-H(50B)	0.9800
C(41)-C(42)	1.538(5)	C(50)-H(50C)	0.9800
C(41)-H(41)	1.0000	C(51)-C(52)	1.523(5)
C(41A)-O(41)	1.418(4)	C(51)-H(51A)	0.9900
C(41A)-C(44)	1.528(5)	C(51)-H(51B)	0.9900
C(41A)-C(42A)	1.551(5)	C(52)-H(52A)	0.9800
C(41A)-H(41A)	1.0000	C(52)-H(52B)	0.9800
N(41)-O(43)	1.456(4)	C(52)-H(52C)	0.9800
N(41)-C(45)	1.468(5)	C(53)-C(54)	1.539(5)
C(42)-O(44)	1.408(5)	C(53)-H(53A)	0.9900
C(42)-C(42A)	1.532(5)	C(53)-H(53B)	0.9900
C(42)-H(42)	1.0000	C(54)-H(54A)	0.9800
C(42A)-O(42)	1.434(5)	C(54)-H(54B)	0.9800
C(42A)-H(42A)	1.0000	C(54)-H(54C)	0.9800
O(42)-C(43)	1.346(5)	C(55)-C(56)	1.501(6)
C(43)-O(45)	1.191(5)	C(55)-H(55A)	0.9900
C(43)-C(44)	1.531(6)	C(55)-H(55B)	0.9900
O(43)-C(46)	1.433(5)	C(56)-H(56A)	0.9800
C(44)-O(46)	1.408(4)	C(56)-H(56B)	0.9800

C(56)-H(56C)	0.9800	C(65)-H(65A)	0.9800
C(57)-C(58)	1.515(6)	C(65)-H(65B)	0.9800
C(57)-H(57A)	0.9900	C(65)-H(65C)	0.9800
C(57)-H(57B)	0.9900	C(66)-H(66A)	0.9800
C(58)-H(58A)	0.9800	C(66)-H(66B)	0.9800
C(58)-H(58B)	0.9800	C(66)-H(66C)	0.9800
C(58)-H(58C)	0.9800	C(67)-C(68)	1.498(5)
Si(61)-O(64)	1.658(3)	C(67)-H(67A)	0.9900
Si(61)-C(67)	1.866(4)	C(67)-H(67B)	0.9900
Si(61)-C(71)	1.877(4)	C(68)-H(68A)	0.9800
Si(61)-C(69)	1.878(4)	C(68)-H(68B)	0.9800
Si(62)-O(66)	1.658(3)	C(68)-H(68C)	0.9800
Si(62)-C(75)	1.862(4)	C(69)-C(70)	1.515(6)
Si(62)-C(77)	1.867(5)	C(69)-H(69A)	0.9900
Si(62)-C(73)	1.878(5)	C(69)-H(69B)	0.9900
C(61)-O(61)	1.436(5)	C(70)-H(70A)	0.9800
C(61)-N(61)	1.464(5)	C(70)-H(70B)	0.9800
C(61)-C(62)	1.510(5)	C(70)-H(70C)	0.9800
C(61)-H(61)	1.0000	C(71)-C(72)	1.505(5)
C(61A)-O(61)	1.424(5)	C(71)-H(71A)	0.9900
C(61A)-C(62A)	1.537(6)	C(71)-H(71B)	0.9900
C(61A)-C(64)	1.551(5)	C(72)-H(72A)	0.9800
C(61A)-H(61A)	1.0000	C(72)-H(72B)	0.9800
N(61)-O(63)	1.452(5)	C(72)-H(72C)	0.9800
N(61)-C(65)	1.470(5)	C(73)-C(74)	1.513(6)
C(62)-O(64)	1.419(4)	C(73)-H(73A)	0.9900
C(62)-C(62A)	1.538(5)	C(73)-H(73B)	0.9900
C(62)-H(62)	1.0000	C(74)-H(74A)	0.9800
C(62A)-O(62)	1.463(5)	C(74)-H(74B)	0.9800
C(62A)-H(62A)	1.0000	C(74)-H(74C)	0.9800
O(62)-C(63)	1.360(5)	C(75)-C(76)	1.577(7)
C(63)-O(65)	1.195(6)	C(75)-H(75A)	0.9900
C(63)-C(64)	1.523(6)	C(75)-H(75B)	0.9900
O(63)-C(66)	1.397(5)	C(76)-H(76A)	0.9800
C(64)-O(66)	1.388(4)	C(76)-H(76B)	0.9800
C(64)-H(64)	1.0000	C(76)-H(76C)	0.9800

C(77)-C(78)	1.555(7)	O(4)-C(2)-C(2A)	110.2(3)
C(77)-H(77A)	0.9900	C(1)-C(2)-C(2A)	102.5(3)
C(77)-H(77B)	0.9900	O(4)-C(2)-H(2)	111.7
C(78)-H(78A)	0.9800	C(1)-C(2)-H(2)	111.7
C(78)-H(78B)	0.9800	C(2A)-C(2)-H(2)	111.7
C(78)-H(78C)	0.9800	O(2)-C(2A)-C(2)	110.8(3)
		O(2)-C(2A)-C(1A)	107.4(3)
O(4)-Si(1)-C(7)	110.23(15)	C(2)-C(2A)-C(1A)	104.3(3)
O(4)-Si(1)-C(9)	102.33(16)	O(2)-C(2A)-H(2A)	111.3
C(7)-Si(1)-C(9)	113.03(17)	C(2)-C(2A)-H(2A)	111.3
O(4)-Si(1)-C(11)	107.48(16)	C(1A)-C(2A)-H(2A)	111.3
C(7)-Si(1)-C(11)	109.17(16)	C(3)-O(2)-C(2A)	112.5(3)
C(9)-Si(1)-C(11)	114.24(19)	O(5)-C(3)-O(2)	121.8(4)
O(6)-Si(2)-C(13)	109.42(18)	O(5)-C(3)-C(4)	129.1(4)
O(6)-Si(2)-C(17)	109.54(16)	O(2)-C(3)-C(4)	108.9(3)
C(13)-Si(2)-C(17)	112.3(2)	C(6)-O(3)-N(1)	108.8(3)
O(6)-Si(2)-C(15)	104.44(18)	O(6)-C(4)-C(1A)	114.9(3)
C(13)-Si(2)-C(15)	110.0(2)	O(6)-C(4)-C(3)	111.0(3)
C(17)-Si(2)-C(15)	110.9(2)	C(1A)-C(4)-C(3)	105.3(3)
O(1)-C(1)-N(1)	108.9(3)	O(6)-C(4)-H(4)	108.5
O(1)-C(1)-C(2)	106.3(3)	C(1A)-C(4)-H(4)	108.5
N(1)-C(1)-C(2)	109.3(3)	C(3)-C(4)-H(4)	108.5
O(1)-C(1)-H(1)	110.8	C(2)-O(4)-Si(1)	122.6(3)
N(1)-C(1)-H(1)	110.8	N(1)-C(5)-H(5A)	109.5
C(2)-C(1)-H(1)	110.8	N(1)-C(5)-H(5B)	109.5
O(1)-C(1A)-C(4)	113.7(3)	H(5A)-C(5)-H(5B)	109.5
O(1)-C(1A)-C(2A)	106.6(3)	N(1)-C(5)-H(5C)	109.5
C(4)-C(1A)-C(2A)	102.9(3)	H(5A)-C(5)-H(5C)	109.5
O(1)-C(1A)-H(1A)	111.1	H(5B)-C(5)-H(5C)	109.5
C(4)-C(1A)-H(1A)	111.1	O(3)-C(6)-H(6A)	109.5
C(2A)-C(1A)-H(1A)	111.1	O(3)-C(6)-H(6B)	109.5
O(3)-N(1)-C(5)	105.1(3)	H(6A)-C(6)-H(6B)	109.5
O(3)-N(1)-C(1)	102.8(3)	O(3)-C(6)-H(6C)	109.5
C(5)-N(1)-C(1)	112.0(3)	H(6A)-C(6)-H(6C)	109.5
C(1)-O(1)-C(1A)	110.2(3)	H(6B)-C(6)-H(6C)	109.5
O(4)-C(2)-C(1)	108.8(3)	C(4)-O(6)-Si(2)	125.3(2)

C(8)-C(7)-Si(1)	114.3(3)	C(14)-C(13)-Si(2)	115.2(3)
C(8)-C(7)-H(7A)	108.7	C(14)-C(13)-H(13A)	108.5
Si(1)-C(7)-H(7A)	108.7	Si(2)-C(13)-H(13A)	108.5
C(8)-C(7)-H(7B)	108.7	C(14)-C(13)-H(13B)	108.5
Si(1)-C(7)-H(7B)	108.7	Si(2)-C(13)-H(13B)	108.5
H(7A)-C(7)-H(7B)	107.6	H(13A)-C(13)-H(13B)	107.5
C(7)-C(8)-H(8A)	109.5	C(13)-C(14)-H(14A)	109.5
C(7)-C(8)-H(8B)	109.5	C(13)-C(14)-H(14B)	109.5
H(8A)-C(8)-H(8B)	109.5	H(14A)-C(14)-H(14B)	109.5
C(7)-C(8)-H(8C)	109.5	C(13)-C(14)-H(14C)	109.5
H(8A)-C(8)-H(8C)	109.5	H(14A)-C(14)-H(14C)	109.5
H(8B)-C(8)-H(8C)	109.5	H(14B)-C(14)-H(14C)	109.5
C(10)-C(9)-Si(1)	114.2(3)	C(16)-C(15)-Si(2)	117.5(3)
C(10)-C(9)-H(9A)	108.7	C(16)-C(15)-H(15A)	107.9
Si(1)-C(9)-H(9A)	108.7	Si(2)-C(15)-H(15A)	107.9
C(10)-C(9)-H(9B)	108.7	C(16)-C(15)-H(15B)	107.9
Si(1)-C(9)-H(9B)	108.7	Si(2)-C(15)-H(15B)	107.9
H(9A)-C(9)-H(9B)	107.6	H(15A)-C(15)-H(15B)	107.2
C(9)-C(10)-H(10A)	109.5	C(15)-C(16)-H(16A)	109.5
C(9)-C(10)-H(10B)	109.5	C(15)-C(16)-H(16B)	109.5
H(10A)-C(10)-H(10B)	109.5	H(16A)-C(16)-H(16B)	109.5
C(9)-C(10)-H(10C)	109.5	C(15)-C(16)-H(16C)	109.5
H(10A)-C(10)-H(10C)	109.5	H(16A)-C(16)-H(16C)	109.5
H(10B)-C(10)-H(10C)	109.5	H(16B)-C(16)-H(16C)	109.5
C(12)-C(11)-Si(1)	116.6(3)	C(18)-C(17)-Si(2)	114.0(3)
C(12)-C(11)-H(11A)	108.1	C(18)-C(17)-H(17A)	108.8
Si(1)-C(11)-H(11A)	108.1	Si(2)-C(17)-H(17A)	108.8
C(12)-C(11)-H(11B)	108.1	C(18)-C(17)-H(17B)	108.8
Si(1)-C(11)-H(11B)	108.1	Si(2)-C(17)-H(17B)	108.8
H(11A)-C(11)-H(11B)	107.3	H(17A)-C(17)-H(17B)	107.6
C(11)-C(12)-H(12A)	109.5	C(17)-C(18)-H(18A)	109.5
C(11)-C(12)-H(12B)	109.5	C(17)-C(18)-H(18B)	109.5
H(12A)-C(12)-H(12B)	109.5	H(18A)-C(18)-H(18B)	109.5
C(11)-C(12)-H(12C)	109.5	C(17)-C(18)-H(18C)	109.5
H(12A)-C(12)-H(12C)	109.5	H(18A)-C(18)-H(18C)	109.5
H(12B)-C(12)-H(12C)	109.5	H(18B)-C(18)-H(18C)	109.5

O(24)-Si(21)-C(29)	103.75(17)	C(22)-C(22A)-C(21A)	104.1(3)
O(24)-Si(21)-C(27)	109.78(16)	O(22)-C(22A)-H(22A)	112.1
C(29)-Si(21)-C(27)	112.73(18)	C(22)-C(22A)-H(22A)	112.1
O(24)-Si(21)-C(31)	111.2(2)	C(21A)-C(22A)-H(22A)	112.1
C(29)-Si(21)-C(31)	110.4(2)	C(23)-O(22)-C(22A)	111.8(3)
C(27)-Si(21)-C(31)	108.93(18)	O(25)-C(23)-O(22)	121.7(4)
O(26)-Si(22)-C(35)	105.86(19)	O(25)-C(23)-C(24)	128.0(4)
O(26)-Si(22)-C(37)	110.40(17)	O(22)-C(23)-C(24)	110.2(4)
C(35)-Si(22)-C(37)	109.7(2)	C(26)-O(23)-N(21)	107.5(3)
O(26)-Si(22)-C(33)	108.2(2)	O(26)-C(24)-C(23)	111.5(3)
C(35)-Si(22)-C(33)	111.8(2)	O(26)-C(24)-C(21A)	115.4(3)
C(37)-Si(22)-C(33)	110.8(3)	C(23)-C(24)-C(21A)	103.8(3)
O(21)-C(21)-N(21)	107.9(4)	O(26)-C(24)-H(24)	108.6
O(21)-C(21)-C(22)	104.8(3)	C(23)-C(24)-H(24)	108.6
N(21)-C(21)-C(22)	110.9(3)	C(21A)-C(24)-H(24)	108.6
O(21)-C(21)-H(21)	111.0	C(22)-O(24)-Si(21)	123.7(3)
N(21)-C(21)-H(21)	111.0	N(21)-C(25)-H(25A)	109.5
C(22)-C(21)-H(21)	111.0	N(21)-C(25)-H(25B)	109.5
O(21)-C(21A)-C(22A)	107.4(3)	H(25A)-C(25)-H(25B)	109.5
O(21)-C(21A)-C(24)	113.4(3)	N(21)-C(25)-H(25C)	109.5
C(22A)-C(21A)-C(24)	104.5(3)	H(25A)-C(25)-H(25C)	109.5
O(21)-C(21A)-H(21A)	110.4	H(25B)-C(25)-H(25C)	109.5
C(22A)-C(21A)-H(21A)	110.4	O(23)-C(26)-H(26A)	109.5
C(24)-C(21A)-H(21A)	110.4	O(23)-C(26)-H(26B)	109.5
O(23)-N(21)-C(21)	102.6(3)	H(26A)-C(26)-H(26B)	109.5
O(23)-N(21)-C(25)	106.2(3)	O(23)-C(26)-H(26C)	109.5
C(21)-N(21)-C(25)	111.1(3)	H(26A)-C(26)-H(26C)	109.5
C(21A)-O(21)-C(21)	109.7(3)	H(26B)-C(26)-H(26C)	109.5
O(24)-C(22)-C(21)	108.9(3)	C(24)-O(26)-Si(22)	124.2(3)
O(24)-C(22)-C(22A)	108.0(3)	C(28)-C(27)-Si(21)	114.9(3)
C(21)-C(22)-C(22A)	103.4(3)	C(28)-C(27)-H(27A)	108.5
O(24)-C(22)-H(22)	112.0	Si(21)-C(27)-H(27A)	108.5
C(21)-C(22)-H(22)	112.0	C(28)-C(27)-H(27B)	108.5
C(22A)-C(22)-H(22)	112.0	Si(21)-C(27)-H(27B)	108.5
O(22)-C(22A)-C(22)	109.2(3)	H(27A)-C(27)-H(27B)	107.5
O(22)-C(22A)-C(21A)	106.9(3)	C(27)-C(28)-H(28A)	109.5

C(27)-C(28)-H(28B)	109.5	C(31)-C(32B)-H(32E)	109.5
H(28A)-C(28)-H(28B)	109.5	H(32D)-C(32B)-H(32E)	109.5
C(27)-C(28)-H(28C)	109.5	C(31)-C(32B)-H(32F)	109.5
H(28A)-C(28)-H(28C)	109.5	H(32D)-C(32B)-H(32F)	109.5
H(28B)-C(28)-H(28C)	109.5	H(32E)-C(32B)-H(32F)	109.5
C(30)-C(29)-Si(21)	116.0(4)	C(34)-C(33)-Si(22)	115.7(3)
C(30)-C(29)-H(29A)	108.3	C(34)-C(33)-H(33A)	108.4
Si(21)-C(29)-H(29A)	108.3	Si(22)-C(33)-H(33A)	108.4
C(30)-C(29)-H(29B)	108.3	C(34)-C(33)-H(33B)	108.4
Si(21)-C(29)-H(29B)	108.3	Si(22)-C(33)-H(33B)	108.4
H(29A)-C(29)-H(29B)	107.4	H(33A)-C(33)-H(33B)	107.4
C(29)-C(30)-H(30A)	109.5	C(33)-C(34)-H(34A)	109.5
C(29)-C(30)-H(30B)	109.5	C(33)-C(34)-H(34B)	109.5
H(30A)-C(30)-H(30B)	109.5	H(34A)-C(34)-H(34B)	109.5
C(29)-C(30)-H(30C)	109.5	C(33)-C(34)-H(34C)	109.5
H(30A)-C(30)-H(30C)	109.5	H(34A)-C(34)-H(34C)	109.5
H(30B)-C(30)-H(30C)	109.5	H(34B)-C(34)-H(34C)	109.5
C(32B)-C(31)-Si(21)	121.5(6)	C(36)-C(35)-Si(22)	114.3(3)
C(32)-C(31)-Si(21)	117.9(4)	C(36)-C(35)-H(35A)	108.7
C(32)-C(31)-H(31A)	107.8	Si(22)-C(35)-H(35A)	108.7
Si(21)-C(31)-H(31A)	107.8	C(36)-C(35)-H(35B)	108.7
C(32)-C(31)-H(31B)	107.8	Si(22)-C(35)-H(35B)	108.7
Si(21)-C(31)-H(31B)	107.8	H(35A)-C(35)-H(35B)	107.6
H(31A)-C(31)-H(31B)	107.2	C(35)-C(36)-H(36A)	109.5
C(32B)-C(31)-H(31C)	107.0	C(35)-C(36)-H(36B)	109.5
Si(21)-C(31)-H(31C)	107.0	H(36A)-C(36)-H(36B)	109.5
C(32B)-C(31)-H(31D)	107.0	C(35)-C(36)-H(36C)	109.5
Si(21)-C(31)-H(31D)	107.0	H(36A)-C(36)-H(36C)	109.5
H(31C)-C(31)-H(31D)	106.7	H(36B)-C(36)-H(36C)	109.5
C(31)-C(32)-H(32A)	109.5	C(38)-C(37)-Si(22)	113.3(3)
C(31)-C(32)-H(32B)	109.5	C(38)-C(37)-H(37A)	108.9
H(32A)-C(32)-H(32B)	109.5	Si(22)-C(37)-H(37A)	108.9
C(31)-C(32)-H(32C)	109.5	C(38)-C(37)-H(37B)	108.9
H(32A)-C(32)-H(32C)	109.5	Si(22)-C(37)-H(37B)	108.9
H(32B)-C(32)-H(32C)	109.5	H(37A)-C(37)-H(37B)	107.7
C(31)-C(32B)-H(32D)	109.5	C(37)-C(38)-H(38A)	109.5

C(37)-C(38)-H(38B)	109.5	O(44)-C(42)-H(42)	112.1
H(38A)-C(38)-H(38B)	109.5	C(42A)-C(42)-H(42)	112.1
C(37)-C(38)-H(38C)	109.5	C(41)-C(42)-H(42)	112.1
H(38A)-C(38)-H(38C)	109.5	O(42)-C(42A)-C(42)	111.0(3)
H(38B)-C(38)-H(38C)	109.5	O(42)-C(42A)-C(41A)	107.7(3)
O(44)-Si(41)-C(49)	101.91(17)	C(42)-C(42A)-C(41A)	103.8(3)
O(44)-Si(41)-C(47)	112.11(16)	O(42)-C(42A)-H(42A)	111.4
C(49)-Si(41)-C(47)	109.75(18)	C(42)-C(42A)-H(42A)	111.4
O(44)-Si(41)-C(51)	109.86(15)	C(41A)-C(42A)-H(42A)	111.4
C(49)-Si(41)-C(51)	114.41(18)	C(43)-O(42)-C(42A)	112.7(3)
C(47)-Si(41)-C(51)	108.74(16)	O(45)-C(43)-O(42)	121.8(4)
O(46)-Si(42)-C(53)	109.09(17)	O(45)-C(43)-C(44)	129.5(4)
O(46)-Si(42)-C(55)	104.27(18)	O(42)-C(43)-C(44)	108.4(3)
C(53)-Si(42)-C(55)	111.2(2)	C(46)-O(43)-N(41)	108.7(3)
O(46)-Si(42)-C(57)	109.77(16)	O(46)-C(44)-C(41A)	115.2(3)
C(53)-Si(42)-C(57)	111.80(19)	O(46)-C(44)-C(43)	111.2(3)
C(55)-Si(42)-C(57)	110.48(19)	C(41A)-C(44)-C(43)	105.6(3)
O(41)-C(41)-N(41)	108.9(3)	O(46)-C(44)-H(44)	108.2
O(41)-C(41)-C(42)	105.5(3)	C(41A)-C(44)-H(44)	108.2
N(41)-C(41)-C(42)	109.3(3)	C(43)-C(44)-H(44)	108.2
O(41)-C(41)-H(41)	111.0	C(42)-O(44)-Si(41)	124.9(2)
N(41)-C(41)-H(41)	111.0	N(41)-C(45)-H(45A)	109.5
C(42)-C(41)-H(41)	111.0	N(41)-C(45)-H(45B)	109.5
O(41)-C(41A)-C(44)	113.7(3)	H(45A)-C(45)-H(45B)	109.5
O(41)-C(41A)-C(42A)	106.9(3)	N(41)-C(45)-H(45C)	109.5
C(44)-C(41A)-C(42A)	102.5(3)	H(45A)-C(45)-H(45C)	109.5
O(41)-C(41A)-H(41A)	111.1	H(45B)-C(45)-H(45C)	109.5
C(44)-C(41A)-H(41A)	111.1	O(43)-C(46)-H(46A)	109.5
C(42A)-C(41A)-H(41A)	111.1	O(43)-C(46)-H(46B)	109.5
O(43)-N(41)-C(45)	105.9(3)	H(46A)-C(46)-H(46B)	109.5
O(43)-N(41)-C(41)	103.1(2)	O(43)-C(46)-H(46C)	109.5
C(45)-N(41)-C(41)	110.9(3)	H(46A)-C(46)-H(46C)	109.5
C(41)-O(41)-C(41A)	110.4(3)	H(46B)-C(46)-H(46C)	109.5
O(44)-C(42)-C(42A)	109.1(3)	C(44)-O(46)-Si(42)	125.0(2)
O(44)-C(42)-C(41)	108.8(3)	C(48)-C(47)-Si(41)	117.1(3)
C(42A)-C(42)-C(41)	101.9(3)	C(48)-C(47)-H(47A)	108.0

Si(41)-C(47)-H(47A)	108.0	Si(42)-C(53)-H(53A)	108.7
C(48)-C(47)-H(47B)	108.0	C(54)-C(53)-H(53B)	108.7
Si(41)-C(47)-H(47B)	108.0	Si(42)-C(53)-H(53B)	108.7
H(47A)-C(47)-H(47B)	107.3	H(53A)-C(53)-H(53B)	107.6
C(47)-C(48)-H(48A)	109.5	C(53)-C(54)-H(54A)	109.5
C(47)-C(48)-H(48B)	109.5	C(53)-C(54)-H(54B)	109.5
H(48A)-C(48)-H(48B)	109.5	H(54A)-C(54)-H(54B)	109.5
C(47)-C(48)-H(48C)	109.5	C(53)-C(54)-H(54C)	109.5
H(48A)-C(48)-H(48C)	109.5	H(54A)-C(54)-H(54C)	109.5
H(48B)-C(48)-H(48C)	109.5	H(54B)-C(54)-H(54C)	109.5
C(50)-C(49)-Si(41)	114.2(3)	C(56)-C(55)-Si(42)	117.1(3)
C(50)-C(49)-H(49A)	108.7	C(56)-C(55)-H(55A)	108.0
Si(41)-C(49)-H(49A)	108.7	Si(42)-C(55)-H(55A)	108.0
C(50)-C(49)-H(49B)	108.7	C(56)-C(55)-H(55B)	108.0
Si(41)-C(49)-H(49B)	108.7	Si(42)-C(55)-H(55B)	108.0
H(49A)-C(49)-H(49B)	107.6	H(55A)-C(55)-H(55B)	107.3
C(49)-C(50)-H(50A)	109.5	C(55)-C(56)-H(56A)	109.5
C(49)-C(50)-H(50B)	109.5	C(55)-C(56)-H(56B)	109.5
H(50A)-C(50)-H(50B)	109.5	H(56A)-C(56)-H(56B)	109.5
C(49)-C(50)-H(50C)	109.5	C(55)-C(56)-H(56C)	109.5
H(50A)-C(50)-H(50C)	109.5	H(56A)-C(56)-H(56C)	109.5
H(50B)-C(50)-H(50C)	109.5	H(56B)-C(56)-H(56C)	109.5
C(52)-C(51)-Si(41)	113.9(3)	C(58)-C(57)-Si(42)	113.7(3)
C(52)-C(51)-H(51A)	108.8	C(58)-C(57)-H(57A)	108.8
Si(41)-C(51)-H(51A)	108.8	Si(42)-C(57)-H(57A)	108.8
C(52)-C(51)-H(51B)	108.8	C(58)-C(57)-H(57B)	108.8
Si(41)-C(51)-H(51B)	108.8	Si(42)-C(57)-H(57B)	108.8
H(51A)-C(51)-H(51B)	107.7	H(57A)-C(57)-H(57B)	107.7
C(51)-C(52)-H(52A)	109.5	C(57)-C(58)-H(58A)	109.5
C(51)-C(52)-H(52B)	109.5	C(57)-C(58)-H(58B)	109.5
H(52A)-C(52)-H(52B)	109.5	H(58A)-C(58)-H(58B)	109.5
C(51)-C(52)-H(52C)	109.5	C(57)-C(58)-H(58C)	109.5
H(52A)-C(52)-H(52C)	109.5	H(58A)-C(58)-H(58C)	109.5
H(52B)-C(52)-H(52C)	109.5	H(58B)-C(58)-H(58C)	109.5
C(54)-C(53)-Si(42)	114.3(3)	O(64)-Si(61)-C(67)	112.89(17)
C(54)-C(53)-H(53A)	108.7	O(64)-Si(61)-C(71)	108.71(15)

C(67)-Si(61)-C(71)	109.10(17)	C(61A)-C(62A)-H(62A)	112.2
O(64)-Si(61)-C(69)	103.81(18)	C(62)-C(62A)-H(62A)	112.2
C(67)-Si(61)-C(69)	109.84(18)	C(63)-O(62)-C(62A)	111.8(3)
C(71)-Si(61)-C(69)	112.47(19)	O(65)-C(63)-O(62)	122.1(4)
O(66)-Si(62)-C(75)	106.31(18)	O(65)-C(63)-C(64)	127.6(4)
O(66)-Si(62)-C(77)	110.14(18)	O(62)-C(63)-C(64)	110.3(4)
C(75)-Si(62)-C(77)	109.83(19)	C(66)-O(63)-N(61)	107.6(3)
O(66)-Si(62)-C(73)	109.2(2)	O(66)-C(64)-C(63)	111.9(3)
C(75)-Si(62)-C(73)	110.6(2)	O(66)-C(64)-C(61A)	115.6(3)
C(77)-Si(62)-C(73)	110.7(2)	C(63)-C(64)-C(61A)	103.8(3)
O(61)-C(61)-N(61)	107.5(3)	O(66)-C(64)-H(64)	108.4
O(61)-C(61)-C(62)	104.9(3)	C(63)-C(64)-H(64)	108.4
N(61)-C(61)-C(62)	111.4(3)	C(61A)-C(64)-H(64)	108.4
O(61)-C(61)-H(61)	110.9	C(62)-O(64)-Si(61)	125.7(2)
N(61)-C(61)-H(61)	110.9	N(61)-C(65)-H(65A)	109.5
C(62)-C(61)-H(61)	110.9	N(61)-C(65)-H(65B)	109.5
O(61)-C(61A)-C(62A)	107.2(3)	H(65A)-C(65)-H(65B)	109.5
O(61)-C(61A)-C(64)	113.2(3)	N(61)-C(65)-H(65C)	109.5
C(62A)-C(61A)-C(64)	104.5(3)	H(65A)-C(65)-H(65C)	109.5
O(61)-C(61A)-H(61A)	110.6	H(65B)-C(65)-H(65C)	109.5
C(62A)-C(61A)-H(61A)	110.6	O(63)-C(66)-H(66A)	109.5
C(64)-C(61A)-H(61A)	110.6	O(63)-C(66)-H(66B)	109.5
O(63)-N(61)-C(61)	102.5(3)	H(66A)-C(66)-H(66B)	109.5
O(63)-N(61)-C(65)	106.1(3)	O(63)-C(66)-H(66C)	109.5
C(61)-N(61)-C(65)	111.3(3)	H(66A)-C(66)-H(66C)	109.5
C(61A)-O(61)-C(61)	109.7(3)	H(66B)-C(66)-H(66C)	109.5
O(64)-C(62)-C(61)	109.8(3)	C(64)-O(66)-Si(62)	124.8(3)
O(64)-C(62)-C(62A)	107.5(3)	C(68)-C(67)-Si(61)	117.5(3)
C(61)-C(62)-C(62A)	103.2(3)	C(68)-C(67)-H(67A)	107.9
O(64)-C(62)-H(62)	112.0	Si(61)-C(67)-H(67A)	107.9
C(61)-C(62)-H(62)	112.0	C(68)-C(67)-H(67B)	107.9
C(62A)-C(62)-H(62)	112.0	Si(61)-C(67)-H(67B)	107.9
O(62)-C(62A)-C(61A)	106.7(3)	H(67A)-C(67)-H(67B)	107.2
O(62)-C(62A)-C(62)	109.2(3)	C(67)-C(68)-H(68A)	109.5
C(61A)-C(62A)-C(62)	103.9(3)	C(67)-C(68)-H(68B)	109.5
O(62)-C(62A)-H(62A)	112.2	H(68A)-C(68)-H(68B)	109.5

C(67)-C(68)-H(68C)	109.5	C(73)-C(74)-H(74C)	109.5
H(68A)-C(68)-H(68C)	109.5	H(74A)-C(74)-H(74C)	109.5
H(68B)-C(68)-H(68C)	109.5	H(74B)-C(74)-H(74C)	109.5
C(70)-C(69)-Si(61)	115.1(3)	C(76)-C(75)-Si(62)	115.0(3)
C(70)-C(69)-H(69A)	108.5	C(76)-C(75)-H(75A)	108.5
Si(61)-C(69)-H(69A)	108.5	Si(62)-C(75)-H(75A)	108.5
C(70)-C(69)-H(69B)	108.5	C(76)-C(75)-H(75B)	108.5
Si(61)-C(69)-H(69B)	108.5	Si(62)-C(75)-H(75B)	108.5
H(69A)-C(69)-H(69B)	107.5	H(75A)-C(75)-H(75B)	107.5
C(69)-C(70)-H(70A)	109.5	C(75)-C(76)-H(76A)	109.5
C(69)-C(70)-H(70B)	109.5	C(75)-C(76)-H(76B)	109.5
H(70A)-C(70)-H(70B)	109.5	H(76A)-C(76)-H(76B)	109.5
C(69)-C(70)-H(70C)	109.5	C(75)-C(76)-H(76C)	109.5
H(70A)-C(70)-H(70C)	109.5	H(76A)-C(76)-H(76C)	109.5
H(70B)-C(70)-H(70C)	109.5	H(76B)-C(76)-H(76C)	109.5
C(72)-C(71)-Si(61)	115.4(3)	C(78)-C(77)-Si(62)	113.4(3)
C(72)-C(71)-H(71A)	108.4	C(78)-C(77)-H(77A)	108.9
Si(61)-C(71)-H(71A)	108.4	Si(62)-C(77)-H(77A)	108.9
C(72)-C(71)-H(71B)	108.4	C(78)-C(77)-H(77B)	108.9
Si(61)-C(71)-H(71B)	108.4	Si(62)-C(77)-H(77B)	108.9
H(71A)-C(71)-H(71B)	107.5	H(77A)-C(77)-H(77B)	107.7
C(71)-C(72)-H(72A)	109.5	C(77)-C(78)-H(78A)	109.5
C(71)-C(72)-H(72B)	109.5	C(77)-C(78)-H(78B)	109.5
H(72A)-C(72)-H(72B)	109.5	H(78A)-C(78)-H(78B)	109.5
C(71)-C(72)-H(72C)	109.5	C(77)-C(78)-H(78C)	109.5
H(72A)-C(72)-H(72C)	109.5	H(78A)-C(78)-H(78C)	109.5
H(72B)-C(72)-H(72C)	109.5	H(78B)-C(78)-H(78C)	109.5
C(74)-C(73)-Si(62)	115.7(4)		
C(74)-C(73)-H(73A)	108.4	Symmetry transformations used to generate equivalent atoms.	
Si(62)-C(73)-H(73A)	108.4		
C(74)-C(73)-H(73B)	108.4		
Si(62)-C(73)-H(73B)	108.4		
H(73A)-C(73)-H(73B)	107.4		
C(73)-C(74)-H(74A)	109.5		
C(73)-C(74)-H(74B)	109.5		
H(74A)-C(74)-H(74B)	109.5		

Table S4. Anisotropic displacement parameters ($\text{\AA}^2 \times 10^3$) for compound **1**. The anisotropic displacement factor exponent takes the form: $-2 \cdot h^2 a^{*2} U^{11} + \dots + 2 h k a^* b^* U^{12}$

	U^{11}	U^{22}	U^{33}	U^{23}	U^{13}	U^{12}
Si(1)	20(1)	19(1)	22(1)	4(1)	-1(1)	-3(1)
Si(2)	17(1)	15(1)	25(1)	-2(1)	1(1)	-1(1)
C(1)	19(2)	14(2)	14(2)	0(1)	0(1)	-4(1)
C(1A)	13(2)	20(2)	19(2)	4(1)	-3(1)	-5(1)
N(1)	19(1)	18(1)	11(1)	-1(1)	-1(1)	4(1)
O(1)	12(1)	23(1)	16(1)	1(1)	1(1)	3(1)
C(2)	24(2)	18(2)	19(2)	-1(1)	-3(2)	0(1)
C(2A)	18(2)	16(2)	20(2)	-4(1)	1(1)	-1(1)
O(2)	14(1)	16(1)	28(2)	-1(1)	4(1)	0(1)
C(3)	14(2)	23(2)	24(2)	-5(2)	3(1)	-1(1)
O(3)	25(1)	34(2)	14(1)	4(1)	0(1)	7(1)
C(4)	14(1)	22(2)	24(2)	3(2)	-4(1)	-1(1)
O(4)	25(1)	21(1)	19(1)	-2(1)	1(1)	3(1)
C(5)	27(2)	29(2)	19(2)	-2(2)	-1(2)	1(2)
O(5)	23(1)	30(2)	36(2)	-9(1)	9(1)	1(1)
C(6)	40(2)	40(2)	19(2)	3(2)	3(2)	-5(2)
O(6)	17(1)	19(1)	23(1)	-2(1)	-3(1)	-7(1)
C(7)	29(2)	32(2)	32(2)	14(1)	-8(1)	3(2)
C(8)	31(2)	46(2)	40(2)	1(2)	-12(2)	0(2)
C(9)	28(2)	14(2)	27(2)	-3(1)	-3(1)	2(1)
C(10)	31(2)	23(2)	66(3)	-14(2)	-6(2)	2(2)
C(11)	23(2)	51(2)	38(2)	16(2)	2(2)	-2(2)
C(12)	38(2)	78(3)	69(3)	19(3)	5(2)	-8(2)
C(13)	26(2)	27(2)	45(2)	-14(2)	-2(2)	4(2)
C(14)	26(2)	68(3)	52(3)	-30(3)	-4(2)	16(2)
C(15)	21(2)	37(2)	35(2)	2(2)	1(2)	-12(2)
C(16)	29(2)	29(2)	31(2)	-4(2)	-4(2)	0(2)
C(17)	26(2)	27(2)	25(2)	5(2)	-2(2)	-1(2)
C(18)	31(2)	30(2)	27(2)	3(2)	0(2)	0(2)
Si(21)	17(1)	26(1)	22(1)	-5(1)	0(1)	-3(1)
Si(22)	20(1)	21(1)	32(1)	7(1)	-4(1)	-3(1)
C(21)	15(2)	36(2)	17(2)	1(2)	-4(1)	6(2)
C(21A)	13(2)	25(2)	20(2)	7(2)	1(1)	5(1)

N(21)	17(1)	44(2)	18(2)	-1(2)	2(1)	0(1)
O(21)	14(1)	29(1)	18(1)	0(1)	-1(1)	1(1)
C(22)	20(2)	27(2)	13(2)	5(1)	-2(1)	0(2)
C(22A)	19(2)	28(2)	18(2)	9(2)	-2(1)	1(1)
O(22)	20(1)	27(1)	18(1)	4(1)	-3(1)	-1(1)
C(23)	12(2)	26(2)	29(2)	3(2)	1(2)	2(1)
O(23)	25(1)	31(2)	22(1)	1(1)	1(1)	4(1)
C(24)	20(2)	22(2)	24(2)	11(2)	-6(1)	-2(1)
O(24)	24(1)	23(1)	18(1)	5(1)	1(1)	7(1)
C(25)	15(2)	48(2)	23(2)	5(2)	6(2)	-10(2)
O(25)	25(1)	34(2)	23(1)	8(1)	-10(1)	-6(1)
C(26)	33(2)	48(3)	16(2)	0(2)	2(2)	-7(2)
O(26)	19(1)	28(1)	27(1)	1(1)	-1(1)	-5(1)
C(27)	28(2)	36(2)	36(2)	-12(2)	6(2)	2(2)
C(28)	23(2)	49(2)	47(2)	-10(2)	11(2)	8(2)
C(29)	21(2)	24(2)	31(2)	5(2)	3(2)	3(2)
C(30)	26(2)	30(2)	61(3)	9(2)	-5(2)	-11(2)
C(31)	24(2)	79(3)	40(2)	-19(2)	1(2)	-6(2)
C(32)	29(2)	51(3)	37(3)	9(2)	-3(2)	-10(3)
C(32B)	24(4)	47(4)	42(4)	2(4)	-2(3)	-10(4)
C(33)	26(2)	40(2)	89(4)	36(3)	-6(2)	3(2)
C(34)	22(2)	49(3)	78(4)	25(2)	-11(2)	3(2)
C(35)	29(2)	25(2)	40(2)	5(2)	-3(2)	-10(2)
C(36)	27(2)	69(3)	51(3)	24(3)	-5(2)	-23(2)
C(37)	20(2)	27(2)	37(2)	-3(2)	0(2)	-5(2)
C(38)	33(2)	60(3)	27(2)	5(2)	-5(2)	-13(2)
Si(41)	20(1)	16(1)	22(1)	-1(1)	-1(1)	2(1)
Si(42)	20(1)	16(1)	23(1)	-1(1)	2(1)	-4(1)
C(41)	18(2)	18(2)	17(2)	0(1)	-3(1)	-2(1)
C(41A)	16(2)	16(2)	19(2)	5(1)	-2(1)	-5(1)
N(41)	19(1)	13(1)	10(1)	-1(1)	-1(1)	-1(1)
O(41)	16(1)	24(1)	14(1)	1(1)	1(1)	-1(1)
C(42)	22(2)	14(2)	22(2)	2(1)	-2(1)	1(1)
C(42A)	17(2)	18(2)	22(2)	4(1)	0(1)	-8(1)
O(42)	14(1)	14(1)	30(2)	1(1)	7(1)	-2(1)
C(43)	13(1)	18(2)	25(2)	-3(1)	2(1)	2(1)
O(43)	26(1)	25(1)	13(1)	3(1)	-1(1)	7(1)
C(44)	13(1)	16(2)	28(2)	5(1)	-2(1)	0(1)

O(44)	33(2)	18(1)	20(1)	-1(1)	-2(1)	0(1)
C(45)	22(2)	25(2)	22(2)	2(2)	1(2)	-2(1)
O(45)	24(1)	26(1)	36(2)	-6(1)	7(1)	2(1)
C(46)	35(2)	30(2)	18(2)	3(2)	4(2)	-1(2)
O(46)	17(1)	16(1)	24(1)	-3(1)	0(1)	-5(1)
C(47)	25(2)	30(2)	34(2)	8(2)	-1(2)	2(2)
C(48)	39(2)	26(2)	35(2)	4(1)	-19(2)	5(1)
C(49)	38(2)	20(2)	22(2)	2(1)	-1(2)	5(2)
C(50)	32(2)	24(2)	32(2)	-10(2)	-3(2)	5(2)
C(51)	22(2)	22(2)	40(2)	1(1)	1(1)	-2(1)
C(52)	20(2)	41(2)	74(3)	-11(2)	-3(2)	-3(2)
C(53)	30(2)	24(2)	28(2)	-10(2)	2(2)	2(2)
C(54)	31(2)	25(2)	46(2)	-7(2)	12(2)	6(2)
C(55)	25(2)	35(2)	25(2)	2(2)	0(2)	-13(2)
C(56)	33(2)	32(2)	26(2)	-10(2)	-2(2)	-5(2)
C(57)	30(2)	25(2)	22(2)	5(2)	-3(2)	-4(2)
C(58)	26(2)	48(3)	27(2)	-8(2)	6(2)	-11(2)
Si(61)	22(1)	22(1)	23(1)	-2(1)	-4(1)	1(1)
Si(62)	17(1)	18(1)	27(1)	2(1)	-2(1)	-1(1)
C(61)	19(2)	28(2)	18(2)	1(2)	-3(1)	3(2)
C(61A)	16(2)	23(2)	20(2)	5(2)	0(1)	2(1)
N(61)	18(1)	30(2)	18(2)	-1(1)	3(1)	-3(1)
O(61)	19(1)	24(1)	18(1)	-2(1)	-2(1)	-4(1)
C(62)	21(1)	21(2)	14(2)	2(1)	-4(1)	-2(1)
C(62A)	16(2)	21(2)	16(2)	5(1)	-1(1)	0(1)
O(62)	23(1)	24(1)	20(1)	3(1)	-3(1)	-4(1)
C(63)	11(2)	26(2)	34(2)	2(2)	-1(2)	-2(1)
O(63)	25(1)	24(1)	18(1)	0(1)	0(1)	0(1)
C(64)	18(2)	20(2)	26(2)	9(2)	-3(1)	-5(1)
O(64)	23(1)	18(1)	19(1)	4(1)	0(1)	-2(1)
C(65)	13(2)	35(2)	24(2)	8(2)	5(1)	-7(2)
O(65)	25(1)	30(1)	27(1)	10(1)	-10(1)	-7(1)
C(66)	33(2)	46(3)	18(2)	-1(2)	-2(2)	-8(2)
O(66)	21(1)	24(1)	29(1)	-3(1)	2(1)	-3(1)
C(67)	26(2)	40(2)	33(2)	-7(2)	-1(2)	5(2)
C(68)	33(2)	41(2)	47(2)	2(2)	10(2)	-2(2)
C(69)	36(2)	24(2)	27(2)	9(2)	2(2)	5(2)
C(70)	35(2)	24(2)	44(2)	5(2)	-3(2)	-7(2)

C(71)	34(2)	22(2)	38(2)	-1(1)	-13(2)	-6(2)
C(72)	22(2)	32(2)	55(2)	-6(2)	-3(2)	-5(2)
C(73)	30(2)	53(3)	72(4)	35(3)	-3(2)	10(2)
C(74)	22(2)	62(3)	66(3)	25(3)	-1(2)	15(2)
C(75)	26(2)	14(2)	43(2)	0(2)	-3(2)	-4(1)
C(76)	24(2)	40(2)	47(3)	8(2)	0(2)	-10(2)
C(77)	19(2)	29(2)	32(2)	-5(2)	2(2)	-4(2)
C(78)	36(2)	63(3)	25(2)	5(2)	2(2)	-8(2)

Table S5. Hydrogen coordinates ($\times 10^4$) and isotropic displacement parameters ($\text{\AA}^2 \times 10^{-3}$) for compound **1**.

	x	y	z	U(eq)
H(1)	11520	2905	2039	18
H(1A)	9090	3480	893	21
H(2)	9793	2575	2889	24
H(2A)	8278	2887	1717	22
H(4)	8280	4038	1731	24
H(5A)	11865	3830	3705	38
H(5B)	11750	3876	2614	38
H(5C)	12580	3493	3047	38
H(6A)	10946	3235	4868	49
H(6B)	11113	2673	4970	49
H(6C)	10026	2878	4479	49
H(7A)	10436	1741	3261	37
H(7B)	10605	1250	2730	37
H(8A)	12175	1567	1973	59
H(8B)	12336	1590	3064	59
H(8C)	12006	2059	2506	59
H(9A)	9769	1747	107	28
H(9B)	10950	1588	500	28
H(10A)	10250	828	886	60
H(10B)	9942	927	-166	60
H(10C)	9017	986	614	60
H(11A)	7986	2026	2337	45
H(11B)	7831	1657	1515	45
H(12A)	8317	1038	2508	92
H(12B)	7238	1317	2853	92
H(12C)	8413	1414	3330	92
H(13A)	8884	5234	2841	39
H(13B)	8737	5509	1889	39
H(14A)	7246	4995	1488	73
H(14B)	6987	5260	2437	73
H(14C)	7393	4719	2442	73
H(15A)	11665	4816	1483	37

H(15B)	11184	5343	1504	37
H(16A)	11004	5272	3115	45
H(16B)	12260	5250	2759	45
H(16C)	11631	4772	3046	45
H(17A)	8716	4508	340	31
H(17B)	9294	5003	97	31
H(18A)	10975	4636	-153	44
H(18B)	10061	4348	-724	44
H(18C)	10511	4142	230	44
H(21)	3499	4479	4588	27
H(21A)	5929	3910	3398	23
H(22)	5249	4812	5395	24
H(22A)	6744	4503	4200	26
H(24)	6741	3332	4230	26
H(25A)	2514	3861	5322	43
H(25B)	2997	3607	6221	43
H(25C)	3406	3443	5225	43
H(26A)	4088	4113	7386	48
H(26B)	4138	4680	7455	48
H(26C)	5096	4397	6926	48
H(27A)	4503	5648	5708	40
H(27B)	4295	6128	5147	40
H(28A)	2786	5762	4394	59
H(28B)	2607	5784	5482	59
H(28C)	2978	5297	5006	59
H(29A)	5230	5621	2553	31
H(29B)	4030	5763	2924	31
H(30A)	5904	6372	2919	58
H(30B)	4726	6517	3342	58
H(30C)	4845	6421	2262	58
H(31A)	7183	5517	4146	57
H(31B)	6815	6055	4292	57
H(31C)	7085	5424	4595	57
H(31D)	7012	5880	3955	57
H(32A)	6490	5890	5826	58
H(32B)	7755	5812	5531	58
H(32C)	6953	5365	5660	58
H(32D)	6565	6321	5149	56

H(32E)	7714	6046	5298	56
H(32F)	6612	5862	5798	56
H(33A)	6239	2169	5426	62
H(33B)	6484	1899	4483	62
H(34A)	7884	2445	4129	74
H(34B)	8124	2211	5112	74
H(34C)	7618	2736	5048	74
H(35A)	3412	2521	4001	38
H(35B)	3946	2002	4022	38
H(36A)	4067	2031	5653	74
H(36B)	2812	2135	5353	74
H(36C)	3603	2564	5653	74
H(37A)	6385	2845	2876	34
H(37B)	5845	2338	2669	34
H(38A)	4074	2710	2437	60
H(38B)	4970	2923	1738	60
H(38C)	4623	3218	2632	60
H(41)	1615	2842	7093	21
H(41A)	-814	3406	5907	21
H(42)	-130	2494	7900	23
H(42A)	-1641	2816	6730	23
H(44)	-1623	3966	6752	23
H(45A)	1895	3783	8717	35
H(45B)	1815	3811	7621	35
H(45C)	2625	3433	8097	35
H(46A)	926	3217	9892	41
H(46B)	1049	2656	10039	41
H(46C)	-5	2864	9506	41
H(47A)	1780	1269	7033	36
H(47B)	2144	1812	6971	36
H(48A)	1486	1942	8473	50
H(48B)	2395	1528	8466	50
H(48C)	1105	1399	8536	50
H(49A)	-440	1691	5155	32
H(49B)	880	1641	5170	32
H(50A)	702	832	5674	44
H(50B)	78	906	4714	44
H(50C)	-620	882	5648	44

H(51A)	-842	1149	7462	33
H(51B)	-853	1628	8052	33
H(52A)	-2238	1950	7137	68
H(52B)	-2638	1429	7426	68
H(52C)	-2145	1521	6421	68
H(53A)	-1067	5136	8004	33
H(53B)	-1364	5416	7080	33
H(54A)	-2759	4838	6742	51
H(54B)	-2999	5090	7708	51
H(54C)	-2471	4569	7680	51
H(55A)	1661	4799	6491	34
H(55B)	1140	5317	6590	34
H(56A)	1084	5211	8202	45
H(56B)	2320	5188	7802	45
H(56C)	1688	4709	8073	45
H(57A)	-1328	4486	5428	31
H(57B)	-805	4998	5231	31
H(58A)	912	4658	4898	50
H(58B)	-11	4402	4281	50
H(58C)	463	4143	5178	50
H(61)	3512	4501	9600	26
H(61A)	5931	3916	8407	24
H(62)	5262	4830	10393	22
H(62A)	6765	4507	9212	21
H(64)	6727	3342	9248	26
H(65A)	3008	3625	11233	36
H(65B)	3424	3459	10240	36
H(65C)	2528	3875	10329	36
H(66A)	4154	4120	12364	49
H(66B)	4084	4684	12482	49
H(66C)	5098	4452	11934	49
H(67A)	3297	6043	9444	40
H(67B)	2965	5495	9424	40
H(68A)	3468	5397	10921	61
H(68B)	2712	5864	10876	61
H(68C)	4032	5911	10956	61
H(69A)	5636	5669	7650	35
H(69B)	4313	5680	7604	35

H(70A)	4388	6477	8209	52
H(70B)	4908	6424	7202	52
H(70C)	5706	6458	8079	52
H(71A)	5908	6176	9948	37
H(71B)	5932	5696	10531	37
H(72A)	7709	5851	10047	55
H(72B)	7313	5901	9003	55
H(72C)	7289	5393	9495	55
H(73A)	6235	2217	10483	62
H(73B)	6343	1884	9601	62
H(74A)	7794	2380	9049	75
H(74B)	8098	2139	10013	75
H(74C)	7714	2683	9976	75
H(75A)	3415	2527	8982	33
H(75B)	3951	2009	9008	33
H(76A)	4013	2033	10655	55
H(76B)	2768	2132	10324	55
H(76C)	3539	2564	10649	55
H(77A)	6417	2841	7912	32
H(77B)	5879	2332	7706	32
H(78A)	4102	2724	7470	62
H(78B)	5010	2884	6731	62
H(78C)	4718	3224	7578	62
