

*review
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Supporting Information

One step transformation of tricyclopentabenzene(trindane, C₁₅H₁₈) to bicyclo(10.3.0)penta dec-1(12)ene-2, 6, 7, 11 tetra-one(C₁₅H₁₈O₄) and its aldol product, 12-hydroxy-16-oxatetracyclo(10.3.1.0^{1,5}.0^{7,11})hexadec-7(11)ene-2,6-dione(C₁₅H₁₈O₄).

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Table 2. Crystal data and structure refinement for 1.

Identification code	oz4
Empirical formula	$C_{15}H_{18}O_4$
Formula weight	262.29
Temperature	293(2) K
Wavelength	1.54178 Å
Crystal system	Triclinic
Space group	$P\bar{1}$
Unit cell dimensions	$a = 11.471(1) \text{ Å}$ $\alpha = 73.02^\circ$ $b = 14.1580(10) \text{ Å}$ $\beta = 89.26^\circ$ $c = 17.1210(10) \text{ Å}$ $\gamma = 89.44^\circ$
Volume, Z	$2659.1(2) \text{ Å}^3, 8$
Density (calculated)	1.310 Mg/m^3
Absorption coefficient	0.775 mm^{-1}
F(000)	1120
Crystal size	$0.36 \times 0.30 \times 0.07 \text{ mm}$
θ range for data collection	2.70 to 57.49°
Limiting indices	$-12 \leq h \leq 2, -14 \leq k \leq 14, -18 \leq l \leq 18$
Reflections collected	7699
Independent reflections	7213 ($R_{\text{int}} = 0.0115$)
Refinement method	Full-matrix least-squares on F^2
Data / restraints / parameters	7211 / 0 / 683
Goodness-of-fit on F^2	1.009
Final R indices [$I > 2\sigma(I)$]	$R1 = 0.0607, wR2 = 0.1414$
R indices (all data)	$R1 = 0.0980, wR2 = 0.1725$
Extinction coefficient	$0.0028(2)$
Largest diff. peak and hole	0.869 and -0.751 eÅ^{-3}

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

	x	y	z	$U(\text{eq})$
O(1A)	6081	4072	3607	55(1)
C(1A)	5168(3)	3531(3)	4020(2)	41(1)
C(2A)	4164(3)	4216(3)	4051(2)	39(1)
C(3A)	3761(4)	4986(3)	3293(3)	62(1)
C(4A)	2725(4)	5474(3)	3564(3)	65(1)
C(5A)	2816(3)	5224(3)	4488(3)	49(1)
C(6A)	3626(3)	4338(3)	4705(2)	36(1)
C(7A)	3755(3)	3731(3)	5555(2)	37(1)
O(7A)	3668(3)	4100(2)	6123(2)	55(1)
C(8A)	3861(3)	2635(2)	5712(2)	35(1)
C(9A)	3846(3)	2049(3)	6619(2)	48(1)
C(10A)	5127(4)	2003(3)	6883(2)	56(1)
C(11A)	5809(4)	2045(3)	6136(2)	47(1)
O(11A)	6851(3)	1900(3)	6100(2)	78(1)
C(12A)	5031(3)	2334(3)	5379(2)	36(1)
O(13A)	5647(2)	3132(2)	4819(1)	37(1)
C(14A)	4872(4)	1491(3)	5010(3)	50(1)
C(15A)	4254(4)	1865(3)	4195(2)	53(1)
C(16A)	4919(4)	2724(3)	3628(2)	54(1)
O(1B)	2125(2)	6292(2)	-1189(2)	55(1)
C(1B)	2282(3)	5273(3)	-1036(2)	46(1)
C(2B)	2204(4)	4769(3)	-134(2)	52(1)
C(3B)	2860(5)	5159(5)	460(3)	86(2)
C(4B)	2524(6)	4481(5)	1284(3)	98(2)
C(5B)	1490(6)	3888(5)	1161(3)	94(2)
C(6B)	1475(4)	4054(3)	259(2)	55(1)
C(7B)	667(4)	3513(3)	-110(3)	59(1)
O(7B)	-310(3)	3280(2)	178(2)	82(1)
C(8B)	1126(4)	3151(3)	-805(3)	53(1)
C(9B)	269(5)	2508(4)	-1103(3)	80(2)
C(10B)	-427(5)	3212(4)	-1773(4)	90(2)
C(11B)	381(5)	4027(4)	-2159(3)	67(1)
O(11B)	283(4)	4609(3)	-2816(2)	108(2)
C(12B)	1406(4)	4013(3)	-1573(2)	49(1)
O(13B)	1336(2)	4969(2)	-1445(1)	43(1)
C(14B)	2554(4)	3872(3)	-1980(3)	67(1)
C(15B)	3574(4)	4090(4)	-1504(3)	70(1)
C(16B)	3442(4)	5120(3)	-1425(3)	60(1)
O(1D)	1595(2)	1045(2)	6095(2)	51(1)
C(1D)	584(3)	1589(3)	5785(2)	41(1)
C(2D)	-452(3)	908(3)	5965(2)	40(1)
C(3D)	-645(4)	220(4)	6810(3)	71(1)
C(4D)	-1731(4)	-333(4)	6749(3)	74(2)
C(5D)	-2000(3)	-130(3)	5846(3)	53(1)
C(6D)	-1200(3)	726(3)	5442(2)	38(1)
C(7D)	-1327(3)	1258(3)	4577(2)	38(1)
O(7D)	-1619(3)	837(2)	4081(2)	60(1)
C(8D)	-1222(3)	2371(3)	4333(2)	38(1)

C(9D)	-1489 (3)	2881 (3)	3436 (2)	51 (1)
C(10D)	-334 (4)	2916 (4)	2988 (3)	61 (1)
C(11D)	569 (4)	2978 (3)	3581 (3)	52 (1)
O(11D)	1574 (3)	3189 (3)	3437 (2)	86 (1)
C(12D)	32 (3)	2710 (3)	4452 (2)	39 (1)
O(13D)	787 (2)	1941 (2)	4918 (2)	39 (1)
C(14D)	23 (4)	3584 (3)	4795 (3)	54 (1)
C(15D)	-307 (4)	3252 (3)	5692 (3)	55 (1)
C(16D)	516 (4)	2434 (3)	6153 (3)	54 (1)
O(1H)	7035 (3)	-1203 (2)	1243 (2)	59 (1)
C(1H)	7123 (4)	-183 (3)	1109 (2)	48 (1)
C(2H)	7097 (4)	337 (3)	211 (3)	55 (1)
C(3H)	7874 (5)	22 (5)	-380 (3)	93 (2)
C(4H)	7522 (7)	706 (5)	-1209 (3)	109 (2)
C(5H)	6459 (6)	1277 (5)	-1092 (3)	100 (2)
C(6H)	6344 (4)	1038 (3)	-183 (2)	60 (1)
C(7H)	5438 (5)	1535 (3)	181 (3)	59 (1)
O(7H)	4469 (3)	1713 (2)	-117 (2)	78 (1)
C(8H)	5805 (4)	1898 (3)	888 (2)	53 (1)
C(9H)	4858 (5)	2496 (3)	1177 (3)	76 (2)
C(10H)	4146 (5)	1751 (4)	1805 (3)	78 (2)
C(11H)	4997 (5)	973 (3)	2213 (3)	64 (1)
O(11H)	4906 (4)	389 (3)	2875 (2)	99 (1)
C(12H)	6083 (4)	1029 (3)	1655 (2)	51 (1)
O(13H)	6102 (2)	81 (2)	1505 (2)	47 (1)
C(14H)	7179 (4)	1206 (3)	2083 (3)	67 (1)
C(15H)	8252 (5)	1030 (3)	1615 (3)	73 (2)
C(16H)	8230 (4)	-8 (3)	1529 (3)	65 (1)

Table 4. Bond lengths [Å] and angles [°] for 1.

O(1A)-C(1A)	1.366(3)	C(1A)-O(13A)	1.432(4)
C(1A)-C(2A)	1.509(5)	C(1A)-C(16A)	1.514(5)
C(2A)-C(6A)	1.326(5)	C(2A)-C(3A)	1.505(5)
C(3A)-C(4A)	1.503(6)	C(4A)-C(5A)	1.522(6)
C(5A)-C(6A)	1.512(5)	C(6A)-C(7A)	1.467(5)
C(7A)-O(7A)	1.232(4)	C(7A)-C(8A)	1.500(5)
C(8A)-C(9A)	1.531(5)	C(8A)-C(12A)	1.556(5)
C(9A)-C(10A)	1.538(6)	C(10A)-C(11A)	1.478(6)
C(11A)-O(11A)	1.215(5)	C(11A)-C(12A)	1.535(5)
C(12A)-O(13A)	1.436(4)	C(12A)-C(14A)	1.520(5)
C(14A)-C(15A)	1.521(6)	C(15A)-C(16A)	1.521(5)
O(1B)-C(1B)	1.400(5)	C(1B)-O(13B)	1.434(5)
C(1B)-C(2B)	1.503(5)	C(1B)-C(16B)	1.522(5)
C(2B)-C(6B)	1.334(6)	C(2B)-C(3B)	1.503(6)
C(3B)-C(4B)	1.505(7)	C(4B)-C(5B)	1.512(8)
C(5B)-C(6B)	1.493(6)	C(6B)-C(7B)	1.469(6)
C(7B)-O(7B)	1.227(5)	C(7B)-C(8B)	1.513(6)
C(8B)-C(9B)	1.536(6)	C(8B)-C(12B)	1.543(5)
C(9B)-C(10B)	1.512(7)	C(10B)-C(11B)	1.479(7)
C(11B)-O(11B)	1.191(6)	C(11B)-C(12B)	1.550(6)
C(12B)-O(13B)	1.435(5)	C(12B)-C(14B)	1.519(6)
C(14B)-C(15B)	1.519(7)	C(15B)-C(16B)	1.509(6)
O(1D)-C(1D)	1.407(4)	C(1D)-O(13D)	1.437(4)
C(1D)-C(2D)	1.509(5)	C(1D)-C(16D)	1.507(5)
C(2D)-C(6D)	1.327(5)	C(2D)-C(3D)	1.504(5)
C(3D)-C(4D)	1.499(6)	C(4D)-C(5D)	1.523(6)
C(5D)-C(6D)	1.518(5)	C(6D)-C(7D)	1.462(5)
C(7D)-O(7D)	1.222(4)	C(7D)-C(8D)	1.513(5)
C(8D)-C(9D)	1.528(5)	C(8D)-C(12D)	1.555(5)
C(9D)-C(10D)	1.517(6)	C(10D)-C(11D)	1.481(6)
C(11D)-O(11D)	1.199(5)	C(11D)-C(12D)	1.549(5)
C(12D)-O(13D)	1.437(4)	C(12D)-C(14D)	1.517(5)
C(14D)-C(15D)	1.513(6)	C(15D)-C(16D)	1.523(6)
O(1H)-C(1H)	1.400(5)	C(1H)-O(13H)	1.445(5)
C(1H)-C(2H)	1.499(6)	C(1H)-C(16H)	1.525(6)
C(2H)-C(6H)	1.339(6)	C(2H)-C(3H)	1.501(6)
C(3H)-C(4H)	1.522(8)	C(4H)-C(5H)	1.501(8)
C(5H)-C(6H)	1.498(6)	C(6H)-C(7H)	1.479(7)
C(7H)-O(7H)	1.223(5)	C(7H)-C(8H)	1.511(6)
C(8H)-C(9H)	1.535(6)	C(8H)-C(12H)	1.549(5)
C(9H)-C(10H)	1.506(7)	C(10H)-C(11H)	1.484(7)
C(11H)-O(11H)	1.196(5)	C(11H)-C(12H)	1.549(6)
C(12H)-O(13H)	1.438(4)	C(12H)-C(14H)	1.522(6)
C(14H)-C(15H)	1.519(7)	C(15H)-C(16H)	1.519(6)
O(1A)-C(1A)-O(13A)	101.5(3)	O(1A)-C(1A)-C(2A)	109.1(3)
O(13A)-C(1A)-C(2A)	110.0(3)	O(1A)-C(1A)-C(16A)	107.8(3)
O(13A)-C(1A)-C(16A)	111.4(3)	C(2A)-C(1A)-C(16A)	116.0(3)
C(6A)-C(2A)-C(3A)	110.2(4)	C(6A)-C(2A)-C(1A)	128.0(3)
C(3A)-C(2A)-C(1A)	121.1(3)	C(4A)-C(3A)-C(2A)	105.1(4)
C(3A)-C(4A)-C(5A)	105.7(3)	C(6A)-C(5A)-C(4A)	103.2(3)
C(2A)-C(6A)-C(7A)	127.3(3)	C(2A)-C(6A)-C(5A)	111.9(3)
C(7A)-C(6A)-C(5A)	120.9(3)	O(7A)-C(7A)-C(6A)	121.0(3)
O(7A)-C(7A)-C(8A)	121.2(3)	C(6A)-C(7A)-C(8A)	117.5(3)
C(7A)-C(8A)-C(9A)	114.0(3)	C(7A)-C(8A)-C(12A)	112.1(3)

C(9A)-C(8A)-C(12A)	104.5(3)	C(8A)-C(9A)-C(10A)	105.0(3)
C(11A)-C(10A)-C(9A)	104.8(3)	O(11A)-C(11A)-C(10A)	126.0(4)
O(11A)-C(11A)-C(12A)	122.9(4)	C(10A)-C(11A)-C(12A)	111.0(3)
O(13A)-C(12A)-C(14A)	110.4(3)	O(13A)-C(12A)-C(11A)	103.8(3)

C(14A)-C(12A)-C(11A)	112.4(3)	O(13A)-C(12A)-C(8A)	114.8(3)
C(14A)-C(12A)-C(8A)	111.8(3)	C(11A)-C(12A)-C(8A)	103.2(3)
C(1A)-O(13A)-C(12A)	117.3(3)	C(15A)-C(14A)-C(12A)	109.8(3)
C(14A)-C(15A)-C(16A)	110.3(3)	C(1A)-C(16A)-C(15A)	112.6(3)
O(1B)-C(1B)-O(13B)	104.8(3)	O(1B)-C(1B)-C(2B)	109.8(3)
O(13B)-C(1B)-C(2B)	110.1(3)	O(1B)-C(1B)-C(16B)	107.1(3)
O(13B)-C(1B)-C(16B)	110.5(3)	C(2B)-C(1B)-C(16B)	114.1(3)
C(6B)-C(2B)-C(3B)	110.8(4)	C(6B)-C(2B)-C(1B)	127.7(4)
C(3B)-C(2B)-C(1B)	120.8(4)	C(2B)-C(3B)-C(4B)	104.2(5)
C(3B)-C(4B)-C(5B)	107.2(4)	C(6B)-C(5B)-C(4B)	103.7(4)
C(2B)-C(6B)-C(7B)	126.9(4)	C(2B)-C(6B)-C(5B)	112.0(5)
C(7B)-C(6B)-C(5B)	121.0(4)	O(7B)-C(7B)-C(6B)	121.6(4)
O(7B)-C(7B)-C(8B)	120.6(5)	C(6B)-C(7B)-C(8B)	117.5(4)
C(7B)-C(8B)-C(9B)	114.4(4)	C(7B)-C(8B)-C(12B)	112.0(3)
C(9B)-C(8B)-C(12B)	104.3(4)	C(10B)-C(9B)-C(8B)	105.9(4)
C(11B)-C(10B)-C(9B)	105.1(5)	O(11B)-C(11B)-C(10B)	126.4(5)
O(11B)-C(11B)-C(12B)	124.2(5)	C(10B)-C(11B)-C(12B)	109.4(4)
O(13B)-C(12B)-C(14B)	111.3(3)	O(13B)-C(12B)-C(8B)	114.0(3)
C(14B)-C(12B)-C(8B)	112.9(4)	O(13B)-C(12B)-C(11B)	103.3(3)
C(14B)-C(12B)-C(11B)	110.0(4)	C(8B)-C(12B)-C(11B)	104.6(4)
C(1B)-O(13B)-C(12B)	118.1(3)	C(15B)-C(14B)-C(12B)	110.5(4)
C(16B)-C(15B)-C(14B)	109.3(4)	C(15B)-C(16B)-C(1B)	112.4(4)
O(1D)-C(1D)-O(13D)	104.6(3)	O(1D)-C(1D)-C(2D)	109.1(3)
O(13D)-C(1D)-C(2D)	109.9(3)	O(1D)-C(1D)-C(16D)	106.8(3)
O(13D)-C(1D)-C(16D)	111.0(3)	C(2D)-C(1D)-C(16D)	114.9(3)
C(6D)-C(2D)-C(1D)	128.3(3)	C(6D)-C(2D)-C(3D)	111.0(4)
C(1D)-C(2D)-C(3D)	120.2(3)	C(4D)-C(3D)-C(2D)	104.8(4)
C(3D)-C(4D)-C(5D)	107.6(3)	C(6D)-C(5D)-C(4D)	102.8(3)
C(2D)-C(6D)-C(7D)	127.6(3)	C(2D)-C(6D)-C(5D)	112.2(3)
C(7D)-C(6D)-C(5D)	120.2(3)	O(7D)-C(7D)-C(6D)	121.5(3)
O(7D)-C(7D)-C(8D)	120.9(3)	C(6D)-C(7D)-C(8D)	117.2(3)
C(7D)-C(8D)-C(9D)	114.0(3)	C(7D)-C(8D)-C(12D)	112.4(3)
C(9D)-C(8D)-C(12D)	104.6(3)	C(10D)-C(9D)-C(8D)	105.2(3)
C(11D)-C(10D)-C(9D)	105.5(3)	O(11D)-C(11D)-C(10D)	127.1(4)
O(11D)-C(11D)-C(12D)	123.1(4)	C(10D)-C(11D)-C(12D)	109.8(3)
O(13D)-C(12D)-C(14D)	110.6(3)	O(13D)-C(12D)-C(11D)	103.5(3)
C(14D)-C(12D)-C(11D)	111.9(3)	O(13D)-C(12D)-C(8D)	114.8(3)
C(14D)-C(12D)-C(8D)	112.0(3)	C(11D)-C(12D)-C(8D)	103.4(3)
C(12D)-O(13D)-C(1D)	117.4(3)	C(15D)-C(14D)-C(12D)	110.2(3)
C(14D)-C(15D)-C(16D)	109.9(4)	C(1D)-C(16D)-C(15D)	112.6(3)
O(1H)-C(1H)-O(13H)	104.8(3)	O(1H)-C(1H)-C(2H)	109.9(3)
O(13H)-C(1H)-C(2H)	109.9(3)	O(1H)-C(1H)-C(16H)	107.0(3)
O(13H)-C(1H)-C(16H)	110.7(3)	C(2H)-C(1H)-C(16H)	114.1(4)
C(6H)-C(2H)-C(3H)	111.0(4)	C(6H)-C(2H)-C(1H)	127.2(4)
C(3H)-C(2H)-C(1H)	121.5(4)	C(2H)-C(3H)-C(4H)	103.8(5)
C(5H)-C(4H)-C(3H)	108.3(5)	C(6H)-C(5H)-C(4H)	103.5(5)
C(2H)-C(6H)-C(7H)	127.4(4)	C(2H)-C(6H)-C(5H)	112.5(5)
C(7H)-C(6H)-C(5H)	120.0(5)	O(7H)-C(7H)-C(6H)	121.4(4)
O(7H)-C(7H)-C(8H)	121.6(5)	C(6H)-C(7H)-C(8H)	116.7(4)
C(7H)-C(8H)-C(9H)	113.7(4)	C(7H)-C(8H)-C(12H)	111.6(3)
C(9H)-C(8H)-C(12H)	104.4(4)	C(10H)-C(9H)-C(8H)	105.7(4)
C(11H)-C(10H)-C(9H)	104.5(4)	O(11H)-C(11H)-C(10H)	127.2(5)
O(11H)-C(11H)-C(12H)	123.1(5)	C(10H)-C(11H)-C(12H)	109.7(4)
O(13H)-C(12H)-C(14H)	112.1(4)	O(13H)-C(12H)-C(11H)	103.4(3)
C(14H)-C(12H)-C(11H)	110.7(4)	O(13H)-C(12H)-C(8H)	113.6(3)
C(14H)-C(12H)-C(8H)	112.4(3)	C(11H)-C(12H)-C(8H)	104.0(4)
C(12H)-O(13H)-C(1H)	118.0(3)	C(15H)-C(14H)-C(12H)	109.8(4)
C(16H)-C(15H)-C(14H)	110.0(4)	C(15H)-C(16H)-C(1H)	111.3(4)

Table 5. Anisotropic displacement parameters [$\text{\AA}^2 \times 10^3$] for 1.

The anisotropic displacement factor exponent takes the form:

$$-2\pi^2 [(h a^*)^2 U_{11} + \dots + 2 h k a^* b^* U_{12}]$$

	U11	U22	U33	U23	U13	U12
O(1A)	58(2)	53(2)	61(2)	-27(2)	25(2)	-15(1)
C(1A)	44(2)	43(2)	36(2)	-15(2)	10(2)	-12(2)
C(2A)	41(2)	40(2)	38(2)	-16(2)	-3(2)	-7(2)
C(3A)	73(3)	66(3)	43(3)	-9(2)	-18(2)	-1(3)
C(4A)	58(3)	48(3)	81(3)	-6(2)	-27(3)	7(2)
C(5A)	42(2)	41(2)	65(3)	-13(2)	-10(2)	2(2)
C(6A)	33(2)	34(2)	42(2)	-12(2)	-3(2)	-3(2)
C(7A)	29(2)	42(2)	42(2)	-14(2)	8(2)	-6(2)
O(7A)	76(2)	46(2)	48(2)	-22(1)	17(2)	-6(1)
C(8A)	34(2)	35(2)	35(2)	-10(2)	4(2)	-5(2)
C(9A)	54(3)	47(2)	40(2)	-7(2)	0(2)	-10(2)
C(10A)	66(3)	53(3)	45(3)	-6(2)	-13(2)	-3(2)
C(11A)	46(3)	39(2)	55(3)	-8(2)	-7(2)	-1(2)
O(11A)	46(2)	89(2)	91(3)	-13(2)	-15(2)	19(2)
C(12A)	32(2)	35(2)	41(2)	-10(2)	-1(2)	-2(2)
O(13A)	33(1)	39(1)	40(2)	-13(1)	4(1)	-6(1)
C(14A)	52(3)	39(2)	64(3)	-22(2)	6(2)	-6(2)
C(15A)	59(3)	51(3)	60(3)	-34(2)	4(2)	-12(2)
C(16A)	66(3)	57(3)	49(3)	-31(2)	5(2)	-9(2)
O(1B)	65(2)	45(2)	57(2)	-18(1)	10(2)	-8(1)
C(1B)	48(2)	51(3)	40(2)	-13(2)	2(2)	-3(2)
C(2B)	55(3)	63(3)	37(2)	-15(2)	-1(2)	11(2)
C(3B)	78(4)	135(5)	54(3)	-41(3)	-16(3)	4(3)
C(4B)	125(5)	128(5)	46(3)	-32(3)	-24(3)	52(4)
C(5B)	108(5)	120(5)	39(3)	1(3)	8(3)	28(4)
C(6B)	63(3)	63(3)	36(2)	-7(2)	8(2)	10(2)
C(7B)	65(3)	44(3)	55(3)	5(2)	23(2)	6(2)
O(7B)	76(2)	71(2)	96(3)	-21(2)	44(2)	-12(2)
C(8B)	58(3)	39(2)	58(3)	-8(2)	15(2)	3(2)
C(9B)	90(4)	47(3)	106(4)	-30(3)	24(3)	-12(3)
C(10B)	89(4)	81(4)	114(5)	-49(4)	0(4)	-6(3)
C(11B)	85(4)	59(3)	66(3)	-34(3)	-4(3)	-5(3)
O(11B)	159(4)	93(3)	70(3)	-16(2)	-48(3)	-13(3)
C(12B)	63(3)	42(2)	44(2)	-14(2)	5(2)	4(2)
O(13B)	51(2)	40(2)	37(2)	-12(1)	-1(1)	3(1)
C(14B)	87(4)	59(3)	58(3)	-24(2)	26(3)	1(3)
C(15B)	60(3)	69(3)	75(3)	-11(3)	29(3)	13(3)
C(16B)	54(3)	67(3)	55(3)	-14(2)	14(2)	-2(2)
O(1D)	41(2)	49(2)	66(2)	-22(1)	-20(1)	7(1)
C(1D)	37(2)	44(2)	43(2)	-16(2)	-10(2)	6(2)
C(2D)	38(2)	45(2)	38(2)	-12(2)	0(2)	7(2)
C(3D)	73(3)	87(4)	45(3)	-7(3)	6(2)	-3(3)
C(4D)	68(3)	64(3)	69(3)	12(3)	16(3)	-2(3)
C(5D)	41(2)	43(2)	69(3)	-7(2)	9(2)	-9(2)
C(6D)	29(2)	37(2)	47(2)	-9(2)	-3(2)	1(2)
C(7D)	26(2)	40(2)	49(2)	-17(2)	-6(2)	3(2)
O(7D)	72(2)	51(2)	62(2)	-23(2)	-26(2)	4(2)
C(8D)	30(2)	40(2)	41(2)	-10(2)	0(2)	3(2)

C(9D)	47(2)	52(3)	48(3)	-4(2)	-5(2)	5(2)
C(10D)	62(3)	68(3)	46(3)	-6(2)	6(2)	5(2)
C(11D)	44(3)	45(2)	61(3)	-5(2)	8(2)	0(2)
O(11D)	50(2)	105(3)	86(3)	-3(2)	21(2)	-17(2)
C(12D)	33(2)	35(2)	48(2)	-11(2)	0(2)	-3(2)
O(13D)	30(1)	37(1)	49(2)	-13(1)	-1(1)	2(1)
C(14D)	49(3)	39(2)	77(3)	-19(2)	-3(2)	-3(2)
C(15D)	58(3)	47(3)	70(3)	-34(2)	-11(2)	10(2)
C(16D)	52(3)	57(3)	63(3)	-33(2)	-9(2)	5(2)
O(1H)	72(2)	48(2)	60(2)	-21(1)	-16(2)	6(2)
C(1H)	57(3)	43(2)	44(2)	-12(2)	-8(2)	-2(2)
C(2H)	59(3)	64(3)	45(3)	-22(2)	-1(2)	-15(2)
C(3H)	85(4)	129(5)	77(4)	-48(4)	18(3)	-17(4)
C(4H)	148(6)	129(6)	55(4)	-33(4)	25(4)	-48(5)
C(5H)	122(5)	127(5)	43(3)	-12(3)	-8(3)	-19(4)
C(6H)	80(3)	62(3)	37(2)	-9(2)	-11(2)	-21(3)
C(7H)	79(3)	41(2)	49(3)	2(2)	-25(3)	-6(2)
O(7H)	90(3)	62(2)	82(2)	-21(2)	-46(2)	12(2)
C(8H)	71(3)	39(2)	49(3)	-11(2)	-18(2)	-6(2)
C(9H)	97(4)	49(3)	88(4)	-28(3)	-28(3)	9(3)
C(10H)	88(4)	69(3)	87(4)	-36(3)	-3(3)	1(3)
C(11H)	97(4)	53(3)	52(3)	-29(2)	-3(3)	-4(3)
O(11H)	156(4)	75(3)	63(2)	-16(2)	30(2)	8(2)
C(12H)	76(3)	37(2)	42(2)	-14(2)	-16(2)	-3(2)
O(13H)	61(2)	38(2)	42(2)	-14(1)	-8(1)	-2(1)
C(14H)	94(4)	55(3)	58(3)	-21(2)	-31(3)	-5(3)
C(15H)	81(4)	65(3)	69(3)	-12(3)	-38(3)	-12(3)
C(16H)	62(3)	68(3)	65(3)	-18(3)	-22(2)	0(2)

Table 6. Hydrogen coordinates ($\times 10^4$) and isotropic displacement parameters ($\text{\AA}^2 \times 10^3$) for 1.

	x	y	z	U(eq)
H(1AA)	6109	4620	3715	80
H(3AA)	3536 (4)	4679 (3)	2887 (3)	80
H(3AB)	4360 (4)	5460 (3)	3069 (3)	80
H(4AA)	2011 (4)	5226 (3)	3417 (3)	80
H(4AB)	2745 (4)	6176 (3)	3317 (3)	80
H(5AA)	2069 (3)	5058 (3)	4748 (3)	80
H(5AB)	3137 (3)	5764 (3)	4646 (3)	80
H(8AA)	3227 (3)	2416 (2)	5449 (2)	80
H(9AA)	3546 (3)	1397 (3)	6696 (2)	80
H(9AB)	3372 (3)	2378 (3)	6927 (2)	80
H(10A)	5286 (4)	1401 (3)	7305 (2)	80
H(10B)	5309 (4)	2553 (3)	7080 (2)	80
H(14A)	4425 (4)	977 (3)	5379 (3)	80
H(14B)	5619 (4)	1222 (3)	4925 (3)	80
H(15A)	3483 (4)	2081 (3)	4289 (2)	80
H(15B)	4186 (4)	1342 (3)	3946 (2)	80
H(16A)	5640 (4)	2483 (3)	3466 (2)	80
H(16B)	4469 (4)	3004 (3)	3145 (2)	80
H(1BA)	1579 (2)	6394 (2)	-882 (2)	80
H(3BA)	2631 (5)	5827 (5)	414 (3)	80
H(3BB)	3686 (5)	5135 (5)	370 (3)	80
H(4BA)	2315 (6)	4851 (5)	1654 (3)	80
H(4BB)	3161 (6)	4048 (5)	1513 (3)	80
H(5BA)	780 (6)	4118 (5)	1349 (3)	80
H(5BB)	1593 (6)	3200 (5)	1445 (3)	80
H(8BA)	1830 (4)	2781 (3)	-633 (3)	80
H(9BA)	-229 (5)	2151 (4)	-663 (3)	80
H(9BB)	680 (5)	2043 (4)	-1318 (3)	80
H(10C)	-1092 (5)	3456 (4)	-1543 (4)	80
H(10D)	-690 (5)	2898 (4)	-2165 (4)	80
H(14C)	2585 (4)	4303 (3)	-2529 (3)	80
H(14D)	2606 (4)	3203 (3)	-2001 (3)	80
H(15C)	4296 (4)	4028 (4)	-1775 (3)	80
H(15D)	3584 (4)	3624 (4)	-969 (3)	80
H(16C)	4065 (4)	5247 (3)	-1100 (3)	80
H(16D)	3502 (4)	5585 (3)	-1959 (3)	80
H(1DA)	1553 (2)	476 (2)	6025 (2)	80
H(3DA)	-747 (4)	587 (4)	7198 (3)	80
H(3DB)	3 (4)	-226 (4)	6973 (3)	80
H(4DA)	-2367 (4)	-111 (4)	7022 (3)	80
H(4DB)	-1620 (4)	-1028 (4)	7001 (3)	80
H(5DA)	-2803 (3)	49 (3)	5736 (3)	80
H(5DB)	-1820 (3)	-695 (3)	5663 (3)	80
H(8DA)	-1748 (3)	2619 (3)	4668 (2)	80
H(9DA)	-1786 (3)	3537 (3)	3368 (2)	80
H(9DB)	-2057 (3)	2514 (3)	3240 (2)	80
H(10E)	-300 (4)	3484 (4)	2516 (3)	80
H(10F)	-228 (4)	2332 (4)	2816 (3)	80
H(14E)	-522 (4)	4072 (3)	4497 (3)	80

H(14F)	782 (4)	3877 (3)	4734 (3)	80
H(15E)	-1092 (4)	3010 (3)	5751 (3)	80
H(15F)	-273 (4)	3799 (3)	5915 (3)	80
H(16E)	1281 (4)	2704 (3)	6149 (3)	80
H(16F)	260 (4)	2186 (3)	6711 (3)	80
H(1HA)	6580 (3)	-1316 (2)	893 (2)	80
H(3HA)	7724 (5)	-652 (5)	-356 (3)	80
H(3HB)	8681 (5)	88 (5)	-265 (3)	80
H(4HA)	7386 (7)	340 (5)	-1591 (3)	80
H(4HB)	8143 (7)	1162 (5)	-1419 (3)	80
H(5HA)	5792 (6)	1045 (5)	-1313 (3)	80
H(5HB)	6539 (6)	1974 (5)	-1345 (3)	80
H(8HA)	6486 (4)	2301 (3)	729 (2)	80
H(9HA)	4381 (5)	2843 (3)	726 (3)	80
H(9HB)	5196 (5)	2967 (3)	1412 (3)	80
H(10G)	3541 (5)	1485 (4)	1552 (3)	80
H(10H)	3799 (5)	2045 (4)	2193 (3)	80
H(14G)	7196 (4)	759 (3)	2626 (3)	80
H(14H)	7171 (4)	1869 (3)	2122 (3)	80
H(15G)	8943 (5)	1130 (3)	1890 (3)	80
H(15H)	8253 (5)	1496 (3)	1080 (3)	80
H(16G)	8897 (4)	-112 (3)	1220 (3)	80
H(16H)	8266 (4)	-474 (3)	2063 (3)	80
