Inorganic Chemistry
including bioinorganic chemistry
Inorg. Chem., 1998, 37(15), 3734-3746, DOI:10.1021/ic980132h

Table S1. Data collection and refinement parameters for **6**.

Identification code	ash
Empirical formula	$C_{17}H_{32}GaO_3PSi$
Formula weight	413.21
Temperature	293(2) K
Wavelength	0.71073 Å
Crystal system	Triclinic
Space group	$P\bar{1}$
Unit cell dimensions	a = 9.485(2) Å alpha = 89.10(2)° b = 11.085(3) Å beta = 75.85(2)° c = 11.730(3) Å gamma = 71.60(2)°
Volume, Z	1132.2(4) $Å^3$, 2
Density (calculated)	1.212 mg/m^3
Absorption coefficient	1.348 mm^{-1}
F(000)	436
Crystal size	0.20 x 0.20 x 0.10 mm
θ range for data collection	1.79 to 24.99°
Limiting indices	$-11 \le h \le 12$, $-7 \le k \le 13$, $-4 \le l \le 15$
Reflections collected	2776
Independent reflections	2770 (R_{int} = 0.0314)
Absorption correction	SADABS
Max. and min. transmission	0.827983 and 0.571028
Refinement method	Full-matrix least-squares on F^2
Data / restraints / parameters	1884 / 0 / 209
Goodness-of-fit on F^2	1.216
Final R indices [I>2σ(I)]	R1 = 0.0616, wR2 = 0.1788
R indices (all data)	R1 = 0.0716, wR2 = 0.1896
Extinction coefficient	0.007(2)
Largest diff. peak and hole	0.625 and -0.455 $eÅ^{-3}$

Table S2. Atomic coordinates (x 10^4) and equivalent isotropic displacement parameters ($Å^2$ x 10^3) for **6**.

	x	y	z	U(eq)
Ga(1)	4798(1)	6843(1)	3816(1)	44(1)
P(1)	4419(3)	6241(3)	6649(2)	47(1)
Si(1)	6526(5)	7060(4)	7872(3)	78(1)
O(1)	5224(9)	5150(7)	3172(7)	66(3)
O(2)	4216(9)	6628(8)	5457(6)	68(3)
O(3)	5679(9)	6719(9)	6919(7)	81(3)
C(1)	2846(13)	7814(12)	3464(11)	69(4)
C(2)	3093(21)	7801(19)	2105(15)	153(9)
C(3)	1633(16)	7201(18)	3991(20)	147(8)
C(4)	2341(16)	9211(14)	3918(14)	109(6)
C(5)	6782(13)	7178(12)	3435(11)	71(4)
C(6)	7262(20)	7339(21)	2120(13)	144(8)
C(7)	6620(16)	8395(15)	4126(14)	105(6)
C(8)	7999(14)	6082(14)	3790(14)	100(5)
C(9)	2689(13)	7085(13)	7717(10)	52(3)
C(10)	1885(15)	8324(14)	7555(12)	81(5)
C(11)	532(19)	8984(19)	8423(18)	115(7)
C(12)	59(20)	8386(23)	9400(18)	116(8)
C(13)	869(20)	7198(21)	9567(14)	116(7)
C(14)	2172(16)	6551(14)	8719(12)	85(5)
C(15)	8401(18)	7086(17)	6986(17)	128(7)
C(16)	6734(31)	5817(20)	8945(18)	172(10)
C(17)	5321(21)	8638(15)	8602(15)	125(7)

U(eq) is defined as one third of the trace of the orthogonalized U_{ij} tensor.

Table S3. Anisotropic displacement parameters ($Å^2 \times 10^3$) for **6**.

	U11	U22	U33	U23	U13	U12
Ga(1)	42(1)	36(1)	45(1)	2(1)	-2(1)	-8(1)
P(1)	50(2)	42(3)	42(2)	-5(2)	-3(1)	-11(1)
Si(1)	103(3)	72(3)	74(3)	0(3)	-35(2)	-37(2)
O(1)	78(5)	34(6)	70(6)	-4(5)	4(4)	-15(4)
O(2)	74(5)	63(7)	46(5)	7(5)	-10(4)	3(4)
O(3)	66(5)	103(8)	73(5)	-31(5)	-1(4)	-35(5)
C(1)	63(8)	54(10)	80(9)	-1(8)	-25(6)	0(6)
C(2)	135(15)	170(20)	109(14)	-49(14)	-75(12)	49(13)
C(3)	59(9)	129(17)	275(26)	52(17)	-70(13)	-41(10)
C(4)	92(10)	76(12)	119(13)	-21(11)	-36(9)	36(8)
C(5)	57(7)	61(10)	88(10)	-19(8)	7(7)	-28(7)
C(6)	134(15)	221(24)	87(12)	-4(13)	34(10)	-119(16)
C(7)	89(10)	99(13)	134(13)	-22(11)	-7(9)	-55(9)
C(8)	50(8)	97(13)	141(14)	-21(11)	-14(8)	-14(8)
C(9)	65(7)	38(10)	43(7)	3(8)	-5(6)	-10(7)
C(10)	90(10)	54(12)	70(9)	-2(9)	-5(8)	7(8)
C(11)	98(12)	93(16)	109(14)	-30(14)	-18(11)	28(10)
C(12)	92(12)	122(21)	88(13)	-37(16)	21(11)	-3(12)
C(13)	115(13)	111(17)	75(11)	0(13)	42(11)	-22(12)
C(14)	101(10)	47(11)	69(10)	6(9)	24(9)	-5(8)
C(15)	101(12)	129(16)	184(19)	9(14)	-65(12)	-56(11)
C(16)	325(34)	106(19)	132(17)	64(16)	-105(20)	-101(20)
C(17)	174(17)	77(13)	124(14)	-30(11)	-22(12)	-49(12)

The anisotropic displacement factor exponent takes the form:

$-2\pi^2 [(ha^*)^2 U_{11} + ... + 2hka^*b^*U_{12}]$

Table S4. Bond distances (Å) and angles (deg) for **6**.

Ga(1)-O(2)	1.901(7)	Ga(1)-O(1)	1.916(7)
Ga(1)-C(1)	1.965(12)	Ga(1)-C(5)	1.975(11)
P(1)-O(1)#1	1.494(8)	P(1)-O(2)	1.496(8)
P(1)-O(3)	1.549(8)	P(1)-C(9)	1.789(11)
Si(1)-O(3)	1.637(8)	Si(1)-C(15)	1.84(2)
Si(1)-C(17)	1.85(2)	Si(1)-C(16)	1.85(2)
O(1)-P(1)#1	1.494(8)	C(1)-C(3)	1.52(2)
C(1)-C(4)	1.53(2)	C(1)-C(2)	1.55(2)
C(5)-C(8)	1.52(2)	C(5)-C(6)	1.52(2)
C(5)-C(7)	1.53(2)	C(9)-C(14)	1.36(2)
C(9)-C(10)	1.38(2)	C(10)-C(11)	1.42(2)
C(11)-C(12)	1.37(2)	C(12)-C(13)	1.34(2)
C(13)-C(14)	1.38(2)		

O(2)-Ga(1)-O(1)	101.0(4)	O(2)-Ga(1)-C(1)	103.3(4)
O(1)-Ga(1)-C(1)	104.2(4)	O(2)-Ga(1)-C(5)	109.2(5)
O(1)-Ga(1)-C(5)	106.1(4)	C(1)-Ga(1)-C(5)	129.6(6)
O(1)#1-P(1)-O(2)	115.7(5)	O(1)#1-P(1)-O(3)	110.0(5)
O(2)-P(1)-O(3)	108.8(5)	O(1)#1-P(1)-C(9)	108.4(5)
O(2)-P(1)-C(9)	107.9(5)	O(3)-P(1)-C(9)	105.4(5)
O(3)-Si(1)-C(15)	104.9(6)	O(3)-Si(1)-C(17)	107.3(7)
C(15)-Si(1)-C(17)	111.9(8)	O(3)-Si(1)-C(16)	109.4(8)
C(15)-Si(1)-C(16)	111.6(11)	C(17)-Si(1)-C(16)	111.4(9)
P(1)#1-O(1)-Ga(1)	148.7(5)	P(1)-O(2)-Ga(1)	157.7(5)
P(1)-O(3)-Si(1)	149.7(6)	C(3)-C(1)-C(4)	111.3(12)
C(3)-C(1)-C(2)	109.5(14)	C(4)-C(1)-C(2)	106.9(13)
C(3)-C(1)-Ga(1)	109.6(10)	C(4)-C(1)-Ga(1)	110.9(8)
C(2)-C(1)-Ga(1)	108.5(8)	C(8)-C(5)-C(6)	110.2(12)
C(8)-C(5)-C(7)	108.1(12)	C(6)-C(5)-C(7)	109.5(13)
C(8)-C(5)-Ga(1)	109.9(9)	C(6)-C(5)-Ga(1)	109.5(9)
C(7)-C(5)-Ga(1)	109.7(8)	C(14)-C(9)-C(10)	118.7(12)
C(14)-C(9)-P(1)	121.4(11)	C(10)-C(9)-P(1)	119.9(10)
C(9)-C(10)-C(11)	119(2)	C(12)-C(11)-C(10)	120(2)
C(13)-C(12)-C(11)	121(2)	C(12)-C(13)-C(14)	119(2)
C(9)-C(14)-C(13)	122(2)		

Symmetry transformations used to generate equivalent atoms:

#1 -x+1,-y+1,-z+1

Table S5. Hydrogen atom coordinates (x 10^4) and isotropic displacement parameters ($Å^2$ x 10^3) for **6**.

	x	y	z	U(eq)
H(2A)	3861(21)	8189(19)	1773(15)	230
H(2B)	2146(21)	8268(19)	1919(15)	230
H(2C)	3425(21)	6937(19)	1784(15)	230
H(3A)	1980(16)	6328(18)	3690(20)	221
H(3B)	695(16)	7650(18)	3782(20)	221
H(3C)	1455(16)	7236(18)	4833(20)	221
H(4A)	3129(16)	9573(14)	3571(14)	163
H(4B)	2169(16)	9261(14)	4760(14)	163
H(4C)	1409(16)	9674(14)	3709(14)	163
H(6A)	6487(20)	8032(21)	1906(13)	216
H(6B)	7386(20)	6569(21)	1686(13)	216
H(6C)	8217(20)	7517(21)	1937(13)	216
H(7A)	5856(16)	9100(15)	3916(14)	157
H(7B)	7586(16)	8554(15)	3941(14)	157
H(7C)	6316(16)	8294(15)	4956(14)	157
H(8A)	7684(14)	5990(14)	4620(14)	150
H(8B)	8956(14)	6257(14)	3612(14)	150
H(8C)	8125(14)	5308(14)	3362(14)	150
H(10A)	2224(15)	8720(14)	6887(12)	97
H(11A)	-29(19)	9818(19)	8329(18)	139
H(12A)	-843(20)	8812(23)	9959(18)	139
H(13A)	555(20)	6814(21)	10251(14)	139
H(14A)	2718(16)	5719(14)	8834(12)	102
H(15A)	8993(18)	6251(17)	6621(17)	192
H(15B)	8937(18)	7340(17)	7486(17)	192
H(15C)	8253(18)	7681(17)	6388(17)	192
H(16A)	5736(31)	5828(20)	9393(18)	258
H(16B)	7299(31)	5980(20)	9468(18)	258
H(16C)	7275(31)	4997(20)	8533(18)	258
H(17A)	4354(21)	8586(15)	9055(15)	188
H(17B)	5150(21)	9245(15)	8017(15)	188
H(17C)	5833(21)	8903(15)	9114(15)	188

Table S6. Data collection and refinement parameters for **8**.

Identification code	RMM.219
Empirical formula	$C_{30}H_{72}Ga_2O_6P_2Si_2$
Formula weight	786.44
Temperature	213(2) K
Wavelength	0.71073 Å
Crystal system	Monoclinic
Space group	C2/c
Unit cell dimensions	a = 35.1763(13) Å alpha = 90° b = 13.0340(5) Å beta = 91.7610(10)° c = 19.2322(7) Å gamma = 90°
Volume, Z	8813.6(6) Å^3, 8
Density (calculated)	1.185 mg/m^3
Absorption coefficient	1.382 mm^{-1}
F(000)	3360
Crystal size	0.28 x 0.25 x 0.10 mm
θ range for data collection	1.16 to 28.19°
Limiting indices	$-45 \le h \le 46$, $-17 \le k \le 9$, $-25 \le l \le 24$
Reflections collected	26448
Independent reflections	10387 (R_{int} = 0.0476)
Absorption correction	SADABS
Max. and min. transmission	0.948857 and 0.670012
Refinement method	Full-matrix least-squares on F^2
Data / restraints / parameters	7968 / 0 / 380
Goodness-of-fit on F^2	1.066
Final R indices [I>2σ(I)]	R1 = 0.0368, wR2 = 0.0932
R indices (all data)	R1 = 0.0563, wR2 = 0.1146
Extinction coefficient	0.00008(3)
Largest diff. peak and hole	0.721 and -0.567 eÅ^{-3}

Table S7. Atomic coordinates (x 10^4) and equivalent isotropic displacement parameters ($Å^2$ x 10^3) for **8**.

	x	y	z	U(eq)
Ga(1)	1398(1)	600(1)	3851(1)	25(1)
Ga(2)	1332(1)	4386(1)	3880(1)	29(1)
P(1)	1492(1)	2574(1)	2723(1)	25(1)
P(2)	1299(1)	2418(1)	5035(1)	25(1)
Si(1)	503(1)	2151(1)	5713(1)	37(1)
Si(2)	842(1)	2696(1)	1577(1)	32(1)
O(1)	1316(1)	1366(1)	4702(1)	30(1)
O(2)	1531(1)	1710(1)	3242(1)	32(1)
O(3)	1434(1)	3625(1)	3036(1)	33(1)
O(4)	1387(1)	3302(1)	4563(1)	34(1)
O(5)	1152(1)	2322(1)	2205(1)	32(1)
O(6)	891(1)	2588(1)	5328(1)	36(1)
C(1)	895(1)	45(2)	3517(1)	31(1)
C(2)	913(1)	-275(2)	2754(1)	48(1)
C(3)	784(1)	-899(2)	3955(2)	50(1)
C(4)	586(1)	869(2)	3583(2)	46(1)
C(5)	1865(1)	-255(2)	4019(1)	35(1)
C(6)	1873(1)	-1118(2)	3472(2)	56(1)
C(7)	1852(1)	-739(2)	4741(2)	50(1)
C(8)	2232(1)	375(2)	3966(2)	47(1)
C(9)	1917(1)	2585(2)	2196(1)	39(1)
C(10)	1958(1)	1526(3)	1853(2)	59(1)
C(11)	1885(1)	3431(3)	1640(2)	56(1)
C(12)	2265(1)	2792(3)	2683(2)	52(1)
C(13)	831(1)	4116(2)	1520(2)	57(1)
C(14)	991(1)	2117(2)	750(1)	48(1)
C(15)	376(1)	2167(3)	1821(2)	53(1)
C(16)	1774(1)	5344(2)	4007(2)	45(1)
C(17)	1678(1)	6168(3)	4547(2)	73(1)
C(18)	2135(1)	4779(3)	4252(2)	66(1)
C(19)	1843(1)	5870(2)	3311(2)	60(1)
C(20)	786(1)	4820(2)	3849(1)	39(1)
C(21)	668(1)	5117(2)	4586(2)	56(1)
C(22)	730(1)	5755(2)	3363(2)	62(1)
C(23)	533(1)	3932(3)	3585(2)	51(1)
C(24)	1629(1)	2470(2)	5788(1)	36(1)
C(25)	1601(1)	3528(2)	6135(2)	57(1)
C(26)	2035(1)	2307(2)	5527(2)	48(1)
C(27)	1536(1)	1615(3)	6308(1)	55(1)
C(28)	480(1)	2804(3)	6568(2)	62(1)
C(29)	531(1)	738(2)	5812(2)	54(1)
C(30)	87(1)	2512(3)	5145(2)	59(1)

U(eq) is defined as one third of the trace of the orthogonalized U_{ij} tensor.

Table S8. Anisotropic displacement parameters ($Å^2 \times 10^3$) for **8**.

	U11	U22	U33	U23	U13	U12
Ga(1)	28(1)	22(1)	25(1)	-1(1)	3(1)	1(1)
Ga(2)	40(1)	21(1)	26(1)	0(1)	0(1)	-1(1)
P(1)	26(1)	28(1)	21(1)	1(1)	4(1)	-3(1)
P(2)	30(1)	25(1)	20(1)	1(1)	1(1)	2(1)
Si(1)	39(1)	38(1)	33(1)	2(1)	11(1)	4(1)
Si(2)	35(1)	38(1)	23(1)	0(1)	0(1)	-2(1)
O(1)	38(1)	27(1)	24(1)	-1(1)	3(1)	0(1)
O(2)	34(1)	32(1)	31(1)	5(1)	5(1)	-1(1)
O(3)	44(1)	29(1)	27(1)	0(1)	3(1)	-2(1)
O(4)	40(1)	30(1)	31(1)	5(1)	-1(1)	-2(1)
O(5)	30(1)	37(1)	30(1)	1(1)	0(1)	-4(1)
O(6)	35(1)	38(1)	35(1)	1(1)	7(1)	6(1)
C(1)	36(1)	28(1)	29(1)	-3(1)	0(1)	-6(1)
C(2)	55(2)	50(2)	38(1)	-9(1)	-4(1)	-8(1)
C(3)	53(2)	43(2)	55(2)	9(1)	2(1)	-14(1)
C(4)	35(1)	51(2)	50(2)	-1(1)	-1(1)	3(1)
C(5)	35(1)	28(1)	43(1)	0(1)	3(1)	7(1)
C(6)	56(2)	43(2)	68(2)	-17(2)	4(2)	16(1)
C(7)	51(2)	42(2)	56(2)	14(1)	-2(1)	11(1)
C(8)	34(1)	50(2)	58(2)	1(1)	3(1)	6(1)
C(9)	31(1)	52(2)	34(1)	2(1)	7(1)	-7(1)
C(10)	43(2)	80(2)	54(2)	-18(2)	17(1)	11(2)
C(11)	46(2)	81(2)	43(2)	19(2)	13(1)	-18(2)
C(12)	28(1)	78(2)	50(2)	2(2)	4(1)	-11(1)
C(13)	84(2)	43(2)	44(2)	6(1)	1(2)	8(2)
C(14)	57(2)	57(2)	29(1)	-8(1)	1(1)	-7(2)
C(15)	31(1)	84(2)	42(2)	9(2)	-3(1)	-4(1)
C(16)	58(2)	31(2)	45(2)	1(1)	-1(1)	-14(1)
C(17)	110(3)	45(2)	64(2)	-18(2)	1(2)	-28(2)
C(18)	53(2)	67(2)	77(2)	11(2)	-19(2)	-25(2)
C(19)	73(2)	47(2)	60(2)	13(2)	6(2)	-22(2)
C(20)	46(2)	34(2)	37(1)	-1(1)	1(1)	10(1)
C(21)	68(2)	50(2)	50(2)	-7(2)	15(2)	16(2)
C(22)	77(2)	47(2)	60(2)	11(2)	-4(2)	20(2)
C(23)	42(2)	57(2)	54(2)	-7(2)	-2(1)	3(1)
C(24)	43(2)	41(2)	26(1)	-1(1)	-9(1)	2(1)
C(25)	75(2)	52(2)	44(2)	-18(2)	-16(2)	3(2)
C(26)	39(2)	55(2)	50(2)	-1(1)	-14(1)	2(1)
C(27)	64(2)	66(2)	33(1)	14(1)	-12(1)	5(2)
C(28)	75(2)	66(2)	45(2)	-11(2)	24(2)	4(2)
C(29)	66(2)	43(2)	53(2)	7(1)	6(2)	-2(1)
C(30)	38(2)	76(3)	65(2)	13(2)	10(2)	7(1)

The anisotropic displacement factor exponent takes the form:

$$-2\pi^2 [(ha^*)^2 U_{11} + \ldots + 2hka^*b^* U_{12}]$$

Table S9. Bond distances (Å) for **8**.

Ga(1)-O(2)	1.928(2)	Ga(1)-O(1)	1.947(2)
Ga(1)-C(1)	1.999(2)	Ga(1)-C(5)	2.003(2)
Ga(2)-O(4)	1.934(2)	Ga(2)-O(3)	1.945(2)
Ga(2)-C(16)	2.002(3)	Ga(2)-C(20)	2.003(3)
P(1)-O(2)	1.509(2)	P(1)-O(3)	1.513(2)
P(1)-O(5)	1.567(2)	P(1)-C(9)	1.832(3)
P(2)-O(4)	1.505(2)	P(2)-O(1)	1.516(2)
P(2)-O(6)	1.571(2)	P(2)-C(24)	1.830(3)
Si(1)-O(6)	1.672(2)	Si(1)-C(29)	1.854(3)
Si(1)-C(28)	1.857(3)	Si(1)-C(30)	1.861(3)
Si(2)-O(5)	1.676(2)	Si(2)-C(15)	1.850(3)
Si(2)-C(14)	1.851(3)	Si(2)-C(13)	1.854(3)
C(1)-C(2)	1.529(3)	C(1)-C(4)	1.536(4)
C(1)-C(3)	1.546(3)	C(5)-C(7)	1.527(4)
C(5)-C(8)	1.537(4)	C(5)-C(6)	1.541(4)
C(9)-C(11)	1.537(4)	C(9)-C(10)	1.539(4)
C(9)-C(12)	1.543(4)	C(16)-C(19)	1.530(4)
C(16)-C(18)	1.531(4)	C(16)-C(17)	1.538(4)
C(20)-C(23)	1.537(4)	C(20)-C(21)	1.539(4)
C(20)-C(22)	1.545(4)	C(24)-C(25)	1.536(4)
C(24)-C(27)	1.538(4)	C(24)-C(26)	1.544(4)

Table S10. Bond angles (deg) for **8**.

O(2)-Ga(1)-O(1)	99.84(7)	O(2)-Ga(1)-C(1)	107.81(8)
O(1)-Ga(1)-C(1)	107.68(8)	O(2)-Ga(1)-C(5)	107.54(9)
O(1)-Ga(1)-C(5)	106.88(9)	C(1)-Ga(1)-C(5)	124.38(11)
O(4)-Ga(2)-O(3)	100.17(7)	O(4)-Ga(2)-C(16)	108.25(10)
O(3)-Ga(2)-C(16)	104.96(10)	O(4)-Ga(2)-C(20)	107.58(9)
O(3)-Ga(2)-C(20)	108.64(9)	C(16)-Ga(2)-C(20)	124.57(12)
O(2)-P(1)-O(3)	115.02(9)	O(2)-P(1)-O(5)	108.41(9)
O(3)-P(1)-O(5)	109.50(9)	O(2)-P(1)-C(9)	108.20(11)
O(3)-P(1)-C(9)	109.64(11)	O(5)-P(1)-C(9)	105.64(11)
O(4)-P(2)-O(1)	115.24(9)	O(4)-P(2)-O(6)	108.46(9)
O(1)-P(2)-O(6)	109.17(9)	O(4)-P(2)-C(24)	108.18(11)
O(1)-P(2)-C(24)	109.51(10)	O(6)-P(2)-C(24)	105.86(12)
O(6)-Si(1)-C(29)	110.08(12)	O(6)-Si(1)-C(28)	107.14(13)
C(29)-Si(1)-C(28)	111.5(2)	O(6)-Si(1)-C(30)	107.08(12)
C(29)-Si(1)-C(30)	110.4(2)	C(28)-Si(1)-C(30)	110.4(2)
O(5)-Si(2)-C(15)	105.67(11)	O(5)-Si(2)-C(14)	107.73(12)
C(15)-Si(2)-C(14)	110.04(14)	O(5)-Si(2)-C(13)	110.17(12)
C(15)-Si(2)-C(13)	111.8(2)	C(14)-Si(2)-C(13)	111.24(14)
P(2)-O(1)-Ga(1)	145.87(10)	P(1)-O(2)-Ga(1)	160.59(11)
P(1)-O(3)-Ga(2)	145.58(10)	P(2)-O(4)-Ga(2)	161.90(11)
P(1)-O(5)-Si(2)	149.80(12)	P(2)-O(6)-Si(1)	151.23(12)
C(2)-C(1)-C(4)	108.8(2)	C(2)-C(1)-C(3)	108.9(2)
C(4)-C(1)-C(3)	108.8(2)	C(2)-C(1)-Ga(1)	110.0(2)
C(4)-C(1)-Ga(1)	110.0(2)	C(3)-C(1)-Ga(1)	110.3(2)
C(7)-C(5)-C(8)	109.2(2)	C(7)-C(5)-C(6)	108.7(2)
C(8)-C(5)-C(6)	108.2(2)	C(7)-C(5)-Ga(1)	109.2(2)
C(8)-C(5)-Ga(1)	112.3(2)	C(6)-C(5)-Ga(1)	109.1(2)
C(11)-C(9)-C(10)	110.6(3)	C(11)-C(9)-C(12)	109.7(2)
C(10)-C(9)-C(12)	109.5(2)	C(11)-C(9)-P(1)	110.3(2)
C(10)-C(9)-P(1)	108.6(2)	C(12)-C(9)-P(1)	108.2(2)
C(19)-C(16)-C(18)	109.4(3)	C(19)-C(16)-C(17)	108.8(3)
C(18)-C(16)-C(17)	108.9(3)	C(19)-C(16)-Ga(2)	108.5(2)
C(18)-C(16)-Ga(2)	111.7(2)	C(17)-C(16)-Ga(2)	109.4(2)
C(23)-C(20)-C(21)	108.9(2)	C(23)-C(20)-C(22)	109.5(2)
C(21)-C(20)-C(22)	109.1(2)	C(23)-C(20)-Ga(2)	110.0(2)
C(21)-C(20)-Ga(2)	109.2(2)	C(22)-C(20)-Ga(2)	110.1(2)
C(25)-C(24)-C(27)	110.6(2)	C(25)-C(24)-C(26)	109.7(2)
C(27)-C(24)-C(26)	109.1(2)	C(25)-C(24)-P(2)	109.2(2)
C(27)-C(24)-P(2)	110.2(2)	C(26)-C(24)-P(2)	107.9(2)

Table S11. Hydrogen atom coordinates (x 10^4) and isotropic displacement parameters ($Å^2$ x 10^3) for **8**.

	x	y	z	U(eq)
H(2A)	1108(1)	-796(2)	2706(1)	72
H(2B)	976(1)	317(2)	2474(1)	72
H(2C)	669(1)	-549(2)	2598(1)	72
H(3A)	772(1)	-702(2)	4440(2)	76
H(3B)	974(1)	-1432(2)	3906(2)	76
H(3C)	538(1)	-1153(2)	3792(2)	76
H(4A)	571(1)	1078(2)	4065(2)	68
H(4B)	342(1)	592(2)	3424(2)	68
H(4C)	649(1)	1458(2)	3300(2)	68
H(6A)	1881(1)	-820(2)	3011(2)	83
H(6B)	1646(1)	-1536(2)	3505(2)	83
H(6C)	2096(1)	-1542(2)	3556(2)	83
H(7A)	1620(1)	-1137(2)	4776(2)	74
H(7B)	1857(1)	-203(2)	5091(2)	74
H(7C)	2070(1)	-1184(2)	4814(2)	74
H(8A)	2242(1)	684(2)	3508(2)	71
H(8B)	2451(1)	-71(2)	4040(2)	71
H(8C)	2237(1)	910(2)	4317(2)	71
H(10A)	1977(1)	1002(3)	2210(2)	88
H(10B)	2185(1)	1517(3)	1579(2)	88
H(10C)	1736(1)	1392(3)	1553(2)	88
H(11A)	1860(1)	4093(3)	1866(2)	85
H(11B)	1663(1)	3306(3)	1340(2)	85
H(11C)	2112(1)	3430(3)	1366(2)	85
H(12A)	2285(1)	2257(3)	3033(2)	78
H(12B)	2236(1)	3451(3)	2909(2)	78
H(12C)	2494(1)	2797(3)	2414(2)	78
H(13A)	1079(1)	4366(2)	1391(2)	86
H(13B)	767(1)	4400(2)	1967(2)	86
H(13C)	641(1)	4325(2)	1171(2)	86
H(14A)	1235(1)	2398(2)	626(1)	72
H(14B)	803(1)	2268(2)	385(1)	72
H(14C)	1013(1)	1379(2)	806(1)	72
H(15A)	301(1)	2475(3)	2255(2)	79
H(15B)	398(1)	1429(3)	1879(2)	79
H(15C)	187(1)	2319(3)	1458(2)	79
H(17A)	1634(1)	5842(3)	4990(2)	110
H(17B)	1452(1)	6537(3)	4392(2)	110
H(17C)	1889(1)	6644(3)	4598(2)	110
H(18A)	2092(1)	4445(3)	4693(2)	99
H(18B)	2342(1)	5266(3)	4309(2)	99
H(18C)	2200(1)	4267(3)	3909(2)	99
H(19A)	1614(1)	6228(2)	3155(2)	90
H(19B)	1908(1)	5358(2)	2968(2)	90
H(19C)	2050(1)	6356(2)	3367(2)	90
H(21A)	826(1)	5677(2)	4757(2)	84
H(21B)	699(1)	4530(2)	4893(2)	84
H(21C)	403(1)	5330(2)	4573(2)	84

Table S11. (continued)

H(22A)	890(1)	6316(2)	3529(2)	92
H(22B)	466(1)	5968(2)	3359(2)	92
H(22C)	800(1)	5570(2)	2895(2)	92
H(23A)	605(1)	3740(3)	3121(2)	77
H(23B)	269(1)	4148(3)	3574(2)	77
H(23C)	565(1)	3349(3)	3895(2)	77
H(25A)	1660(1)	4057(2)	5800(2)	86
H(25B)	1780(1)	3565(2)	6527(2)	86
H(25C)	1345(1)	3630(2)	6295(2)	86
H(26A)	2051(1)	1638(2)	5309(2)	72
H(26B)	2216(1)	2344(2)	5917(2)	72
H(26C)	2092(1)	2835(2)	5191(2)	72
H(27A)	1555(1)	953(3)	6081(1)	82
H(27B)	1280(1)	1709(3)	6469(1)	82
H(27C)	1715(1)	1644(3)	6701(1)	82
H(28A)	466(1)	3540(3)	6498(2)	92
H(28B)	706(1)	2640(3)	6848(2)	92
H(28C)	256(1)	2574(3)	6806(2)	92
H(29A)	542(1)	421(2)	5357(2)	81
H(29B)	307(1)	494(2)	6044(2)	81
H(29C)	757(1)	560(2)	6087(2)	81
H(30A)	76(1)	3252(3)	5098(2)	89
H(30B)	-145(1)	2269(3)	5351(2)	89
H(30C)	111(1)	2202(3)	4690(2)	89

Table S12. Data collection and refinement parameters for **10**.

Identification code	JDF.085
Empirical formula	$C_{28}H_{72}Ga_2O_8P_2Si_4$
Formula weight	850.60
Temperature	300(2) K
Wavelength	0.71073 Å
Crystal system	Monoclinic
Space group	C2/c
Unit cell dimensions	a = 21.1348(11) Å alpha = 90° b = 12.6241(5) Å beta = 119.2630(10)° c = 20.4695(8) Å gamma = 90°
Volume, Z	4764.5(4) Å^3, 4
Density (calculated)	1.186 mg/m^3
Absorption coefficient	1.334 mm^{-1}
F(000)	1808
Crystal size	0.25 x 0.20 x 0.10 mm
θ range for data collection	1.96 to 28.24°
Limiting indices	$-27 \le h \le 26$, $-16 \le k \le 12$, $-18 \le l \le 27$
Reflections collected	13922
Independent reflections	5609 (R_{int} = 0.0329)
Absorption correction	SADABS
Max. and min. transmission	0.948857 and 0.770206
Refinement method	Full-matrix least-squares on F^2
Data / restraints / parameters	4173 / 0 / 200
Goodness-of-fit on F^2	1.116
Final R indices [I>2σ(I)]	R1 = 0.0375, wR2 = 0.0780
R indices (all data)	R1 = 0.0741, wR2 = 0.0999
Extinction coefficient	0.00015(5)
Largest diff. peak and hole	0.273 and -0.294 eÅ^{-3}

Table S13. Atomic coordinates (x 10^4) and equivalent isotropic displacement parameters ($Å^2$ x 10^3) for **10**.

	x	y	z	U(eq)
Ga(1)	2446(1)	5634(1)	4874(1)	43(1)
P(1)	2733(1)	7640(1)	4033(1)	37(1)
Si(1)	1661(1)	7829(1)	2353(1)	57(1)
Si(2)	4147(1)	7908(1)	4015(1)	53(1)
O(1)	2405(1)	6655(2)	4146(1)	52(1)
O(2)	2077(1)	6510(2)	5392(1)	50(1)
O(3)	3422(1)	7329(2)	3989(1)	52(1)
O(4)	2207(1)	8124(2)	3257(1)	55(1)
C(1)	1636(2)	4651(2)	4260(2)	61(1)
C(2)	1605(3)	3756(3)	4749(3)	113(2)
C(3)	1746(3)	4174(4)	3635(3)	125(2)
C(4)	914(2)	5236(3)	3913(3)	96(1)
C(5)	3480(2)	5249(3)	5566(2)	62(1)
C(6)	3780(2)	4686(4)	5113(2)	107(2)
C(7)	3939(2)	6227(3)	5931(2)	80(1)
C(8)	3520(2)	4514(3)	6184(2)	100(2)
C(9)	1418(3)	9127(3)	1887(2)	115(2)
C(10)	854(2)	7130(4)	2252(2)	99(2)
C(11)	2162(2)	7007(4)	2019(2)	103(2)
C(12)	3918(3)	9295(3)	3710(3)	101(2)
C(13)	4902(2)	7809(4)	4982(2)	100(2)
C(14)	4338(2)	7149(3)	3358(2)	87(1)

U(eq) is defined as one third of the trace of the orthogonalized U_{ij} tensor.

Table S14. Anisotropic displacement parameters ($Å^2 \times 10^3$) for **10**.

	U11	U22	U33	U23	U13	U12
Ga(1)	50(1)	38(1)	48(1)	-3(1)	29(1)	-3(1)
P(1)	36(1)	43(1)	35(1)	1(1)	20(1)	-2(1)
Si(1)	58(1)	70(1)	38(1)	3(1)	19(1)	-2(1)
Si(2)	46(1)	63(1)	61(1)	-1(1)	34(1)	-3(1)
O(1)	54(1)	53(1)	53(1)	2(1)	30(1)	-10(1)
O(2)	51(1)	55(1)	50(1)	-13(1)	30(1)	-7(1)
O(3)	46(1)	53(1)	68(1)	-1(1)	37(1)	1(1)
O(4)	56(1)	63(1)	39(1)	4(1)	18(1)	3(1)
C(1)	77(2)	51(2)	71(2)	-20(2)	48(2)	-22(2)
C(2)	131(4)	76(3)	142(4)	1(3)	76(4)	-40(3)
C(3)	134(4)	145(4)	134(4)	-95(4)	94(4)	-71(4)
C(4)	67(3)	99(3)	103(3)	-21(3)	26(2)	-24(2)
C(5)	63(2)	67(2)	57(2)	4(2)	30(2)	19(2)
C(6)	89(3)	135(4)	94(3)	-5(3)	43(3)	51(3)
C(7)	44(2)	107(3)	75(3)	-1(2)	19(2)	1(2)
C(8)	102(3)	100(3)	84(3)	35(3)	34(3)	28(3)
C(9)	148(5)	100(3)	62(3)	25(2)	24(3)	11(3)
C(10)	64(2)	151(4)	65(3)	-1(3)	18(2)	-26(3)
C(11)	101(3)	122(4)	90(3)	-38(3)	51(3)	-7(3)
C(12)	112(4)	68(3)	160(5)	14(3)	94(4)	-7(2)
C(13)	59(2)	162(4)	72(3)	-5(3)	27(2)	-18(3)
C(14)	75(3)	115(3)	93(3)	-12(3)	59(3)	5(2)

The anisotropic displacement factor exponent takes the form:

$-2\pi^2 [(ha^*)^2 U_{11} + ... + 2hka^*b^* U_{12}]$

Table S15. Bond distances (Å) and angles (deg) for **10**.

Ga(1)-O(2)	1.940(2)	Ga(1)-O(1)	1.941(2)
Ga(1)-C(1)	1.987(3)	Ga(1)-C(5)	1.997(3)
P(1)-O(1)	1.496(2)	P(1)-O(2)#1	1.496(2)
P(1)-O(4)	1.551(2)	P(1)-O(3)	1.552(2)
Si(1)-O(4)	1.675(2)	Si(1)-C(11)	1.835(4)
Si(1)-C(9)	1.838(4)	Si(1)-C(10)	1.840(4)
Si(2)-O(3)	1.676(2)	Si(2)-C(13)	1.842(4)
Si(2)-C(12)	1.843(4)	Si(2)-C(14)	1.848(4)
O(2)-P(1)#1	1.496(2)	C(1)-C(4)	1.524(5)
C(1)-C(3)	1.531(5)	C(1)-C(2)	1.532(5)
C(5)-C(7)	1.522(5)	C(5)-C(6)	1.531(5)
C(5)-C(8)	1.538(5)		

O(2)-Ga(1)-O(1)	99.35(9)	O(2)-Ga(1)-C(1)	104.40(11)
O(1)-Ga(1)-C(1)	103.18(12)	O(2)-Ga(1)-C(5)	110.14(11)
O(1)-Ga(1)-C(5)	109.20(12)	C(1)-Ga(1)-C(5)	127.0(2)
O(1)-P(1)-O(2)#1	116.12(12)	O(1)-P(1)-O(4)	109.33(12)
O(2)#1-P(1)-O(4)	107.84(12)	O(1)-P(1)-O(3)	108.47(11)
O(2)#1-P(1)-O(3)	109.20(11)	O(4)-P(1)-O(3)	105.35(12)
O(4)-Si(1)-C(11)	109.0(2)	O(4)-Si(1)-C(9)	104.0(2)
C(11)-Si(1)-C(9)	112.1(2)	O(4)-Si(1)-C(10)	109.3(2)
C(11)-Si(1)-C(10)	111.0(2)	C(9)-Si(1)-C(10)	111.1(2)
O(3)-Si(2)-C(13)	107.6(2)	O(3)-Si(2)-C(12)	108.6(2)
C(13)-Si(2)-C(12)	112.0(2)	O(3)-Si(2)-C(14)	105.8(2)
C(13)-Si(2)-C(14)	111.4(2)	C(12)-Si(2)-C(14)	111.2(2)
P(1)-O(1)-Ga(1)	145.20(13)	P(1)#1-O(2)-Ga(1)	144.50(13)
P(1)-O(3)-Si(2)	139.20(13)	P(1)-O(4)-Si(1)	143.6(2)
C(4)-C(1)-C(3)	109.1(4)	C(4)-C(1)-C(2)	108.0(3)
C(3)-C(1)-C(2)	109.2(3)	C(4)-C(1)-Ga(1)	110.5(2)
C(3)-C(1)-Ga(1)	109.8(2)	C(2)-C(1)-Ga(1)	110.3(3)
C(7)-C(5)-C(6)	108.7(3)	C(7)-C(5)-C(8)	108.7(3)
C(6)-C(5)-C(8)	110.2(3)	C(7)-C(5)-Ga(1)	111.4(2)
C(6)-C(5)-Ga(1)	108.5(2)	C(8)-C(5)-Ga(1)	109.4(3)

Symmetry transformations used to generate equivalent atoms:

#1 -x+1/2,-y+3/2,-z+1

Table S16. Hydrogen atom coordinates (x 10^4) and isotropic displacement parameters ($Å^2$ x 10^3) for **10**.

	x	y	z	U(eq)
H(2A)	2056(3)	3375(3)	4975(3)	169
H(2B)	1216(3)	3282(3)	4445(3)	169
H(2C)	1524(3)	4050(3)	5134(3)	169
H(3A)	2201(3)	3804(4)	3851(3)	188
H(3B)	1747(3)	4730(4)	3316(3)	188
H(3C)	1359(3)	3688(4)	3347(3)	188
H(4A)	842(2)	5537(3)	4303(3)	144
H(4B)	528(2)	4749(3)	3624(3)	144
H(4C)	916(2)	5791(3)	3593(3)	144
H(6A)	3495(2)	4067(4)	4880(2)	160
H(6B)	4274(2)	4481(4)	5441(2)	160
H(6C)	3761(2)	5156(4)	4735(2)	160
H(7A)	3756(2)	6588(3)	6217(2)	120
H(7B)	3919(2)	6693(3)	5551(2)	120
H(7C)	4433(2)	6018(3)	6256(2)	120
H(8A)	3232(2)	3893(3)	5960(2)	150
H(8B)	3338(2)	4879(3)	6469(2)	150
H(8C)	4015(2)	4310(3)	6508(2)	150
H(9A)	1158(3)	9531(3)	2077(2)	172
H(9B)	1118(3)	9029(3)	1357(2)	172
H(9C)	1851(3)	9500(3)	1984(2)	172
H(10A)	602(2)	7575(4)	2430(2)	149
H(10B)	1001(2)	6488(4)	2540(2)	149
H(10C)	539(2)	6963(4)	1735(2)	149
H(11A)	2278(2)	6339(4)	2275(2)	154
H(11B)	2601(2)	7362(4)	2117(2)	154
H(11C)	1868(2)	6891(4)	1490(2)	154
H(12A)	3524(3)	9314(3)	3205(3)	152
H(12B)	4333(3)	9642(3)	3734(3)	152
H(12C)	3778(3)	9653(3)	4034(3)	152
H(13A)	5005(2)	7077(4)	5119(2)	150
H(13B)	4770(2)	8155(4)	5315(2)	150
H(13C)	5325(2)	8144(4)	5015(2)	150
H(14A)	3937(2)	7215(3)	2860(2)	131
H(14B)	4409(2)	6417(3)	3502(2)	131
H(14C)	4769(2)	7422(3)	3372(2)	131

Table S17. Data collection and refinement parameters for **12**.

Identification code	ash
Empirical formula	$C_{35}H_{80}Ga_3O_{10}P_3Si$
Formula weight	991.15
Temperature	213(2) K
Wavelength	0.71073 Å
Crystal system	Monoclinic
Space group	$P2_1/n$
Unit cell dimensions	a = 12.8965(3) Å alpha = 90° b = 26.7499(7) Å beta = 90.26° c = 14.7946(2) Å gamma = 90°
Volume, Z	5103.8(2) $Å^3$, 4
Density (calculated)	1.290 Mg/m^3
Absorption coefficient	1.733 mm^{-1}
F(000)	2088
Crystal size	0.35 x 0.25 x 0.20 mm
θ range for data collection	1.52 to 28.34°
Limiting indices	$-16 \le h \le 17$, $-19 \le k \le 35$, $-19 \le l \le 19$
Reflections collected	31912
Independent reflections	12128 (R_{int} = 0.0284)
Absorption correction	SADABS
Max. and min. transmission	0.948833 and 0.781704
Refinement method	Full-matrix least-squares on F^2
Data / restraints / parameters	12126 / 82 / 539
Goodness-of-fit on F^2	1.072
Final R indices [I>2σ(I)]	R1 = 0.0389, wR2 = 0.0820
R indices (all data)	R1 = 0.0572, wR2 = 0.0887
Extinction coefficient	0.00021(5)
Largest diff. peak and hole	0.450 and -0.444 $eÅ^{-3}$

Table S18. Atomic coordinates (x 10^4) and equivalent isotropic displacement parameters ($Å^2$ x 10^3) for **12**.

	x	y	z	U(eq)
Ga(1)	2395(1)	682(1)	8043(1)	33(1)
Ga(2)	2876(1)	2158(1)	8061(1)	32(1)
Ga(3)	2622(1)	1406(1)	10900(1)	39(1)
P(1)	4086(1)	1320(1)	9101(1)	34(1)
P(2)	1178(1)	1511(1)	9113(1)	33(1)
P(3)	2664(1)	1410(1)	6371(1)	38(1)
Si(1)	4796(1)	1097(1)	5554(1)	54(1)
O(1)	2148(2)	1009(1)	6930(1)	49(1)
O(2)	1423(1)	985(1)	8780(1)	42(1)
O(3)	3671(1)	945(1)	8399(1)	41(1)
O(4)	3050(2)	1849(1)	6922(1)	42(1)
O(5)	1617(1)	1903(1)	8462(1)	40(1)
O(6)	3875(1)	1854(1)	8780(1)	43(1)
O(7)	1540(2)	1593(1)	10073(1)	46(1)
O(8)	3664(2)	1222(1)	10033(1)	48(1)
O(9)	3565(2)	1172(1)	5844(2)	68(1)
C(1)	2288(2)	-47(1)	7901(2)	47(1)
C(2)	2307(13)	-324(3)	8781(6)	130(7)
C(3)	3125(7)	-226(3)	7283(7)	90(4)
C(4)	1250(6)	-157(3)	7420(8)	96(4)
C(2')	3299(11)	-277(4)	8274(13)	131(9)
C(3')	2199(13)	-182(4)	6937(6)	104(7)
C(4')	1409(12)	-227(4)	8440(12)	129(8)
C(5)	2998(2)	2889(1)	7933(2)	45(1)
C(6)	3001(12)	3039(3)	6964(5)	107(5)
C(7)	3995(7)	3062(2)	8388(8)	97(5)
C(8)	2083(7)	3131(3)	8406(8)	97(4)
C(6')	4044(16)	2997(6)	7501(22)	153(16)
C(7')	2923(25)	3170(5)	8791(10)	130(15)
C(8')	2176(20)	3057(6)	7276(19)	146(16)
C(9)	2276(3)	767(1)	11519(2)	57(1)
C(10)	3244(4)	574(2)	12004(4)	112(2)
C(11)	1402(4)	853(2)	12184(3)	114(2)
C(12)	1948(4)	374(1)	10843(3)	91(1)
C(13)	2996(3)	2044(1)	11516(2)	53(1)
C(14)	2084(4)	2208(2)	12107(3)	91(1)
C(15)	3186(3)	2453(1)	10820(3)	72(1)
C(16)	3975(4)	1978(2)	12091(3)	102(2)
C(17)	5479(2)	1238(1)	9159(2)	50(1)
C(18)	5899(3)	1563(2)	9934(3)	91(2)
C(19)	5706(3)	687(2)	9341(3)	84(1)
C(20)	5963(3)	1394(2)	8270(3)	87(1)
C(21)	-219(2)	1577(1)	9103(2)	42(1)
C(22)	-631(2)	1511(2)	8141(2)	68(1)
C(23)	-504(3)	2098(1)	9449(3)	68(1)
C(24)	-678(3)	1177(2)	9726(3)	73(1)
C(25)	1769(2)	1621(1)	5518(2)	48(1)
C(26)	2305(3)	2016(1)	4927(2)	73(1)

Table S18. (continued)

C(27)	1444(3)	1176(2)	4922(2)	71(1)
C(28)	820(3)	1846(2)	5977(2)	70(1)
C(29)	5214(4)	537(2)	6179(4)	104(2)
C(30)	4786(4)	982(2)	4322(3)	95(1)
C(31)	5510(3)	1674(2)	5840(3)	82(1)
O(1S)	8220(7)	956(3)	6091(7)	279(4)
C(1S)	7968(16)	834(7)	5147(11)	228(6)
C(2S)	7817(16)	246(7)	5289(10)	205(5)
C(3S)	8419(26)	121(6)	5818(17)	190(9)
C(4S)	8914(26)	539(8)	6328(12)	205(6)
C(1S')	7629(17)	670(8)	5361(13)	228(6)
C(2S')	8785(17)	465(9)	5151(11)	205(5)
C(3S')	9007(24)	207(8)	5819(18)	190(9)
C(4S')	8682(32)	539(10)	6608(13)	205(6)

U(eq) is defined as one third of the trace of the orthogonalized U_{ij} tensor.

Table S19. Anisotropic displacement parameters ($Å^2 \times 10^3$) for **12**.

	U11	U22	U33	U23	U13	U12
Ga(1)	40(1)	24(1)	35(1)	1(1)	-1(1)	-1(1)
Ga(2)	36(1)	25(1)	35(1)	2(1)	3(1)	-2(1)
Ga(3)	47(1)	40(1)	29(1)	1(1)	0(1)	-1(1)
P(1)	30(1)	34(1)	39(1)	1(1)	-2(1)	2(1)
P(2)	30(1)	33(1)	36(1)	2(1)	3(1)	0(1)
P(3)	48(1)	34(1)	32(1)	0(1)	3(1)	2(1)
Si(1)	57(1)	48(1)	58(1)	0(1)	10(1)	9(1)
O(1)	71(1)	36(1)	39(1)	7(1)	-12(1)	-10(1)
O(2)	39(1)	33(1)	53(1)	-1(1)	8(1)	0(1)
O(3)	36(1)	37(1)	49(1)	-4(1)	-2(1)	-1(1)
O(4)	55(1)	36(1)	35(1)	0(1)	6(1)	-8(1)
O(5)	35(1)	38(1)	48(1)	8(1)	7(1)	-2(1)
O(6)	42(1)	33(1)	53(1)	3(1)	-9(1)	-1(1)
O(7)	45(1)	54(1)	39(1)	-1(1)	-3(1)	1(1)
O(8)	49(1)	51(1)	44(1)	3(1)	5(1)	6(1)
O(9)	58(1)	80(2)	67(2)	-25(1)	10(1)	11(1)
C(1)	66(2)	27(1)	49(2)	1(1)	3(1)	-5(1)
C(2)	289(23)	29(4)	71(5)	13(4)	9(9)	0(8)
C(3)	101(7)	41(4)	128(10)	-28(4)	40(7)	3(4)
C(4)	77(5)	62(5)	147(11)	-38(5)	-4(6)	-26(4)
C(2')	146(13)	31(5)	215(24)	2(8)	-98(14)	25(6)
C(3')	197(22)	40(5)	73(7)	-11(5)	-27(9)	-5(7)
C(4')	173(15)	48(7)	165(20)	-8(9)	69(14)	-57(9)
C(5)	56(2)	29(1)	51(2)	3(1)	4(1)	-3(1)
C(6)	226(16)	39(3)	56(4)	16(3)	5(6)	-24(6)
C(7)	98(7)	44(3)	148(10)	9(5)	-28(7)	-37(4)
C(8)	108(6)	36(3)	148(11)	-2(4)	40(6)	19(4)
C(6')	170(22)	71(11)	220(39)	24(15)	105(25)	-44(12)
C(7')	277(48)	28(6)	87(11)	-9(6)	23(16)	-16(12)
C(8')	187(24)	37(7)	212(35)	50(13)	-130(24)	-21(12)
C(9)	76(2)	52(2)	44(2)	13(2)	1(2)	-6(2)
C(10)	127(4)	90(3)	118(4)	57(3)	-45(3)	-9(3)
C(11)	146(5)	90(3)	106(4)	29(3)	66(3)	-13(3)
C(12)	143(4)	45(2)	85(3)	15(2)	-17(3)	-23(2)
C(13)	67(2)	50(2)	43(2)	-12(1)	-6(1)	-1(2)
C(14)	126(4)	73(3)	76(3)	-27(2)	36(3)	-3(3)
C(15)	98(3)	47(2)	71(2)	-11(2)	6(2)	-15(2)
C(16)	119(4)	82(3)	103(3)	-35(3)	-62(3)	7(3)
C(17)	35(2)	62(2)	52(2)	-5(2)	-6(1)	5(1)
C(18)	45(2)	124(4)	103(3)	-41(3)	-27(2)	3(2)
C(19)	64(2)	80(3)	109(3)	2(2)	-18(2)	37(2)
C(20)	41(2)	134(4)	86(3)	8(3)	14(2)	-7(2)
C(21)	32(1)	51(2)	44(2)	4(1)	6(1)	1(1)
C(22)	38(2)	100(3)	65(2)	-2(2)	-10(2)	4(2)
C(23)	52(2)	69(2)	84(3)	-7(2)	15(2)	21(2)
C(24)	42(2)	86(3)	90(3)	26(2)	18(2)	-8(2)
C(25)	60(2)	44(2)	39(2)	5(1)	-4(1)	2(1)
C(26)	101(3)	67(2)	50(2)	25(2)	1(2)	-4(2)

Table S19. (continued)

C(27)	89(3)	74(3)	50(2)	-7(2)	-17(2)	-5(2)
C(28)	60(2)	86(3)	63(2)	4(2)	-3(2)	16(2)
C(29)	102(4)	63(3)	148(5)	20(3)	-11(3)	13(2)
C(30)	111(4)	104(4)	69(3)	-18(3)	30(2)	10(3)
C(31)	92(3)	64(2)	91(3)	17(2)	-3(2)	-14(2)
O(1S)	320(10)	165(5)	351(10)	-8(6)	-111(8)	42(6)
C(1S)	232(11)	262(11)	189(9)	169(8)	-71(8)	-66(10)
C(2S)	250(12)	258(11)	104(6)	29(6)	-39(7)	-88(10)
C(3S)	310(26)	103(6)	158(8)	-5(6)	-41(14)	-17(11)
C(4S)	395(14)	96(5)	122(8)	-17(7)	-97(9)	14(7)
C(1S')	232(11)	262(11)	189(9)	169(8)	-71(8)	-66(10)
C(2S')	250(12)	258(11)	104(6)	29(6)	-39(7)	-88(10)
C(3S')	310(26)	103(6)	158(8)	-5(6)	-41(14)	-17(11)
C(4S')	395(14)	96(5)	122(8)	-17(7)	-97(9)	14(7)

The anisotropic displacement factor exponent takes the form:

$-2\pi^2 [(ha^*)^2 U_{11} + ... + 2hka^*b^*U_{12}]$

Table S20. Bond distances (Å) for **12**.

Ga(1)-O(2)	1.852(2)	Ga(1)-O(3)	1.862(2)
Ga(1)-O(1)	1.890(2)	Ga(1)-C(1)	1.967(3)
Ga(2)-O(6)	1.855(2)	Ga(2)-O(5)	1.862(2)
Ga(2)-O(4)	1.891(2)	Ga(2)-C(5)	1.970(3)
Ga(3)-O(7)	1.917(2)	Ga(3)-O(8)	1.925(2)
Ga(3)-C(9)	1.991(3)	Ga(3)-C(13)	1.992(3)
P(1)-O(8)	1.508(2)	P(1)-O(6)	1.530(2)
P(1)-O(3)	1.539(2)	P(1)-C(17)	1.811(3)
P(2)-O(7)	1.509(2)	P(2)-O(2)	1.526(2)
P(2)-O(5)	1.532(2)	P(2)-C(21)	1.810(3)
P(3)-O(1)	1.512(2)	P(3)-O(4)	1.512(2)
P(3)-O(9)	1.540(2)	P(3)-C(25)	1.797(3)
Si(1)-O(9)	1.659(2)	Si(1)-C(29)	1.842(4)
Si(1)-C(31)	1.844(4)	Si(1)-C(30)	1.848(4)
C(1)-C(4')	1.469(11)	C(1)-C(3')	1.474(9)
C(1)-C(3)	1.497(7)	C(1)-C(2)	1.499(8)
C(1)-C(4)	1.541(8)	C(1)-C(2')	1.542(10)
C(5)-C(7')	1.479(12)	C(5)-C(6)	1.488(7)
C(5)-C(8')	1.504(13)	C(5)-C(8)	1.521(7)
C(5)-C(7)	1.521(7)	C(5)-C(6')	1.522(13)
C(9)-C(12)	1.511(5)	C(9)-C(11)	1.517(5)
C(9)-C(10)	1.527(5)	C(13)-C(15)	1.523(5)
C(13)-C(16)	1.530(5)	C(13)-C(14)	1.533(5)
C(17)-C(20)	1.517(5)	C(17)-C(19)	1.526(5)
C(17)-C(18)	1.536(5)	C(21)-C(22)	1.527(4)
C(21)-C(23)	1.528(4)	C(21)-C(24)	1.533(4)
C(25)-C(28)	1.526(4)	C(25)-C(26)	1.538(4)
C(25)-C(27)	1.539(5)	O(1S)-C(1S)	1.47(2)
O(1S)-C(4S)	1.47(2)	O(1S)-C(4S')	1.48(2)
O(1S)-C(1S')	1.52(2)	C(1S)-C(2S)	1.60(2)
C(2S)-C(3S)	1.15(2)	C(3S)-C(4S)	1.49(2)
C(1S')-C(2S')	1.62(2)	C(2S')-C(3S')	1.24(2)
C(3S')-C(4S')	1.53(3)		

Table S21. Bond angles (deg) for **12**.

O(2)-Ga(1)-O(3)	105.54(8)	O(2)-Ga(1)-O(1)	101.41(9)
O(3)-Ga(1)-O(1)	102.53(9)	O(2)-Ga(1)-C(1)	116.68(11)
O(3)-Ga(1)-C(1)	117.83(11)	O(1)-Ga(1)-C(1)	110.75(10)
O(6)-Ga(2)-O(5)	105.11(8)	O(6)-Ga(2)-O(4)	103.56(9)
O(5)-Ga(2)-O(4)	103.32(8)	O(6)-Ga(2)-C(5)	115.79(11)
O(5)-Ga(2)-C(5)	117.73(10)	O(4)-Ga(2)-C(5)	109.74(10)
O(7)-Ga(3)-O(8)	98.64(8)	O(7)-Ga(3)-C(9)	110.70(12)
O(8)-Ga(3)-C(9)	104.23(12)	O(7)-Ga(3)-C(13)	104.05(11)
O(8)-Ga(3)-C(13)	110.78(12)	C(9)-Ga(3)-C(13)	125.36(14)
O(8)-P(1)-O(6)	112.37(12)	O(8)-P(1)-O(3)	112.26(11)
O(6)-P(1)-O(3)	109.75(11)	O(8)-P(1)-C(17)	107.37(13)
O(6)-P(1)-C(17)	107.61(13)	O(3)-P(1)-C(17)	107.20(13)
O(7)-P(2)-O(2)	111.92(12)	O(7)-P(2)-O(5)	112.31(11)
O(2)-P(2)-O(5)	110.52(11)	O(7)-P(2)-C(21)	107.26(12)
O(2)-P(2)-C(21)	107.14(12)	O(5)-P(2)-C(21)	107.38(12)
O(1)-P(3)-O(4)	113.68(11)	O(1)-P(3)-O(9)	108.54(14)
O(4)-P(3)-O(9)	110.33(13)	O(1)-P(3)-C(25)	108.92(13)
O(4)-P(3)-C(25)	110.06(13)	O(9)-P(3)-C(25)	104.93(14)
O(9)-Si(1)-C(29)	104.2(2)	O(9)-Si(1)-C(31)	108.5(2)
C(29)-Si(1)-C(31)	114.9(2)	O(9)-Si(1)-C(30)	105.9(2)
C(29)-Si(1)-C(30)	111.1(2)	C(31)-Si(1)-C(30)	111.6(2)
P(3)-O(1)-Ga(1)	137.06(13)	P(2)-O(2)-Ga(1)	137.33(12)
P(1)-O(3)-Ga(1)	137.87(12)	P(3)-O(4)-Ga(2)	141.20(12)
P(2)-O(5)-Ga(2)	140.90(12)	P(1)-O(6)-Ga(2)	135.26(12)
P(2)-O(7)-Ga(3)	141.61(13)	P(1)-O(8)-Ga(3)	145.19(13)
P(3)-O(9)-Si(1)	154.9(2)	C(4')-C(1)-C(3')	112.9(8)
C(3)-C(1)-C(2)	111.3(6)	C(3)-C(1)-C(4)	106.6(5)
C(2)-C(1)-C(4)	108.6(7)	C(4')-C(1)-C(2')	109.1(8)
C(3')-C(1)-C(2')	108.1(8)	C(4')-C(1)-Ga(1)	108.8(5)
C(3')-C(1)-Ga(1)	110.5(4)	C(3)-C(1)-Ga(1)	109.4(3)
C(2)-C(1)-Ga(1)	113.4(4)	C(4)-C(1)-Ga(1)	107.4(3)
C(2')-C(1)-Ga(1)	107.3(4)	C(7')-C(5)-C(8')	110.7(10)
C(6)-C(5)-C(8)	109.5(5)	C(6)-C(5)-C(7)	109.8(5)
C(8)-C(5)-C(7)	108.8(5)	C(7')-C(5)-C(6')	109.0(10)
C(8')-C(5)-C(6')	107.3(10)	C(7')-C(5)-Ga(2)	114.6(6)
C(6)-C(5)-Ga(2)	111.1(3)	C(8')-C(5)-Ga(2)	107.6(6)
C(8)-C(5)-Ga(2)	108.4(3)	C(7)-C(5)-Ga(2)	109.1(3)
C(6')-C(5)-Ga(2)	107.4(7)	C(12)-C(9)-C(11)	109.1(4)
C(12)-C(9)-C(10)	107.6(4)	C(11)-C(9)-C(10)	110.8(4)
C(12)-C(9)-Ga(3)	110.8(2)	C(11)-C(9)-Ga(3)	109.7(3)
C(10)-C(9)-Ga(3)	108.8(3)	C(15)-C(13)-C(16)	108.9(3)
C(15)-C(13)-C(14)	107.8(3)	C(16)-C(13)-C(14)	110.4(3)
C(15)-C(13)-Ga(3)	110.2(2)	C(16)-C(13)-Ga(3)	110.7(2)
C(14)-C(13)-Ga(3)	108.8(3)	C(20)-C(17)-C(19)	109.9(3)
C(20)-C(17)-C(18)	110.3(3)	C(19)-C(17)-C(18)	110.3(3)
C(20)-C(17)-P(1)	109.8(2)	C(19)-C(17)-P(1)	108.3(2)
C(18)-C(17)-P(1)	108.3(2)	C(22)-C(21)-C(23)	109.5(3)
C(22)-C(21)-C(24)	110.2(3)	C(23)-C(21)-C(24)	109.9(3)
C(22)-C(21)-P(2)	109.7(2)	C(23)-C(21)-P(2)	109.1(2)
C(24)-C(21)-P(2)	108.4(2)	C(28)-C(25)-C(26)	110.2(3)
C(28)-C(25)-C(27)	110.0(3)	C(26)-C(25)-C(27)	109.2(3)
C(28)-C(25)-P(3)	109.0(2)	C(26)-C(25)-P(3)	109.1(2)
C(27)-C(25)-P(3)	109.4(2)	C(1S)-O(1S)-C(4S)	100.9(11)

Table S21. (continued)

C(4S')-O(1S)-C(1S')	100.8(13)	O(1S)-C(1S)-C(2S)	96.9(10)
C(3S)-C(2S)-C(1S)	107(2)	C(2S)-C(3S)-C(4S)	114(2)
O(1S)-C(4S)-C(3S)	101(2)	O(1S)-C(1S')-C(2S')	81.2(12)
C(3S')-C(2S')-C(1S')	104(2)	C(2S')-C(3S')-C(4S')	103(2)
O(1S)-C(4S')-C(3S')	98.9(13)		

Table S22. Hydrogen atom coordinates (x 10^4) and isotropic displacement parameters ($Å^2$ x 10^3) for **12**.

	x	y	z	U(eq)
H(2A)	1757(13)	-201(3)	9167(6)	194
H(2B)	2971(13)	-273(3)	9077(6)	194
H(2C)	2205(13)	-678(3)	8670(6)	194
H(3A)	3094(7)	-41(3)	6720(7)	135
H(3B)	3029(7)	-580(3)	7161(7)	135
H(3C)	3796(7)	-174(3)	7568(7)	135
H(4A)	682(6)	-47(3)	7798(8)	143
H(4B)	1189(6)	-513(3)	7312(8)	143
H(4C)	1227(6)	20(3)	6848(8)	143
H(2'A)	3881(11)	-159(4)	7921(13)	196
H(2'B)	3260(11)	-639(4)	8237(13)	196
H(2'C)	3392(11)	-178(4)	8900(13)	196
H(3'A)	2796(13)	-54(4)	6614(6)	156
H(3'B)	1572(13)	-36(4)	6686(6)	156
H(3'C)	2171(13)	-542(4)	6877(6)	156
H(4'A)	1506(12)	-130(4)	9066(12)	193
H(4'B)	1371(12)	-589(4)	8400(12)	193
H(4'C)	771(12)	-83(4)	8209(12)	193
H(6A)	3585(12)	2884(3)	6662(5)	161
H(6B)	3059(12)	3399(3)	6920(5)	161
H(6C)	2361(12)	2930(3)	6679(5)	161
H(7A)	3990(7)	2964(2)	9019(8)	145
H(7B)	4047(7)	3423(2)	8346(8)	145
H(7C)	4585(7)	2910(2)	8090(8)	145
H(8A)	2082(7)	3034(3)	9038(8)	145
H(8B)	1443(7)	3023(3)	8121(8)	145
H(8C)	2141(7)	3492(3)	8362(8)	145
H(6'A)	4099(16)	2813(6)	6938(22)	230
H(6'B)	4595(16)	2893(6)	7908(22)	230
H(6'C)	4105(16)	3352(6)	7382(22)	230
H(7'A)	3459(25)	3057(5)	9205(10)	196
H(7'B)	2247(25)	3114(5)	9057(10)	196
H(7'C)	3013(25)	3524(5)	8672(10)	196
H(8'A)	2238(20)	2869(6)	6719(19)	219
H(8'B)	2262(20)	3410(6)	7151(19)	219
H(8'C)	1496(20)	3000(6)	7536(19)	219
H(10A)	3474(4)	820(2)	12445(4)	168
H(10B)	3790(4)	517(2)	11567(4)	168
H(10C)	3084(4)	263(2)	12310(4)	168
H(11A)	1609(4)	1105(2)	12620(3)	171
H(11B)	1249(4)	543(2)	12496(3)	171
H(11C)	789(4)	965(2)	11860(3)	171
H(12A)	2504(4)	318(1)	10416(3)	137
H(12B)	1334(4)	487(1)	10521(3)	137
H(12C)	1794(4)	65(1)	11157(3)	137
H(14A)	1947(4)	1953(2)	12558(3)	137
H(14B)	1473(4)	2255(2)	11732(3)	137
H(14C)	2256(4)	2520(2)	12407(3)	137
H(15A)	2568(3)	2497(1)	10452(3)	108
H(15B)	3762(3)	2359(1)	10438(3)	108

Table S22. (continued)

H(15C)	3347(3)	2764(1)	11128(3)	108
H(16A)	3861(4)	1718(2)	12537(3)	152
H(16B)	4135(4)	2290(2)	12397(3)	152
H(16C)	4550(4)	1885(2)	11706(3)	152
H(18A)	5584(3)	1459(2)	10498(3)	136
H(18B)	5733(3)	1911(2)	9818(3)	136
H(18C)	6645(3)	1524(2)	9977(3)	136
H(19A)	5395(3)	589(2)	9910(3)	126
H(19B)	6450(3)	636(2)	9373(3)	126
H(19C)	5418(3)	485(2)	8856(3)	126
H(20A)	5816(3)	1744(2)	8158(3)	130
H(20B)	5675(3)	1194(2)	7783(3)	130
H(20C)	6708(3)	1344(2)	8300(3)	130
H(22A)	-449(2)	1181(2)	7923(2)	102
H(22B)	-326(2)	1762(2)	7752(2)	102
H(22C)	-1379(2)	1548(2)	8139(2)	102
H(23A)	-243(3)	2139(1)	10060(3)	102
H(23B)	-1253(3)	2135(1)	9447(3)	102
H(23C)	-199(3)	2349(1)	9060(3)	102
H(24A)	-412(3)	1223(2)	10335(3)	109
H(24B)	-487(3)	848(2)	9508(3)	109
H(24C)	-1428(3)	1208(2)	9730(3)	109
H(26A)	2907(3)	1869(1)	4639(2)	109
H(26B)	2522(3)	2295(1)	5301(2)	109
H(26C)	1825(3)	2133(1)	4467(2)	109
H(27A)	2052(3)	1035(2)	4634(2)	107
H(27B)	958(3)	1289(2)	4464(2)	107
H(27C)	1117(3)	923(2)	5295(2)	107
H(28A)	489(3)	1593(2)	6347(2)	104
H(28B)	335(3)	1962(2)	5520(2)	104
H(28C)	1032(3)	2125(2)	6354(2)	104
H(29A)	4801(4)	252(2)	5988(4)	157
H(29B)	5122(4)	591(2)	6822(4)	157
H(29C)	5940(4)	471(2)	6056(4)	157
H(30A)	4564(4)	1282(2)	4009(3)	142
H(30B)	4311(4)	711(2)	4184(3)	142
H(30C)	5478(4)	892(2)	4126(3)	142
H(31A)	5242(3)	1949(2)	5482(3)	123
H(31B)	6241(3)	1628(2)	5712(3)	123
H(31C)	5423(3)	1747(2)	6477(3)	123
H(1SA)	8539(16)	911(7)	4735(11)	273
H(1SB)	7331(16)	998(7)	4939(11)	273
H(2SA)	7114(16)	175(7)	5502(10)	245
H(2SB)	7925(16)	68(7)	4718(10)	245
H(3SA)	8963(26)	-70(6)	5513(17)	229
H(3SB)	8081(26)	-103(6)	6250(17)	229
H(4SA)	8918(26)	475(8)	6980(12)	246
H(4SB)	9624(26)	600(8)	6124(12)	246
H(1SC)	7321(17)	878(8)	4885(13)	273
H(1SD)	7142(17)	418(8)	5586(13)	273
H(2SC)	8790(17)	264(9)	4598(11)	245
H(2SD)	9274(17)	743(9)	5084(11)	245
H(3SC)	9752(24)	135(8)	5842(18)	229
H(3SD)	8621(24)	-108(8)	5817(18)	229
H(4SC)	8173(32)	374(10)	6997(13)	246
H(4SD)	9278(32)	647(10)	6972(13)	246

Table S23. Data collection and refinement parameters for **14**.

Identification code	RMM.211
Empirical formula	$C_{32}H_{72}Ga_4O_{12}P_4$
Formula weight	1051.66
Temperature	293(2) K
Wavelength	0.71073 Å
Crystal system	Triclinic
Space group	P1
Unit cell dimensions	a = 10.6709(7) Å alpha = 69.5720(10)° b = 10.9726(7) Å beta = 72.2260(10)° c = 11.9742(8) Å gamma = 84.4980(10)°
Volume, Z	1251.06(14) $Å^3$, 1
Density (calculated)	1.396 Mg/m^3
Absorption coefficient	2.305 mm^{-1}
F(000)	544
Crystal size	0.45 x 0.25 x 0.15 mm
θ range for data collection	1.90 to 23.28°
Limiting indices	$-11 \le h \le 11$, $-11 \le k \le 12$, $-12 \le l \le 13$
Reflections collected	5472
Independent reflections	4341 (R_{int} = 0.0163)
Absorption correction	SADABS
Max. and min. transmission	0.694347 and 0.377582
Refinement method	Full-matrix least-squares on F^2
Data / restraints / parameters	4341 / 267 / 471
Goodness-of-fit on F^2	1.010
Final R indices [I>2σ(I)]	R1 = 0.0368, wR2 = 0.1008
R indices (all data)	R1 = 0.0424, wR2 = 0.1060
Absolute structure parameter	0.58(6)
Extinction coefficient	0.0124(11)
Largest diff. peak and hole	0.478 and -0.421 $eÅ^{-3}$

Table S24. Atomic coordinates (x 10^4) and equivalent isotropic displacement parameters ($Å^2$ x 10^3) for **14**.

	x	y	z	U(eq)
Ga(1)	2200(1)	6536(1)	2625(1)	30(1)
Ga(2)	-938(1)	7236(1)	3177(1)	30(1)
Ga(3)	2938(1)	9581(1)	1809(1)	31(1)
Ga(4)	2026(1)	6153(1)	5460(1)	30(1)
Ga(5)	-203(1)	10296(1)	2359(1)	30(1)
Ga(6)	-1124(1)	6868(1)	6011(1)	30(1)
Ga(7)	2750(1)	9198(1)	4648(1)	30(1)
Ga(8)	-385(1)	9910(1)	5194(1)	31(1)
P(1)	2200(1)	6536(1)	2625(1)	30(1)
P(2)	-938(1)	7236(1)	3177(1)	30(1)
P(3)	2938(1)	9581(1)	1809(1)	31(1)
P(4)	2026(1)	6153(1)	5460(1)	30(1)
P(5)	-203(1)	10296(1)	2359(1)	30(1)
P(6)	-1124(1)	6868(1)	6011(1)	30(1)
P(7)	2750(1)	9198(1)	4648(1)	30(1)
P(8)	-385(1)	9910(1)	5194(1)	31(1)
O(1)	2310(10)	5965(9)	4062(9)	76(3)
O(2)	2868(10)	8041(8)	1935(9)	82(3)
O(3)	3198(10)	9649(10)	3069(8)	75(3)
O(4)	2675(10)	7621(9)	5185(10)	81(3)
O(5)	-1035(8)	8922(8)	2745(8)	51(2)
O(6)	-316(10)	10591(8)	3664(9)	64(2)
O(7)	-1229(8)	8495(9)	5768(8)	52(2)
O(8)	-1315(10)	6644(9)	4718(9)	67(3)
O(9)	1202(9)	9750(10)	5057(10)	83(3)
O(10)	406(10)	6418(9)	6053(9)	62(2)
O(11)	626(9)	6930(9)	2539(8)	60(2)
O(12)	1413(10)	10155(9)	1752(9)	71(3)
C(1)	2950(13)	5463(12)	1769(10)	46(3)
C(2)	2164(16)	4190(14)	2380(17)	85(5)
C(3)	2821(17)	6056(19)	409(13)	96(6)
C(4)	4323(15)	5192(14)	1752(14)	79(4)
C(5)	-2037(13)	6654(12)	2575(12)	52(3)
C(6)	-2161(18)	5146(13)	3165(19)	100(6)
C(7)	-1612(14)	7103(18)	1182(13)	89(5)
C(8)	-3447(15)	7142(15)	2994(18)	87(5)
C(9)	4201(11)	10544(12)	339(10)	43(3)
C(10)	5577(14)	9958(14)	350(15)	81(4)
C(11)	4204(14)	11953(13)	272(15)	83(4)
C(12)	3836(17)	10516(20)	-757(14)	114(7)
C(13)	2692(12)	4804(12)	6542(11)	47(3)
C(14)	2464(18)	5096(13)	7737(12)	79(5)
C(15)	4158(13)	4677(15)	5864(16)	98(5)
C(16)	1930(15)	3554(13)	6859(14)	71(4)
C(17)	-842(12)	11701(12)	1247(10)	45(3)
C(18)	-792(16)	11375(17)	81(13)	80(4)
C(19)	-2288(13)	11953(13)	1819(12)	63(3)
C(20)	-46(17)	12929(12)	932(17)	88(6)

Table S24. (continued)

C(21)	-2405(14)	5991(12)	7438(12)	51(3)
C(22)	-3666(15)	6600(21)	7424(17)	130(8)
C(23)	-2442(19)	4591(14)	7478(14)	125(8)
C(24)	-2030(18)	6031(15)	8587(12)	93(6)
C(25)	3930(11)	9922(12)	5169(11)	42(3)
C(26)	3966(14)	11390(13)	4543(17)	87(5)
C(27)	3414(18)	9541(20)	6627(13)	108(6)
C(28)	5266(11)	9329(12)	4773(11)	54(3)
C(29)	-1155(12)	11075(13)	6088(12)	51(3)
C(30)	-487(17)	12435(14)	5320(17)	86(5)
C(31)	-1083(20)	10565(19)	7389(15)	102(6)
C(32)	-2646(12)	11240(16)	6133(16)	85(5)

U(eq) is defined as one third of the trace of the orthogonalized U_{ij} tensor.

Table S25. Anisotropic displacement parameters ($Å^2 \times 10^3$) for 14.

	U11	U22	U33	U23	U13	U12
Ga(1)	33(1)	30(1)	30(1)	-14(1)	-7(1)	0(1)
Ga(2)	35(1)	30(1)	28(1)	-12(1)	-10(1)	-2(1)
Ga(3)	33(1)	26(1)	29(1)	-6(1)	-6(1)	-5(1)
Ga(4)	34(1)	28(1)	27(1)	-7(1)	-10(1)	-2(1)
Ga(5)	34(1)	29(1)	27(1)	-7(1)	-7(1)	-3(1)
Ga(6)	33(1)	33(1)	23(1)	-8(1)	-7(1)	-3(1)
Ga(7)	33(1)	30(1)	28(1)	-10(1)	-9(1)	-3(1)
Ga(8)	33(1)	32(1)	28(1)	-13(1)	-8(1)	-1(1)
P(1)	33(1)	30(1)	30(1)	-14(1)	-7(1)	0(1)
P(2)	35(1)	30(1)	28(1)	-12(1)	-10(1)	-2(1)
P(3)	33(1)	26(1)	29(1)	-6(1)	-6(1)	-5(1)
P(4)	34(1)	28(1)	27(1)	-7(1)	-10(1)	-2(1)
P(5)	34(1)	29(1)	27(1)	-7(1)	-7(1)	-3(1)
P(6)	33(1)	33(1)	23(1)	-8(1)	-7(1)	-3(1)
P(7)	33(1)	30(1)	28(1)	-10(1)	-9(1)	-3(1)
P(8)	33(1)	32(1)	28(1)	-13(1)	-8(1)	-1(1)
O(1)	109(7)	66(6)	63(5)	-33(4)	-40(5)	58(5)
O(2)	99(7)	52(5)	68(5)	-23(4)	24(5)	-20(4)
O(3)	70(6)	101(7)	49(5)	-10(4)	-11(4)	-58(5)
O(4)	103(7)	64(5)	93(6)	-4(4)	-72(5)	-18(5)
O(5)	49(4)	42(4)	58(4)	-9(3)	-20(3)	5(3)
O(6)	87(6)	34(4)	66(5)	-8(3)	-23(4)	-1(4)
O(7)	38(4)	71(5)	44(4)	-25(3)	0(3)	1(3)
O(8)	72(6)	58(5)	69(6)	-22(4)	-14(5)	-17(4)
O(9)	52(5)	116(7)	136(8)	-104(7)	-40(5)	24(4)
O(10)	58(6)	54(5)	52(5)	-4(4)	-4(4)	7(4)
O(11)	70(5)	61(4)	51(4)	-24(3)	-14(3)	-1(3)
O(12)	52(6)	66(6)	54(5)	22(4)	-9(4)	3(4)
C(1)	50(7)	58(7)	38(6)	-17(5)	-19(5)	-9(5)
C(2)	76(9)	63(8)	134(13)	-75(9)	-2(8)	-7(6)
C(3)	97(11)	167(15)	61(9)	-85(10)	-32(8)	37(10)
C(4)	84(10)	79(9)	83(9)	-57(8)	-2(7)	-4(7)
C(5)	60(8)	44(6)	51(7)	-20(5)	-11(6)	9(5)
C(6)	143(14)	37(7)	173(15)	-47(8)	-117(12)	32(7)
C(7)	72(9)	171(14)	76(9)	-87(9)	-47(7)	18(8)
C(8)	68(10)	70(10)	147(14)	-52(9)	-57(10)	32(7)
C(9)	34(6)	56(7)	31(6)	-10(5)	-6(5)	6(5)
C(10)	48(8)	82(9)	105(11)	-17(8)	-29(8)	9(6)
C(11)	84(9)	59(8)	91(10)	-17(7)	-20(8)	6(6)
C(12)	83(11)	220(19)	41(8)	-47(9)	-18(8)	9(11)
C(13)	44(7)	44(7)	49(7)	-8(6)	-17(6)	1(5)
C(14)	141(13)	60(8)	47(7)	1(6)	-63(8)	-4(7)
C(15)	53(8)	89(9)	118(11)	16(7)	-44(8)	17(6)
C(16)	80(10)	61(9)	77(9)	-15(7)	-38(8)	-5(7)
C(17)	50(8)	46(7)	34(6)	-8(5)	-4(6)	-23(6)
C(18)	79(9)	101(11)	59(8)	-32(8)	-13(7)	-3(7)
C(19)	56(7)	62(6)	55(6)	-15(5)	2(5)	-3(5)
C(20)	95(12)	29(7)	123(13)	7(7)	-40(10)	-24(7)

Table S25. (continued)

C(21)	68(9)	39(6)	50(7)	-13(5)	-24(7)	-2(6)
C(22)	40(8)	162(16)	99(12)	31(10)	16(8)	2(9)
C(23)	198(18)	62(8)	67(9)	-13(7)	42(9)	-74(10)
C(24)	123(14)	100(10)	39(8)	-7(6)	-4(8)	-48(9)
C(25)	41(6)	50(6)	50(6)	-27(5)	-20(5)	-2(5)
C(26)	73(9)	59(8)	149(14)	-60(9)	-27(9)	-4(7)
C(27)	115(13)	161(14)	47(8)	-38(8)	-2(8)	-46(10)
C(28)	49(7)	60(8)	61(7)	-29(6)	-10(6)	-15(6)
C(29)	34(6)	60(7)	66(8)	-45(6)	2(6)	0(5)
C(30)	83(10)	62(8)	112(11)	-36(7)	-13(8)	-14(6)
C(31)	108(14)	128(13)	69(10)	-36(8)	-24(9)	22(10)
C(32)	23(6)	135(13)	130(13)	-86(10)	-30(6)	26(6)

The anisotropic displacement factor exponent takes the form:

$$-2\pi^2 [(ha^*)^2 U_{11} + \ldots + 2hka^*b^*U_{12}]$$

Table S26. Bond distances (Å) for **14**.

Ga(1)-O(1)	1.650(10)	Ga(1)-O(2)	1.683(8)
Ga(1)-O(11)	1.719(10)	Ga(1)-C(1)	1.799(13)
Ga(2)-O(8)	1.658(10)	Ga(2)-O(11)	1.665(10)
Ga(2)-O(5)	1.741(8)	Ga(2)-C(5)	1.813(13)
Ga(3)-O(3)	1.643(9)	Ga(3)-O(2)	1.650(9)
Ga(3)-O(12)	1.701(10)	Ga(3)-C(9)	1.886(11)
Ga(4)-O(1)	1.690(10)	Ga(4)-O(10)	1.695(10)
Ga(4)-O(4)	1.699(9)	Ga(4)-C(13)	1.843(12)
Ga(5)-O(12)	1.670(10)	Ga(5)-O(5)	1.671(8)
Ga(5)-O(6)	1.671(10)	Ga(5)-C(17)	1.879(13)
Ga(6)-O(10)	1.671(11)	Ga(6)-O(7)	1.704(9)
Ga(6)-O(8)	1.722(10)	Ga(6)-C(21)	1.843(13)
Ga(7)-O(4)	1.623(10)	Ga(7)-O(9)	1.690(9)
Ga(7)-O(3)	1.699(9)	Ga(7)-C(25)	1.903(10)
Ga(8)-O(9)	1.649(9)	Ga(8)-O(7)	1.685(8)
Ga(8)-O(6)	1.700(10)	Ga(8)-C(29)	1.916(11)
P(1)-O(1)	1.650(10)	P(1)-O(2)	1.683(8)
P(1)-O(11)	1.719(10)	P(1)-C(1)	1.799(13)
P(2)-O(8)	1.658(10)	P(2)-O(11)	1.665(10)
P(2)-O(5)	1.741(8)	P(2)-C(5)	1.813(13)
P(3)-O(3)	1.643(9)	P(3)-O(2)	1.650(9)
P(3)-O(12)	1.701(10)	P(3)-C(9)	1.886(11)
P(4)-O(1)	1.690(10)	P(4)-O(10)	1.695(10)
P(4)-O(4)	1.699(9)	P(4)-C(13)	1.843(12)
P(5)-O(12)	1.670(10)	P(5)-O(5)	1.671(8)
P(5)-O(6)	1.671(10)	P(5)-C(17)	1.879(13)
P(6)-O(10)	1.671(11)	P(6)-O(7)	1.704(9)
P(6)-O(8)	1.722(10)	P(6)-C(21)	1.843(13)
P(7)-O(4)	1.623(10)	P(7)-O(9)	1.690(9)
P(7)-O(3)	1.699(9)	P(7)-C(25)	1.903(10)
P(8)-O(9)	1.649(9)	P(8)-O(7)	1.685(8)
P(8)-O(6)	1.700(10)	P(8)-C(29)	1.916(11)
C(1)-C(4)	1.46(2)	C(1)-C(2)	1.53(2)
C(1)-C(3)	1.57(2)	C(5)-C(7)	1.50(2)
C(5)-C(8)	1.54(2)	C(5)-C(6)	1.56(2)
C(9)-C(12)	1.49(2)	C(9)-C(11)	1.52(2)
C(9)-C(10)	1.55(2)	C(13)-C(14)	1.52(2)
C(13)-C(16)	1.53(2)	C(13)-C(15)	1.55(2)
C(17)-C(19)	1.53(2)	C(17)-C(20)	1.53(2)
C(17)-C(18)	1.54(2)	C(21)-C(22)	1.45(2)
C(21)-C(23)	1.52(2)	C(21)-C(24)	1.56(2)
C(25)-C(28)	1.52(2)	C(25)-C(26)	1.52(2)
C(25)-C(27)	1.57(2)	C(29)-C(31)	1.48(2)
C(29)-C(30)	1.56(2)	C(29)-C(32)	1.57(2)

Table S27. Bond angles (deg) for **14**.

O(1)-Ga(1)-O(2)	108.5(5)	O(1)-Ga(1)-O(11)	113.8(5)
O(2)-Ga(1)-O(11)	98.3(5)	O(1)-Ga(1)-C(1)	111.6(5)
O(2)-Ga(1)-C(1)	112.5(5)	O(11)-Ga(1)-C(1)	111.5(5)
O(8)-Ga(2)-O(11)	110.5(5)	O(8)-Ga(2)-O(5)	107.5(5)
O(11)-Ga(2)-O(5)	105.4(4)	O(8)-Ga(2)-C(5)	112.8(5)
O(11)-Ga(2)-C(5)	111.2(5)	O(5)-Ga(2)-C(5)	109.1(5)
O(3)-Ga(3)-O(2)	108.8(5)	O(3)-Ga(3)-O(12)	109.4(6)
O(2)-Ga(3)-O(12)	104.3(5)	O(3)-Ga(3)-C(9)	112.4(5)
O(2)-Ga(3)-C(9)	112.4(5)	O(12)-Ga(3)-C(9)	109.3(5)
O(1)-Ga(4)-O(10)	110.5(5)	O(1)-Ga(4)-O(4)	107.0(5)
O(10)-Ga(4)-O(4)	100.4(5)	O(1)-Ga(4)-C(13)	112.2(5)
O(10)-Ga(4)-C(13)	113.3(5)	O(4)-Ga(4)-C(13)	112.7(5)
O(12)-Ga(5)-O(5)	112.6(5)	O(12)-Ga(5)-O(6)	103.6(5)
O(5)-Ga(5)-O(6)	108.3(4)	O(12)-Ga(5)-C(17)	109.5(5)
O(5)-Ga(5)-C(17)	111.6(4)	O(6)-Ga(5)-C(17)	111.0(5)
O(10)-Ga(6)-O(7)	107.6(4)	O(10)-Ga(6)-O(8)	106.8(5)
O(7)-Ga(6)-O(8)	107.2(4)	O(10)-Ga(6)-C(21)	113.7(5)
O(7)-Ga(6)-C(21)	109.7(5)	O(8)-Ga(6)-C(21)	111.6(5)
O(4)-Ga(7)-O(9)	107.5(5)	O(4)-Ga(7)-O(3)	106.9(6)
O(9)-Ga(7)-O(3)	105.3(5)	O(4)-Ga(7)-C(25)	114.0(5)
O(9)-Ga(7)-C(25)	112.0(5)	O(3)-Ga(7)-C(25)	110.6(5)
O(9)-Ga(8)-O(7)	114.6(5)	O(9)-Ga(8)-O(6)	99.6(5)
O(7)-Ga(8)-O(6)	107.7(4)	O(9)-Ga(8)-C(29)	110.6(5)
O(7)-Ga(8)-C(29)	112.5(5)	O(6)-Ga(8)-C(29)	111.1(5)
O(1)-P(1)-O(2)	108.5(5)	O(1)-P(1)-O(11)	113.8(5)
O(2)-P(1)-O(11)	98.3(5)	O(1)-P(1)-C(1)	111.6(5)
O(2)-P(1)-C(1)	112.5(5)	O(11)-P(1)-C(1)	111.5(5)
O(8)-P(2)-O(11)	110.5(5)	O(8)-P(2)-O(5)	107.5(5)
O(11)-P(2)-O(5)	105.4(4)	O(8)-P(2)-C(5)	112.8(5)
O(11)-P(2)-C(5)	111.2(5)	O(5)-P(2)-C(5)	109.1(5)
O(3)-P(3)-O(2)	108.8(5)	O(3)-P(3)-O(12)	109.4(6)
O(2)-P(3)-O(12)	104.3(5)	O(3)-P(3)-C(9)	112.4(5)
O(2)-P(3)-C(9)	112.4(5)	O(12)-P(3)-C(9)	109.3(5)
O(1)-P(4)-O(10)	110.5(5)	O(1)-P(4)-O(4)	107.0(5)
O(10)-P(4)-O(4)	100.4(5)	O(1)-P(4)-C(13)	112.2(5)
O(10)-P(4)-C(13)	113.3(5)	O(4)-P(4)-C(13)	112.7(5)
O(12)-P(5)-O(5)	112.6(5)	O(12)-P(5)-O(6)	103.6(5)
O(5)-P(5)-O(6)	108.3(4)	O(12)-P(5)-C(17)	109.5(5)
O(5)-P(5)-C(17)	111.6(4)	O(6)-P(5)-C(17)	111.0(5)
O(10)-P(6)-O(7)	107.6(4)	O(10)-P(6)-O(8)	106.8(5)
O(7)-P(6)-O(8)	107.2(4)	O(10)-P(6)-C(21)	113.7(5)
O(7)-P(6)-C(21)	109.7(5)	O(8)-P(6)-C(21)	111.6(5)
O(4)-P(7)-O(9)	107.5(5)	O(4)-P(7)-O(3)	106.9(6)
O(9)-P(7)-O(3)	105.3(5)	O(4)-P(7)-C(25)	114.0(5)
O(9)-P(7)-C(25)	112.0(5)	O(3)-P(7)-C(25)	110.6(5)
O(9)-P(8)-O(7)	114.6(5)	O(9)-P(8)-O(6)	99.6(5)
O(7)-P(8)-O(6)	107.7(4)	O(9)-P(8)-C(29)	110.6(5)
O(7)-P(8)-C(29)	112.5(5)	O(6)-P(8)-C(29)	111.1(5)
P(1)-O(1)-Ga(1)	0.00(11)	P(1)-O(1)-P(4)	149.2(6)
Ga(1)-O(1)-P(4)	149.2(6)	P(1)-O(1)-Ga(4)	149.2(6)
Ga(1)-O(1)-Ga(4)	149.2(6)	P(4)-O(1)-Ga(4)	0.00(11)
P(3)-O(2)-Ga(3)	0.00(12)	P(3)-O(2)-Ga(1)	152.8(6)
Ga(3)-O(2)-Ga(1)	152.8(6)	P(3)-O(2)-P(1)	152.8(6)
Ga(3)-O(2)-P(1)	152.8(6)	Ga(1)-O(2)-P(1)	0.00(11)

Table S27. (continued)

P(3)-O(3)-Ga(3)	0.00(11)	P(3)-O(3)-P(7)	149.1(5)
Ga(3)-O(3)-P(7)	149.1(5)	P(3)-O(3)-Ga(7)	149.1(5)
Ga(3)-O(3)-Ga(7)	149.1(5)	P(7)-O(3)-Ga(7)	0.00(11)
P(7)-O(4)-Ga(7)	0.00(11)	P(7)-O(4)-Ga(4)	154.0(6)
Ga(7)-O(4)-Ga(4)	154.0(6)	P(7)-O(4)-P(4)	154.0(6)
Ga(7)-O(4)-P(4)	154.0(6)	Ga(4)-O(4)-P(4)	0.00(10)
P(5)-O(5)-Ga(5)	0.00(10)	P(5)-O(5)-Ga(2)	145.0(5)
Ga(5)-O(5)-Ga(2)	145.0(5)	P(5)-O(5)-P(2)	145.0(5)
Ga(5)-O(5)-P(2)	145.0(5)	Ga(2)-O(5)-P(2)	0.00(11)
P(5)-O(6)-Ga(5)	0.00(11)	P(5)-O(6)-P(8)	145.2(5)
Ga(5)-O(6)-P(8)	145.2(5)	P(5)-O(6)-Ga(8)	145.2(5)
Ga(5)-O(6)-Ga(8)	145.2(5)	P(8)-O(6)-Ga(8)	0.00(11)
P(8)-O(7)-Ga(8)	0.00(11)	P(8)-O(7)-Ga(6)	145.4(5)
Ga(8)-O(7)-Ga(6)	145.4(5)	P(8)-O(7)-P(6)	145.4(5)
Ga(8)-O(7)-P(6)	145.4(5)	Ga(6)-O(7)-P(6)	0.00(11)
P(2)-O(8)-Ga(2)	0.00(11)	P(2)-O(8)-P(6)	144.5(6)
Ga(2)-O(8)-P(6)	144.5(6)	P(2)-O(8)-Ga(6)	144.5(6)
Ga(2)-O(8)-Ga(6)	144.5(6)	P(6)-O(8)-Ga(6)	0.00(11)
P(8)-O(9)-Ga(8)	0.00(11)	P(8)-O(9)-Ga(7)	158.1(6)
Ga(8)-O(9)-Ga(7)	158.1(6)	P(8)-O(9)-P(7)	158.1(6)
Ga(8)-O(9)-P(7)	158.1(6)	Ga(7)-O(9)-P(7)	0.00(10)
P(6)-O(10)-Ga(6)	0.00(11)	P(6)-O(10)-Ga(4)	156.2(6)
Ga(6)-O(10)-Ga(4)	156.2(6)	P(6)-O(10)-P(4)	156.2(6)
Ga(6)-O(10)-P(4)	156.2(6)	Ga(4)-O(10)-P(4)	0.00(10)
P(2)-O(11)-Ga(2)	0.00(10)	P(2)-O(11)-Ga(1)	151.2(5)
Ga(2)-O(11)-Ga(1)	151.2(5)	P(2)-O(11)-P(1)	151.2(5)
Ga(2)-O(11)-P(1)	151.2(5)	Ga(1)-O(11)-P(1)	0.00(10)
P(5)-O(12)-Ga(5)	0.00(11)	P(5)-O(12)-Ga(3)	154.3(6)
Ga(5)-O(12)-Ga(3)	154.3(6)	P(5)-O(12)-P(3)	154.3(6)
Ga(5)-O(12)-P(3)	154.3(6)	Ga(3)-O(12)-P(3)	0.00(11)
C(4)-C(1)-C(2)	109.2(12)	C(4)-C(1)-C(3)	111.2(12)
C(2)-C(1)-C(3)	106.3(12)	C(4)-C(1)-Ga(1)	112.5(8)
C(2)-C(1)-Ga(1)	108.1(9)	C(3)-C(1)-Ga(1)	109.4(9)
C(4)-C(1)-P(1)	112.5(8)	C(2)-C(1)-P(1)	108.1(9)
C(3)-C(1)-P(1)	109.4(9)	Ga(1)-C(1)-P(1)	0.00(10)
C(7)-C(5)-C(8)	107.5(13)	C(7)-C(5)-C(6)	112.2(13)
C(8)-C(5)-C(6)	104.6(12)	C(7)-C(5)-P(2)	112.0(9)
C(8)-C(5)-P(2)	110.9(9)	C(6)-C(5)-P(2)	109.3(9)
C(7)-C(5)-Ga(2)	112.0(9)	C(8)-C(5)-Ga(2)	110.9(9)
C(6)-C(5)-Ga(2)	109.3(9)	P(2)-C(5)-Ga(2)	0.00(8)
C(12)-C(9)-C(11)	108.0(12)	C(12)-C(9)-C(10)	111.5(12)
C(11)-C(9)-C(10)	109.5(11)	C(12)-C(9)-Ga(3)	108.9(9)
C(11)-C(9)-Ga(3)	109.7(9)	C(10)-C(9)-Ga(3)	109.2(9)
C(12)-C(9)-P(3)	108.9(9)	C(11)-C(9)-P(3)	109.7(9)
C(10)-C(9)-P(3)	109.2(9)	Ga(3)-C(9)-P(3)	0.00(10)
C(14)-C(13)-C(16)	108.0(10)	C(14)-C(13)-C(15)	114.0(12)
C(16)-C(13)-C(15)	110.5(12)	C(14)-C(13)-P(4)	108.4(9)
C(16)-C(13)-P(4)	108.8(8)	C(15)-C(13)-P(4)	107.0(8)
C(14)-C(13)-Ga(4)	108.4(9)	C(16)-C(13)-Ga(4)	108.8(8)
C(15)-C(13)-Ga(4)	107.0(8)	P(4)-C(13)-Ga(4)	0.00(9)
C(19)-C(17)-C(20)	108.2(12)	C(19)-C(17)-C(18)	105.6(10)
C(20)-C(17)-C(18)	112.6(11)	C(19)-C(17)-P(5)	111.4(8)

Table S27. (continued)

C(20)-C(17)-P(5)	109.1(9)	C(18)-C(17)-P(5)	109.9(10)
C(19)-C(17)-Ga(5)	111.4(8)	C(20)-C(17)-Ga(5)	109.1(9)
C(18)-C(17)-Ga(5)	109.9(10)	P(5)-C(17)-Ga(5)	0.00(9)
C(22)-C(21)-C(23)	110.7(14)	C(22)-C(21)-C(24)	110(2)
C(23)-C(21)-C(24)	110.3(12)	C(22)-C(21)-Ga(6)	110.0(10)
C(23)-C(21)-Ga(6)	107.5(9)	C(24)-C(21)-Ga(6)	108.6(9)
C(22)-C(21)-P(6)	110.0(10)	C(23)-C(21)-P(6)	107.5(9)
C(24)-C(21)-P(6)	108.6(9)	Ga(6)-C(21)-P(6)	0.00(10)
C(28)-C(25)-C(26)	111.6(10)	C(28)-C(25)-C(27)	110.9(12)
C(26)-C(25)-C(27)	110.8(13)	C(28)-C(25)-Ga(7)	106.7(7)
C(26)-C(25)-Ga(7)	108.5(9)	C(27)-C(25)-Ga(7)	108.1(9)
C(28)-C(25)-P(7)	106.7(7)	C(26)-C(25)-P(7)	108.5(9)
C(27)-C(25)-P(7)	108.1(9)	Ga(7)-C(25)-P(7)	0.00(7)
C(31)-C(29)-C(30)	113.7(14)	C(31)-C(29)-C(32)	108.0(13)
C(30)-C(29)-C(32)	106.6(12)	C(31)-C(29)-P(8)	112.0(11)
C(30)-C(29)-P(8)	107.9(9)	C(32)-C(29)-P(8)	108.3(8)
C(31)-C(29)-Ga(8)	112.0(11)	C(30)-C(29)-Ga(8)	107.9(9)
C(32)-C(29)-Ga(8)	108.3(8)	P(8)-C(29)-Ga(8)	0.00(9)

Table S28. Hydrogen atom coordinates (x 10^4) and isotropic displacement parameters ($Å^2$ x 10^3) for **14**.

	x	y	z	U(eq)
H(2A)	1262(16)	4364(14)	2393(17)	128
H(2B)	2213(16)	3789(14)	3218(17)	128
H(2C)	2523(16)	3617(14)	1915(17)	128
H(3A)	1912(17)	6225(19)	447(13)	143
H(3B)	3153(17)	5452(19)	-26(13)	143
H(3C)	3318(17)	6855(19)	-22(13)	143
H(4A)	4822(15)	5991(14)	1368(14)	118
H(4B)	4680(15)	4617(14)	1287(14)	118
H(4C)	4370(15)	4789(14)	2590(14)	118
H(6A)	-2435(18)	4901(13)	4056(19)	150
H(6B)	-1324(18)	4766(13)	2898(19)	150
H(6C)	-2800(18)	4842(13)	2904(19)	150
H(7A)	-734(14)	6812(18)	892(13)	134
H(7B)	-1631(14)	8035(18)	859(13)	134
H(7C)	-2199(14)	6749(18)	902(13)	134
H(8A)	-3749(15)	6869(15)	3887(18)	131
H(8B)	-4019(15)	6788(15)	2699(18)	131
H(8C)	-3451(15)	8075(15)	2656(18)	131
H(10A)	5783(14)	9991(14)	1066(15)	122
H(10B)	6225(14)	10450(14)	-393(15)	122
H(10C)	5578(14)	9071(14)	385(15)	122
H(11A)	4437(14)	11995(13)	971(15)	124
H(11B)	3343(14)	12309(13)	289(15)	124
H(11C)	4832(14)	12445(13)	-487(15)	124
H(12A)	3828(17)	9634(20)	-734(14)	171
H(12B)	4467(17)	11017(20)	-1510(14)	171
H(12C)	2977(17)	10880(20)	-734(14)	171
H(14A)	2933(18)	5878(13)	7560(12)	119
H(14B)	2774(18)	4386(13)	8324(12)	119
H(14C)	1541(18)	5211(13)	8081(12)	119
H(15A)	4228(13)	4492(15)	5120(16)	146
H(15B)	4542(13)	3983(15)	6402(16)	146
H(15C)	4614(13)	5477(15)	5648(16)	146
H(16A)	2060(15)	3349(13)	6115(14)	106
H(16B)	1010(15)	3677(13)	7209(14)	106
H(16C)	2243(15)	2852(13)	7452(14)	106
H(18A)	100(16)	11206(17)	-322(13)	120
H(18B)	-1116(16)	12097(17)	-484(13)	120
H(18C)	-1329(16)	10619(17)	323(13)	120
H(19A)	-2804(13)	11193(13)	2024(12)	95
H(19B)	-2586(13)	12674(13)	1232(12)	95
H(19C)	-2384(13)	12150(13)	2561(12)	95
H(20A)	868(17)	12789(12)	571(17)	132
H(20B)	-153(17)	13122(12)	1679(17)	132
H(20C)	-355(17)	13646(12)	349(17)	132
H(22A)	-3624(15)	7480(21)	7400(17)	195
H(22B)	-4331(15)	6126(21)	8162(17)	195
H(22C)	-3881(15)	6601(21)	6702(17)	195
H(23A)	-1598(19)	4202(14)	7486(14)	188

Table S28. (continued)

H(23B)	-2651(19)	4581(14)	6755(14)	188
H(23C)	-3101(19)	4106(14)	8215(14)	188
H(24A)	-1193(18)	5626(15)	8594(12)	139
H(24B)	-2689(18)	5573(15)	9338(12)	139
H(24C)	-1979(18)	6919(15)	8535(12)	139
H(26A)	3108(14)	11733(13)	4812(17)	131
H(26B)	4222(14)	11599(13)	3655(17)	131
H(26C)	4589(14)	11766(13)	4766(17)	131
H(27A)	2570(18)	9926(20)	6856(13)	162
H(27B)	4024(18)	9854(20)	6915(13)	162
H(27C)	3334(18)	8612(20)	7001(13)	162
H(28A)	5210(11)	8403(12)	5184(11)	81
H(28B)	5900(11)	9688(12)	4998(11)	81
H(28C)	5533(11)	9521(12)	3887(11)	81
H(30A)	-568(17)	12707(14)	4492(17)	129
H(30B)	428(17)	12383(14)	5282(17)	129
H(30C)	-909(17)	13054(14)	5714(17)	129
H(31A)	-1510(20)	9728(19)	7807(15)	154
H(31B)	-1514(20)	11154(19)	7816(15)	154
H(31C)	-178(20)	10483(19)	7384(15)	154
H(32A)	-2717(12)	11570(16)	5299(16)	127
H(32B)	-3043(12)	11839(16)	6560(16)	127
H(32C)	-3090(12)	10413(16)	6567(16)	127

ORTEP for $[^tBuGaO_3P^tBu]_4$ (**14**).

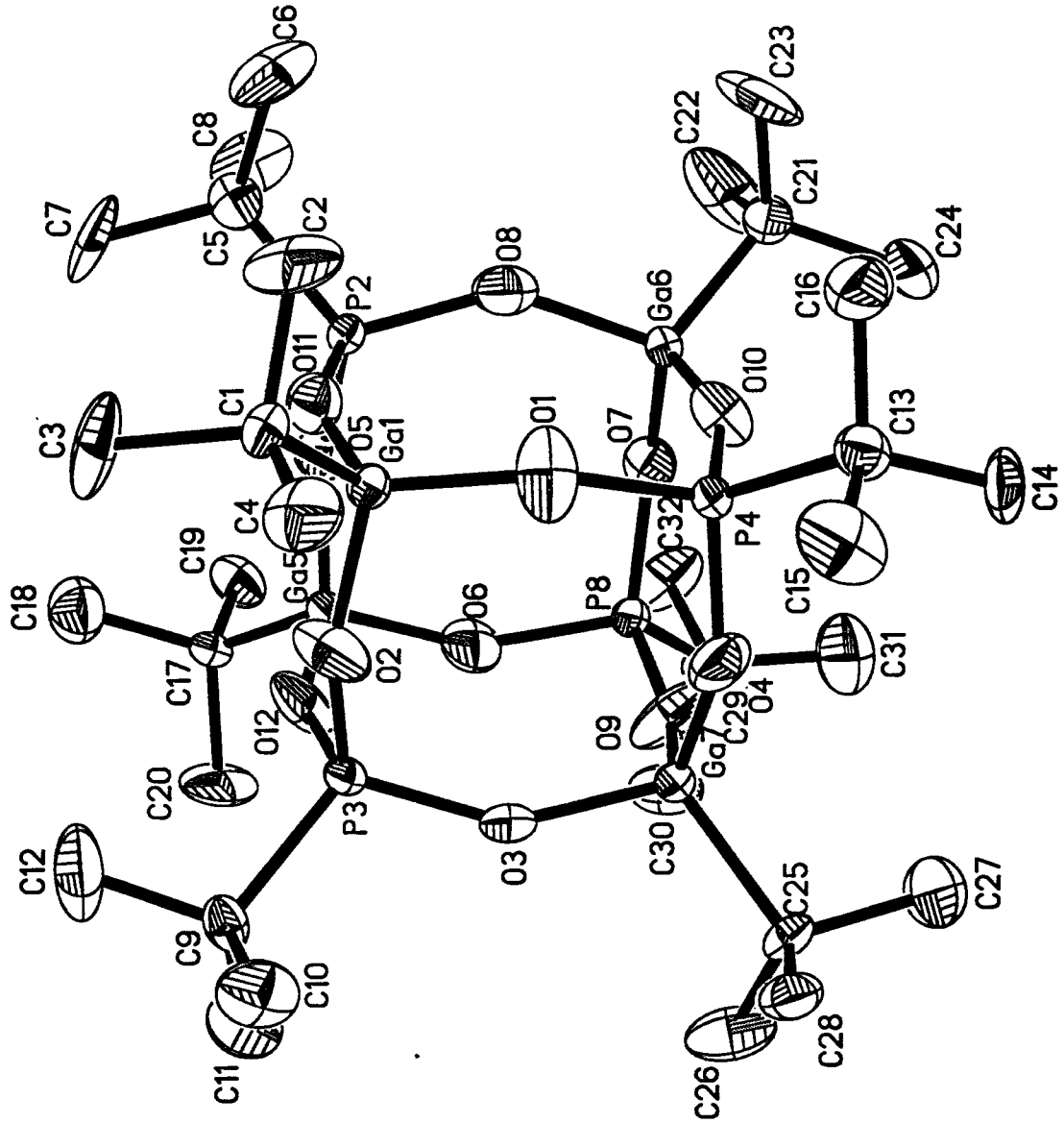

Table S29. Data collection and refinement parameters for 15.

Identification code	yij
Empirical formula	$C_{20}H_{48}Ga_4O_{12}P_4$
Formula weight	883.34
Temperature	300(2) K
Wavelength	0.71073 Å
Crystal system	Orthorhombic
Space group	Pbca
Unit cell dimensions	a = 19.261(2) Å alpha = 90° b = 19.530(3) Å beta = 90° c = 19.840(3) Å gamma = 90°
Volume, Z	7463(2) $Å^3$, 8
Density (calculated)	1.572 Mg/m^3
Absorption coefficient	3.075 mm^{-1}
F(000)	3584
Crystal size	0.50 x 0.20 x 0.15 mm
θ range for data collection	1.81 to 24.80°
Limiting indices	$-22 \le h \le 22$, $-20 \le k \le 22$, $-21 \le l \le 23$
Reflections collected	34097
Independent reflections	6385 (R_{int} = 0.0742)
Absorption correction	SADABS
Max. and min. transmission	0.962236 and 0.601756
Refinement method	Full-matrix least-squares on F^2
Data / restraints / parameters	5356 / 90 / 393
Goodness-of-fit on F^2	1.116
Final R indices [I>2σ(I)]	R1 = 0.0443, wR2 = 0.0837
R indices (all data)	R1 = 0.0790, wR2 = 0.1009
Extinction coefficient	0.00010(3)
Largest diff. peak and hole	0.529 and -0.392 $eÅ^{-3}$