Structure Refinement and Photocatalytic Properties of Porous

POMCPs by Selecting the Isomerous PYTTZ

Liang Li^{a,b}, Jing-Wen Sun^a, Jing-Quan Sha^{a*}, Guang-Ming Li^a, Peng-Fei Yan^{a*}, Cheng

Wang^a, Lian Yu^b

^aKey Laboratory of Functional Inorganic Material Chemistry (MOE), P. R. China; School of Chemistry and Materials Science, Heilongjiang University; Harbin 150080, P. R. China

^bThe Key Laboratory of Biological Medicine Formulation, Heilongjiang Provincial; School of Pharmacy, Jiamusi University, Jiamusi, 154007, PR China



Scheme 1. Schematic representation of the ligands H₂pyttz-I (left) and H₂pyttz-II (right).



Fig. S1 Graphic of the 2D structure with tunnel A via short interaction in compound 1.



Fig. S2 Graphic of the 2D structure with tunnel A and B *via* short interaction in compound **2**.



Fig. S3 Structure of two types of tunnels in compound 2.



Fig. S4 Contrast of building units in compound 1 and 2.



Fig. S5 The simulative (below) and experimental (up) XRPD patterns of the compounds 1 and 2.



Fig. S6 IR spectra of the compounds 1 and 2.

ESI[†] **photodecomposition of Rhodamine-B (RhB)** : the power of 50 mg was mixed together with 100 ml of 1.0×10^{-5} mol/L (C₀) RhB solution in a beaker by ultrasonic dispersion for 10 min. The mixture was stirred for 0.5 h till reached the surface-adsorption equilibrium on the particles of the compounds. Then, the mixture was stirred continuously under ultraviolet (UV) irradiation from a 125 W high pressure Hg lamp. At 0, 10, 20, 40, 60, 90, 120 and 150 min, 3 ml of the sample was taken out from the beaker respectively, followed by several centrifugations to remove the title compounds and a clear solution was obtained for UV-vis analysis.

No	Compounds	Strategy	Metal centers	Organic linkers	Dimensionality	Ref
1	$Zn_8(ad)_4(BPDC)_6O_2{}^\bullet 4Me_2NH_2,\ 49DMF,\ 31H_2O$	Vertex modification	Zinc-adeninate	biphenyldicarboxylate	3D	7a
2	$\{[Ag_2(trz)_2][Ag_{24}(trz)_{18}]\}[PW_{12}O_{40}]_2$	Vertex modification	Ag	trz	3D	7b
3	$\mathrm{Zn_3O(HBTB)_2(H_2O)*(DMF)_{0.5}(H_2O)_3}$	extension organic molecules	Zn ₂ O ₉	ВТВ	3D	8b
4	$Zn_2(ATB)(H_2O)\bullet(H_2O)_3(DMF)_3$	extension organic molecules	Zn_3O_{11}	ATB	3D	8b
6	$(TBA)_{3}\{PMo^{V_{8}}Mo^{VI}_{4}O_{36}(OH)_{4}Zn_{4}\}[1,4-bdc]_{2}$	extension organic molecules	PMo ₁₂ O ₄₀ Zn ₄	1,4-H ₂ bdc	2D	5
7	$(TPA)_{3}{PMo^{V_{8}}Mo^{VI}_{4}O_{37}(OH)_{3}Zn_{4}}[1,3,5-btc]$	extension organic molecules	PMo ₁₂ O ₄₀ Zn ₄	1,3,5-H ₃ btc	2D	5
8	$({\rm TBA})_3 [{\rm PMoV_8MoVI_4O_{36}(OH)_4Zn_4}] [1,3,5\text{-btc}]_{4/3} \bullet 6{\rm H_2O}$	regulation of solvent	PMo12O40Zn4	1,3,5-H ₃ btc	3D	9c
9	$(TBA)_{3}[PMoV_{8}MoV_{4}O_{37}(OH)_{3}Zn_{4}][1,3,5-btc]$	regulation of solvent	PMo ₁₂ O ₄₀ Zn ₄	1,3,5-H ₃ btc	3D	9c
10	$({\rm TBA})_3[{\rm PMo^V}_8{\rm Mo^{VI}}_4{\rm O}_{37}({\rm OH})_3{\rm Zn}_4][1,3,5\text{-btc}]\bullet8{\rm H}_2{\rm O}$	regulation of solvent	PMo12O40Zn4	1,3,5-H ₃ btc	2D	9c
11	[Cu(L)(DMF)•5/2H ₂ O]n	regulation of solvent	Cu ₂ O ₆	4, 4'-dicarboxydiphenylamine	3D	9d
12	$[Cu_2(L)_2(H_2O)_2 * 3/2H_2O]n$	regulation of solvent	Cu_2O_6	4, 4'-dicarboxydiphenylamine	3D	9d
13	[Cu(L)(H2O)•H2O]n	regulation of solvent	Cu ₂ O ₆	4, 4'-dicarboxydiphenylamine	3D	9d
14	MOF-5	introduction of nucleation seeds	[Zn ₄ O] ⁶⁺	H ₂ BDC	3D	10

Table S1 Summary of strategy to construct porous CPs or porous POMCPs.

Table S2 Coordination model of Ag, pyttz molecules, and SiW_{12} clusters in 1 and 2



N(1)-Ag(3)	2.400(18)	O(12)-W(8)	1.938(10)
N(2)-Ag(3)	2.335(15)	O(13)-W(1)	1.914(11)
N(5)-Ag(2)	2.127(12)	O(13)-W(11)	1.919(11)
N(7)-Ag(1)#1	2.267(14)	O(14)-W(1)	1.707(11)
N(9)-Ag(4)	2.242(13)	O(15)-W(7)	1.913(10)
N(10)-N(11)	1.404(18)	O(15)-W(9)	1.936(10)
N(10)-Ag(3)	2.118(14)	O(17)-W(12)	1.896(10)
N(11)-Ag(1)	2.240(13)	O(17)-W(7)	1.911(10)
N(12)-N(13)	1.374(18)	O(18)-W(3)	1.907(10)
N(12)-Ag(4)	2.443(14)	O(18)-W(12)	1.913(11)
N(14)-Ag(2)	2.124(13)	O(19)-W(10)	1.719(11)
N(17)-N(18)	1.364(18)	O(19)-Ag(1)	2.514(11)
N(19)-C(19)	1.40(2)	O(20)-W(12)	1.685(11)
N(19)-Ag(4)	2.149(15)	O(21)-W(12)	1.909(10)
O(1)-Si(1)	1.631(10)	O(21)-W(4)	1.954(10)
O(1)-W(10)	2.319(10)	O(21)-Ag(1)#2	2.595(10)
O(1)-W(7)	2.341(10)	O(22)-W(4)	1.686(11)
O(1)-W(9)	2.356(9)	O(23)-W(8)	1.915(11)
O(2)-Si(1)	1.628(10)	O(23)-W(11)	1.943(10)
O(2)-W(11)	2.330(10)	O(24)-W(6)	1.699(11)
O(2)-W(8)	2.345(10)	O(26)-W(2)	1.891(11)
O(2)-W(1)	2.361(9)	O(26)-W(6)	1.931(11)
O(3)-Si(1)	1.612(10)	O(27)-W(3)	1.682(11)
O(3)-W(2)	2.335(10)	O(28)-W(9)	1.703(11)
O(3)-W(5)	2.355(10)	O(29)-W(2)	1.689(11)
O(3)-W(6)	2.367(10)	O(30)-W(8)	1.903(10)
O(4)-Si(1)	1.625(10)	O(30)-W(1)	1.919(11)
O(4)-W(4)	2.326(10)	O(31)-W(10)	1.878(10)
O(4)-W(12)	2.334(10)	O(31)-W(3)	1.927(11)
O(4)-W(3)	2.363(10)	O(32)-W(11)	1.896(10)
O(5)-W(4)	1.888(11)	O(32)-W(3)	1.904(10)
O(5)-W(6)	1.911(11)	O(33)-W(3)	1.913(11)
O(6)-W(6)	1.903(11)	O(33)-W(4)	1.961(11)
O(6)-W(5)	1.931(11)	O(34)-W(11)	1.712(11)
O(7)-W(8)	1.892(10)	O(35)-W(10)	1.907(11)
O(7)-W(6)	1.898(10)	O(35)-W(7)	1.921(11)
O(8)-W(5)	1.907(11)	O(36)-W(10)	1.926(11)
O(8)-W(1)	1.909(11)	O(36)-W(9)	1.931(11)
O(9)-W(5)	1.699(11)	O(37)-W(9)	1.898(10)
O(10)-W(8)	1.688(12)	O(37)-W(5)	1.912(10)

Table S3 Selected bond length (Å) and angle (°) for compound 1.

O(11)-W(11)	1.904(11)	O(38)-W(7)	1.726(12)
O(11)-W(10)	1.910(11)	O(39)-W(2)	1.906(10)
O(12)-W(4)	1.888(10)	O(39)-W(7)	1.919(10)
Ag(1)-N(7)#1	2.267(14)	O(40)-W(2)	1.873(10)
Ag(1)-O(21)#3	2.595(10)	O(40)-W(12)	1.921(10)
Ag(1)-Ag(3)	3.167(3)	O(16)-W(5)	1.920(10)
Ag(2)-Ag(3)	2.957(3)	O(16)-W(2)	1.953(11)
O(25)-W(9)	1.910(10)	O(25)-W(1)	1.898(10)
O(3)-Si(1)-O(4)	109.5(5)	O(9)-W(5)-O(8)	102.7(5)
O(3)-Si(1)-O(2)	109.6(5)	O(9)-W(5)-O(37)	100.6(5)
O(4)-Si(1)-O(2)	109.3(5)	O(8)-W(5)-O(37)	86.6(5)
O(3)-Si(1)-O(1)	110.0(6)	O(9)-W(5)-O(16)	99.1(5)
O(4)-Si(1)-O(1)	108.7(5)	O(8)-W(5)-O(16)	158.1(5)
O(2)-Si(1)-O(1)	109.6(5)	O(37)-W(5)-O(16)	87.6(5)
N(11)-Ag(1)-N(7)#1	150.4(5)	O(9)-W(5)-O(6)	101.6(5)
N(11)-Ag(1)-O(19)	96.9(4)	O(8)-W(5)-O(6)	88.6(5)
N(7)#1-Ag(1)-O(19)	97.7(4)	O(37)-W(5)-O(6)	157.8(5)
N(11)-Ag(1)-O(21)#3	104.2(4)	O(16)-W(5)-O(6)	88.9(5)
N(7)#1-Ag(1)-O(21)#3	93.6(4)	O(9)-W(5)-O(3)	171.0(4)
O(19)-Ag(1)-O(21)#3	112.7(3)	O(8)-W(5)-O(3)	84.8(4)
N(14)-Ag(2)-N(5)	167.1(5)	O(37)-W(5)-O(3)	84.6(4)
N(14)-Ag(2)-Ag(3)	84.6(4)	O(16)-W(5)-O(3)	73.6(4)
N(5)-Ag(2)-Ag(3)	102.0(4)	O(6)-W(5)-O(3)	73.4(4)
N(10)-Ag(3)-N(2)	152.7(5)	O(24)-W(6)-O(7)	102.6(5)
N(10)-Ag(3)-N(1)	133.1(6)	O(24)-W(6)-O(6)	101.6(5)
N(2)-Ag(3)-N(1)	74.0(6)	O(7)-W(6)-O(6)	89.6(5)
N(10)-Ag(3)-Ag(2)	86.0(4)	O(24)-W(6)-O(5)	101.1(5)
N(2)-Ag(3)-Ag(2)	73.0(4)	O(7)-W(6)-O(5)	85.2(5)
N(1)-Ag(3)-Ag(2)	131.7(4)	O(6)-W(6)-O(5)	157.4(4)
N(10)-Ag(3)-Ag(1)	67.1(4)	O(24)-W(6)-O(26)	100.6(5)
N(2)-Ag(3)-Ag(1)	119.9(3)	O(7)-W(6)-O(26)	156.7(4)
N(1)-Ag(3)-Ag(1)	86.7(4)	O(6)-W(6)-O(26)	87.5(5)
Ag(2)-Ag(3)-Ag(1)	140.69(9)	O(5)-W(6)-O(26)	88.7(5)
N(19)-Ag(4)-N(9)	161.8(5)	O(24)-W(6)-O(3)	170.8(5)
N(19)-Ag(4)-N(12)	125.1(5)	O(7)-W(6)-O(3)	85.3(4)
N(9)-Ag(4)-N(12)	73.0(5)	O(6)-W(6)-O(3)	73.6(4)
O(14)-W(1)-O(25)	101.9(5)	O(5)-W(6)-O(3)	84.0(4)
O(14)-W(1)-O(8)	101.5(5)	O(26)-W(6)-O(3)	71.6(4)
O(25)-W(1)-O(8)	86.3(4)	O(38)-W(7)-O(17)	102.3(5)
O(14)-W(1)-O(13)	101.4(5)	O(38)-W(7)-O(15)	99.6(5)
O(25)-W(1)-O(13)	88.8(5)	O(17)-W(7)-O(15)	158.0(4)
O(8)-W(1)-O(13)	157.1(4)	O(38)-W(7)-O(39)	100.0(5)
O(14)-W(1)-O(30)	101.3(5)	O(17)-W(7)-O(39)	86.8(4)

O(25)-W(1)-O(30)	156.8(4)	O(15)-W(7)-O(39)	88.0(4)
O(8)-W(1)-O(30)	88.0(5)	O(38)-W(7)-O(35)	101.8(5)
O(13)-W(1)-O(30)	87.8(5)	O(17)-W(7)-O(35)	89.1(4)
O(14)-W(1)-O(2)	172.0(5)	O(15)-W(7)-O(35)	87.9(4)
O(25)-W(1)-O(2)	84.2(4)	O(39)-W(7)-O(35)	158.2(5)
O(8)-W(1)-O(2)	84.0(4)	O(38)-W(7)-O(1)	172.0(4)
O(13)-W(1)-O(2)	73.2(4)	O(17)-W(7)-O(1)	84.2(4)
O(30)-W(1)-O(2)	72.9(4)	O(15)-W(7)-O(1)	74.1(4)
O(29)-W(2)-O(40)	101.7(5)	O(39)-W(7)-O(1)	84.9(4)
O(29)-W(2)-O(26)	99.7(5)	O(35)-W(7)-O(1)	73.4(4)
O(40)-W(2)-O(26)	90.6(4)	O(10)-W(8)-O(7)	103.3(5)
O(29)-W(2)-O(39)	102.3(5)	O(10)-W(8)-O(30)	100.1(5)
O(40)-W(2)-O(39)	86.8(4)	O(7)-W(8)-O(30)	90.5(5)
O(26)-W(2)-O(39)	157.9(5)	O(10)-W(8)-O(23)	97.8(5)
O(29)-W(2)-O(16)	100.4(5)	O(7)-W(8)-O(23)	158.7(4)
O(40)-W(2)-O(16)	157.8(4)	O(30)-W(8)-O(23)	88.5(4)
O(26)-W(2)-O(16)	87.0(5)	O(10)-W(8)-O(12)	101.8(5)
O(39)-W(2)-O(16)	87.2(5)	O(7)-W(8)-O(12)	85.1(4)
O(29)-W(2)-O(3)	170.5(5)	O(30)-W(8)-O(12)	158.1(5)
O(40)-W(2)-O(3)	84.7(4)	O(23)-W(8)-O(12)	87.9(4)
O(26)-W(2)-O(3)	73.0(4)	O(10)-W(8)-O(2)	169.3(5)
O(39)-W(2)-O(3)	84.9(4)	O(7)-W(8)-O(2)	85.5(4)
O(16)-W(2)-O(3)	73.5(4)	O(30)-W(8)-O(2)	73.5(4)
O(27)-W(3)-O(32)	101.0(5)	O(23)-W(8)-O(2)	73.8(4)
O(27)-W(3)-O(18)	102.1(5)	O(12)-W(8)-O(2)	84.8(4)
O(32)-W(3)-O(18)	156.8(4)	O(28)-W(9)-O(37)	101.4(5)
O(27)-W(3)-O(33)	99.2(5)	O(28)-W(9)-O(25)	102.7(5)
O(32)-W(3)-O(33)	89.0(4)	O(37)-W(9)-O(25)	87.5(4)
O(18)-W(3)-O(33)	89.0(5)	O(28)-W(9)-O(36)	101.0(5)
O(27)-W(3)-O(31)	102.4(5)	O(37)-W(9)-O(36)	157.6(4)
O(32)-W(3)-O(31)	85.3(4)	O(25)-W(9)-O(36)	86.4(4)
O(18)-W(3)-O(31)	88.2(5)	O(28)-W(9)-O(15)	99.3(5)
O(33)-W(3)-O(31)	158.3(4)	O(37)-W(9)-O(15)	88.8(5)
O(27)-W(3)-O(4)	171.6(4)	O(25)-W(9)-O(15)	158.0(4)
O(32)-W(3)-O(4)	84.1(4)	O(36)-W(9)-O(15)	88.9(4)
O(18)-W(3)-O(4)	73.1(4)	O(28)-W(9)-O(1)	169.9(5)
O(33)-W(3)-O(4)	74.1(4)	O(37)-W(9)-O(1)	85.6(4)
O(31)-W(3)-O(4)	84.6(4)	O(25)-W(9)-O(1)	84.7(4)
O(22)-W(4)-O(12)	101.4(5)	O(36)-W(9)-O(1)	72.4(4)
O(22)-W(4)-O(5)	103.2(5)	O(15)-W(9)-O(1)	73.3(4)
O(12)-W(4)-O(5)	87.2(5)	O(19)-W(10)-O(31)	102.1(5)
O(22)-W(4)-O(21)	98.9(5)	O(19)-W(10)-O(35)	101.5(5)
O(12)-W(4)-O(21)	159.7(4)	O(31)-W(10)-O(35)	90.8(4)

O(5)-W(4)-O(21)	89.1(5)	O(19)-W(10)-O(11)	99.7(5)
O(22)-W(4)-O(33)	97.2(5)	O(31)-W(10)-O(11)	85.5(4)
O(12)-W(4)-O(33)	89.0(5)	O(35)-W(10)-O(11)	158.8(4)
O(5)-W(4)-O(33)	159.7(4)	O(19)-W(10)-O(36)	99.2(5)
O(21)-W(4)-O(33)	87.5(4)	O(31)-W(10)-O(36)	158.3(4)
O(22)-W(4)-O(4)	168.2(5)	O(35)-W(10)-O(36)	89.2(4)
O(12)-W(4)-O(4)	86.5(4)	O(11)-W(10)-O(36)	86.7(4)
O(5)-W(4)-O(4)	85.7(4)	O(19)-W(10)-O(1)	171.1(5)
O(21)-W(4)-O(4)	73.3(4)	O(31)-W(10)-O(1)	85.8(4)
O(33)-W(4)-O(4)	74.1(4)	O(35)-W(10)-O(1)	74.1(4)
O(20)-W(12)-O(17)	101.2(5)	O(11)-W(10)-O(1)	84.8(4)
O(20)-W(12)-O(21)	100.1(5)	O(36)-W(10)-O(1)	73.3(4)
O(17)-W(12)-O(21)	158.6(4)	O(34)-W(11)-O(32)	100.2(5)
O(20)-W(12)-O(18)	100.4(5)	O(34)-W(11)-O(11)	99.9(5)
O(17)-W(12)-O(18)	89.2(5)	O(32)-W(11)-O(11)	85.5(4)
O(21)-W(12)-O(18)	89.1(5)	O(34)-W(11)-O(13)	100.9(5)
O(20)-W(12)-O(40)	102.2(5)	O(32)-W(11)-O(13)	158.9(4)
O(17)-W(12)-O(40)	84.9(4)	O(11)-W(11)-O(13)	89.9(5)
O(21)-W(12)-O(40)	88.6(4)	O(34)-W(11)-O(23)	101.2(5)
O(18)-W(12)-O(40)	157.3(4)	O(32)-W(11)-O(23)	89.4(4)
O(20)-W(12)-O(4)	171.4(5)	O(11)-W(11)-O(23)	158.8(4)
O(17)-W(12)-O(4)	85.2(4)	O(13)-W(11)-O(23)	87.6(4)
O(21)-W(12)-O(4)	73.9(4)	O(34)-W(11)-O(2)	172.6(5)
O(18)-W(12)-O(4)	73.7(4)	O(32)-W(11)-O(2)	85.2(4)
O(40)-W(12)-O(4)	84.0(4)	O(11)-W(11)-O(2)	85.4(4)

Symmetry transformations used to generate equivalent atoms: #1 -x+2,-y-1,-z+1; #2 x-1,y,z; #3 x+1,y,z.

Ag(1)-N(7)	2.138(19)	O(17)-W(2)	1.921(15)
Ag(1)-N(8)#1	2.15(2)	O(17)-W(10)	1.922(13)
Ag(1)-Ag(2)#1	2.858(3)	O(18)-W(10)	1.692(19)
Ag(2)-N(6)	2.144(18)	O(19)-W(3)	1.916(14)
Ag(2)-N(2)#1	2.15(2)	O(19)-W(12)	1.917(13)
Ag(2)-Ag(1)#1	2.858(3)	O(20)-W(8)	1.876(15)
Ag(2)-Ag(3)	3.167(3)	O(20)-W(12)	1.916(15)
Ag(3)-N(18)	2.16(2)	O(21)-W(8)	1.706(16)
Ag(3)-N(1)	2.25(2)	O(22)-W(12)	1.718(15)
Ag(3)-O(22)	2.503(15)	O(23)-W(12)	1.901(15)
Ag(4)-N(9)	2.185(18)	O(23)-W(11)	1.907(15)
Ag(4)-N(13)	2.280(19)	O(24)-W(11)	1.910(14)
Ag(4)-N(4)	2.39(2)	O(24)-W(6)	1.923(15)
N(2)-Ag(2)#1	2.15(2)	O(25)-W(5)	1.904(15)
N(8)-Ag(1)#1	2.15(2)	O(25)-W(7)	1.929(14)
O(1)-W(5)	1.899(14)	O(26)-Si(1)	1.663(12)
O(1)-W(2)	1.909(14)	O(26)-W(9)	2.288(13)
O(2)-W(2)	1.861(15)	O(26)-W(12)	2.316(12)
O(2)-W(4)	1.921(16)	O(26)-W(3)	2.361(12)
O(3)-W(4)	1.920(14)	O(27)-Si(1)	1.586(15)
O(3)-W(6)	1.948(15)	O(27)-W(2)	2.323(14)
O(4)-W(4)	1.868(15)	O(27)-W(10)	2.386(17)
O(4)-W(5)	1.928(17)	O(27)-W(8)	2.390(15)
O(5)-W(5)	1.711(15)	O(28)-W(8)	1.920(14)
O(6)-W(1)	1.699(16)	O(28)-W(2)	1.961(16)
O(7)-Si(1)	1.595(16)	O(29)-W(9)	1.876(15)
O(7)-W(6)	2.352(15)	O(29)-W(10)	1.934(14)
O(7)-W(11)	2.357(15)	O(30)-W(10)	1.883(16)
O(7)-W(4)	2.371(13)	O(30)-W(8)	1.929(18)
O(8)-W(3)	1.692(14)	O(31)-W(1)	1.885(15)
O(9)-W(1)	1.901(16)	O(31)-W(5)	1.958(15)
O(9)-W(7)	1.972(15)	O(32)-W(7)	1.693(16)
O(10)-W(1)	1.895(15)	O(33)-W(6)	1.721(17)
O(10)-W(10)	1.907(16)	O(34)-W(11)	1.687(19)
O(11)-W(4)	1.678(18)	O(35)-W(11)	1.905(14)
O(12)-W(2)	1.686(15)	O(35)-W(4)	1.937(16)
O(13)-W(7)	1.912(15)	O(36)-W(6)	1.891(14)
O(13)-W(6)	1.918(14)	O(36)-W(3)	1.906(15)
O(14)-W(9)	1.916(15)	O(37)-Si(1)	1.582(14)
O(14)-W(3)	1.958(15)	O(37)-W(1)	2.352(14)
O(15)-W(9)	1.896(16)	O(37)-W(7)	2.365(13)

Table S4 Selected bond length (Å) and angle (°) for compound **2**.

O(15)-W(1)	1.910(15)	O(37)-W(5)	2.372(13)
O(16)-W(9)	1.733(16)	O(38)-W(8)	1.897(17)
O(39)-W(12)	1.931(18)	O(38)-W(11)	1.917(17)
O(40)-W(3)	1.886(15)	O(39)-W(9)	1.921(18)
N(7)-Ag(1)-N(8)#1	170.2(7)	O(16)-W(9)-O(29)	100.0(8)
N(7)-Ag(1)-Ag(2)#1	91.8(5)	O(16)-W(9)-O(15)	102.3(8)
N(8)#1-Ag(1)-Ag(2)#1	88.7(6)	O(29)-W(9)-O(15)	84.8(7)
N(6)-Ag(2)-N(2)#1	175.8(7)	O(16)-W(9)-O(14)	99.1(7)
N(18)-Ag(3)-N(1)	153.5(7)	O(29)-W(9)-O(14)	160.6(7)
N(18)-Ag(3)-O(22)	95.0(7)	O(15)-W(9)-O(14)	88.0(6)
N(1)-Ag(3)-O(22)	102.6(6)	O(16)-W(9)-O(39)	99.5(8)
N(9)-Ag(4)-N(13)	155.7(7)	O(29)-W(9)-O(39)	92.4(7)
N(9)-Ag(4)-N(4)	129.6(7)	O(15)-W(9)-O(39)	158.2(7)
N(13)-Ag(4)-N(4)	72.0(7)	O(14)-W(9)-O(39)	87.6(7)
O(37)-Si(1)-O(27)	109.1(8)	O(16)-W(9)-O(26)	171.3(6)
O(37)-Si(1)-O(7)	110.5(8)	O(29)-W(9)-O(26)	86.2(6)
O(27)-Si(1)-O(7)	109.5(9)	O(15)-W(9)-O(26)	84.3(6)
O(37)-Si(1)-O(26)	108.8(7)	O(14)-W(9)-O(26)	75.2(5)
O(27)-Si(1)-O(26)	107.9(8)	O(39)-W(9)-O(26)	74.0(6)
O(7)-Si(1)-O(26)	111.0(7)	O(18)-W(10)-O(30)	101.4(8)
O(6)-W(1)-O(31)	97.6(7)	O(18)-W(10)-O(10)	101.2(7)
O(6)-W(1)-O(10)	101.0(7)	O(30)-W(10)-O(10)	157.2(7)
O(31)-W(1)-O(10)	89.6(6)	O(18)-W(10)-O(17)	100.9(7)
O(6)-W(1)-O(9)	99.9(7)	O(30)-W(10)-O(17)	89.9(6)
O(31)-W(1)-O(9)	87.8(7)	O(10)-W(10)-O(17)	88.7(6)
O(10)-W(1)-O(9)	159.1(6)	O(18)-W(10)-O(29)	101.1(8)
O(6)-W(1)-O(15)	103.8(7)	O(30)-W(10)-O(29)	89.8(7)
O(31)-W(1)-O(15)	158.5(7)	O(10)-W(10)-O(29)	83.1(6)
O(10)-W(1)-O(15)	86.2(6)	O(17)-W(10)-O(29)	157.7(6)
O(9)-W(1)-O(15)	88.6(7)	O(18)-W(10)-O(27)	172.9(7)
O(6)-W(1)-O(37)	170.2(6)	O(30)-W(10)-O(27)	74.6(7)
O(31)-W(1)-O(37)	74.4(5)	O(10)-W(10)-O(27)	83.2(6)
O(10)-W(1)-O(37)	84.9(6)	O(17)-W(10)-O(27)	73.5(5)
O(9)-W(1)-O(37)	74.5(5)	O(29)-W(10)-O(27)	84.9(6)
O(15)-W(1)-O(37)	84.3(6)	O(34)-W(11)-O(35)	102.2(8)
O(12)-W(2)-O(2)	102.2(8)	O(34)-W(11)-O(23)	101.0(8)
O(12)-W(2)-O(1)	103.4(9)	O(35)-W(11)-O(23)	156.8(7)
O(2)-W(2)-O(1)	86.2(6)	O(34)-W(11)-O(24)	98.8(8)
O(12)-W(2)-O(17)	98.2(8)	O(35)-W(11)-O(24)	89.3(6)
O(2)-W(2)-O(17)	159.6(6)	O(23)-W(11)-O(24)	87.3(6)
O(1)-W(2)-O(17)	89.4(6)	O(34)-W(11)-O(38)	102.9(8)
O(12)-W(2)-O(28)	96.7(9)	O(35)-W(11)-O(38)	89.5(7)
O(2)-W(2)-O(28)	90.3(7)	O(23)-W(11)-O(38)	85.2(6)

O(1)-W(2)-O(28)	159.9(6)	O(24)-W(11)-O(38)	158.0(6)
O(17)-W(2)-O(28)	87.1(7)	O(34)-W(11)-O(7)	171.3(7)
O(12)-W(2)-O(27)	168.7(8)	O(35)-W(11)-O(7)	73.5(6)
O(2)-W(2)-O(27)	84.8(6)	O(23)-W(11)-O(7)	83.6(6)
O(1)-W(2)-O(27)	85.7(6)	O(24)-W(11)-O(7)	73.8(6)
O(17)-W(2)-O(27)	75.0(5)	O(38)-W(11)-O(7)	84.8(6)
O(28)-W(2)-O(27)	74.3(5)	O(22)-W(12)-O(23)	102.8(7)
O(8)-W(3)-O(40)	100.8(7)	O(22)-W(12)-O(20)	105.2(8)
O(8)-W(3)-O(36)	102.2(8)	O(23)-W(12)-O(20)	87.1(6)
O(40)-W(3)-O(36)	85.8(6)	O(22)-W(12)-O(19)	97.5(7)
O(8)-W(3)-O(19)	101.9(6)	O(23)-W(12)-O(19)	88.3(6)
O(40)-W(3)-O(19)	157.1(6)	O(20)-W(12)-O(19)	157.4(6)
O(36)-W(3)-O(19)	86.1(6)	O(22)-W(12)-O(39)	97.7(7)
O(8)-W(3)-O(14)	98.2(7)	O(23)-W(12)-O(39)	159.6(7)
O(40)-W(3)-O(14)	91.2(6)	O(20)-W(12)-O(39)	88.0(7)
O(36)-W(3)-O(14)	159.6(6)	O(19)-W(12)-O(39)	88.6(7)
O(19)-W(3)-O(14)	89.0(6)	O(22)-W(12)-O(26)	166.9(7)
O(8)-W(3)-O(26)	169.0(7)	O(23)-W(12)-O(26)	86.6(6)
O(40)-W(3)-O(26)	85.8(6)	O(20)-W(12)-O(26)	84.2(6)
O(36)-W(3)-O(26)	87.0(6)	O(19)-W(12)-O(26)	73.4(5)
O(19)-W(3)-O(26)	72.4(5)	O(39)-W(12)-O(26)	73.2(6)
O(14)-W(3)-O(26)	72.7(5)	O(32)-W(7)-O(40)	100.5(7)
O(11)-W(4)-O(4)	103.5(8)	O(32)-W(7)-O(13)	100.7(8)
O(11)-W(4)-O(3)	100.0(8)	O(40)-W(7)-O(13)	86.1(6)
O(4)-W(4)-O(3)	91.2(7)	O(32)-W(7)-O(25)	101.1(7)
O(11)-W(4)-O(2)	103.4(8)	O(40)-W(7)-O(25)	158.3(7)
O(4)-W(4)-O(2)	86.6(7)	O(13)-W(7)-O(25)	87.7(6)
O(3)-W(4)-O(2)	156.3(6)	O(32)-W(7)-O(9)	101.7(8)
O(11)-W(4)-O(35)	98.8(8)	O(40)-W(7)-O(9)	88.4(7)
O(4)-W(4)-O(35)	157.7(7)	O(13)-W(7)-O(9)	157.6(6)
O(3)-W(4)-O(35)	86.0(7)	O(25)-W(7)-O(9)	89.5(6)
O(2)-W(4)-O(35)	87.2(7)	O(32)-W(7)-O(37)	172.9(7)
O(11)-W(4)-O(7)	169.2(7)	O(40)-W(7)-O(37)	84.2(6)
O(4)-W(4)-O(7)	85.3(6)	O(13)-W(7)-O(37)	84.8(6)
O(3)-W(4)-O(7)	73.2(6)	O(25)-W(7)-O(37)	74.5(6)
O(2)-W(4)-O(7)	83.1(6)	O(9)-W(7)-O(37)	73.0(6)
O(35)-W(4)-O(7)	72.7(6)	O(21)-W(8)-O(20)	103.9(7)
O(5)-W(5)-O(1)	99.8(7)	O(21)-W(8)-O(38)	102.0(8)
O(5)-W(5)-O(25)	101.6(7)	O(20)-W(8)-O(38)	87.9(7)
O(1)-W(5)-O(25)	158.5(7)	O(21)-W(8)-O(28)	98.8(7)
O(5)-W(5)-O(4)	101.9(8)	O(20)-W(8)-O(28)	157.3(7)
O(1)-W(5)-O(4)	85.9(6)	O(38)-W(8)-O(28)	87.8(7)
O(25)-W(5)-O(4)	87.3(7)	O(21)-W(8)-O(30)	100.8(8)

O(5)-W(5)-O(31)	101.0(7)	O(20)-W(8)-O(30)	87.9(6)
O(1)-W(5)-O(31)	88.5(6)	O(38)-W(8)-O(30)	157.2(7)
O(25)-W(5)-O(31)	89.9(6)	O(28)-W(8)-O(30)	87.6(7)
O(4)-W(5)-O(31)	157.0(6)	O(21)-W(8)-O(27)	170.4(6)
O(5)-W(5)-O(37)	172.5(7)	O(20)-W(8)-O(27)	84.0(6)
O(1)-W(5)-O(37)	84.3(6)	O(38)-W(8)-O(27)	83.5(6)
O(25)-W(5)-O(37)	74.8(6)	O(28)-W(8)-O(27)	73.4(6)
O(4)-W(5)-O(37)	84.5(6)	O(13)-W(6)-O(24)	158.0(6)
O(31)-W(5)-O(37)	72.7(5)	O(33)-W(6)-O(3)	100.1(7)
O(33)-W(6)-O(36)	100.4(7)	O(36)-W(6)-O(3)	159.5(6)
O(33)-W(6)-O(13)	102.5(7)	O(13)-W(6)-O(3)	88.1(6)
O(36)-W(6)-O(13)	87.3(6)	O(24)-W(6)-O(3)	86.3(6)
O(33)-W(6)-O(24)	99.4(7)	O(33)-W(6)-O(7)	170.5(7)
O(36)-W(6)-O(24)	90.6(6)	O(36)-W(6)-O(7)	86.5(6)
O(3)-W(6)-O(7)	73.2(5)	O(13)-W(6)-O(7)	84.4(6)

Symmetry transformations used to generate equivalent atoms: #1 -x+2,-y+1,-z+1