Supporting information

Sandwich-type aluminum complex composed of tri-lacunary Keggin-type polyoxotungstate: synthesis and X-ray crystal structure of $[(A\text{-}PW_9O_{34})_2\{W(OH)(OH_2)\}\{Al(OH)(OH_2)\}\{Al(\mu\text{-}OH)(OH_2)_2\}_2]^{7-}$†

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Contents

Table S1. Bond distances (Å) and angles (°) for **KNa-1**.

KNa-1 (Å)			
W(1)-O(1)	1.798(13)	W(6)-O(6)	1.890(11)
W(1)-O(7)	1.951(9)	W(6)-O(11)	1.927(10)
W(1)-O(12)	1.933(9)	W(6)-O(12)	1.888(10)
W(1)-O(13)	1.740(9)	W(6)-O(18)	1.737(11)
W(1)-O(19)	2.029(14)	W(6)-O(24)	1.999(12)
W(1)-O(31)	2.366(9)	W(6)-O(33)	2.388(10)
W(2)-O(2)	1.799(13)	W(7)-O(19)	1.869(13)
W(2)-O(7)	1.947(10)	W(7)-O(24)	1.898(10)
W(2)-O(8)	1.952(9)	W(7)-O(25)	1.977(11)
W(2)-O(14)	1.721(8)	W(7)-O(27)	1.960(12)
W(2)-O(20)	2.038(13)	W(7)-O(28)	1.732(10)
W(2)-O(31)	2.396(9)	W(7)-O(34)	2.394(9)
W(3)-O(3)	1.945(11)	W(8)-O(20)	1.844(13)
W(3)-O(8)	1.893(10)	W(8)-O(21)	1.921(9)
W(3)-O(9)	1.907(10)	W(8)-O(25)	1.939(10)
W(3)-O(15)	1.732(9)	W(8)-O(26)	1.962(11)
W(3)-O(21)	1.954(11)	W(8)-O(29)	1.718(11)
W(3)-O(32)	2.347(9)	W(8)-O(34)	2.388(10)
W(4)-O(4)	1.859(13)	W(9)-O(22)	1.902(10)
W(4)-O(9)	1.949(9)	W(9)-O(23)	1.916(11)
W(4)-O(10)	1.921(10)	W(9)-O(26)	1.927(9)
W(4)-O(16)	1.736(10)	W(9)-O(27)	1.952(9)
W(4)-O(22)	1.970(12)	W(9)-O(30)	1.743(16)
W(4)-O(32)	2.405(9)	W(9)-O(34)	2.399(12)
W(5)-O(5)	1.867(13)	W(10)-O(35)	1.792(12)
W(5)-O(10)	1.918(9)	W(10)-O(41)	1.924(10)
W(5)-O(11)	1.910(10)	W(10)-O(46)	1.921(10)
W(5)-O(17)	1.741(11)	W(10)-O(47)	1.769(12)
W(5)-O(23)	1.949(12)	W(10)-O(53)	2.028(9)
W(5)-O(33)	2.438(9)	W(10)-O(65)	2.390(10)

Table S1-continued

KNa-1 (Å)			
W(11)-O(36)	1.815(11)	W(16)-O(53)	1.867(8)
W(11)-O(41)	1.945(11)	W(16)-O(58)	1.916(12)
W(11)-O(42)	1.947(11)	W(16)-O(59)	1.967(10)
W(11)-O(48)	1.745(12)	W(16)-O(61)	1.958(9)
W(11)-O(54)	2.045(10)	W(16)-O(62)	1.741(14)
W(11)-O(65)	2.371(9)	W(16)-O(68)	2.408(12)
W(12)-O(37)	1.922(12)	W(17)-O(54)	1.859(8)
W(12)-O(42)	1.891(9)	W(17)-O(55)	1.905(12)
W(12)-O(43)	1.940(9)	W(17)-O(59)	1.949(12)
W(12)-O(49)	1.755(10)	W(17)-O(60)	1.950(8)
W(12)-O(55)	1.960(12)	W(17)-O(63)	1.702(12)
W(12)-O(66)	2.352(8)	W(17)-O(68)	2.403(11)
W(13)-O(38)	1.849(11)	W(18)-O(56)	1.889(12)
W(13)-O(43)	1.926(10)	W(18)-O(57)	1.904(11)
W(13)-O(44)	1.922(10)	W(18)-O(60)	1.955(11)
W(13)-O(50)	1.736(9)	W(18)-O(61)	1.921(13)
W(13)-O(56)	1.983(13)	W(18)-O(64)	1.709(8)
W(13)-O(66)	2.413(8)	W(18)-O(68)	2.391(8)
W(14)-O(39)	1.840(11)	P(1)-O(31)	1.555(11)
W(14)-O(44)	1.895(11)	P(1)-O(32)	1.532(9)
W(14)-O(45)	1.961(11)	P(1)-O(33)	1.534(10)
W(14)-O(51)	1.739(9)	P(1)-O(34)	1.594(13)
W(14)-O(57)	1.985(12)	P(2)-O(65)	1.538(8)
W(14)-O(67)	2.412(9)	P(2)-O(66)	1.539(10)
W(15)-O(40)	1.904(13)	P(2)-O(67)	1.553(10)
W(15)-O(45)	1.924(9)	P(2)-O(68)	1.577(12)
W(15)-O(46)	1.906(9)		
W(15)-O(52)	1.734(11)		
W(15)-O(58)	1.983(12)		
W(15)-O(67)	2.357(9)		

Table S1-continued

KNa-1 (°)			
O(1)-W(1)-O(7)	93.6(4)	O(3)-W(3)-O(8)	90.6(4)
O(1)-W(1)-O(12)	92.2(5)	O(3)-W(3)-O(9)	89.1(4)
O(1)-W(1)-O(13)	100.8(5)	O(3)-W(3)-O(15)	100.4(4)
O(1)-W(1)-O(19)	166.2(4)	O(3)-W(3)-O(21)	163.2(4)
O(1)-W(1)-O(31)	85.7(4)	O(3)-W(3)-O(32)	80.4(4)
O(7)-W(1)-O(12)	156.0(4)	O(8)-W(3)-O(9)	158.2(4)
O(7)-W(1)-O(13)	100.0(4)	O(8)-W(3)-O(15)	103.4(4)
O(7)-W(1)-O(19)	86.5(4)	O(8)-W(3)-O(21)	87.1(4)
O(7)-W(1)-O(31)	73.8(3)	O(8)-W(3)-O(32)	83.2(3)
O(12)-W(1)-O(13)	101.7(4)	O(9)-W(3)-O(15)	98.1(4)
O(12)-W(1)-O(19)	82.4(4)	O(9)-W(3)-O(21)	87.0(4)
O(12)-W(1)-O(31)	83.5(3)	O(9)-W(3)-O(32)	75.2(4)
O(13)-W(1)-O(19)	92.7(5)	O(15)-W(3)-O(21)	96.3(5)
O(13)-W(1)-O(31)	171.4(4)	O(15)-W(3)-O(32)	173.3(4)
O(19)-W(1)-O(31)	81.0(4)	O(21)-W(3)-O(32)	82.8(4)
O(2)-W(2)-O(7)	93.4(5)	O(4)-W(4)-O(9)	88.6(5)
O(2)-W(2)-O(8)	91.3(4)	O(4)-W(4)-O(10)	93.0(5)
O(2)-W(2)-O(14)	101.4(5)	O(4)-W(4)-O(16)	100.9(5)
O(2)-W(2)-O(20)	166.7(3)	O(4)-W(4)-O(22)	160.7(4)
O(2)-W(2)-O(31)	87.2(4)	O(4)-W(4)-O(32)	79.3(4)
O(7)-W(2)-O(8)	154.1(3)	O(9)-W(4)-O(10)	157.6(3)
O(7)-W(2)-O(14)	99.7(4)	O(9)-W(4)-O(16)	101.9(4)
O(7)-W(2)-O(20)	86.6(4)	O(9)-W(4)-O(22)	84.7(4)
O(7)-W(2)-O(31)	73.1(3)	O(9)-W(4)-O(32)	73.1(4)
O(8)-W(2)-O(14)	104.2(4)	O(10)-W(4)-O(16)	99.7(4)
O(8)-W(2)-O(20)	83.1(4)	O(10)-W(4)-O(22)	86.5(4)
O(8)-W(2)-O(31)	81.7(3)	O(10)-W(4)-O(32)	85.2(3)
O(14)-W(2)-O(20)	91.6(5)	O(16)-W(4)-O(22)	98.2(5)
O(14)-W(2)-O(31)	169.2(4)	O(16)-W(4)-O(32)	175.1(4)
O(20)-W(2)-O(31)	80.1(4)	O(22)-W(4)-O(32)	81.5(4)

Table S1-continued

KNa-1 (°)			
O(5)-W(5)-O(10)	90.9(5)	O(19)-W(7)-O(24)	87.3(5)
O(5)-W(5)-O(11)	88.3(5)	O(19)-W(7)-O(25)	89.0(5)
O(5)-W(5)-O(17)	101.2(5)	O(19)-W(7)-O(27)	156.8(4)
O(5)-W(5)-O(23)	161.5(4)	O(19)-W(7)-O(28)	102.8(5)
O(5)-W(5)-O(33)	80.6(4)	O(19)-W(7)-O(34)	84.4(4)
O(10)-W(5)-O(11)	155.6(4)	O(24)-W(7)-O(25)	157.7(4)
O(10)-W(5)-O(17)	101.5(4)	O(24)-W(7)-O(27)	90.4(4)
O(10)-W(5)-O(23)	85.8(4)	O(24)-W(7)-O(28)	102.9(4)
O(10)-W(5)-O(33)	82.5(3)	O(24)-W(7)-O(34)	85.9(3)
O(11)-W(5)-O(17)	102.7(4)	O(25)-W(7)-O(27)	84.5(4)
O(11)-W(5)-O(23)	87.3(5)	O(25)-W(7)-O(28)	99.3(4)
O(11)-W(5)-O(33)	73.3(3)	O(25)-W(7)-O(34)	71.9(3)
O(17)-W(5)-O(23)	97.4(5)	O(27)-W(7)-O(28)	100.2(5)
O(17)-W(5)-O(33)	175.6(4)	O(27)-W(7)-O(34)	72.5(4)
O(23)-W(5)-O(33)	80.9(4)	O(28)-W(7)-O(34)	168.7(5)
O(6)-W(6)-O(11)	88.9(5)	O(20)-W(8)-O(21)	86.5(4)
O(6)-W(6)-O(12)	95.7(4)	O(20)-W(8)-O(25)	90.5(5)
O(6)-W(6)-O(18)	101.6(5)	O(20)-W(8)-O(26)	156.4(4)
O(6)-W(6)-O(24)	161.6(4)	O(20)-W(8)-O(29)	103.4(5)
O(6)-W(6)-O(33)	80.3(4)	O(20)-W(8)-O(34)	84.4(4)
O(11)-W(6)-O(12)	155.9(4)	O(21)-W(8)-O(25)	156.3(4)
O(11)-W(6)-O(18)	100.4(5)	O(21)-W(8)-O(26)	86.8(4)
O(11)-W(6)-O(24)	84.0(4)	O(21)-W(8)-O(29)	103.0(4)
O(11)-W(6)-O(33)	74.3(4)	O(21)-W(8)-O(34)	83.6(3)
O(12)-W(6)-O(18)	101.8(4)	O(25)-W(8)-O(26)	86.5(4)
O(12)-W(6)-O(24)	84.4(5)	O(25)-W(8)-O(29)	100.6(4)
O(12)-W(6)-O(33)	83.1(3)	O(25)-W(8)-O(34)	72.6(3)
O(18)-W(6)-O(24)	96.4(5)	O(26)-W(8)-O(29)	100.1(5)
O(18)-W(6)-O(33)	174.4(5)	O(26)-W(8)-O(34)	72.4(4)
O(24)-W(6)-O(33)	81.4(4)	O(29)-W(8)-O(34)	169.9(5)

Table S1-continued

KNa-1 (°)			
O(22)-W(9)-O(23)	86.8(4)	O(36)-W(11)-O(41)	95.2(4)
O(22)-W(9)-O(26)	89.6(4)	O(36)-W(11)-O(42)	92.4(5)
O(22)-W(9)-O(27)	157.2(5)	O(36)-W(11)-O(48)	100.8(5)
O(22)-W(9)-O(30)	101.3(5)	O(36)-W(11)-O(54)	165.8(4)
O(22)-W(9)-O(34)	84.8(4)	O(36)-W(11)-O(65)	86.6(4)
O(23)-W(9)-O(26)	157.1(5)	O(41)-W(11)-O(42)	155.3(3)
O(23)-W(9)-O(27)	88.3(4)	O(41)-W(11)-O(48)	101.3(5)
O(23)-W(9)-O(30)	102.3(5)	O(41)-W(11)-O(54)	85.1(4)
O(23)-W(9)-O(34)	84.4(4)	O(41)-W(11)-O(65)	73.5(4)
O(26)-W(9)-O(27)	86.2(4)	O(42)-W(11)-O(48)	100.3(5)
O(26)-W(9)-O(30)	100.6(5)	O(42)-W(11)-O(54)	81.9(4)
O(26)-W(9)-O(34)	72.7(4)	O(42)-W(11)-O(65)	83.5(3)
O(27)-W(9)-O(30)	101.5(5)	O(48)-W(11)-O(54)	93.0(5)
O(27)-W(9)-O(34)	72.5(4)	O(48)-W(11)-O(65)	171.5(5)
O(30)-W(9)-O(34)	171.0(4)	O(54)-W(11)-O(65)	79.9(3)
O(35)-W(10)-O(41)	94.2(4)	O(37)-W(12)-O(42)	92.5(4)
O(35)-W(10)-O(46)	92.5(5)	O(37)-W(12)-O(43)	89.2(4)
O(35)-W(10)-O(47)	100.5(5)	O(37)-W(12)-O(49)	98.7(5)
O(35)-W(10)-O(53)	167.1(5)	O(37)-W(12)-O(55)	162.3(4)
O(35)-W(10)-O(65)	87.1(4)	O(37)-W(12)-O(66)	80.5(4)
O(41)-W(10)-O(46)	154.5(4)	O(42)-W(12)-O(43)	158.0(4)
O(41)-W(10)-O(47)	101.3(5)	O(42)-W(12)-O(49)	99.8(4)
O(41)-W(10)-O(53)	84.7(4)	O(42)-W(12)-O(55)	86.3(4)
O(41)-W(10)-O(65)	73.5(4)	O(42)-W(12)-O(66)	84.2(3)
O(46)-W(10)-O(47)	101.7(4)	O(43)-W(12)-O(49)	101.6(4)
O(46)-W(10)-O(53)	83.4(4)	O(43)-W(12)-O(55)	85.5(4)
O(46)-W(10)-O(65)	82.3(3)	O(43)-W(12)-O(66)	74.4(3)
O(47)-W(10)-O(53)	92.3(4)	O(49)-W(12)-O(55)	98.9(5)
O(47)-W(10)-O(65)	171.1(4)	O(49)-W(12)-O(66)	175.9(4)
O(53)-W(10)-O(65)	80.3(4)	O(55)-W(12)-O(66)	81.8(4)

Table S1-continued

KNa-1 (°)			
O(38)-W(13)-O(43)	88.2(4)	O(40)-W(15)-O(45)	88.8(4)
O(38)-W(13)-O(44)	92.8(4)	O(40)-W(15)-O(46)	94.1(4)
O(38)-W(13)-O(50)	100.9(4)	O(40)-W(15)-O(52)	100.0(5)
O(38)-W(13)-O(56)	160.7(4)	O(40)-W(15)-O(58)	163.2(4)
O(38)-W(13)-O(66)	79.7(4)	O(40)-W(15)-O(67)	80.7(4)
O(43)-W(13)-O(44)	156.2(4)	O(45)-W(15)-O(46)	157.2(4)
O(43)-W(13)-O(50)	101.1(4)	O(45)-W(15)-O(52)	98.9(4)
O(43)-W(13)-O(56)	85.8(4)	O(45)-W(15)-O(58)	86.5(4)
O(43)-W(13)-O(66)	73.2(3)	O(45)-W(15)-O(67)	75.4(3)
O(44)-W(13)-O(50)	102.1(4)	O(46)-W(15)-O(52)	102.8(4)
O(44)-W(13)-O(56)	85.5(4)	O(46)-W(15)-O(58)	84.3(4)
O(44)-W(13)-O(66)	83.5(3)	O(46)-W(15)-O(67)	82.8(3)
O(50)-W(13)-O(56)	98.3(4)	O(52)-W(15)-O(58)	96.7(5)
O(50)-W(13)-O(66)	174.3(3)	O(52)-W(15)-O(67)	174.3(3)
O(56)-W(13)-O(66)	81.0(3)	O(58)-W(15)-O(67)	82.5(4)
O(39)-W(14)-O(44)	94.3(4)	O(53)-W(16)-O(58)	87.8(4)
O(39)-W(14)-O(45)	88.0(4)	O(53)-W(16)-O(59)	89.9(4)
O(39)-W(14)-O(51)	101.5(5)	O(53)-W(16)-O(61)	155.0(5)
O(39)-W(14)-O(57)	160.7(4)	O(53)-W(16)-O(62)	104.3(4)
O(39)-W(14)-O(67)	80.7(4)	O(53)-W(16)-O(68)	83.9(4)
O(44)-W(14)-O(45)	156.0(4)	O(58)-W(16)-O(59)	156.8(5)
O(44)-W(14)-O(51)	102.9(4)	O(58)-W(16)-O(61)	87.5(4)
O(44)-W(14)-O(57)	85.0(4)	O(58)-W(16)-O(62)	102.5(5)
O(44)-W(14)-O(67)	83.4(3)	O(58)-W(16)-O(68)	84.3(4)
O(45)-W(14)-O(51)	100.0(4)	O(59)-W(16)-O(61)	84.9(4)
O(45)-W(14)-O(57)	85.0(4)	O(59)-W(16)-O(62)	100.4(5)
O(45)-W(14)-O(67)	73.4(3)	O(59)-W(16)-O(68)	72.4(4)
O(51)-W(14)-O(57)	97.5(4)	O(61)-W(16)-O(62)	100.7(4)
O(51)-W(14)-O(67)	173.1(5)	O(61)-W(16)-O(68)	71.2(4)
O(57)-W(14)-O(67)	80.1(3)	O(62)-W(16)-O(68)	169.4(4)

Table S1-continued

KNa-1 (°)			
O(54)-W(17)-O(55)	87.4(4)	O(31)-P(1)-O(32)	110.9(5)
O(54)-W(17)-O(59)	91.0(4)	O(31)-P(1)-O(33)	112.0(6)
O(54)-W(17)-O(60)	156.0(5)	O(31)-P(1)-O(34)	108.7(5)
O(54)-W(17)-O(63)	103.9(4)	O(32)-P(1)-O(33)	109.9(5)
O(54)-W(17)-O(68)	84.1(3)	O(32)-P(1)-O(34)	107.4(6)
O(55)-W(17)-O(59)	157.3(4)	O(33)-P(1)-O(34)	107.8(6)
O(55)-W(17)-O(60)	86.8(4)	O(65)-P(2)-O(66)	111.2(5)
O(55)-W(17)-O(63)	102.4(5)	O(65)-P(2)-O(67)	111.5(5)
O(55)-W(17)-O(68)	84.4(4)	O(65)-P(2)-O(68)	108.7(6)
O(59)-W(17)-O(60)	85.5(4)	O(66)-P(2)-O(67)	110.8(6)
O(59)-W(17)-O(63)	100.0(5)	O(66)-P(2)-O(68)	106.8(5)
O(59)-W(17)-O(68)	72.9(4)	O(67)-P(2)-O(68)	107.7(5)
O(60)-W(17)-O(63)	100.1(4)	W(1)-O(1)-Al(1)	163.2(6)
O(60)-W(17)-O(68)	72.1(3)	W(2)-O(2)-Al(2)	161.4(6)
O(63)-W(17)-O(68)	169.6(4)	W(3)-O(3)-W(20)	142.8(5)
O(56)-W(18)-O(57)	86.5(5)	W(3)-O(3)-Al(4)	142.8(5)
O(56)-W(18)-O(60)	88.2(5)	W(4)-O(4)-W(20)	145.2(4)
O(56)-W(18)-O(61)	157.5(3)	W(4)-O(4)-Al(4)	145.2(4)
O(56)-W(18)-O(64)	101.0(5)	W(5)-O(5)-W(19)	142.6(4)
O(56)-W(18)-O(68)	85.4(3)	W(5)-O(5)-Al(3)	142.6(4)
O(57)-W(18)-O(60)	156.5(3)	W(6)-O(6)-W(19)	142.4(6)
O(57)-W(18)-O(61)	89.0(5)	W(6)-O(6)-Al(3)	142.4(6)
O(57)-W(18)-O(64)	102.5(4)	W(1)-O(7)-W(2)	121.0(4)
O(57)-W(18)-O(68)	84.4(3)	W(2)-O(8)-W(3)	153.4(6)
O(60)-W(18)-O(61)	87.2(5)	W(3)-O(9)-W(4)	121.0(6)
O(60)-W(18)-O(64)	101.0(4)	W(4)-O(10)-W(5)	151.7(5)
O(60)-W(18)-O(68)	72.3(3)	W(5)-O(11)-W(6)	122.7(5)
O(61)-W(18)-O(64)	101.5(5)	W(1)-O(12)-W(6)	156.4(7)
O(61)-W(18)-O(68)	72.2(3)	W(1)-O(19)-W(7)	151.3(5)
O(64)-W(18)-O(68)	170.7(5)	W(2)-O(20)-W(8)	153.6(4)

Table S1-continued

KNa-1 (°)			
W(3)-O(21)-W(8)	149.0(7)	W(15)-O(40)-Al(3)	144.6(5)
W(4)-O(22)-W(9)	149.7(7)	W(10)-O(41)-W(11)	121.0(6)
W(5)-O(23)-W(9)	151.6(6)	W(11)-O(42)-W(12)	154.2(5)
W(6)-O(24)-W(7)	148.9(6)	W(12)-O(43)-W(13)	121.2(4)
W(7)-O(25)-W(8)	123.3(5)	W(13)-O(44)-W(14)	153.7(7)
W(8)-O(26)-W(9)	123.4(6)	W(14)-O(45)-W(15)	120.2(5)
W(7)-O(27)-W(9)	123.2(6)	W(10)-O(46)-W(15)	156.5(5)
W(1)-O(31)-W(2)	90.8(2)	W(10)-O(53)-W(16)	151.0(7)
W(1)-O(31)-P(1)	127.7(5)	W(11)-O(54)-W(17)	152.5(7)
W(2)-O(31)-P(1)	128.2(6)	W(12)-O(55)-W(17)	148.6(4)
W(3)-O(32)-W(4)	89.8(3)	W(13)-O(56)-W(18)	150.2(5)
W(3)-O(32)-P(1)	128.3(4)	W(14)-O(57)-W(18)	151.1(5)
W(4)-O(32)-P(1)	128.1(6)	W(15)-O(58)-W(16)	149.2(5)
W(5)-O(33)-W(6)	88.5(3)	W(16)-O(59)-W(17)	123.2(7)
W(5)-O(33)-P(1)	129.4(6)	W(17)-O(60)-W(18)	123.7(5)
W(6)-O(33)-P(1)	128.4(4)	W(16)-O(61)-W(18)	125.0(5)
W(7)-O(34)-W(8)	92.2(3)	W(10)-O(65)-W(11)	90.1(3)
W(7)-O(34)-W(9)	91.8(4)	W(10)-O(65)-P(2)	128.1(5)
W(7)-O(34)-P(1)	122.9(6)	W(11)-O(65)-P(2)	129.3(5)
W(8)-O(34)-W(9)	91.4(4)	W(12)-O(66)-W(13)	89.9(2)
W(8)-O(34)-P(1)	124.4(5)	W(12)-O(66)-P(2)	128.9(6)
W(9)-O(34)-P(1)	124.7(4)	W(13)-O(66)-P(2)	128.8(4)
W(10)-O(35)-Al(1)	162.5(7)	W(14)-O(67)-W(15)	89.8(3)
W(11)-O(36)-Al(2)	166.6(6)	W(14)-O(67)-P(2)	128.7(4)
W(12)-O(37)-W(20)	141.8(5)	W(15)-O(67)-P(2)	128.2(7)
W(12)-O(37)-Al(4)	141.8(5)	W(16)-O(68)-W(17)	91.4(4)
W(13)-O(38)-W(20)	144.3(6)	W(16)-O(68)-W(18)	91.6(3)
W(13)-O(38)-Al(4)	144.3(6)	W(16)-O(68)-P(2)	124.0(5)
W(14)-O(39)-W(19)	145.6(7)	W(17)-O(68)-W(18)	91.8(3)
W(14)-O(39)-Al(3)	145.6(7)	W(17)-O(68)-P(2)	123.6(5)
W(15)-O(40)-W(19)	144.6(5)	W(18)-O(68)-P(2)	124.7(6)

Table S2. Bond valence sum (BVS) calculation for **KNa-1**.

	BVS		BVS
O(1)	1.884	O(36)	1.851
O(2)	1.878	O(41)	1.908
O(7)	1.832	O(42)	1.992
O(8)	1.975	O(43)	1.913
O(9)	1.942	O(44)	2.047
O(10)	1.984	O(45)	1.867
O(11)	1.992	O(46)	2.017
O(12)	2.036	O(47)	1.491
O(13)	1.610	O(48)	1.591
O(14)	1.695	O(49)	1.549
O(15)	1.645	O(50)	1.627
O(16)	1.631	O(51)	1.614
O(17)	1.609	O(52)	1.639
O(18)	1.626	O(53)	1.881
O(19)	1.877	O(54)	1.874
O(20)	1.939	O(55)	1.923
O(21)	1.892	O(56)	1.914
O(22)	1.907	O(57)	1.867
O(23)	1.919	O(58)	1.838
O(24)	1.853	O(59)	1.790
O(25)	1.792	O(60)	1.815
O(26)	1.856	O(61)	1.882
O(27)	1.798	O(62)	1.608
O(28)	1.648	O(63)	1.787
O(29)	1.712	O(64)	1.751
O(30)	1.600	O(65)	1.805
O(31)	1.751	O(66)	1.803
O(32)	1.834	O(67)	1.755
O(33)	1.775	O(68)	1.925
O(34)	1.891	O(69)	0.887
O(35)	1.901	O(70)	1.010

Table S2-continued.

	BVS		BVS
O(71)	0.404	W(10)	5.879
O(72)	0.457	W(11)	5.756
O(73)	0.438	W(12)	5.740
O(74)	0.434	W(13)	5.887
W(1)	5.889	W(14)	5.888
W(2)	5.894	W(15)	5.821
W(3)	5.883	W(16)	5.783
W(4)	5.837	W(17)	6.086
W(5)	5.928	W(18)	6.032
W(6)	5.836	P(1)	4.752
W(7)	5.853	P(2)	4.772
W(8)	6.024	Al(1)	2.798
W(9)	5.794	Al(2)	2.874