The Canadian Mineralogist
Vol. 34, pp. 685-692 (1996)

NEW MINERALS RECENTLY APPROVED BY THE COMMISSION ON NEW MINERALS AND MINERAL NAMES, INTERNATIONAL MINERALOGICAL ASSOCIATION

The information given here is provided by the Commission on New Minerals and Mineral Names, IMA, for comparative purposes and as a service to mineralogists working on new species.

Each mineral is described in the following format:

IMA No. (any relationship to other minerals)
Chemical Formula
Crystal system, space group
unit-cell parameters
Color; luster; diaphaneity
Optical properties
Strongest lines in the X-ray powder-diffraction pattern

The names of these approved species are considered confidential information until the authors have published their descriptions or released information themselves. No other information will be released by the Commission.

J.A. Mandarino, Chairman Emeritus, and J.D. Grice, Chairman
Commission on New Minerals and Mineral Names
International Mineralogical Association

1995 PROPOSALS

IMA No. 95–001 A member of the crandallite group
$SrFe_3^{3+}(PO_4)_2(OH,H_2O)_6$
Hexagonal (trigonal): $R\bar{3}m$
a 7.28, *c* 16.85 Å
Yellow, brown; vitreous to resinous; transparent to translucent.
Uniaxial (–), ω 1.872, ε 1.862
5.88(10), 3.65(6), 3.06(9), 2.96(5), 2.81(5), 2.53(5), 2.25(6), 1.969(5), 1.820(5).

IMA No. 95–002 The Mn^{2+} and (O,F) analogue of paulkerrite
$(H_2O,K)_2Ti(Mn^{2+},Fe^{2+})_2(Fe^{3+},Ti^{4+})_2(PO_4)_4(O,F)_2 \cdot 14H_2O$
Orthorhombic: *Pbca*
a 10.561, *b* 20.858, *c* 12.516 Å
Greenish yellow, in some cases light brown; vitreous; transparent.
Biaxial (+), α 1.612, β 1.621, γ 1.649, 2*V*(calc.) 59.9°.
10.40(90), 7.50(80), 6.28(100), 5.22(40), 3.97(40), 3.77(50), 3.13(100), 2.88(40).

IMA No. 95–003
$Cu(Pt,Ir)_2S_4$
Cubic: $Fd\bar{3}m$
a 9.940 Å
Steel grey; metallic; opaque.
In reflected light: white with greenish tint, isotropic, no bireflectance or pleochroism. R: (37.3%) 470 nm, (37.7%) 546 nm, (38.1%) 589 nm, (38.6%) 650 nm.
5.72(4), 2.98(6), 2.48(5), 1.90(7), 1.75(10), 1.29(5), 1.014(5).

IMA No. 95–005 The strontium end-member of the cryptomelane group
$(Sr,Ba,K)Mn_8O_{16}$
Monoclinic: $P2_1/n$
a 10.00, *b* 5.758, *c* 9.88 Å, β 90.64°
Black; submetallic; opaque.
In reflected light: grey, strong anisotropism, grey-blue to white bireflectance, pleochroism strong. R_{max} and R_{min}: (34.2, 26.0%) 470 nm, (31.7, 24.4%) 546 nm, (30.6, 23.4%) 589 nm, (27.9, 22.3%) 650 nm.
3.15(100), 3.13(80), 2.409(80), 2.229(40), 2.170(60), 2.170(60), 1.556(50).

IMA No. 95–006 The silver analogue of roquesite in the chalcopyrite group
$AgInS_2$
Tetragonal: $I\bar{4}2d$
a 5.880, *c* 11.21 Å
Havana brown; metallic; opaque.
In reflected light: brownish grey; abundant red internal reflections; strong anisotropism in oil from red brick with orange tint to bluish grey and purplish; pleochroism weak, brown to clear brown-grey in oil. R_{max} and R_{min}: (29.3, 27.8%) 460 nm, (27.5, 25.9%) 540 nm, (27.65, 25.6%) 580 nm, (27.4, 27.5%) 660 nm.
3.351(100), 2.941(80), 2.082(75), 2.030(75), 1.767(80), 1.188(40).

IMA No. 95–007 Probably belongs to the marcasite group
CoSbAs
Orthorhombic: space group unknown
a 3.304, *b* 6.092, *c* 10.26 Å
White; metallic; opaque.
In reflected light: silver-white, weak to distinct anisotropism, weak bireflectance, nonpleochroic. R_2 and R_1: (58.2, 55.5%) 470 nm, (56.8, 55.6%) 546 nm, (55.8, 55.5%) 589 nm, (55.0, 55.5%) 650 nm.
2.63(10), 2.53(8), 1.942(10), 1.730(4), 1.640(4), 1.3963(4), 1.1182(8).

IMA No. 95–009 The natural analogue of synthetic $PtSe_2$
$PtSe_2$
Hexagonal (trigonal): $P\bar{3}m1$
a 3.730, *c* 5.024 Å
Silvery lead grey; metallic; opaque.
In reflected light: white; anisotropism moderate to strong with tints from pinkish yellow to dark grey – lilac; strong bireflectance; pleochroism: R_{max} light yellow, R_{min} light lilac. R_{max} and R_{min}: (48.4, 35.1%) 470 nm, (48.3, 35.0%) 546 nm, (49.1, 35.3%) 589 nm, (50.8, 36.5%) 650 nm.
5.04(3), 2.72(10), 1.983(5), 1.859(5), 1.747(3), 1.360(4).

IMA No. 95–011
$Cu(Mg,Cu,Fe,Zn)_2Te^{6+}O_6{\cdot}6H_2O$
Hexagonal (trigonal): $P\bar{3}$
a 5.305, *c* 9.693 Å
Pale yellow to pale orange-yellow; vitreous; transparent to somewhat translucent.
Uniaxial (–), ω 1.803, ε 1.581 (calc.).
9.70(100), 4.834(80), 4.604(60), 2.655(60), 2.556(70), 2.326(70), 1.789(40).

IMA No. 95–012
$Cu[AsO_3OH]{\cdot}2H_2O$
Triclinic: $P\bar{1}$
a 6.020, *b* 7.632, *c* 11.168 Å, α 74.43°, β 89.32°, γ 86.55°
Turquoise blue; vitreous; transparent.
Biaxial (–), α 1.615, β 1.660, γ 1.700, 2*V*(meas.) 82°, 2*V*(calc.) 84°.
7.35(100), 5.239(50), 4.440(60), 3.936(60), 3.302(40), 3.008(50), 2.840(35).

IMA No. 95–013 The zinc analogue of arsenbrackebuschite
$Pb_2(Zn,Fe)[(As,S)O_4]_2{\cdot}H_2O$
Monoclinic: $P2_1$ or $P2_1/m$
a 8.973, *b* 5.955, *c* 7.766 Å, β 112.20°

Pale olive green with streaks of white; adamantine; transparent.
In reflected light: pale brownish grey; abundant colorless to very pale yellow internal reflections; anisotropism not detectable by eye; bireflectance measurable but not noticeable by the eye; nonpleochroic. R_{min} and R_{max}: (11.2, 11.5%) 470 nm, (10.8, 10.9%) 546 nm, (10.7, 10.8%) 589 nm, (10.7, 10.8%) 650 nm.
4.85(50), 3.659(30), 3.246(100), 2.988(60), 2.769(60), 2.293(30), 2.107(50), 1.889(30).

IMA No. 95–014
$Ca_2FeCl[B_9O_{13}(OH)_6]\cdot 4H_2O$
Monoclinic: $P2_1$
a 11.64, *b* 9.38, *c* 8.735 Å, β 98.40°
Pale yellow; vitreous; transparent.
Biaxial (+-), α 1.550, β 1.554, γ 1.592, 2*V*(meas.) 36.6°, 2*V*(calc.) 32.6°.
8.65(3), 7.29(10), 5.32(2), 4.50(2), 2.958(3), 2.744(2), 2.113(3).

IMA No. 95–015
$Ca_5(SiO_4)_2SO_4$
Orthorhombic: *Pnma*
a 6.863, *b* 15.387, *c* 10.181 Å
Bright blue; vitreous; transparent.
Biaxial (–), α 1.630, β 1.637, γ 1.640, 2*V*(meas.) 63.3°, 2*V*(calc.) 66.2°.
3.198(27), 3.042(32), 2.853(40), 2.830(100), 2.617(32), 2.565(57), 1.9612(26), 1.8924(27).

IMA No. 95–016
$Mn_2V(V,As)O_7\cdot 2H_2O$
Monoclinic: $P2_1/n$
a 7.809, *b* 14.554, *c* 6.705 Å, β 93.25°
Orange-red; vitreous; transparent.
Biaxial, mean *n* 1.82, 2*V* small.
5.32(80), 3.436(50), 3.260(50), 3.039(100), 2.723(60), 2.573(50b), 2.441(50), 1.592(60).

IMA No. 95–017 The natural analogue of synthetic $FeNb_3S_6$
$FeNb_3S_6$
Hexagonal: $P6_322$
a 5.771, *c* 12.190 Å
Dark grey to black; metallic; opaque.
In reflected light: grey; distinct to strong anisotropism from blue-grey to dark brown; distinct bireflectance; pleochroism, light grey to grey. R_{max} and R_{min}: (36.3, 29.5%) 470 nm, (36.6, 29.4%) 546 nm, (36.1, 28.9%) 589 nm, (34.7, 28.1%) 650 nm.
6.11(8), 3.04(6), 2.88(5), 2.606(8), 2.096(10), 1.665(8), 1.524(6).

IMA No. 95–018 A member of the mica group (compare 95–019)
$K(Fe^{2+},Mg)(Fe^{3+},Al)Si_4O_{10}(OH)_2$
Monoclinic: *C2/m*
a 5.270, *b* 9.106, *c* 10.125 Å, β 100.27°
Blue green; earthy; translucent in thin section.
Complete optical data could not be measured, mean *n* 1.640.
3.65(52), 3.358(86), 3.321(100), 3.090(60), 2.584(50).

IMA No. 95–019 A member of the mica group (compare 95–018)
$K(Fe^{2+},Mg)(Al,Fe^{3+})Si_4O_{10}(OH)_2$
Monoclinic: *C2/m*
a 5.270, *b* 9.106, *c* 10.125 Å, β 100.27°
Blue green; earthy; translucent in thin section.
Complete optical data could not be measured, mean *n* 1.625.
3.65(52), 3.358(86), 3.321(100), 3.090(60), 2.584(50).

NOTE: The minerals represented by 95–018 and 95–019 occur intimately mixed, have the same unit-cell parameters, and give the same X-ray powder-diffraction data. They differ in chemical composition.

IMA No. 95–020
$CaB_3O_4(OH)_3$
Monoclinic: *Pc*
a 7.234, *b* 8.130, *c* 8.378 Å, β 98.22°
Colorless to white; vitreous; transparent to translucent.
Biaxial (–), α 1.580, β 1.605, γ 1.623, 2*V*(meas.) 63°, 2*V*(calc.) 80°.
4.30(64), 3.379(100), 3.169(25), 3.122(31), 2.151(20), 1.919(20), 1.846(45).

IMA No. 95–021 The natural analogue of synthetic $PbSb_2O_6$
$PbSb_2O_6$
Hexagonal (trigonal): *P*31*m*
a 5.295, *c* 5.372 Å
Colorless to pale yellow; resinous; transparent.
Uniaxial (–), ω 2.092, ε 1.920
3.49(VS), 2.648(M), 2.110(W), 1.887(W), 1.651(W), 1.531(W).

IMA No. 95–022
$KFe^{3+}_8(PO_4)_6(OH)_7{\cdot}8H_2O$
Monoclinic: *C*2, *Cm* or *C*2/*m*
a 29.52, *b* 5.249, *c* 18.56 Å, β 109.27°
Yellowish brown, pale yellow, cream to white; vitreous to silky; translucent.
Biaxial (+), α 1.780, β 1.785, γ 1.800, 2*V*(calc.) 60°.
9.41(60), 4.84(90), 4.32(70), 4.25(50), 3.470(60), 3.216(100), 3.116(80).

IMA No. 95–023
$Sr_3Na(La,Ce)(PO_4)_3(F,OH)$
Hexagonal (trigonal): *P*3
a 9.647(1), *c* 7.170(1) Å
Bright yellow to greenish yellow; vitreous; transparent.
Uniaxial (–), ω 1.653, ε 1.635.
3.59(87), 3.30(65), 3.17(32), 2.897(100), 2.884(100), 2.790(54), 1.910(36), 1.796(36).

IMA No. 95–024 The cubic polymorph of lueshite and natroniobite
$NaNbO_3$
Cubic: $Pm\bar{3}$ or *P*23
a 3.911 Å
Brownish black; adamantine; opaque.
In reflected light: bluish; reddish brown internal reflections; isotropic; nonpleochroic. R: (15.75%) 480 nm, (15.00%) 540 nm, (14.70%) 580 nm, (14.35%) 660 nm.
3.915(35), 2.765(100), 1.953(53), 1.747(8), 1.594(30), 1.380(22), 1.234(7).

IMA No. 95–025
$[Zn_{8-x}Al_x(OH)_{16}][(SO_4)_{x/2+y/2}Na_y(H_2O)_6]$
Hexagonal (trigonal): $P\bar{3}$
a 3.082, *c* 11.116 Å
Pale blue; vitreous to waxy, translucent.
Uniaxial (sign unknown), ω 1.532, ε unknown.
11.12(100), 5.549(24), 3.704(15), 2.595(6), 2.408(6), 2.167(4), 1.926(4).

IMA No. 95–026 A member of the zeolite group
$NaCaAl_3Si_{17}O_{40}{\cdot}7H_2O$
Orthorhombic: *Cmcm*
a 9.747, *b* 23.880, *c* 20.068 Å
Colorless; vitreous; transparent.
Biaxial (+), α 1.476, β 1.478, γ 1.483, 2*V*(meas.) 65°, 2*V*(calc.) 65°.
11.94(40), 9.04(33), 8.23(29), 7.69(29), 3.79(100), 3.61(40).

IMA No. 95–027
$Cu_5(VO_4)_2O_2 \cdot n(Cs,Rb,K)Cl$
Hexagonal (trigonal): *P*3
a 6.375, *c* 8.399 Å
Black; resinous to metallic; opaque.
Reflectance measurements could not be made because the material is too fine grained.
3.43(7), 2.810(4), 2.315(10), 2.131(3), 1.598(4).

IMA No. 95–028 An hexagonal polymorph of alabandite
MnS
Hexagonal: $P6_3mc$
a 3.9817, *c* 6.4447 Å
Dark brown to black; resinous; opaque.
In reflected light: steel grey; brown-red internal reflections; anisotropism, 2.62 to 2.77; bireflectance, 0.15; nonpleochroic. R_{max} and R_{min}: (24.5, 22.1%) 470 nm, (22.6, 20.5%) 546 nm, (22.1, 20.0%) 589 nm, (21.6, 19.6%) 650 nm.
3.445(89), 3.217(72), 3.036(66), 1.988(82), 1.820(100), 1.691(63).

IMA No. 95–029 The Mn-analogue of berthierite
$MnSb_2S_4$
Orthorhombic: *Pnam*
a 11.47, *b* 14.36, *c* 3.81 Å
Black; submetallic; opaque.
In reflected light: light grey; distinct anisotropism; faint bireflectance; nonpleochroic. R_{max} and R_{min}: (35.0, 24.0%) 470 nm, (36.1, 23.9%) 546 nm, (36.9, 24.9%) 589 nm, (35.6, 25.7%) 650 nm.
4.46(40), 3.69(90), 3.23(70), 3.05(40), 2.90(80), 2.65(100), 2.18(40), 1.906(40), 1.813(50).

IMA No. 95–030
$Zn_3Cu_2(SO_4)_2(OH)_6 \cdot 4H_2O$
Triclinic: $P\bar{1}$
a 5.415, *b* 6.338, *c* 10.475 Å, α 94.38°, β 90.08°, γ 90.24°
Greenish blue; vitreous; transparent.
Biaxial (+), α 1.629, β 1.630, γ 1.637, 2*V*(meas.) 60–, 2*V*(calc.) 42°.
10.459(61), 5.230(74), 3.486(40), 3.157(6), 2.728(6), 2.493(7), 2.355(7), 1.743(9).

IMA No. 95–031
$(K,Na)_2(Nb,Ti)_2Si_4O_{12}(O,OH)_2 \cdot 4H_2O$
Monoclinic: *Cm*
a 14.692, *b* 14.164, *c* 7.859 Å, β 117.87°
White; vitreous; translucent.
Biaxial (+), α 1.649, β 1.655, γ 1.759, 2*V*(meas.) 20°, 2*V*(calc.) 28°.
7.10(9), 4.98(6), 3.262(10), 3.151(8b), 2.956(6), 2.549(4), 1.723(4), 1.591(4b), 1.451(4b).

IMA No. 95–032
(Fe,Os,Ru,Ir)
Hexagonal: $P6_3/mmc$
a 2.591, *c* 4.168 Å
Megascopic color unknown; metallic; opaque.
In reflected light: white; weak anisotropism. R: (57.4%) 470 nm, (53.4%) 546 nm, (53.3%) 589 nm, (54.4%) 650 nm.
2.246(5), 2.087(6), 1.976(10), 1.297(6b), 1.180(6b), 1.100(5b).

IMA No. 95–033
$Na_6Mn(Ti,Nb)Si_{10}(O,OH)_{28} \cdot 4H_2O$
Monoclinic: *I*2/*m*
a 13.033, *b* 18.717, *c* 12.264 Å, β 99.62°
Yellow, pinkish yellow or pink; vitreous to greasy; translucent to transparent.
Biaxial (–), α 1.536, β 1.545, γ 1.553, 2*V*(meas.) 87°, 2*V*(calc.) 86°.
10.56(100), 6.38(50), 5.55(45), 4.78(40), 4.253(40), 3.196(80), 2.608(50).

IMA No. 95–034
$Na_5(Y,Dy,Gd)(Ti,Nb)Si_6O_{18}\cdot 6H_2O$
Hexagonal (trigonal): *R*32
a 10.696, *c* 15.728 Å
Colorless; vitreous; transparent or cloudy.
Uniaxial (–), ω 1.612, ε 1.607.
5.99(60), 3.21(100), 3.093(40), 2.990(85), 2.61(40), 1.998(55), 1.481(44b).

IMA No. 95–035
(Nb,Ta)C
Cubic: *Fm*3*m*
a 4.45 Å
Bronze-yellow; metallic; opaque.
In reflected light: yellowish to rose-cream; no anisotropism, bireflectance or pleochroism. R: (33.9%) 480 nm, (38.5%) 540 nm, (45.1%) 580 nm, (52.8%) 660 nm.
2.56(10), 2.22(9), 1.574(8), 1.343(8), 1.289(7), 1.115(3).

IMA No. 95–036 The calcium-dominant analogue of belovite-(Ce)
$Na(Ca,Sr)_3Ce(PO_4)_3F$
Hexagonal (trigonal): *P*3
a 9.51, *c* 7.01 Å
Bright yellow; vitreous; transparent.
Uniaxial (–), ω 1.682, ε 1.660.
3.51(30), 3.12(40), 2.84(100b), 2.753(40), 1.967(30), 1.870(30).

IMA No. 95–037 The natural analogue of synthetic $Fe_3^{3+}PO_7$
$Fe_3^{3+}PO_7$
Hexagonal (trigonal): *R*3*m*
a 7.994, *c* 6.855 Å
Brown to red brown; greasy; nontranslucent.
Optical data could not be obtained because of the small size of the domains.
4.86(10), 3.09(100), 2.446(16), 2.078(20), 1.997(13), 1.845(11), 1.623(23), 1.545(12), 1.440(16).

IMA No. 95–038 The natural analogue of synthetic $Fe^{3+}PO_4$
$Fe^{3+}PO_4$
Hexagonal (trigonal): $P3_121$
a 5.048, *c* 11.215 Å
Brown to red-brown; greasy; nontranslucent.
Optical data could not be obtained because of the small size of the domains.
4.360(19), 3.445(100), 2.518(7), 2.362(14), 2.298(7), 2.180(10), 1.8846(12), 1.5814(8), 1.4214(10).

IMA No. 95–039
$Cu_5Zn_3(Te^{6+}O_4)_4(OH)_8\cdot 7H_2O$
Triclinic: *P*1 or $P\bar{1}$
a 8.794, *b* 9.996, *c* 5.660 Å, α 104.10°, β 90.07°, γ 96.34°
Pale blue to deeper blue-green; vitreous to pearly; transparent to translucent.
In reflected light: very pale light brown; light emerald green internal reflections; anisotropism unknown; slight bireflectance. R values could not be measured with certainty.
9.638(100), 8.736(50), 4.841(100), 2.747(60), 2.600(45).

IMA No. 95–040
$Ba_2Ce(CO_3)_3F$
Monoclinic: $P2_1/m$ or $P2_1$
a 13.396, *b* 5.067, *c* 6.701 Å, β 106.58°
Yellow; vitreous; transparent.
Biaxial (–), α 1.584, β 1.724, γ 1.728, 2*V*(meas.) 16°, 2*V*(calc.) 18°.
4.000(10), 3.269(100), 2.535(20), 2.140(40), 2.003(40), 1.635(10), 1.373(10).

IMA No. 95–041
In_2Pt
Cubic: $Fm\bar{3}m$, $F\bar{4}32$ or $F\bar{4}3m$
a 6.364 Å
Bright white; metallic; opaque.
In reflected light: bright white with yellowish tint; no anisotropism, bireflectance or pleochroism. R: (49.3%) 470 nm, (60.6 %) 550 nm, (68.5%) 590 nm, (80.1%) 650 nm.
2.25(100), 1.92(60), 1.59(60), 1.299(80), 1.125(60), 1.076(60), 1.006(60).

IMA No. 95–042
$InPt_3$
Cubic: $Pm\bar{3}m$
a 3.988 Å
Bright white; metallic; opaque.
In reflected light: bright white with yellowish tint; no anisotropism, bireflectance or pleochroism. R: (56.1%) 470 nm, (62.5%) 550 nm, (65.7%) 590 nm, (71.3%) 650 nm.
2.30(100), 1.99(60), 1.411(40), 1.203(80), 1.151(40), 0.997(20).

IMA No. 95–043
$Fe_2(Ta,Nb)$
Hexagonal: $P6_3/mmc$, $P6_3mc$ or $P\bar{6}2c$
a 4.87, *c* 7.76 Å
Greyish yellow; metallic; opaque.
In reflected light: greyish white; no anisotropism, bireflectance or pleochroism. R: (55.4%) 460 nm, (60.8%) 540 nm, (65.7%) 590 nm, (71.3%) 660 nm.
2.84(7), 2.46(6), 2.22(9), 2.00(3), 1.92(4), 1.41(3), 1.34(8).

IMA No. 95–044 The natural analogue of synthetic $Bi_{16}CrO_{27}$
$Bi_{16}CrO_{27}$
Tetragonal: $I4$, $I\bar{4}$ or $I4/m$
a 8.649, *c* 17.24 Å
Orange-brown; adamantine; translucent.
Uniaxial (+), ω 2.50, ε 2.55.
In reflected light: greyish white to light orange; orange internal reflections; weak anisotropism; weak bireflectance; very weak pleochroism. $R_{E'}$ and R_O: (21.46, 19.40%) 470 nm, (27.46, 25.22%) 546 nm, (29.80, 26.22%) 589 nm, (29.98, 25.96%) 650 nm.
3.19(100), 2.730(40), 1.980(40), 1.715(30), 1.655(55), 1.124(25), 1.054(25).

IMA No. 95–045 A member of the amphibole group
$Li_2(Mg,Fe^{2+})_3Fe_2^{3+}Si_8O_{22}(OH)_2$
Monoclinic: $C2/m$
a 9.474, *b* 17.858, *c* 5.268 Å, β 101.88°
Black; vitreous; translucent.
Biaxial (+), α 1.699, β 1.703, γ 1.708, 2*V*(meas.) 72°, 2*V*(calc.) 84°.
8.222(61), 4.458(19), 3.044(100), 2.741(53), 2.712(14), 2.341(14), 1.433(46), 1.392(14).

IMA No. 95–046
$Na_2(Sr,Ba)_{14}Na_2Al_{12}F_{64}(F,OH)_4$
Monoclinic: $C2/m$
a 16.046, *b* 10.971, *c* 7.281 °, β 101.734°
Colorless to white; vitreous; translucent.
Biaxial (–), α 1.436, β 1.442, γ 1.442, 2*V*(meas.) 0–5°, 2*V*(calc.) 0°.
7.844(8), 3.643(9), 3.453(10), 3.193(10), 3.112(9), 2.989(9), 2.220(8), 2.173(9), 2.001(8).

IMA No. 95–047
IrBiS
Cubic: $P2_13$
a 6.164 Å

Steel black; metallic; opaque.
In reflected light: bright white with yellowish tint, isotropic. R: (46.2%) 470 nm, (47.2%) 550 nm, (47.6%) 590 nm, (47.4%) 650 nm.
2.75(70), 2.51(60), 1.860(100), 1.090(50), 1.090(50).

IMA No. 95–048 — A polymorph of geminite

$Cu^{2+}(AsO_3OH)\cdot H_2O$
Triclinic: $P1$ or $P\bar{1}$
a 6.435, b 11.257, c 18.662 Å, α 79.40°, β 86.48°, γ 83.59°
Very light green to colorless; vitreous; transparent.
Biaxial (+), α 1.602, β 1.642, γ 1.725, $2V$(meas.) 70°, $2V$(calc.) 73°.
18.3(25), 11.00(100), 3.171(30), 2.952(50), 2.920(60), 2.816(50), 2.492(25).

IMA No. 95–049 — The Pt-dominant analogue of taimyrite

$(Pt,Pd,Cu)_9Cu_3Sn_4$
Orthorhombic: *Pmmm*, *Pmm*2 or *P*222
a 7.89, b 4.07, c 7.73 Å
Pinkish lilac; metallic; opaque.
In reflected light: pinkish lilac, distinct to moderate anisotropism, weak to distinct bireflectance, pleochroic from brownish pink to pinkish lilac. R_{max} and R_{min}: (44.1, 42.8%) 470 nm, (50.0, 49.5%) 546 nm, (54.6, 51.8%) 589 nm, (56.8, 55.6%) 650 nm.
2.283(10), 2.163(4), 2.030(2), 1.369(3), 1.218(2), 1.143(2).

IMA No. 95–050 — The vanadium analogue of atelestite

$Bi_2O(OH)VO_4$
Monoclinic: $P2_1/c$
a 6.973, b 7.539, c 10.881 Å, β 107.00°
Light brown; adamantine; transparent to translucent.
Biaxial (+), α 2.26, β 2.27, γ 2.30, $2V$(meas.) 65°, $2V$(calc.) 61°.
6.667(23), 6.102(22), 4.279(38), 3.267(100+), 3.150(62), 2.734(36), 2.549(21), 1.889(21).

IMA No. 95–051 — A member of the zeolite group

$Ca_4(Ca,Sr,K,Ba)_3Cu_3Al_{12}Si_{12}O_{48}(OH)_8\cdot\sim H_2O$
Cubic: *Fm*3*m*
a 31.62 Å
Light blue; vitreous; transparent.
Isotropic: n 1.505.
18.34(100), 15.82(50), 9.69(5), 4.43(5), 3.87(5), 3.47(5).

IMA No. 95–052 — A member of the mica group; the Cr-dominant analogue of muscovite

$KCr_2[AlSi_3O_{10}](OH,F)_2$
Monoclinic: *C*2/*c*
a 5.32, b 9.07, c 20.20 Å, β 95.6°
Emerald green; vitreous; transparent.
Biaxial (–), α 1.619, β 1.669, γ 1.673, $2V$(meas.) 31°, $2V$(calc.) 31°.
9.94(6), 4.52(8), 2.60(10), 2.40(6), 2.15(6), 1.519(10).

IMA No. 95–053 — The lanthanum-dominant analogue of ancylite-(Ce)

$SrLa(CO_3)_2(OH)\cdot H_2O$
Orthorhombic: *Pmcn*
a 5.072, b 8.589, c 7.276 Å
Light yellow to yellowish brown; vitreous; transparent.
Biaxial (+), α 1.640, β 1.668 (calc.), γ 1.731, $2V$(meas.) 70°.
4.36(92), 3.738(88), 3.705(90), 2.955(100), 2.664(89), 2.358(87), 2.092(80).