

**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, I. M. A. 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

Colour; lustre; 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

Commission on New Minerals and Mineral Names
International Mineralogical Association

1992 PROPOSALS

IMA No. 92-001

$\text{FeZr}(\text{PO}_4)_2 \cdot 4\text{H}_2\text{O}$

Monoclinic: $\text{P}2_1/c$

a 9.12 b 5.42 c 19.17 Å β 94.8°

Pale yellowish white; vitreous to dull; transparent.

Biaxial (+), α 1.644, β 1.652, γ 1.652, $2V(\text{meas.})$ 0°, $2V(\text{calc.})$ 0°.

9.58 (75), 4.572 (65), 4.382 (80), 4.092 (60), 3.160 (100), 2.640 (70).

(41.95, 39.02 %)546nm, (41.23, 39.42 %)589nm,
(44.39, 41.56 %)650nm.

3.70 (70), 3.17 (50), 2.870 (100), 2.625 (60), 1.930 (30), 1.764 (35).

IMA No. 92-002

$\text{Bi}_2\text{O}(\text{OH})_2\text{SO}_4$ Monoclinic: $\text{P}2_1/c$

a 7.700 b 13.839 c 5.686 Å β 109.11°

Colourless; adamantine; transparent.

Biaxial, indices of refraction calculated from reflectance data at 589nm: R_1 1.91, R_2 1.99.
3.644 (60), 3.466 (60), 3.206 (100), 2.924 (70),
2.782 (50), 1.984 (90).

IMA No. 92-005

$\text{Mg}[\text{UO}_2(\text{AsO}_3)_x(\text{AsO}_4)_{1-x}]_2 \cdot 7\text{H}_2\text{O}$ x about $\frac{2}{3}$

Monoclinic: $\text{C}2/m$

a 18.194 b 7.071 c 6.670 Å β 99.70°

Bright yellow to straw yellow; vitreous; transparent.

Biaxial (-), α 1.610, β 1.730, γ 1.740, $2V(\text{meas.})$ 34°, $2V(\text{calc.})$ 30°.

9.02 (100), 4.90 (40), 4.48 (80), 4.00 (40), 3.53 (40),
3.28 (50), 3.01 (60), 2.849 (60).

IMA No. 92-006 The nickel-analogue of hydro-magnesite.

$\text{Ni}_5(\text{CO}_3)_4(\text{OH})_2 \cdot 4-5\text{H}_2\text{O}$

Monoclinic: $\text{P}2_1/c$

a 10.06 b 8.75 c 8.32 Å β 114.3°

Bluish-green; silky; transparent.

Biaxial (sign unknown), α 1.630, γ 1.640, $2V$ unknown.

6.30 (5), 5.75 (10), 4.36 (4), 4.14 (3), 2.871 (4b),
2.458 (2b), 2.120 (3).

IMA No. 92-003 The selenium analogue of stibnite.

Sb_2Se_3

Orthorhombic: Pbnm

a 11.593 b 11.747 c 3.984 Å

Black; metallic; opaque.

In reflected light: white, distinct anisotropism, distinct bireflectance, pleochroic white to greyish white. R_{max} & R_{min} : (42.62, 40.55 %)470nm,

IMA No. 92-008

$\text{NaH}(\text{CO}_3)\text{H}_3(\text{BO}_3) \cdot 2\text{H}_2\text{O}$

Monoclinic: $\text{C}2$

a 16.119 b 6.928 c 6.730 Å β 100.46°

Colourless; vitreous; transparent.

- Biaxial (-), α 1.351 (calc.), β 1.459, γ 1.486, $2V(\text{meas.})$ 50°. 6.36 (25), 4.203 (6), 3.464 (100), 3.173 (59), 2.608 (5), 1.731 (19).
- IMA No. 92-010 A triclinic polymorph of 92-011.
 $\text{Ca}_9\text{B}_{26}\text{O}_{34}(\text{OH})_{24}\text{Cl}_4 \cdot 13\text{H}_2\text{O}$
 Triclinic: P1
 a 12.759 b 13.060 c 9.733 Å α 102.14° β 102.03° γ 85.68°
 Colourless to very pale yellow; vitreous; translucent to transparent.
 Biaxial (+), α 1.537, β 1.548, γ 1.570, $2V(\text{meas.})$ 77°, $2V(\text{calc.})$ 71°. 9.21 (70), 7.69 (100), 5.74 (60), 4.63 (40), 3.845 (35), 2.199 (30b).
- IMA No. 92-011 A monoclinic polymorph of 92-010.
 $\text{Ca}_9\text{B}_{26}\text{O}_{34}(\text{OH})_{24}\text{Cl}_4 \cdot 13\text{H}_2\text{O}$
 Monoclinic: P2₁
 a 19.88 b 9.715 c 17.551 Å β 114.85°
 Colourless to very pale yellow; vitreous; translucent to transparent.
 Biaxial (+), α 1.542, β 1.545, γ 1.565, $2V(\text{meas.})$ 47°, $2V(\text{calc.})$ 43°. 9.03 (60), 8.56 (100), 6.62 (70), 6.14 (30b), 5.12 (30), 4.09 (30), 3.768 (30), 3.493 (30).
- IMA No. 92-012
 $\text{Ca}_2(\text{CaMn})(\text{SiO}_3\text{OH})_2(\text{OH})_2$
 Orthorhombic: Pbc
 a 9.398 b 9.139 c 10.535 Å
 Colourless; vitreous; transparent.
 Biaxial (+), α 1.634, β 1.640, γ 1.656, $2V(\text{meas.})$ 65°, $2V(\text{calc.})$ 63°. 4.18 (45), 3.231 (100), 2.846 (42), 2.789 (35), 2.391 (42), 2.042 (28).
- IMA No. 92-013 The phosphate analogue of preisingerite and schumacherite.
 $\text{Bi}_3\text{O}(\text{OH})(\text{PO}_4)_2$
 Triclinic: P
 a 9.798 b 7.250 c 6.866 Å α 88.28° β 115.27° γ 110.70°
 White to pale pink, sometimes brown; vitreous; transparent to translucent.
 Mean index of refraction estimated from reflectance data: 2.01 at 589nm. 4.437 (46), 3.247 (87), 3.188 (100), 3.135 (95), 3.026 (75), 2.953 (47), 2.165 (41).
- IMA No. 92-014
 $\text{Na}_x\text{Ca}_y\text{Cu}_z(\text{Mg}, \text{Fe}^{3+}, \text{Al})_3(\text{AsO}_4)_3 \cdot x \sim 0.76, y \sim 0.42, z \sim 0.39$
 Monoclinic: C2/c
 a 11.882 b 12.760 c 6.647 Å β 112.81°
 Light blue; vitreous; translucent.
 Biaxial (+), α 1.714, β 1.744, γ 1.783, $2V(\text{meas.})$ 60°, $2V(\text{calc.})$ 84°. 4.35 (40), 4.06 (50), 3.56 (40), 3053 (40), 3.495 (60), 3.066 (40), 2.744 (140), 2.605 (40).
- IMA No. 92-015 The ferric analogue of millosevichite.
 $(\text{Fe}, \text{Al})_2(\text{SO}_4)_3$
 Hexagonal: R $\bar{3}$
 a 8.14 c 21.99 Å
 White to light brown; dull; transparent.
 Uniaxial (sign unknown), n is between 1.555 and 1.625. 5.99 (28), 4.35 (23), 3.56 (100), 2.97 (20), 2.72 (20), 2.64 (11).
- IMA No. 92-016 The phosphate analogue of arsenoclasite.
 $\text{Mn}_5(\text{PO}_4)_2(\text{OH})_4$
 Orthorhombic: P2₁2₁2₁
 a 9.097 b 5.693 c 18.00 Å Pale yellow, yellow, pale burnt orange; adamantine; transparent.
 Biaxial (sign unknown), α 1.74, γ 1.76, $2V$ unknown. 2.900 (100), 2.853 (70), 2.802 (50), 2.702 (80), 2.022 (15), 1.608 (15).
- IMA No. 92-017 A member of the garnet group.
 $\text{Ca}_3(\text{Ti}, \text{Fe}^{2+}, \text{Fe}^{3+})_2(\text{Si}, \text{Fe}^{3+})_3\text{O}_{12}$
 Cubic: Ia $\bar{3}d$
 a 12.162 Å
 Black; adamantine; opaque.
 Isotropic, ω 1.955. 3.039 (72), 2.720 (100), 2.483 (51), 2.385 (21), 1.973 (24), 1.687 (26), 1.626 (56).
- IMA No. 92-018
 $\text{Ca}_2\text{Y}(\text{AsO}_4)(\text{WO}_4)_2$
 Tetragonal: I4_{1/a}
 a 5.135 c 33.882 Å
 Creamy yellow; vitreous to adamantine; translucent.
 Uniaxial (+), ω 1.874, ϵ 1.918. 4.674 (18), 3.059 (100), 2.571 (19), 1.901 (32), 1.818 (16), 1.674 (17), 1.562 (32).
- IMA No. 92-019
 $\text{C}_{14}\text{H}_{10}$
 Monoclinic: P2₁
 a 8.392 b 6.181 c 9.558 Å β 98.48°
 Colourless to greyish-white; vitreous to waxy; transparent.
 Biaxial (+), $n_{\text{min.}}$ \sim 1.75, $n_{\text{max.}}$ \sim 1.95, $2V(\text{meas.})$ \sim 90°. 9.434 (100), 4.941 (11), 4.724 (11), 4.546 (5), 4.028 (13), 3.371 (10).
- IMA No. 92-020 A member of the amphibole group.
 $(\text{Na}, \text{K})(\text{Ca}, \text{Na})_2(\text{Mg}, \text{Fe}^{3+}, \text{Fe}^{2+})_5\text{Si}_8\text{O}_{22}(\text{F}, \text{OH}, \text{O})_2$
 Monoclinic: C2/m
 a 9.762 b 17.888 c 5.122 Å β 102.25°

Blue green and green; vitreous; transparent.
 Biaxial (-), α 1.618, β 1.624, γ 1.627, 2V(meas.) 71°, 2V(calc.) 70°.
 9.9 (70), 3.69 (60), 3.34 (100), 3.18 (60), 3.13 (90), 2.82 (70), 1.98 (90), 1.439 (60).

IMA No. 92-024

CuBi_2O_4
 Tetragonal: P4/ncc
 a 8.511 c 5.823 Å
 Black; metallic; opaque.
 In reflected light: grey, weak anisotropism, weak but distinct birefractance, pleochroic grey with a faint bluish tint and brownish grey.
 $R_{\text{max.}}$ & $R_{\text{min.}}$: (21.1, 19.0 %)482nm, (20.2, 18.0 %)545nm, (19.7, 17.6 %)589nm, (19.5, 17.3 %)659nm.
 4.26 (17), 3.191 (100), 2.913 (16), 2.695 (18), 1.947 (18).

IMA No. 92-025

$\text{Cu}_3\text{TeO}_6 \cdot \text{H}_2\text{O}$
 Cubic: P-lattice, space group unknown
 a 9.555 Å
 Emerald green; adamantine; transparent to translucent.
 Isotropic, ω 2.01 calculated from reflectance values at 589nm.
 4.26 (40), 2.763 (100), 2.384 (70), 1.873 (40), 1.689 (80), 1.440 (60).

IMA No. 92-026 The -2H polytype of 92-027.

$\text{Mn}_4\text{Al}_2(\text{OH})_{12}\text{CO}_3 \cdot 3\text{H}_2\text{O}$
 Hexagonal: P6₃22
 a 10.985 c 15.10 Å
 Orange-brown, pale brown, pale blue, colourless; vitreous; transparent.
 Uniaxial (-), ω 1.587, ϵ 1.547.
 7.53 (100), 3.768 (60), 2.578 (50), 2.221 (40), 1.856 (40), 1.552 (40).

IMA No. 92-027 The -3T polytype of 92-026.

$\text{Mn}_4\text{Al}_2(\text{OH})_{12}\text{CO}_3 \cdot 3\text{H}_2\text{O}$
 Hexagonal (trigonal): P3₁12 or P3₂12
 a 10.985 c 22.63 Å
 Orange-brown, pale brown; vitreous; transparent.
 Uniaxial (-), ω 1.587, ϵ could not be measured.
 7.55 (100), 3.770 (90), 2.670 (70), 2.346 (70), 1.973 (60), 1.586 (30), 1.662 (30).

IMA No. 92-028 The -2H polytype of 92-029.

$\text{Mg}_4\text{Al}_2(\text{OH})_{12}\text{CO}_3 \cdot 3\text{H}_2\text{O}$
 Hexagonal: P6₃22
 a 10.571 c 15.139 Å
 Orange-brown, pale brown; vitreous; transparent.
 Uniaxial (+), ω 1.533, ϵ 1.533.
 7.63 (100), 3.785 (100), 2.603 (15), 2.496 (15), 2.341 (15), 2.166 (15), 1.991 (15), 1.825 (20), 1.495 (15).

IMA No. 92-029 The -3T polytype of 92-028.

$\text{Mg}_4\text{Al}_2(\text{OH})_{12}\text{CO}_3 \cdot 3\text{H}_2\text{O}$
 Hexagonal (trigonal): P3₁12 or P3₂12
 a 10.558 c 22.71 Å
 Yellow to pale yellow; vitreous; transparent.
 Uniaxial (+ or -), ω 1.533, ϵ 1.533.
 7.57 (100), 3.778 (90), 2.570 (40), 2.281 (40), 1.932 (40), 1.524 (20), 1.493 (20).

IMA No. 92-030

$\text{Fe}_4\text{Al}_2(\text{OH})_{12}\text{CO}_3 \cdot 3\text{H}_2\text{O}$
 Hexagonal (trigonal): P3₁12 or P3₂12
 a 10.805 c 22.48 Å Green-brown with black coating; vitreous; transparent.
 Uniaxial (-), ω 1.599, ϵ 1.570.
 7.49 (100), 3.746 (50), 2.625 (40), 2.314 (50), 1.948 (40), 1.558 (15), 1.526 (20).

IMA No. 92-031

$\text{Na}_5\text{YZrSi}_6\text{O}_{18} \cdot 6\text{H}_2\text{O}$
 Hexagonal (trigonal): R32
 a 10.825 c 15.809 Å
 Light green to yellow green; vitreous; transparent to translucent.
 Uniaxial (-), ω 1.585, ϵ 1.578.
 6.03 (32), 5.40 (63), 3.236 (84), 3.127 (88), 3.030 (100), 1.805 (21).

IMA No. 92-032 A member of the amphibole group.

$(\text{K}, \text{Na})(\text{Na}, \text{Li})_2(\text{Mg}, \text{Mn}^{3+}, \text{Fe}^{3+}, \text{Li})_5\text{Si}_8\text{O}_{22}(\text{OH})_2$
 Monoclinic: P2₁/m
 a 9.94 b 17.80 c 5.302 Å β 105.5°
 Dark red to brownish lilac; vitreous; transparent.
 Biaxial (-), α 1.654, β 1.675 (calculated), γ 1.696, 2V(meas.) 88–92°.
 8.890 (M), 8.427 (M), 5.077 (M), 4.442 (M), 3.357 (M), 3.257 (S), 3.132 (S), 2.812 (S), 2.553 (S) plus seven other lines of intensity (M).

IMA No. 92-033

$\text{SrMn}_2^{3+}[\text{Si}_2\text{O}_7](\text{OH})_2 \cdot \text{H}_2\text{O}$
 Orthorhombic: Cmc21
 a 6.245 b 9.031 c 13.404 Å
 Orange-brown; vitreous; translucent.
 Biaxial (+), $n_s > 1.82$, 2V(meas.) 63°.
 4.804 (86), 3.373 (66), 2.833 (100), 2.807 (82), 2.695 (98), 2.401 (68).

IMA No. 92-034 A member of the tourmaline group.

$\square(\text{Fe}_2^{2+} \text{Al})\text{Al}_6\text{Si}_6\text{O}_{18}(\text{BO}_3)_3(\text{OH})_4$ Hexagonal (trigonal): R3m
 a 15.967 c 7.126 Å
 Bluish black; vitreous; transparent.
 Uniaxial (-), ω 1.664, ϵ 1.642.
 6.338 (84), 4.212 (48), 3.989 (38), 3.452 (91), 2.944 (71), 2.573 (100).

- IMA No. 92-035** The magnesium-analogue of staurolite.
 $(\text{Mg}, \text{Li}, \text{Fe}, \square)_4 \text{Al}_{18} \text{Si}_8 \text{O}_{44} (\text{OH})_4$
 Monoclinic: C2/m
 a 7.872 b 16.55 c 5.634 Å β 90.00°
 Colourless in thin section; vitreous to resinous; transparent.
 Biaxial (sign unknown), mean n 1.709, 2V unknown.
 4.139 (24), 2.678 (38), 2.390 (50), 2.370 (33), 2.356 (24), 1.968 (100).
- IMA No. 92-036** The zinc-analogue of staurolite.
 $(\text{Zn}, \text{Li}, \text{Fe}, \text{Mg}, \square)_4 \text{Al}_{18} \text{Si}_8 \text{O}_{44} (\text{OH})_4$
 Monoclinic: C2/m
 a 7.853 b 16.54 c 5.639 Å β 90.00°
 Colourless in thin section; vitreous to resinous; transparent.
 Biaxial (sign unknown), $\alpha \sim 1.722$, β unknown, γ 1.734, 2V unknown.
 3.001 (61), 2.678 (70), 2.390 (87), 2.363 (46), 2.349 (45), 1.968 (61), 1.964 (48), 1.391 (100).
- IMA No. 92-037** The tetragonal, lead-analogue of lavendulan.
 $\text{NaPbCu}_5 (\text{AsO}_4)_4 \text{Cl} \cdot 5\text{H}_2\text{O}$
 Tetragonal: P4₁22 or P4₃22
 a 10.066 c 39.39 Å
 Intense blue; vitreous; translucent.
 Uniaxial (-), ω 1.770, ϵ 1.710.
 9.83 (100), 4.925 (60), 4.482 (50), 3.132 (90), 2.772 (40), 2.515 (50), 1.778 (40).
- IMA No. 92-038**
 $\text{Cu}_{20} (\text{Fe}, \text{Cu}, \text{Zn})_6 \text{Mo}_2 \text{Ge}_6 \text{S}_{32}$
 Cubic: space group unknown
 a 10.64 Å
 Megascopic colour unknown; metallic; opaque.
 In reflected light: pale yellow to greyish yellow, no anisotropism, no birefractance, nonpleochroic. R: (23.7 %)470nm, (25.5 %)546nm, (25.7 %)589nm, (25.6 %)650nm.
 3.07 (10), 2.66 (2), 1.884 (8), 1.603 (4), 1.536 (½), 1.331 (1), 1.220 (2), 1.190 (1).
- IMA No. 92-039**
 $\text{Cu}_{20} (\text{Fe}, \text{Zn}, \text{Cu})_6 \text{W}_2 \text{Ge}_6 \text{S}_{32}$
 Cubic: space group unknown
 a 10.675 Å
 Megascopic colour unknown; metallic; opaque.
 In reflected light: pale yellowish pink, no anisotropism, no birefractance, nonpleochroic.
 R: (23.2 %)470nm, (23.7 %)546nm, (24.0 %)589nm, (23.8 %)650nm.
 4.36 (1), 3.38 (1), 3.08 (10), 2.67 (2), 1.887 (7), 1.612 (5), 1.543 (1), 1.333 (1), 1.225 (1½), 1.192 (½).
- IMA No. 92-040**
 $\text{Na}_4 \text{Zn}_2 \text{Si}_7 \text{O}_{18} \cdot 5\text{H}_2\text{O}$
- IMA No. 92-041** The thallium-analogue of jarosite.
 $(\text{Tl}, \text{K}) \text{Fe}_3 (\text{SO}_4)_2 (\text{OH})_6$ Hexagonal (trigonal): Rm
 a 7.3301 c 17.6631 Å
 Gold yellow; adamantine; transparent.
 Uniaxial (-), ω 1.822, ϵ 1.768.
 5.974 (87), 3.666 (34), 3.112 (100), 2.9877 (22), 2.5773 (21), 1.9912 (29), 1.8329 (23).
- IMA No. 92-043**
 $\text{Ca} (\text{UO}_2)_4 (\text{SO}_4)_2 (\text{OH})_6 \cdot 6\text{H}_2\text{O}$
 Orthorhombic: P-lattice, space group unknown
 a 8.73 b 17.09 c 15.72 Å
 Sulphur yellow; vitreous; translucent.
 Biaxial (-), α 1.617 (calculated), β 1.710, γ 1.758, 2V(meas.) 68°.
 7.90 (100), 4.17 (30), 3.98 (40), 3.49 (80), 3.38 (70), 2.844 (30b).
- IMA No. 92-045** The phosphate-analogue of segnitite.
 $\text{PbFe}_3^{3+} (\text{PO}_4)_2 (\text{OH}, \text{H}_2\text{O})_6$
 Hexagonal (trigonal): Rm
 a 7.325 c 16.900 Å
 Cream to brownish yellow to yellowish green; adamantine; translucent.
 Uniaxial (-), ω 1.955, ϵ 1.935.
 5.96 (90), 3.67 (60), 3.07 (100), 2.538 (50), 2.257 (50), 1.979 (50).
- IMA No. 92-046**
 $\text{AlF}_3 \cdot 3\text{H}_2\text{O}$
 Tetragonal: P4/n
 a 7.715 c 3.648 Å
 Colourless; vitreous; transparent.
 Uniaxial (-), ω 1.427, ϵ 1.403.
 5.47 (100), 2.439 (72), 2.027 (70), 1.775 (78), 1.725 (85), 1.306 (70).
- IMA No. 92-048**
 $\text{Na}_4 \text{REE}_2 (\text{CO}_3)_5$ with Ce the dominant REE
 Monoclinic: P2₁
 a 20.84 b 6.374 c 10.578 Å β 120.45°
 Grey with slight pinkish tint; vitreous; translucent.
 Biaxial (+ or -), α 1.623, β 1.636, γ 1.649, 2V(meas.) 90°, 2V(calc.) 89°.
 9.13 (3), 5.22 (5), 4.13 (3), 3.70 (4), 2.607 (10), 2.148 (3), 1.921 (3).
- IMA No. 92-050** The magnesium-analogue of dumortierite.
 $(\text{Mg}, \text{Ti}, \square) (\text{Al}, \text{Mg})_2 \text{Al}_4 \text{Si}_3 \text{O}_{18-x} (\text{OH})_x \text{B} \approx 3$

Orthorhombic: Pmcn

a 12.02 b 20.22 c 4.732 Å

Pink to red; vitreous; transparent.

Biaxial (-), α 1.678, β 1.700, γ 1.701, $2V(\text{meas.})$ 38°, $2V(\text{calc.})$ 24°.

6.01 (59), 5.88 (100), 3.489 (60), 3.255 (82), 3.074 (53), 2.927 (74), 2.131 (50), 2.090 (48).

NOTE:

The following three minerals from previous years also have been approved.

IMA No. 90-006

$\text{Fe}_{16}\text{O}_{16}(\text{OH})_y(\text{SO}_4)_z$ where $16-y = 2z$ and $2.0 \leq z \leq 3.5$

Tetragonal: probably P4/m

a 10.66 c 6.04 Å

Brownish yellow; dull; translucent.

Optical properties unknown.

4.86 (37), 3.38 (46), 2.55 (100), 2.28 (23), 1.66 (21), 1.51 (24), 1.46 (18).

IMA No. 90-046 The uranium-analogue of polycrase-(Y). $(\text{U},\text{Y})(\text{Ti},\text{Nb},\text{Ta})_2\text{O}_8$

Orthorhombic: Pbcn

a 14.48 b 5.559 c 5.223 Å

Brown-red; adamantine; opaque.

In reflected light: pale grey with bluish tones; no anisotropism, bireflectance, or pleochroism. R: (23.6 %)470nm, (21.5 %)546nm, (22.3 %)589nm, (25.1 %)650nm.

3.73 (W), 3.21 (W), 2.99 (S), 2.78 (W), 1.90 (MS), 1.86 (W), 1.77 (MW), 1.48 (M).

IMA No. 91-036

$\text{Fe}_2(\text{OH})_3\text{Cl}$

Orthorhombic: Pnam

a 6.31 b 9.20 c 7.10 Å

Megascopic colour unknown; lustre probably dull; transparent.

Index of refraction: 1.6 to 1.7.

Electron diffraction pattern: 5.68, 5.07, 2.93, 2.37, 2.14, 1.65.