

Arsenogoyazite

(Sr, Ca, Ba)Al₃(AsO₄, PO₄)₂(OH, F)₅•H₂O

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Crystal Data: Hexagonal. *Point Group:* $\bar{3} 2/m$ or $3m$. Crystals indistinctly rhombohedral, may show {0001}, to 30 μm , aggregated into reniform crusts with a radial structure.

Physical Properties: *Fracture:* Conchoidal. Hardness = ~ 4 D(meas.) = 3.35(5)
D(calc.) = 3.33

Optical Properties: Translucent. *Color:* Pale green to gray-green, white to yellowish.

Luster: Vitreous.

Optical Class: Isotropic, or nearly so; weak birefringence. $n = 1.64(3)$

Cell Data: *Space Group:* $R\bar{3}m$ or $R3m$. $a = 7.10$ $c = 17.16$ $Z = 3$

X-ray Powder Pattern: Clara Mine, Germany.

3.03 (10), 3.56 (8), 5.84(7), 1.933 (5), 2.31 (4), 2.27 (4), 1.777 (4)

Chemistry:

	(1)
P ₂ O ₅	8.9
As ₂ O ₅	25.3
Al ₂ O ₃	30.9
FeO	0.2
CaO	2.8
SrO	10.1
BaO	6.5
F	3.6
H ₂ O	[13.2]
—O = F ₂	1.5
Total	[100.0]

(1) Clara Mine, Germany; by electron microprobe, total Fe as FeO, H₂O by difference; corresponds to (Sr_{0.49}Ca_{0.25}Ba_{0.21}Fe_{0.01}²⁺)_{Σ=0.96}Al_{3.04}[AsO₄]_{1.10}(PO₄)_{0.63}]_{Σ=1.73}[(OH)_{4.05}F_{0.95}]_{Σ=5.00}•2.07H₂O.

Mineral Group: Crandallite group.

Occurrence: A secondary mineral in a hydrothermal polymetallic barite–fluorite deposit (Clara mine, Germany).

Association: Olivenite, cornwallite, malachite, brochantite, barian pharmacosiderite, arsenogorceixite, cualstibite, quartz, barite (Clara mine, Germany); arsenocrandallite, beudantite, olivenite (Centennial Eureka mine, Utah, USA).

Distribution: From the Clara Mine, near Oberwolfach, Black Forest, Germany. In the Centennial Eureka mine, Tintic district, Juab Co., Utah, USA.

Name: For *arsenic* in the composition, and its relation to *goyazite*.

Type Material: University of Stuttgart, Stuttgart, Germany; National Museum of Natural History, Washington, D.C., USA, 150232.

References: (1) Walenta, K. and P.J. Dunn (1984) Arsenogoyazit, ein neues Mineral der Crandallitgruppe aus dem Schwarzwald. Schweiz. Mineral. Petrog. Mitt., 64, 11–19 (in German with English abs.). (2) (1986) Amer. Mineral., 71, 845–846 (abs. ref. 1).