

# Georgiadèsite

# $\text{Pb}_8(\text{AsO}_4)_2\text{OCl}_7(\text{OH})$

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**Crystal Data:** Monoclinic. *Point Group:*  $2/m$ . Crystals are pseudo-hexagonal tablets, showing {100}, {001}, {110}, and several other modifying forms, with multiple individuals typically grown in parallel, to 5 mm.

**Physical Properties:** Hardness = 3.5 D(meas.) = 6.3(3) D(calc.) = 6.39

**Optical Properties:** Semitransparent. *Color:* White or brownish yellow; colorless in transmitted light. *Luster:* Resinous.

*Optical Class:* Biaxial (+). *Orientation:*  $Y = b; Z = c$ . *Dispersion:*  $r < v$ , strong.  $\alpha = 2.17$   
 $\beta = 2.17$   $\gamma = 2.18$   $2V(\text{meas.}) = \text{Very large}$ .

**Cell Data:** *Space Group:*  $P2_1/c$ .  $a = 13.803(10)$   $b = 7.910(2)$   $c = 10.812(4)$   
 $\beta = 102.68(3)^\circ$   $Z = 1$

**X-ray Powder Pattern:** Laurium, Greece.

3.096 (10), 3.955 (5), 3.164 (5), 6.33 (3), 5.30 (3), 4.031 (3), 3.773 (3)

## Chemistry:

	(1)	(2)	(3)
$\text{As}_2\text{O}_5$	12.49	11.2	10.37
PbO	78.05	81.3	80.55
Cl	12.47	11.3	11.20
$\text{H}_2\text{O}$	n.d.	n.d.	0.41
$-\text{O} = \text{Cl}_2$	2.81	2.6	2.53
Total	100.20	101.2	100.00

(1) Laurium, Greece; recalculated from original analyses,  $\text{O}^{2-}$  calculated for charge balance; corresponds to  $\text{Pb}_{7.65}(\text{AsO}_4)_{2.35}\text{O}_{0.3}\text{Cl}_{7.65}$ . (2) Do.; by electron microprobe,  $\text{O}^{2-}$  calculated for charge balance; corresponds to  $\text{Pb}_{7.85}(\text{AsO}_4)_{2.1}\text{O}_{1.25}\text{Cl}_{6.9}$ . (3)  $\text{Pb}_8(\text{AsO}_4)_2\text{OCl}_7(\text{OH})$ .

**Occurrence:** Formed by the action of seawater on lead-bearing slag (Laurium, Greece).

**Association:** Laurionite, fiedlerite, matlockite, phosgenite, nealite (Laurium, Greece).

**Distribution:** At Laurium, Greece, in slag.

**Name:** In honor of Mr. Georgiadès, a Director of the mines at Laurium Greece.

**Type Material:** National School of Mines, Paris, France; American Museum of Natural History, New York City, New York, 28427; National Museum of Natural History, Washington, D.C., USA, 137839, 145938.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 791–792. (2) Rouse, R.C. and P.J. Dunn (1983) New data on georgiadesite. Mineral. Mag., 47, 219–220.