

Georgiadèsite

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

©2001-2005 Mineral Data Publishing, version 1

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) |
|---------------------------|--------|-------|--------|
| As_2O_5 | 12.49 | 11.2 | 10.37 |
| PbO | 78.05 | 81.3 | 80.55 |
| Cl | 12.47 | 11.3 | 11.20 |
| H_2O | 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, 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, 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 georgiadèsite. Mineral. Mag., 47, 219–220.