

Crystal Data: Hexagonal. *Point Group:* $3m$. As pseudocubic rhombohedral crystals, to 2 mm, with prominent $\{10\bar{1}1\}$; usually in crusts, massive.

Physical Properties: *Cleavage:* Perfect on $\{0001\}$. Hardness = 3.5–4.5 $D(\text{meas.}) = 4.295$
 $D(\text{calc.}) = [4.31]$

Optical Properties: Transparent. *Color:* Brown to light yellowish brown, pale yellow, yellowish green to dark green. *Luster:* Vitreous to resinous.

Optical Class: Uniaxial (-); commonly anomalous biaxial, birefringence weak, showing lamellar structure. $n = 1.93\text{--}1.96$

Cell Data: *Space Group:* $R3m$. $a = 7.280$ (1) $c = 16.821$ (1) $Z = 3$

X-ray Powder Pattern: Glandore mines, Ireland. (ICDD 17-471).

3.03 (100), 5.86 (65), 2.237 (55), 3.61 (35), 2.793 (35), 1.482 (35), 2.508 (30)

Chemistry:

	(1)	(2)	(3)
SO_3	13.76	11.70	11.99
P_2O_5	8.97	10.62	10.63
As_2O_5	0.24	0.29	
Fe_2O_3	40.69	35.79	35.87
CuO	2.45	0.58	
PbO	24.05	32.64	33.42
H_2O	9.77	8.15	8.09
Total	99.93	99.77	100.00

(1) Glandore mines, Ireland. (2) Dernbach, Germany; Pb, Cu, and Fe by AA, P and As by neutron activation, SO_4 by ESCA, H_2O by the phosphoric acid method; corresponding to $\text{Pb}_{0.98}\text{Cu}_{0.05}\text{Fe}_{2.99}(\text{PO}_4)_{1.00}(\text{AsO}_4)_{0.02}(\text{SO}_4)_{0.98}(\text{OH})_{6.04}$. (3) $\text{PbFe}_3(\text{PO}_4)(\text{SO}_4)(\text{OH})_6$.

Mineral Group: Beudantite group.

Occurrence: A rare secondary mineral formed at low temperatures or by weathering in oxidized hydrothermal base-metal deposits.

Association: Pyromorphite, malachite, plumbojarosite, "limonite", quartz.

Distribution: Widespread in small amounts. From the Glandore iron mines, Co. Cork, Ireland. In England, large crystals at the Mexico mine, Caldbeck Fells, Cumbria; in Cornwall, from the Penberthy Croft mine, St. Hilary, at Wheal Unity, Gwennap, and the Gravel Hill mine, Perranzabuloe. In Germany, from Dernbach, near Montabaur, Hesse, and in the Virneberg mine, near Rheinbreitbach, Rhineland-Palatinate. At Richelle, near Visé, Belgium. From Maikain, Kazakhstan. In the USA, at the Silver Queen mine, Galena, Lawrence Co., South Dakota; in the Wild Bill, Harrington-Hickory, and other mines, Beaver Co., and the Gold Hill and Honerine mines, Tooele Co., Utah; at the Mex-Tex mine, near Bingham, Hansonburg district, Socorro Co., New Mexico. From Santa Eulalia, Chihuahua, Mexico. At the Osarizawa mine, Akita prefecture, Japan. From Aggeneys, Northern Cape Province, South Africa. At Tsumeb, Namibia. In the Woodcutters Pb-Zn mine, Northern Territory, Australia. A number of other localities are known.

Name: For its first-noted occurrence, in Co. Cork, Ireland.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 1002–1003. (2) Giuseppetti, G. and C. Tadani (1987) Corkite, $\text{PbFe}_3(\text{SO}_4)(\text{PO}_4)(\text{OH})_6$, its crystal structure and ordered arrangement of the tetrahedral cations. Neues Jahrb. Mineral., Monatsh., 71–81.