

Crystal Data: Monoclinic. *Point Group:* 2/*m*. Crystals, to 5 cm, are elongated along [010], showing {001}, {110}, with many {*h*0*l*} forms, may form radial aggregates; massive. *Twining:* Rare, along the [010] zone.

Physical Properties: *Cleavage:* On { $\bar{2}$ 01}, perfect; on { $\bar{4}$ 01}, {201}, {010}, imperfect. *Tenacity:* Flexible in thin laminae. Hardness = 2–2.5 D(meas.) = 6.92 D(calc.) = 7.08 Fluoresces yellow under X-rays and LW UV.

Optical Properties: Transparent to translucent. *Color:* Gray, pale green, pale yellow; colorless in transmitted light. *Streak:* White. *Luster:* Adamantine to resinous, pearly on cleavage surfaces.

Optical Class: Biaxial (–). *Orientation:* $Y = b$; $Z \wedge c = 30^\circ$. *Dispersion:* $r > v$, strong, inclined. $\alpha = 1.928(3)$ $\beta = 2.007(3)$ $\gamma = 2.036(3)$ $2V(\text{meas.}) = 60(2)^\circ$

Cell Data: *Space Group:* *C*2/*m* (synthetic). $a = 13.769(5)$ $b = 5.698(3)$ $c = 7.079(2)$ $\beta = 115^\circ 56(10)'$ $Z = 4$

X-ray Powder Pattern: [Scotland?] (ICDD 18-702). 2.95 (100), 3.33 (80), 2.85 (30), 2.048 (20), 1.841 (20), 2.260 (16), 4.42 (10)

Chemistry:

	(1)	(2)
SO ₃	15.37	15.21
PbO	84.63	84.79
Total	[100.00]	100.00

(1) Leadhills, Scotland; recalculated to 100% after deduction of ignition loss 0.83% from an original total of 98.66%. (2) Pb₂O(SO₄).

Occurrence: A rare secondary mineral in the oxidized zone of lead sulfide deposits.

Association: Cerussite, leadhillite, susannite, hydrocerussite, caledonite.

Distribution: In Scotland, large crystals from the Susanna mine, Leadhills, Lanarkshire; at the Meadowfoot smelter, near Wanlockhead, Dumfriesshire, in slag. In England, from several mines in Caldbeck Fells, Cumbria; in the Gravel Hill mine, Perranzabuloe, Cornwall. At the Frongoch mine, Dyfed, Wales. In Germany, at Giepenbach, near Tanne, Harz Mountains; in the Herrensegen mine, Kinzigtal, and from near Badenweiler, Black Forest. From the Silberleiten mine, near Bieberwier, northwest of Innsbruck, Tirol, Austria. At the Laquorre mine, near Aulus, Ariège, France. At Laurium, Greece, in slag. In the Tchah Milleh mine, near Anarak, Iran. From the Argent Pb–Zn mines, about 100 km east of Johannesburg, Transvaal, South Africa, in slag. In the Ediacara lead mine, 19 km west of Beltana, South Australia. In the USA, in the Leadville district, Lake Co., Colorado; at the C & B mine, Dripping Springs Mountains, Gila Co., Arizona. From the Buena Esperanza mine, Challacollo, Tarapacá, Chile.

Name: For the occurrence in the Susanna mine, Lanarkshire, Scotland.

Type Material: Natural History Museum, Paris, France.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 550–551. (2) Sahl, K. (1970) Zur Kristallstruktur von Lanarkit, Pb₂O(SO₄). Zeits. Krist., 132, 99–117 (in German with English abs.).