

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. Crystals are typically elongated with rhomboidal cross-section, prismatic with large {210}, vertically striated, or large {011} with {101} and {102}; tabular on {001} or {100}; equant {111} and {211}, may exhibit 20 other minor forms, to 0.5 m. Also nodular, stalactitic, granular, massive, banded around a core of galena.

Physical Properties: *Cleavage:* {001}, good; {210}, distinct; {010}, less distinct. *Fracture:* Conchoidal. *Tenacity:* Brittle. Hardness = 2.5–3 D(meas.) = 6.38 D(calc.) = 6.36 May fluoresce yellow under UV.

Optical Properties: Transparent to opaque. *Color:* Colorless to white, commonly tinted gray; orange, yellow, green, blue, rarely violet; colorless in transmitted light. *Streak:* White. *Luster:* Adamantine, resinous to vitreous. *Optical Class:* Biaxial (+). *Orientation:* $X = c; Y = b; Z = a$. *Dispersion:* $r < v$, strong. $\alpha = 1.877$ $\beta = 1.883$ $\gamma = 1.894$ $2V(\text{meas.}) = 68^\circ\text{--}75^\circ$

Cell Data: *Space Group:* $Pnma$. $a = 8.482(2)$ $b = 5.398(2)$ $c = 6.959(2)$ $Z = 4$

X-ray Powder Pattern: Synthetic.
3.001 (100), 4.26 (87), 3.333 (86), 2.067 (76), 3.220 (71), 3.813 (57), 2.028 (48)

Chemistry: (1) Modern analyses are lacking; identification depends on coincidence of X-ray and optical properties with those of the synthetic compound.

Mineral Group: Barite group.

Occurrence: Common in the oxidized zone of lead deposits, where it may constitute an important ore.

Association: Cerussite, leadhillite, lanarkite, caledonite, linarite, brochantite, malachite, mimetite, pyromorphite, wulfenite, massicot, gypsum, sulfur, galena.

Distribution: A few localities for well-crystallized specimens include: from Parys Mountain, Anglesey, Wales. In England, at Matlock and Cromford, Derbyshire, and Caldbeck Fells, Cumbria. From Leadhills, Lanarkshire, and Wanlockhead, Dumfriesshire, Scotland. At Bleiberg, Carinthia, Austria. From Mežica (Mies), Slovenia. In Germany, at Müsen, Littlefeld, Siegen, and other places in Siegerland. From Monteponi and Montevecchio, near Iglesias, Sardinia. In Russia, at Beresovsk, near Yekaterinburg (Sverdlovsk), Middle Ural Mountains, and at Nerchinsk, Siberia. From Sidi-Amor-ben-Salem, Tunisia. Fine crystals at the Touissit mine, near Oujda, Morocco. Very large crystals from Tsumeb, and in the Kombat Cu–Pb–Ag mine, 49 km south of Tsumeb, Namibia. In the USA, from the Wheatley mine, Phoenixville, Chester Co., Pennsylvania; in Idaho, from the Bunker Hill mine, Coeur d'Alene district, in the Hypotheek mine, south of Kingston, and the Last Chance and Tyler mines, Wardner, Shoshone Co.; in the Eureka Hill mine, Tintic district, Juab Co., Utah; from the Grand Reef mine, Graham Co., Arizona. In Mexico, from Los Lamentos, Chihuahua; in the Amelia mine, Santa Rosalia, Baja California; at San Felipe Canyon, Aconchi, Sonora. In Australia, large crystals from Broken Hill, New South Wales, and at Dundas, Tasmania.

Name: For its occurrence on the island of Anglesey, Wales.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 420–424. (2) Miyake, M., I. Minato, H. Morikawa, and S. Iwai (1978) Crystal structures and sulphate force constants of barite, celestite, and anglesite. *Amer. Mineral.*, 63, 506–510. (3) Jacobsen, S.D., J.R. Smyth, R.J. Swope, and R.T. Downs (1998) Rigid-body character of the SO₄ groups in celestine, anglesite, and barite. *Can. Mineral.*, 36, 1053–1060. (4) (1954) NBS Circular 539, 3, 67.

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