

**Dundasite****PbAl<sub>2</sub>(CO<sub>3</sub>)<sub>2</sub>(OH)<sub>4</sub>•H<sub>2</sub>O**

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**Crystal Data:** Orthorhombic. *Point Group:*  $2/m\ 2/m\ 2/m$ . As acicular crystals, elongated along [001], made up of subparallel individuals, to 1 cm; typically in spherical aggregates and tufted matted crusts.

**Physical Properties:** *Cleavage:* Perfect on {010}. *Hardness* = 2 *D*(meas.) = 3.10–3.55 *D*(calc.) = 3.716

**Optical Properties:** Transparent. *Color:* White to very pale blue; colorless in transmitted light. *Luster:* Vitreous to silky.

*Optical Class:* Biaxial (-). *Orientation:*  $X = a; Y = b; Z = c.$   $\alpha = 1.603(3)$   $\beta = 1.716(3)$   $\gamma = 1.742(3)$   $2V$ (meas.) = Very large.

**Cell Data:** *Space Group:*  $Pbnm.$   $a = 9.08(1)$   $b = 16.37(2)$   $c = 5.62(1)$   $Z = 4$

**X-ray Powder Pattern:** Dundas, Tasmania, Australia.

7.91 (10), 3.60 (8), 3.08 (6), 4.63 (5), 3.23 (5), 2.667 (5), 2.968 (4)

**Chemistry:**

	(1)	(2)
CO <sub>2</sub>		18.84
CO <sub>2</sub> + H <sub>2</sub> O	28.08	
Al <sub>2</sub> O <sub>3</sub>	26.06	21.82
Fe <sub>2</sub> O <sub>3</sub>	5.50	
PbO	41.86	47.77
H <sub>2</sub> O		11.57
Total	101.50	100.00

(1) Dundas, Tasmania, Australia. (2) PbAl<sub>2</sub>(CO<sub>3</sub>)<sub>2</sub>(OH)<sub>4</sub>•H<sub>2</sub>O.

**Occurrence:** Uncommon in the oxidized zone of lead-bearing deposits.

**Association:** Cerussite, plattnerite, azurite, malachite, pyromorphite, mimetite, beudantite, duftite, crocoite, gibbsite, allophane, “limonite”.

**Distribution:** In Australia, from near Dundas, Tasmania, notably at the Adelaide Proprietary mine, and at the Hercules mine, Mt. Read. In the Tui mine, Mt. Te Aroha, New Zealand. In Wales, from the Welsh Foxdale mine and others, near Trefriw, Gwynedd. At the Clements mine, near Maam, Co. Galway, Ireland. In England, from the Mill Close mine, Wensley, Derbyshire; at Wheals Rose and Penrose, Sithney, in the Trevinnick mine, St. Kew, and others in Cornwall; from the Brandehow mine, Derwentwater, and the Wanthwaite mine, St. John’s in the Vale, Cumbria. In the Bad Ems district, Rhineland-Palatinate, and at Bad Harzburg and elsewhere, Harz, Germany. At Guttaring, and Pleschutz, near Hirt, Carinthia, Austria. In Italy, on Sardinia, from the Punta Sa Torre mine, the Seddas Moddizis mine, and the San Giovanni mine, near Gonessa, Iglesias. In the Kamariza mine, Laurium, Greece. Long crystals from the Cap Garonne mine, near le Pradet, Var, France. At the Touissit mine, Oujda, Morocco. From Tsumeb, Namibia. In the USA, in New Mexico, from the South Juanita, Tip Top, and Kelly mines, near Magdalena, Socorro Co.; in the Success mine, Schell Creek Range, White Pine Co., Nevada; at the Noble mine, Ogdensburg, Sussex Co., New Jersey.

**Name:** For the occurrence at Dundas, Tasmania, Australia.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1951) Dana’s system of mineralogy, (7th edition), v. II, 279–280. (2) Jambor, J.L., D.G. Fong, and A.P. Sabina (1969) Dresserite, the new barium analogue of dundasite. *Can. Mineral.*, 10, 84–89. (3) Cocco, G., L. Fanfani, A. Nunzi, and P.F. Zanazzi (1972) The crystal structure of dundasite. *Mineral. Mag.*, 38, 564–569.

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