

Aldridgeite**(Cd, Ca)(Cu, Zn)₄(SO₄)₂(OH)₆·3H₂O**

Crystal Data: Monoclinic. *Point Group:* 2/m. As acicular crystals to 0.4 mm in sprays to 0.8 mm.

Physical Properties: *Cleavage:* Perfect on {100} (by analogy to serpierite). *Tenacity:* Brittle.
Fracture: Irregular. Hardness = ~3 D(meas.) = 3.25(3) D(calc.) = 3.33

Optical Properties: Transparent. *Color:* Pale blue. *Streak:* Pale blue. *Luster:* Vitreous.
Optical Class: Biaxial (-). $\alpha = 1.596(3)$ $\beta = 1.636(3)$ $\gamma = 1.643(3)$ $2V(\text{calc.}) = 44.5^\circ$
Orientation: n.d. *Pleochroism:* Weak, *X* = pale yellowish blue, *Y* = pale blue, *Z* = pale greenish blue.

Cell Data: *Space Group:* C2/c. $a = 22.049(2)$ $b = 6.212(2)$ $c = 21.839(2)$ $\beta = 113.19(3)^\circ$ $Z = 8$

X-Ray Diffraction Pattern: Block 14 open cut, Broken Hill, New South Wales, Australia.
 10.167 (100), 2.645 (60), 5.076 (55), 2.439 (50), 3.380 (35), 2.167 (35), 2.704 (30)

Chemistry:	(1)
CdO	9.25
CaO	4.95
PbO	0.04
CuO	40.49
ZnO	8.48
SO ₃	24.01
H ₂ O	[16.59]
Total	103.83

(1) Block 14 open cut, Broken Hill, New South Wales, Australia; average electron microprobe analysis supplemented by IR spectroscopy, H₂O calculated for charge balance; corresponds to (Cd_{0.62}Ca_{0.39})_{Σ=1.01}(Cu_{2.89}Zn_{1.10})_{Σ=3.99}(SO₄)₂(OH)₆·3H₂O.

Occurrence: Secondary mineral in the oxidation zone of a galena, Cd-bearing sphalerite, and chalcopyrite deposit.

Association: Neidermayrite, pyromorphite.

Distribution: From the Kintore and Block 14 open cuts, Broken Hill, New South Wales, Australia.

Name: Honors Edward William *Aldridge*, owner of the Duke of Cornwall Hotel, Broken Hill, Australia and collector of the first major Broken Hill mineral specimen collection (1888-1891).

Type Material: South Australian Museum, Adelaide, South Australia (G33030).

References: (1) Elliot, P. and A. Pring (2015) Aldridgeite, a new mineral from the Block 14 open cut, Broken Hill, New South Wales. *Australian J. Mineral.*, 17, 67-71.