

**Crystal Data:** Monoclinic. *Point Group:* 2/m. Powdery to massive.

**Physical Properties:** *Cleavage:* n.d. *Fracture:* n.d. *Tenacity:* n.d. Hardness = n.d.  
D(meas.) = 1.917 D(calc.) = 1.918 Readily soluble in water.

**Optical Properties:** Translucent. *Color:* White. *Streak:* n.d. *Luster:* n.d.  
*Optical Class:* Biaxial. *n*(average) = 1.465

**Cell Data:** *Space Group:* C2/c. *a* = 11.9236(3) *b* = 5.1736(1) *c* = 12.1958(3)  $\beta$  = 117.548(2)° *Z* = 4

**X-ray Powder Pattern:** Calingasta, Argentina.

5.259 (100), 3.927 (46), 3.168 (45), 4.603 (29), 2.570 (23), 3.970 (22), 3.118 (22)

<b>Chemistry:</b>	(1)
Co	0.01
Mg	20.28
Mn	0.06
Ni	0.08
S	41.59
Zn	0.17
<u>H<sub>2</sub>O</u>	<u>37.90</u>
Total	100.09

(1) Calingasta, Argentina; ICP-MS analysis supplemented by Raman and FTIR spectrometry, H<sub>2</sub>O by DTA.

**Occurrence:** In veins of up to 3 cm in thickness in a fine-grained metasedimentary rock (illite, quartz, and gypsum).

**Association:** Hexahydrite, starkeyite, kieserite.

**Distribution:** From an outcrop 1 km east-southeast of Calingasta, Argentina.

**Name:** Honors Lachlan M.D. *Cranswick* (1968-2010), an Australian crystallographer who helped to develop and maintain the Collaborative Computational Project No. 14 in Powder and Small Molecule Single Crystal Diffraction (CCP14).

**Type Material:** Canadian Museum of Nature, Ottawa, Ontario, Canada (CMNMC 86134).

**References:** (1) Peterson, R.C. (2011) Cranswickite MgSO<sub>4</sub>·4H<sub>2</sub>O, a new mineral from Calingasta, Argentina. *Amer. Mineral.*, 96, 869-877.