

## Metazellerite



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**Crystal Data:** Orthorhombic. *Point Group:*  $mm2$  or  $2/m\ 2/m\ 2/m$ . A topotactic replacement of fibrous zellerite.

**Physical Properties:** Hardness = n.d.  $D(\text{meas.}) = \text{n.d.}$   $D(\text{calc.}) = 3.414$  Radioactive.

**Optical Properties:** Translucent. *Color:* Pale yellow. *Luster:* Chalky.

*Optical Class:* Biaxial (-). *Orientation:*  $Z = c$ .  $n = 1.626$   $\alpha = \text{n.d.}$   $\beta = \text{n.d.}$   $\gamma = \text{n.d.}$   
 $2V(\text{meas.}) = \text{n.d.}$

**Cell Data:** *Space Group:*  $Pbn2_1$  or  $Pbnm$ .  $a = 9.718(5)$   $b = 18.226(9)$   $c = 4.965(4)$   
 $Z = 4$

**X-ray Powder Pattern:** Lucky Mc mine, Wyoming, USA.

9.10 (100), 3.794 (50), 4.695 (36), 4.296 (36), 4.552 (18), 4.412 (18), 3.978 (18)

**Chemistry:** (1) No analysis could be performed; crystal chemical considerations indicate dehydration from  $5\text{H}_2\text{O}$  in zellerite to  $3\text{H}_2\text{O}$  in metazellerite.

**Occurrence:** A dehydration product of zellerite.

**Association:** Zellerite, gypsum, "limonite", iron sulfides, schoepite, meta-autunite, uranophane, voglite, "opal".

**Distribution:** In the USA, from the Lucky Mc mine, Wind River Basin, Fremont Co., Wyoming; in the White Canyon # 1 mine, Frey Point, San Juan Co., Colorado. At Jáchymov (Joachimsthal), Czech Republic. Other zellerite localities must also have this species.

**Name:** From the Greek *meta*, for a lower hydrate of *zellerite*.

**Type Material:** National Museum of Natural History, Washington, D.C., USA, 112827.

**References:** (1) Coleman, R.G., D.R. Ross, and R. Meyrowitz (1966) Zellerite and metazellerite, new uranyl carbonates. *Amer. Mineral.*, 51, 1567–1578.