Metazellerite \(\text{Ca(UO}_2\text{)(CO}_3\text{)}_2\cdot3\text{H}_2\text{O}\)

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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. \(D(\text{meas.}) = n.d\). \(D(\text{calc.}) = 3.414\) Radioactive.


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 \textit{meta}, for a lower hydrate of \textit{zellerite}.
