

**Asselbornite****(Pb, Ba)(UO<sub>2</sub>)<sub>6</sub>(BiO)<sub>4</sub>(AsO<sub>4</sub>)<sub>2</sub>(OH)<sub>12</sub>•3H<sub>2</sub>O**

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**Crystal Data:** Cubic. *Point Group:*  $4/m\bar{3}2/m$ ,  $432$ ,  $2/m\bar{3}$  or  $23$ . Crystals are cubes modified by tetrahedra or pseudotetrahedra, to 0.3 mm.

**Physical Properties:** Hardness = n.d.  $D(\text{meas.}) = \text{n.d.}$   $D(\text{calc.}) = 5.6$  Radioactive.

**Optical Properties:** Translucent. *Color:* Brown to lemon-yellow; yellow in transmitted light. *Luster:* Greasy to adamantine.

*Optical Class:* Isotropic.  $n = \sim 1.9$

**Cell Data:** *Space Group:*  $Im\bar{3}m$ ,  $I432$ ,  $Im\bar{3}$  or  $I23$ .  $a = 15.66$   $Z = 4$

**X-ray Powder Pattern:** Schneeberg, Germany.

4.185 (100), 3.196 (80), 4.520 (70), 3.691 (60), 5.536 (40), 2.609 (40), 3.501 (35)

**Chemistry:**

	(1)	(2)
UO <sub>3</sub>	56.00	57.77
P <sub>2</sub> O <sub>5</sub>	1.11	1.36
As <sub>2</sub> O <sub>5</sub>	6.42	6.23
Bi <sub>2</sub> O <sub>3</sub>	33.27	32.55
PbO	5.88	3.61
BaO	1.84	2.29
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Total	104.52	103.81

(1) Schneeberg, Germany; by electron microprobe, average of eight analyses of the central part of a crystal; H<sub>2</sub>O 5.6% by TGA, the loss of which is assumed to account for the high total; corresponds to (Pb<sub>0.77</sub>Ba<sub>0.35</sub>)<sub>Σ=1.12</sub>(UO<sub>2</sub>)<sub>5.78</sub>(BiO)<sub>4.18</sub>[(AsO<sub>4</sub>)<sub>1.63</sub>(PO<sub>4</sub>)<sub>0.46</sub>]<sub>Σ=2.09</sub>(OH)<sub>12</sub>•3H<sub>2</sub>O.

(2) Do.; by electron microprobe, average of eight analyses of the exterior part of a crystal; corresponds to (Pb<sub>0.48</sub>Ba<sub>0.45</sub>)<sub>Σ=0.93</sub>(UO<sub>2</sub>)<sub>5.87</sub>(BiO)<sub>4.07</sub>[(AsO<sub>4</sub>)<sub>1.57</sub>(PO<sub>4</sub>)<sub>0.57</sub>]<sub>Σ=2.14</sub>(OH)<sub>12</sub>•3H<sub>2</sub>O.

**Occurrence:** On a museum specimen initially, later at the locality.

**Association:** Uranospinite, uranophane, uranosphaerite, quartz.

**Distribution:** In the Walpurgis vein, Weisser Hirsch mine, Neustädtel-Schneeberg, Saxony, Germany.

**Name:** For Eric Asselborn (1954–), surgeon and mineral collector, of Dijon, France, in whose collection the mineral was first found.

**Type Material:** Museum of Natural History, Geneva, Switzerland, 435/50; National Museum of Natural History, Washington, D.C., USA, 142229.

**References:** (1) Sarp. H., J. Bertrand, and J. Deferne (1983) Asselbornite, (Pb, Ba)(UO<sub>2</sub>)<sub>6</sub>(BiO)<sub>4</sub>[(As, P)O<sub>4</sub>]<sub>2</sub>(OH)<sub>12</sub>•3H<sub>2</sub>O, a new uranium, lead and barium hydrous arsenate. Neues Jahrb. Mineral., Monatsh., 417–423. (2) (1984) Amer. Mineral., 69, 565 (abs. ref. 1).