

**Crystal Data:** Hexagonal. *Point Group:* 3. As equant crystals, to 0.3 mm. *Twinning:* On {0001}.

**Physical Properties:** Hardness = n.d. VHN = n.d. D(meas.) = n.d. D(calc.) = 4.3

**Optical Properties:** Opaque. *Color:* Lead-gray to black. *Luster:* Metallic.  
R<sub>1</sub>–R<sub>2</sub>: n.d.

**Cell Data:** *Space Group:* R3. *a* = 13.440(1) *c* = 9.17(1) *Z* = 3

**X-ray Powder Pattern:** Binntal, Switzerland.

1.019 (100), 1.081 (75), 1.887 (63), 3.127 (61), 1.605 (61), 1.216 (52), 1.085 (20)

<b>Chemistry:</b>	(1)	(2)	(3)
Cu	31.2	30.9	30.21
Zn	15.9	16.4	15.54
As	22.4	22.8	23.75
S	31.9	32.0	30.50
Total	101.4	102.1	100.00

(1) Binntal, Switzerland; by electron microprobe, corresponding to Cu<sub>6.04</sub>Zn<sub>3.01</sub>As<sub>3.73</sub>S<sub>12.70</sub>.

(2) Do.; by electron microprobe, corresponding to Cu<sub>6.02</sub>Zn<sub>3.11</sub>As<sub>3.77</sub>S<sub>12.36</sub>. (3) Cu<sub>6</sub>Zn<sub>3</sub>As<sub>4</sub>S<sub>12</sub>.

**Occurrence:** In a hydrothermal deposit in dolostone, noted for a variety of Pb–As–S minerals.

**Association:** Sphalerite, dolomite.

**Distribution:** From the Lengenbach quarry, Binntal, Valais, Switzerland [TL].

**Name:** Honors Professor Werner Nowacki (1909–1989), Swiss mineralogist, University of Berne, Switzerland.

**Type Material:** University of Bern, Bern, Switzerland, holotype no longer exists, L3892-65.

**References:** (1) Marumo, F. and G. Burri (1965) Nowackiite, a new copper–zinc arsenosulfosalt from Lengenbach (Binntal, Kanton Wallis). *Chimia (Switzerland)*, 19, 500–501. (2) (1966) *Amer. Mineral.*, 51, 532 (abs. ref. 1). (3) Marumo, F. (1967) The crystal structure of nowackiite, Cu<sub>6</sub>Zn<sub>3</sub>As<sub>4</sub>S<sub>12</sub>. *Zeits. Krist.*, 124, 352–368. (4) Nowacki, W. (1982) Isotypic state of aktashite (Cu<sub>6</sub>Hg<sub>3</sub>As<sub>4</sub>S<sub>12</sub>) and nowackiite (Cu<sub>6</sub>Zn<sub>3</sub>As<sub>4</sub>S<sub>12</sub>). *Kristallografiya (Sov. Phys. Crystal.)*, 27, 49–50 (in Russian).