

**Crystal Data:** Cubic. *Point Group:*  $\bar{4} 3m$ . As massive material in a museum specimen.

**Physical Properties:** *Cleavage:* n.d. *Fracture:* n.d. *Tenacity:* n.d. *Hardness* = 3  
VHN = 148-172, 160 average (25 g load). *D(meas.)* = n.d. *D(calc.)* = n.d.

**Optical Properties:** n.d. *Color:* Greenish gray, with intense deep red internal reflections in reflected light. *Streak:* n.d. *Luster:* n.d.

*Optical Class:* n.d.

*R:* (400) 30.8, (420) 30.7, (440) 30.5, (460) 30.3, (480) 30.1, (500) 29.7, (520) 29.1, (540) 28.2, (560) 27.1, (580) 26.0, (600) 25.0, (620) 24.3, (640) 23.5, (660) 23.1, (680) 22.9, (700) 22.7

**Cell Data:** Space Group:  $I\bar{4} 3m$ . *a* = 10.9845(7) *Z* = 1

**X-ray Powder Pattern:** Quasi-powder diffraction data.

3.161 (100), 2.738 (35), 1.936 (24), 1.651 (19), 2.148 (18), 1.999 (10), 2.927 (8),

| Chemistry: | (1)   | (2)    |
|------------|-------|--------|
| S          | 18.93 | 19.73  |
| Fe         | 0.23  |        |
| Cu         | 0.14  |        |
| Zn         | 5.0   | 6.19   |
| As         | 1.2   |        |
| Ag         | 51.3  | 51.04  |
| Cd         | 0.9   |        |
| Sb         | 21.3  | 23.04  |
| Total      | 99.77 | 100.00 |

(1) Moctezuma mine, Moctezuma, Sonora, Mexico; average of 7 electron microprobe analyses; corresponds to (Ag<sub>10.05</sub>Cu<sub>0.05</sub>) $\Sigma$ =10.10(Zn<sub>1.62</sub>Cd<sub>0.17</sub>Fe<sub>0.09</sub>) $\Sigma$ =1.88(Sb<sub>3.70</sub>As<sub>0.34</sub>) $\Sigma$ =4.04S<sub>12.44</sub>.

(2) Ag<sub>10</sub>Zn<sub>2</sub>Sb<sub>4</sub>S<sub>13</sub>.

**Mineral Group:** Tetrahedrite group.

**Occurrence:** Found in hydrothermal veins and contact metamorphic deposits.

**Association:** Galena, pyrite, hessite.

**Distribution:** Moctezuma mine (Bambolla mine), Moctezuma, Sonora, Mexico.

**Name:** Honors Irina Rozhdestvenskaya, Department of Crystallography, St. Petersburg University, Russia, in recognition of her contributions to mineralogy and crystal chemistry of the tetrahedrite group. The suffix, (Zn), indicates the dominant composition in the C structural site.

**Type Material:** The Natural History Museum, London, England (BM2016,102).

**References:** (1) Welch, M.D., C.J. Stanley, J. Spratt, and S.J. Mills (2018) Rozhdestvenskayaite Ag<sub>10</sub>Zn<sub>2</sub>Sb<sub>4</sub>S<sub>13</sub> and argentotetrahedrite Ag<sub>6</sub>Cu<sub>4</sub>(Fe<sup>2+</sup>,Zn)<sub>2</sub>Sb<sub>4</sub>S<sub>13</sub>: two Ag-dominant members of the tetrahedrite group. *Eur. J. Mineral.*, 30(6), 1163-1172. (2) (2019) *Amer. Mineral.*, 104(9), 1360-1361 (abs. ref. 1).