

**Crystal Data:** Isometric. *Point Group:*  $\bar{4}3m$ . As round segregations, to 100  $\mu\text{m}$ , as disseminated emulsion-texture grains in germanite, and as the outer zones of maikainite overgrowths on germanocolusite.

**Physical Properties:** *Cleavage:* None. *Fracture:* n.d. *Tenacity:* n.d. *Hardness:* = n.d. *VHN* = 265-340 (30 g load). *D(meas.)* = n.d. *D(calc.)* = 4.736

**Optical Properties:** Opaque. *Color:* White to pale yellow; pinkish gray in reflected light. *Streak:* n.d. *Luster:* Metallic. *Optical Class:* Isotropic. *R:* (460) 24.1, (546) 24.3, (589) 24.4, (650) 24.0

**Cell Data:** *Space Group:*  $P\bar{4}3n$ . By analogy with the germanite group.  $a = 10.68$   $Z = 1$

**X-ray Powder Pattern:** Tsumeb deposit, Namibia.

3.08 (100), 1.887 (70), 1.612 (50), 2.67 (20), 1.225 (15), 1.543 (10), 1.333 (10)

<b>Chemistry:</b>	(1)
Cu	39.85
Fe	4.75
Zn	3.34
Mo	1.01
W	9.83
Sn	0.04
V	0.09
Ge	10.01
Ga	0.48
As	2.58
<u>S</u>	<u>29.65</u>
Total	101.63

(1) Tsumeb deposit, Namibia; electron microprobe analysis; corresponding to  $(\text{Cu}_{21.41}\text{Fe}_{2.91}\text{Zn}_{1.74})_{\Sigma=26.06}(\text{W}_{1.83}\text{Mo}_{0.36}\text{V}_{0.06}\text{Sn}_{0.01})_{\Sigma=2.26}(\text{Ge}_{4.70}\text{As}_{1.17}\text{Ga}_{0.24})_{\Sigma=6.11}\text{S}_{31.57}$ .

**Mineral Group:** Germanite group.

**Occurrence:** In a germanium-bearing, base-metal, massive-sulfide deposit (Tsumeb); in a gold-bearing, base-metal, massive-sulfide deposit (Maikain).

**Association:** Maikainite, germanite, germanocolusite (Tsumeb).

**Distribution:** From the Tsumeb deposit, Ovamboland, Namibia and the Maikain deposit, Kazakhstan.

**Name:** For the *Ovamboland* region of Namibia in which the first specimens were located.

**Type Material:** A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, and in the Mining Museum, St. Petersburg, Russia.

**References:** (1) Spiridonov, E.M. (2003) Maikainite  $\text{Cu}_{20}(\text{Fe,Cu})_6\text{Mo}_2\text{Ge}_6\text{S}_{32}$  and ovamboite  $\text{Cu}_{20}(\text{Fe,Cu,Zn})_6\text{W}_2\text{Ge}_6\text{S}_{32}$ : New minerals in massive sulfide base metal ores. *Doklady Earth Sci.*, 393A, 1329-1332. (2) (2004) *Amer. Mineral.*, 89, 1830 (abs. ref. 1).