Ovamboite

$Cu_{20}(Fe,Cu,Zn)_6W_2Ge_6S_{32}$

CUBIC

Locality: (1) Tsumeb deposit, Ovamboland, Namibia, and (2) the Maikain deposit, Kazakhstan.

Occurrence: (1) In a germanium-bearing massive-sulfide base-metal deposit. Associated minerals are: maikainite, germanite, gallite, tennantite, sphalerite, galena and germanocolusite. (2) In a gold-bearing massive-sulfide base-metal deposit. Associated minerals are: maikainite, sphalerite, bornite and barite.

General appearance: Isolated grains (up to 0.1 mm) and coatings.

Physical, chemical and crystallographic properties: *Luster*: metallic. *Diaphaneity*: opaque. *Color*: megascopic color not given. *Streak*: not given. *Hardness*: VHN_{50} 265 to 340 (average 295) kg/mm^2. *Tenacity*: not given. *Cleavage*: absent. *Fracture*: not given. *Density*: could not be measured, 4.74 g/cm^3 (calc.). **Crystallography**: Cubic, $P\bar{4}3n$ by analogy with the germanite group, a 10.68 Å, V 1216 Å^3, Z = 1. Morphology: elongate cubes. Twinning: none observed. **X-ray powder-diffraction data**: 3.08(10)(222), 2.67(2)(400), 1.887(7)(440), 1.612(5)(622), 1.543(1)(444), 1.333(1)(800), 1.225(1.5)(662). **Optical data**: In reflected light: pale yellowish pink, isotropic, no internal reflections. R: (24.0%) 470 nm, (24.3%) 546 nm, (24.4%) 589 nm, (24.0%) 650 nm. **Chemical analytical data**: Four sets of electron-microprobe data are given. The data corresponding to the material used to derive the unit-cell parameter are: Cu 39.85, Zn 3.34, Fe 4.75, As 2.58, Mo 1.01, W 9.83, Sn 0.04, S 29.65, V 0.09, Ge 10.01, Ga 0.48, Total 101.63 wt.%. Empirical formula: $(Cu_{21.41}Fe_{2.90}Zn_{1.74})_{\Sigma 26.05}(W_{1.83}Mo_{0.36}V_{0.06}Sn_{0.01})_{\Sigma 2.26}(Ge_{4.71}As_{1.18}Ga_{0.23})_{\Sigma 6.12}S_{31.57}$. **Relationship to other species**: A member of the germanite group.

Name: After the area that includes the type locality.

Comments: IMA No. 1992–039.

SPIRIDONOV, E.M. (2003): Maikainite $Cu_{20}(Fe,Cu)_6Mo_2Ge_6S_{32}$ and ovamboite $Cu_{20}(Fe,Cu,Zn)_6W_2Ge_6S_{32}$: new minerals in massive sulfide base metal ores. *Doklady Earth Sciences* **393A**, 1329-1332.