

Hereroite**[Pb₃₂(O,□)₂₁](AsO₄)₂[(Si,As,V,Mo)O₄]₂Cl₁₀**

Crystal Data: Monoclinic. *Point Group:* 2/m. As grains < 1 mm and in aggregates to 3 mm.

Physical Properties: *Cleavage:* None. *Fracture:* Conchoidal. *Tenacity:* Brittle. *Hardness* = n.d. D(meas.) = n.d. D(calc.) = 8.15

Optical Properties: Transparent to translucent. *Color:* Bright orange, gray with a bluish tint in reflected light. *Streak:* White. *Luster:* Adamantine. *Birefractance:* Masked by yellowish orange internal reflections.

Optical Class: n.d.

R: (470) 17.9, (546) 16.9, (589) 16.6, (650) 16.3

Cell Data: *Space Group:* C2/c. *a* = 23.139(4) *b* = 22.684(4) *c* = 12.389(2) *β* = 102.090(3)°
Z = 4

X-ray Powder Pattern: Kombat mine, Namibia.

2.982 (100), 2.795 (47), 1.986 (24), 1.641 (24), 3.512 (23), 3.901 (21), 1.7580 (14)

Chemistry:	(1)	(2)
PbO	91.90	91.02
As ₂ O ₅	3.81	2.93
SiO ₂	0.74	1.53
V ₂ O ₅	0.35	
MoO ₃	0.31	
Cl	4.49	4.52
<u>-O=Cl₂</u>	<u>1.01</u>	<u> </u>
Total	100.59	100.00

(1) Kombat mine, Namibia; average of 20 electron microprobe analyses; corresponding to [Pb₃₂O_{20.70}](AsO₄)₂[(Si_{0.48}As_{0.29}V_{0.15}Mo_{0.09})_{Σ=1.01}O₄]₂Cl_{9.84}.

(2) [Pb₃₂(O,□)₂₁](AsO₄)₂[(Si,As,V,Mo)O₄]₂Cl₁₀.

Occurrence: Most likely a late-stage, low-temperature hydrothermal (epigenetic) reworking of primary Pb-Cu-Zn-Ag sulfides. Known from a single specimen purchased commercially.

Association: Vladkrivovichevite, asisite, damaraite, kombatite, sahlinite, quartz, native copper, barysilite, hausmannite, jacobsonite, manganite.

Distribution: From the Kombat mine, Grootfontein, Namibia.

Name: For the *Herero* people, one of the indigenous tribes in the region near the Kombat mine.

Type Material: Natural History Museum, London, England (BM2010, 101).

References: (1) Turner, R., O.I. Siidra, M.S. Rumsey, S.V. Krivovichev, C.J. Stanley, and J. Spratt (2012) Hereroite and vladkrivovichevite: two novel lead oxychlorides from the Kombat mine, Namibia. *Mineral. Mag.*, 76(4), 883-890. (2) (2015) *Amer. Mineral.*, 100, 1325-1326 (abs. ref. 1). (3) Siidra, O.I., S.V. Krivovichev, R.W. Turner, M.S. Rumsey, and J. Spratt (2013) Crystal chemistry of layered Pb oxychloride minerals with PbO-related structures: Part I. Crystal structure of hereroite, [Pb₃₂O₂₀(O,□)](AsO₄)₂[(Si,As,V,Mo)O₄]₂Cl₁₀. *Amer. Mineral.*, 98, 248-255.