

Electron Microprobe Data

Rruff ID: R050532 **Mineral: Olivenite**
Locality: Tsumeb mine, Tsumeb, Otavi District, Oshikoto, Namibia

Weight Percents

Analysis	#21	#22	#24	#25	#26	#27	#28	#29	#31	#32	#33	#34	#36	#37	#39	#40	Average	StDev
CuO	55.53	55.95	56.05	55.60	55.11	56.14	55.52	55.76	55.35	55.13	54.99	55.19	55.19	55.64	55.08	55.25	55.47	0.37
ZnO	0.34	0.56	0.33	0.77	0.54	0.40	0.48	1.23	0.83	0.97	0.94	1.08	0.88	1.01	1.17	0.90	0.78	0.30
As ₂ O ₅	40.84	40.51	40.68	40.83	40.77	40.60	40.92	40.79	40.04	40.62	40.66	40.49	40.77	40.47	40.47	40.62	40.63	0.21
Totals	96.72	97.01	97.06	97.19	96.42	97.15	96.91	97.78	96.22	96.72	96.58	96.76	96.83	97.12	96.71	96.76	96.87	0.36
H ₂ O*	3.28	2.99	2.94	2.81	3.58	2.85	3.09	2.22	3.78	3.28	3.42	3.24	3.17	2.88	3.29	3.24	3.13	0.36

* = calculated values

Cation numbers normalized to 4 Oxygens and 1 (OH)

																	ACN	StDev	NCN	CNISF**
Cu	1.98	1.99	1.99	1.97	1.97	1.99	1.97	1.97	1.99	1.96	1.96	1.97	1.96	1.98	1.96	1.97	1.97	0.01	1.97	0.99
Zn	0.01	0.02	0.01	0.03	0.02	0.01	0.02	0.04	0.03	0.03	0.03	0.04	0.03	0.04	0.04	0.03	0.03	0.01	0.03	0.01
As	1.01	1.00	1.00	1.00	1.01	1.00	1.01	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Totals	2.99	3.01	3.00	3.00	2.99	3.00	2.99	3.01	3.01	3.00	3.00	3.00	3.00	3.01	3.00	3.00	3.00	0.01	3.00	

Ideal Chemistry: $\text{Cu}_2(\text{AsO}_4)(\text{OH})$

Calculated Chemistry: $(\text{Cu}_{0.99}\text{Zn}_{0.01})_2(\text{As}_{1.00}\text{O}_4)(\text{OH})$

Instrument: Cameca SX50
 Sample Voltage: 15 kV
 Acceleration Current: 20 nA
 Beam Size: 10 microns
 Date of Analysis: 06/03/2006

Microprobe Calibration Data

Xtal	El	Line	Pk(s)	Bkg(s)	Bkg(+)	Bkg(-)	Standards
TAP	As	La	20	10	600	-600	as
LIF	Zn	Ka	20	10	500	-500	zn_2
LIF	Cu	Ka	20	10	500	-500	cu

ACN: Average Number of Cations

NCN: Normalized Cation Numbers = ACN*3/3.00

StDev: Standard Deviation

CNISF**: Cation numbers in structural formulae, charge balanced