

Status Alternate **Quality Mark:** Star **Environment:** Ambient **Temp:** 298.0 K (Assigned by ICDD editor)
Chemical Formula: Cu O **Empirical Formula:** Cu O **Weight %:** Cu79.89 O20.11 **Atomic %:** Cu50.00 O50.00
Compound Name: Copper Oxide **Mineral Name:** Tenorite, syn **Alternate Name:** melaconite
Entry Date: 09/01/1991

Radiation: CuK α 1 (1.5406 Å) **Filter:** Quartz Mono **Camera Diameter:** 114.60 mm **Internal Standard:** Si
d-Spacing: Guinier **Intensity:** Diffractometer - Peak

Crystal System: Monoclinic **SPGR:** C2/c (15)
Author's Unit Cell [a: 4.685 Å b: 3.423 Å c: 5.132 Å β : 99.52° Volume: 81.17 Å³ Z: 4.00
MolVol: 20.29 **c/a:** 1.095 **a/b:** 1.369 **c/b:** 1.499 **Calculated Density:** 6.509 g/cm³
Measured Density: 6.45 g/cm³ **Color:** Black **SS/FOM:** F(23) = 60.1(0.0109, 35) **I/Ic:** 2.8

Space Group: A2/a (15) **Molecular Wt:** 79.54 g/mol
Crystal Data [a: 5.132 Å b: 3.423 Å c: 4.685 Å α : 90.00° β : 99.52° γ : 90.00° XtlCell Vol: 81.17 Å³
XtlCell Z: 4.00 c/a: 0.913 a/b: 1.499 c/b: 1.369]
Reduced Cell [a: 2.901 Å b: 2.901 Å c: 5.132 Å α : 82.33° β : 82.33° γ : 72.31° RedCell Vol: 40.58 Å³]

Crystal (Symmetry Allowed): Centrosymmetric

Subfiles: Battery Material, Common Phase, Educational Pattern, Forensic, Inorganic, Metal & Alloy, Mineral Related (Mineral, Synthetic), Superconducting Material

Pearson Symbol: mC8.00 **Prototype Structure (Formula Order):** Cu O **Prototype Structure (Alpha Order):** Cu O
LPF Prototype Structure (Formula Order): Cu O,mS8,15 **LPF Prototype Structure (Alpha Order):** Cu O,mS8,15
ANX: AX

Cross-Ref PDF #'s: 00-045-0937 (Alternate), 04-007-1375 (Experimental <-> LPF), 04-012-7238 (Experimental <-> LPF)

References:

Type	DOI	Reference
Primary Reference		Geyer, A., Eysel, W., Mineral. Petrograph. Inst., Univ. Heidelberg, Germany. ICDD Grant-in-Aid 1989.
Unit Cell		Asbrink, S., Norrby, L. Acta Crystallogr., Sect. B: Struct. Crystallogr. Cryst. Chem. 1970, 26, 8.

Database Comments: Additional Patterns: See PDF 00-045-0937. ANX: AX. Sample Source or Locality: Sample from Merck, purity >99.0%.

d-spacings (23) - Cu O - 00-041-0254 (Stick, Fixed Slit Intensity) - X-ray (Cu K α 1 1.54056 Å)

2 θ (°)	d (Å)	I	h	k	l	*	2 θ (°)	d (Å)	I	h	k	l	*	2 θ (°)	d (Å)	I	h	k	l	*
32.508	2.7520	8	1	1	0		58.311	1.5811	12	2	0	2		75.260	1.2616	7	-2	2	2	
35.437	2.5310	60	0	0	2		61.547	1.5055	16	-1	1	3		80.188	1.1960	2	-2	0	4	
35.538	2.5240	100	-1	1	1		65.821	1.4177	12	0	2	2		82.375	1.1697	4	-3	1	3	
38.730	2.3230	100	1	1	1		66.275	1.4091	14	-3	1	1		83.103	1.1613	4	2	2	2	
38.940	2.3110	100	2	0	0		67.932	1.3787	9	1	1	3		83.685	1.1547	4	4	0	0	
46.263	1.9608	3	-1	1	2		68.145	1.3749	14	2	2	0		86.567	1.1235	2	-4	0	2	
48.742	1.8667	25	-2	0	2		72.433	1.3037	6	3	1	1		89.815	1.0911	5	-1	3	1	
53.465	1.7124	7	0	2	0		74.988	1.2655	6	0	0	4								