

$\text{Cu}_{1.75}\text{Te}$	$hP18$	(187) $P\text{-}6m2 - h^4g^4da$
-----------------------------	--------	---------------------------------

# **$\text{Cu}_{1.75}\text{Te}$ [1]**

Structural features: Triangle-mesh Cu and Te layers in h stacking (non homogeneous stacking sequence, partial vacancies in some Cu layers).

Baranova R.V. (1969) [1]

$\text{Cu}_{1.75}\text{Te}$

$a = 0.417$ ,  $c = 2.165$  nm,  $c/a = 5.192$ ,  $V = 0.3260$  nm<sup>3</sup>,  $Z = 6$

site	Wyck.	sym.	$x$	$y$	$z$	occ.	atomic environment
Cu1	$2h$	$3m.$	$\frac{1}{3}$	$\frac{2}{3}$	0.060	0.63	8-vertex polyhedron $\text{Cu}_5\text{Te}_3$
Cu2	$2h$	$3m.$	$\frac{1}{3}$	$\frac{2}{3}$	0.182		8-vertex polyhedron $\text{Cu}_5\text{Te}_3$
Cu3	$2h$	$3m.$	$\frac{1}{3}$	$\frac{2}{3}$	0.266		8-vertex polyhedron $\text{Cu}_7\text{Te}$
Te4	$2h$	$3m.$	$\frac{1}{3}$	$\frac{2}{3}$	0.382	0.63	8-vertex polyhedron $\text{Cu}_5\text{Te}_3$
Te5	$2g$	$3m.$	0	0	0.116		8-vertex polyhedron $\text{Cu}_8$
Cu6	$2g$	$3m.$	0	0	0.232		8-vertex polyhedron $\text{Cu}_7\text{Te}$
Cu7	$2g$	$3m.$	0	0	0.322		8-vertex polyhedron $\text{Cu}_4\text{Te}_4$
Te8	$2g$	$3m.$	0	0	0.437		8-vertex polyhedron $\text{Cu}_4\text{Te}_4$
Cu9	$1d$	$-6m2$	$\frac{1}{3}$	$\frac{2}{3}$	$\frac{1}{2}$		8-vertex polyhedron $\text{Te}_8$
Cu10	$1a$	$-6m2$	0	0	0		8-vertex polyhedron $\text{Te}_2\text{Cu}_6$

Experimental: thin film, electron diffraction,  $R = 0.230$

Remarks: Phase referred to as  $\beta\text{II}-(\text{CuTe})$ . Short interatomic distances:  $d(\text{Cu2-Cu3}) = 0.182$ ,  $d(\text{Cu4-Cu5}) = 0.195$  nm. In the abstract of [1] the Hermann-Mauguin symbol for the space group is misprinted as  $P6m2$  instead of  $P\text{-}6m2$  (given elsewhere).

References: [1] Baranova R.V. (1969), Sov. Phys. Crystallogr. 13, 695-699 (Kristallografiya 13, 803-808).