Body-Centered Cubic (W, $A2$, bcc) Structure: A_cI2_229_a-001

This structure originally had the label `A_cI2_229_a`. Calls to that address will be redirected here.

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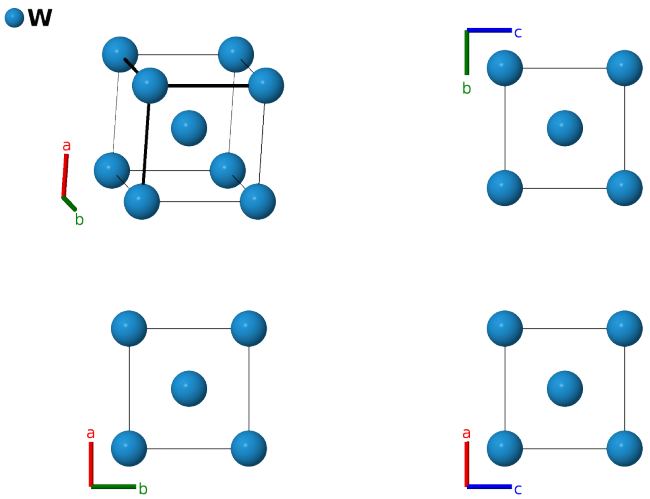
https://aflow.org/p/7W8F

https://aflow.org/p/A_cI2_229_a-001



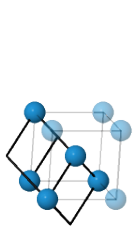
Prototype	W
AFLOW prototype label	A_cI2_229_a-001
***Strukturbericht* designation**	$A2$
ICSD	52538
Pearson symbol	cI2
Space group number	229
Space group symbol	$Im\bar{3}m$
AFLOW prototype command	`aflow --proto=A_cI2_229_a-001 --params=`a

Other compounds with this structure
Li (RT), Na, K, V, Cr, Fe, Rb, Nb, Mo, Cs, Ba, Eu, Ta

- Although more accurate measurements of the lattice constant of tungsten are available, (Davey, 1925) is chosen because of the unique experimental technique. The ICSD entry is from the later work of (Hartmann, 1931).

Body-centered Cubic primitive vectors

$$\mathbf{a_1} = -\tfrac{1}{2}a\,\hat{\mathbf{x}} + \tfrac{1}{2}a\,\hat{\mathbf{y}} + \tfrac{1}{2}a\,\hat{\mathbf{z}}$$
$$\mathbf{a_2} = \tfrac{1}{2}a\,\hat{\mathbf{x}} - \tfrac{1}{2}a\,\hat{\mathbf{y}} + \tfrac{1}{2}a\,\hat{\mathbf{z}}$$
$$\mathbf{a_3} = \tfrac{1}{2}a\,\hat{\mathbf{x}} + \tfrac{1}{2}a\,\hat{\mathbf{y}} - \tfrac{1}{2}a\,\hat{\mathbf{z}}$$



Basis vectors

		Lattice coordinates		Cartesian coordinates	Wyckoff position	Atom type
$\mathbf{B_1}$	=	0	=	0	(2a)	W I

References

[1] W. P. Davey, *Precision Measurements of the Lattice Constants of Twelve Common Metals*, Phys. Rev. **25**, 753–761 (1925), doi:10.1103/PhysRev.25.753.

[2] W. P. Davey, *The Lattice Parameter and Density of Pure Tungsten*, Phys. Rev. **26**, 736–738 (1925), doi:10.1103/PhysRev.26.736.

[3] H. Hartmann, F. Ebert, and O. Bretschneider, *Elektrolysen in Phosphatschmelzen I*, Z. Anorganische und Allgemeine Chemie **198**, 116–140 (1931), doi:10.1002/zaac.19311980111.