

ZnS	<i>hP</i> 24	(186) $P6_3mc - b^8a^4$
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ZnS 12H [1]

Structural features: Close-packed S layers in hc_5 stacking; Zn in tetrahedral voids (same stacking position as the preceding S layer). ZnS_4 tetrahedra share vertices to form a 3D-framework.

Kiflawi I. et al. (1969) [1]

SZn

$a = 0.382$, $c = 3.756$ nm, $c/a = 9.832$, $V = 0.4747$ nm³, $Z = 12$

site	Wyck.	sym.	<i>x</i>	<i>y</i>	<i>z</i>	occ.	atomic environment
S1	2 <i>b</i>	3 <i>m.</i>	$\frac{1}{3}$	$\frac{2}{3}$	0.10417		tetrahedron Zn ₄
Zn2	2 <i>b</i>	3 <i>m.</i>	$\frac{1}{3}$	$\frac{2}{3}$	0.16667		tetrahedron S ₄
S3	2 <i>b</i>	3 <i>m.</i>	$\frac{1}{3}$	$\frac{2}{3}$	0.35417		tetrahedron Zn ₄
Zn4	2 <i>b</i>	3 <i>m.</i>	$\frac{1}{3}$	$\frac{2}{3}$	0.41667		tetrahedron S ₄
S5	2 <i>b</i>	3 <i>m.</i>	$\frac{1}{3}$	$\frac{2}{3}$	0.52083		tetrahedron Zn ₄
Zn6	2 <i>b</i>	3 <i>m.</i>	$\frac{1}{3}$	$\frac{2}{3}$	0.58333		tetrahedron S ₄
S7	2 <i>b</i>	3 <i>m.</i>	$\frac{1}{3}$	$\frac{2}{3}$	0.77083		tetrahedron Zn ₄
Zn8	2 <i>b</i>	3 <i>m.</i>	$\frac{1}{3}$	$\frac{2}{3}$	0.83333		tetrahedron S ₄
Zn9	2 <i>a</i>	3 <i>m.</i>	0	0	0.0		tetrahedron S ₄
S10	2 <i>a</i>	3 <i>m.</i>	0	0	0.1875		tetrahedron Zn ₄
Zn11	2 <i>a</i>	3 <i>m.</i>	0	0	0.25		tetrahedron S ₄
S12	2 <i>a</i>	3 <i>m.</i>	0	0	0.4375		tetrahedron Zn ₄

Transformation from published data: origin shift 0 0 0.5625

Experimental: single crystal, oscillation photographs, X-rays

Remarks: Zhdanov notation (66). We derived idealized atom coordinates from the stacking sequence.

References: [1] Kiflawi I., Mardix S., Steinberger I.T. (1969), Acta Crystallogr. B 25, 1581-1586.