ZnS	*hP*28	(186) $P6_3mc$ – $b^{10}a^4$

ZnS 14H [1], wurtzite-14H
Structural features: Close-packed S layers in hc_6 stacking; Zn in tetrahedral voids (same stacking position as the preceding S layer). ZnS_4 tetrahedra share vertices to form a 3D-framework.

Mardix S. et al. (1967) [1]
SZn
$a = 0.382$, $c = 4.382$ nm, $c/a = 11.471$, $V = 0.5538$ nm^3, $Z = 14$

site	Wyck.	sym.	*x*	*y*	*z*	occ.	atomic environment
Zn1	2*b*	3*m*.	$^1/_3$	$^2/_3$	0.07143		tetrahedron S_4
S2	2*b*	3*m*.	$^1/_3$	$^2/_3$	0.125		tetrahedron Zn_4
Zn3	2*b*	3*m*.	$^1/_3$	$^2/_3$	0.28571		tetrahedron S_4
S4	2*b*	3*m*.	$^1/_3$	$^2/_3$	0.33929		tetrahedron Zn_4
Zn5	2*b*	3*m*.	$^1/_3$	$^2/_3$	0.42857		tetrahedron S_4
S6	2*b*	3*m*.	$^1/_3$	$^2/_3$	0.48214		tetrahedron Zn_4
Zn7	2*b*	3*m*.	$^1/_3$	$^2/_3$	0.64286		tetrahedron S_4
S8	2*b*	3*m*.	$^1/_3$	$^2/_3$	0.69643		tetrahedron Zn_4
Zn9	2*b*	3*m*.	$^1/_3$	$^2/_3$	0.85714		tetrahedron S_4
S10	2*b*	3*m*.	$^1/_3$	$^2/_3$	0.91071		tetrahedron Zn_4
Zn11	2*a*	3*m*.	0	0	0.0		tetrahedron S_4
S12	2*a*	3*m*.	0	0	0.05357		tetrahedron Zn_4
Zn13	2*a*	3*m*.	0	0	0.21429		tetrahedron S_4
S14	2*a*	3*m*.	0	0	0.26786		tetrahedron Zn_4

Transformation from published data ($P6_3mc$ *): origin shift $^1/_3$ $^2/_3$ 0.07143
Experimental: single crystal, photographs, X-rays

Remarks: Zhdanov notation (77); idealized atom coordinates. We deduced the space group from the coordinates of all the atoms in the unit cell. In [1] the origin of the cell is shifted by $^1/_3$ $^2/_3$ 0 from the description in the International Tables for Crystallography.

References: [1] Mardix S., Brafman O., Steinberger I.T. (1967), Acta Crystallogr. 22, 805-807.