$Bi_{6.33}S_9I$	*hP*36	(176) $P6_3/m$ – h^5ec

$Bi(Bi_2S_3)_9I_3$ [1]
Structural features: :BiS_3 ψ-tetrahedra share vertices to form infinite chains; additional Bi (partial disorder) and I between the chains.

Miehe G., Kupcik V. (1971) [1]
$Bi_{6.33}IS_9$
a = 1.563, c = 0.402 nm, c/a = 0.257, V = 0.8505 nm^3, Z = 2

site	Wyck.	sym.	*x*	*y*	*z*	occ.	atomic environment
S1	6*h*	*m*..	0.067	0.4546	$^1/_4$		square pyramid Bi_5
S2	6*h*	*m*..	0.1847	0.0166	$^1/_4$		
S3	6*h*	*m*..	0.2635	0.3953	$^1/_4$		non-coplanar triangle Bi_3
Bi4	6*h*	*m*..	0.2965	0.2407	$^1/_4$		square antiprism S_8
Bi5	6*h*	*m*..	0.5115	0.1218	$^1/_4$		5-vertex polyhedron S_5
Bi6	4*e*	3..	0	0	0.103	0.167	
I7	2*c*	-6..	$^1/_3$	$^2/_3$	$^1/_4$		14-vertex polyhedron $Bi_6S_6I_2$

Experimental: single crystal, diffractometer, X-rays, R = 0.082

Remarks: The cell parameters from [2] were confirmed. Short interatomic distances for partly occupied site(s). Space group (173) $P6_3$ could not be rejected (R = 0.079); according to [1] physical properties indicate the absence of an inversion center.

References: [1] Miehe G., Kupcik V. (1971), Naturwissenschaften 58, 219. [2] Otto H.H., Strunz H. (1968), Neues Jahrb. Mineral., Abh. 108, 1-19.