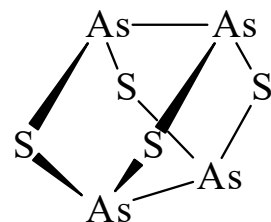




>>Entry Name: Arsenic sulfide (As₄S₄), 9Cl, 8Cl

Synonym(s): 2,4,6,8-Tetrathia-1,3,5,7-tetraarsatricyclo[3.3.0.0.^{3,7}]octane



CAS Registry Number: 12279-90-2

Molecular Formula: As₄S₄

Molecular Weight: 427.95

Accurate Mass: 427.574656

Percentage Composition: As 70.03%; S 29.97%

General Statement: Arsenic atoms arranged tetrahedrally with the sulfide atoms almost coplanar. Mean interatomic distances, As-S 259.3, As-S 224.3 pm. In vap., mean As-As 249 pm

>>Variant: α -form

Synonym(s): Realgar

CAS Registry Number: 12044-30-3

Molecular Formula: As₄S₄

Molecular Weight: 427.95

Accurate Mass: 427.574656

Percentage Composition: As 70.03%; S 29.97%

General Statement: Mineral

Source/Synthesis: Found as pigment in ancient Persian and Armenian manuscripts. Widespread occurrence. e.g. in Sb ores of Yugoslavia; hot spring deposits in USSR; borate deposits in Turkey; gold ores of USA (Montana) and Armenia

Physical Description: Orange-red solid

Other Data: At 270°, $\rightarrow$ β -form. On exp. to light, $\rightarrow$ orpiment

>>Variant: β -form

Synonym(s): Synthetic-form

Molecular Formula: As₄S₄

Molecular Weight: 427.95

Accurate Mass: 427.574656

Percentage Composition: As 70.03%; S 29.97%

General Statement: Molecular packing not identical to that of α -form

Source/Synthesis: Synth. from As + S at 400-1000° under pressure

Physical Description: Cryst. (CS₂ or C₆H₆)

Melting Point: Mp 320°

Boiling Point: Bp 565°

Other Data: Subl. *in vacuo*. Annealing at 200° $\rightarrow$ α -form. In vap., dissociation into As₂S₂ complete at 1000°. Colour of solid darkens at >170°

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