



>>Entry Name: Indium selenide (In₂Se₃)

Synonym(s): Diindium triselenide

CAS Registry Number: 12056-07-4

In₂Se₃

Molecular Formula: In₂Se₃

Molecular Weight: 466.52

Accurate Mass: 469.55732

Percentage Composition: In 49.22%; Se 50.78%

Melting Point: Mp 890°

Other Data: 3 polymorphs. descr. Forms mixed cryst. (wurtzite-like) with InP, InAs. Related non-stoichiometric compd. with disordered S, Se, Te and some In(I) also descr.

Aldrich: 40331-8

>>Variant: Low temp.-form

Synonym(s): Rhombohedral-form

Molecular Formula: In₂Se₃

Molecular Weight: 466.52

Accurate Mass: 469.55732

Percentage Composition: In 49.22%; Se 50.78%

Source/Synthesis: Obtd. from In, Se at 950° and purified by chemical vapour transport using I₂

Physical Description: Black solid

Other Data: Band gap 1.25 eV. Electrical conductivity 5-9 Ω⁻¹ m⁻¹

>>Variant: Trigonal-form

Molecular Formula: In₂Se₃

Molecular Weight: 466.52

Accurate Mass: 469.55732

Percentage Composition: In 49.22%; Se 50.78%

>>Variant: High temp.-form

Synonym(s): Hexagonal-form

Molecular Formula: In₂Se₃

Molecular Weight: 466.52

Accurate Mass: 469.55732

Percentage Composition: In 49.22%; Se 50.78%

Source/Synthesis: Obt. from elements; with tempering at 800°; condensed from vapour on to mica

Physical Description: Graphite-like soft plates

References:

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Hahn, H. *et al.*, *Naturwissenschaften*, 1957, **44**, 533; 534, (*cryst struct*)
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Hahn, H. *et al.*, *Z. Anorg. Allg. Chem.*, 1960, **303**, 107, (*phase diagram*)
Slavnova, G.K. *et al.*, *Russ. J. Inorg. Chem. (Engl. Transl.)*, 1963, **8**, 78; 622; 861, (*phase diagram*)
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Grinberg, Ja.Kh. *et al.*, *J. Inorg. Nucl. Chem.*, 1976, **38**, 383, (*synth, thermodyn data*)
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Chery, A., *J. Cryst. Growth*, 1981, **51**, 157, (*synth*)
Svensson, C. *et al.*, *J. Solid State Chem.*, 1983, **46**, 46, (*related compd*)