



>>Entry Name: Gallium(III) sulfide (Ga<sub>2</sub>S<sub>3</sub>)

Synonym(s): Digallium trisulfide. Gallium sesquisulfide

CAS Registry Number: 12024-22-5

Ga<sub>2</sub>S<sub>3</sub>

Molecular Formula: Ga<sub>2</sub>S<sub>3</sub>

Molecular Weight: 235.644

Accurate Mass: 233.76737

Percentage Composition: Ga 59.18%; S 40.82%

General Statement:  $\alpha$ -form stable at r.t. has zinc blende-based struct.; above 600°,  $\beta$ -form with wurtzite-based struct. is more stable

Source/Synthesis: From Ga or Ga(OH)<sub>3</sub> + H<sub>2</sub>S at 950°. Deposition from vapour at 800°

Physical Description: White plates

Melting Point: Mp 1250°

Other Data:  $\Delta H_f$  -572.3 kJ mol<sup>-1</sup>. Band gap,  $E_g$  2.5-2.7 eV. Forms glasses with Y and La sulfides cf. GaLaS<sub>3</sub>

Aldrich: 41052-7

References:

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Rustamov, P.G. *et al.*, *Izv. Akad. Nauk SSSR, Neorg. Mater.*, 1967, **3**, 479, (*phase diagram*)  
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