



>>Entry Name: Zinc nitride (Zn_3N_2)

CAS Registry Number: 1313-49-1

Zn_3N_2

Molecular Formula: N_2Zn_3

Molecular Weight: 224.183

Accurate Mass: 219.793583

Percentage Composition: N 12.50%; Zn 87.50%

Source/Synthesis: Synth. from Zn and NH_3 at 600° ; by thermolysis of $\text{Zn}(\text{NH}_2)_2$ or by dec. of Et_2Zn and N_2H_4 at 450°

Use/Importance: Used in ceramics

Physical Description: Grey cryst., stable up to 500° in air; stable to 600° in N_2

Other Data: Undergoes rapid solvolysis in NH_3

Hazard & Toxicity: Reacts violently with $\text{H}_2\text{O} \rightarrow \text{NH}_3$

References:

Juza, R. *et al.*, *Z. Anorg. Allg. Chem.*, 1938, **239**, 273; 1940, **244**, 125, (*synth, struct*)

Juza, R. *et al.*, *Angew. Chem.*, 1945, **58**, 25, (*rev*)

Gmelin Handbook Inorg. Chem., Syst. No. 32, 1956, 833, (*rev*)

Braume, E.G. *et al.*, *J. Inorg. Nucl. Chem.*, 1957, **5**, 48, (*ir*)

Brauer, G., *Handb. Prep. Inorg. Chem., 2nd edn.*, Academic Press, 1965, **2**, 1080, (*synth*)

Glasson, D.R. *et al.*, *SCI Monogr.*, 1968, **28**, 353, (*synth*)

Tobisch, J. *et al.*, *Wiss. Z. Tech. Univ. Dresden*, 1971, **20**, 441, (*nd, struct*)