



>>Entry Name: Aluminium barium oxide (Al₂BaO₄)

CAS Registry Number: 12004-04-5

Related CAS Registry Numbers(s): 12254-17-0

BaAl₂O₄

Molecular Formula: Al₂BaO₄

Molecular Weight: 255.288

Accurate Mass: 255.84797

Percentage Composition: Al 21.14%; Ba 53.79%; O 25.07%

General Statement: Tridymite struct. with Ba in interstices

Source/Synthesis: Synth. from BaO or BaCO₃-Al₂O₃-B₂O₃ melt

Use/Importance: Used as ceramic in nuclear reactors and as support for transition metal and lanthanide phosphors

Physical Description: Clear hexagonal rods (melt)

Other Data: Mn²⁽⁺⁾ doped cryst. also descr. Al₂Ba₅O₈ and several other related compds. descr.

Aldrich: 43401-9

References:

- Hoppe, R. *et al.*, *Naturwissenschaften*, 1960, **47**, 376, (*cryst struct*)
Glasser, F.P. *et al.*, *J. Am. Ceram. Soc.*, 1963, **46**, 377, (*synth, cryst struct*)
Arlett, R.H. *et al.*, *Acta Cryst.*, 1967, **22**, 315, (*cryst struct*)
Palilla, F.C. *et al.*, *J. Electrochem. Soc.*, 1968, **115**, 642, (*phosphors*)
Do-Dinh, C. *et al.*, *J. Phys. (Paris)*, 1970, **31**, 401, (*nd*)
Beretka, J. *et al.*, *Aust. J. Chem.*, 1973, **26**, 2527, (*synth, reactions*)
Riebling, E.-F. *et al.*, *Mater. Res. Bull.*, 1975, **10**, 997, (*synth*)
Hörkner, W. *et al.*, *Z. Anorg. Allg. Chem.*, 1979, **451**, 40, (*cryst struct*)
Sander, K. *et al.*, *Z. Anorg. Allg. Chem.*, 1980, **468**, 197, (*Mn-doped cryst*)
Müller, D. *et al.*, *Chem. Phys. Lett.*, 1981, **79**, 59, (*Al-27 nmr*)
Müller, D. *et al.*, *J.C.S. Dalton*, 1986, 1277, (*Al-27 nmr*)