



>>Entry Name: Gadolinium(III) bromide (GdBr₃)

Synonym(s): Gadolinium tribromide

CAS Registry Number: 13818-75-2

GdBr₃

Molecular Formula: Br₃Gd

Molecular Weight: 396.962

Accurate Mass: 394.739107

Percentage Composition: Br 60.39%; Gd 39.61%

Use/Importance: Can be used as neutron absorber shutdown material in nuclear reactors

Physical Description: White solid

Melting Point: Mp 785°

Solubility: Sol. H₂O

Other Data: $\mu_{\text{eff}} = 8.0\mu_{\text{B}}$ (Curie-Weiss to 5K)

>>Derivative: Hexahydrate

CAS Registry Number: 13450-83-4

Molecular Formula: Br₃GdH₁₂O₆

Molecular Weight: 505.053

Accurate Mass: 502.802497

Percentage Composition: Br 47.46%; Gd 31.14%; H 2.39%; O 19.01%

Physical Description: Colourless rhombic plates

Solubility: Sol. H₂O

Other Data: Loses H₂O on controlled heating *in vacuo*. Isostructural with corresp. chloride

References:

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Basile, L.J. *et al.*, *J. Chem. Phys.*, 1971, **55**, 3729, (*ir*)
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