>>**Entry Name: Barium iodide (BaI_2),** 8CI

CAS Registry Number: 13718-50-8

BaI_2

Molecular Formula: BaI_2
Molecular Weight: 391.136
Accurate Mass: 391.714178
Percentage Composition: Ba 35.11%; I 64.89%
General Statement: Struct. type $PbCl_2$
Source/Synthesis: Prepd. directly by reaction of BaH_2 with $[NH_4]I$ in Py. Alternatively obtained by slow neutralisation of $BaCO_3$ with aq. HI. Cryst. as hydrate. Thermal dec. affords anhyd. prod.
Use/Importance: Forms solid solns. with other alkaline earth metal halides which when activated with Eu(2+), are used in phosphors for radiographic image conversion screens
Physical Description: Deliquescent, colourless, orthorhombic cryst. Light sensitive
Melting Point: Mp 711°
Solubility: V. sol. H_2O (170 g per 100 cm^3 at 0°), EtOH (77 g per 100 cm^3 at 20°)
Other Data: ΔH_f° –605 kJ mol^{-1}, ΔG_f° –601 kJ mol^{-1}, S° 165.1 J K^{-1} mol^{-1}
Hazard & Toxicity: Highly toxic

Aldrich: 41361-5
Fluka: 11785

>>**Derivative:** Dihydrate

CAS Registry Number: 7787-33-9
Molecular Formula: $BaH_4I_2O_2$
Molecular Weight: 427.166
Accurate Mass: 427.735308
Percentage Composition: Ba 32.15%; H 0.94%; I 59.42%; O 7.49%
Use/Importance: Commercially available
Physical Description: Deliquescent, colourless orthorhombic light sensitive cryst., dec. on heating by H_2O loss (–H_2O at 99°; –2H_2O at 539°)
Solubility: V. sol. H_2O (200 g per 100 cm^3 at 15°; 269 g per 100 cm^3 at 100°); mod. sol. EtOH (1.07 g per 100 cm^3 at 15°)
Other Data: ΔH_f° –1217 kJ mol^{-1}
Aldrich: 22380-8

>>**Derivative:** Hexahydrate

CAS Registry Number: 13477-15-1
Molecular Formula: $BaH_{12}I_2O_6$
Molecular Weight: 499.227
Accurate Mass: 499.777568
Percentage Composition: Ba 27.51%; H 2.42%; I 50.84%; O 19.23%
Physical Description: Colourless, hexagonal light sensitive cryst. (aq. soln.); dec. on heating by H_2O loss
Solubility: V. sol. H_2O (410 g per 100 cm^3 at 0°), EtOH
Other Data: Struct. resembles $K_2Pt(SCN)_6$

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