



>>Entry Name: Silver(I) tetraiodomercurate(II) (Ag₂(HgI₄))

Synonym(s): Mercury silver iodide (HgAg₂I₄)

CAS Registry Number: 7784-03-4

Ag₂(HgI₄)

Molecular Formula: Ag₂HgI₄

Molecular Weight: 923.944

Accurate Mass: 923.398693

Percentage Composition: Ag 23.35%; Hg 21.71%; I 54.94%

-form above 50°, in which the silver ions are highly mobile

Use/Importance: Thermal sensor, becomes blood red at 40-50° and yellow again on cooling

Physical Description: Deep yellow thermochromic powder

Melting Point: Mp 652°

Solubility: Insol. H₂O, dil. acids; sol. solns. of alkali iodides or cyanides

Other Data: $\Delta H_f^\circ -716.1 \text{ kJ mol}^{-1}$

References:

Lietzke, M.H. *et al.*, *J. Inorg. Nucl. Chem.*, 1966, **28**, 1877, (*sol*)

Kroge-Moe, J., *Sel. Top. High Temp. Chem.*, 1966, 79; *CA*, **65**, 11455b, (*conductivity*)

Geller, S., *Fast Ion Transp. Solids*, Solid State Batteries Devices, Proc. NATO Adv. Study Inst., (Van Gool, W. Ed.), North Holland, Amsterdam, 1973, 607, (*conductivity*)

Browall, K.W. *et al.*, *J. Solid State Chem.*, 1974, **10**, 20, (*cryst struct, β-form, synth*)

Kasper, J.S. *et al.*, *J. Solid State Chem.*, 1975, **13**, 49, (*cryst struct, α-form*)

Jaw, H.R.C. *et al.*, *Inorg. Chem.*, 1987, **26**, 1387, (*synth, uv, thermal props*)

Merck Index, 11th edn., 1989, No. 8482