



>>Entry Name: Tetrabromaurate(III)(1-), 9CI

CAS Registry Number: 14337-14-5

Related CAS Registry Numbers(s): 13005-38-4
[AuBr₄]⁽⁻⁾

Molecular Formula: AuBr₄⁽⁻⁾

Molecular Weight: 516.583

Accurate Mass: 512.719887

Percentage Composition: Au 38.13%; Br 61.87%

>>Derivative: K salt

Synonym(s): Potassium bromaurate

CAS Registry Number: 14323-32-1

Molecular Formula: AuBr₄K

Molecular Weight: 555.681

Accurate Mass: 551.683594

Percentage Composition: Au 35.45%; Br 57.52%; K 7.04%

Source/Synthesis: Prepd. from KBr + Au + Br₂

Use/Importance: Commercially available

Physical Description: Reddish-purple cryst. Slowly absorbs water from the atm. to give the dihydrate

Melting Point: Mp 120 dec.°

Solubility: V. sol. H₂O, MeOH, EtOH

Aldrich: 39845-4

>>Derivative: H compd

Synonym(s): Bromauric acid

CAS Registry Number: 17083-68-0

Molecular Formula: AuBr₄H

Molecular Weight: 517.59

Accurate Mass: 513.727712

Percentage Composition: Au 38.05%; Br 61.75%; H 0.19%

Source/Synthesis: Formed from AuBr₃ + aq. HBr

Physical Description: Very hygroscopic, dark red cryst. + 5H₂O

Melting Point: Mp 80 dec.°

Solubility: V. sol. H₂O; sol. EtOH

>>Derivative: Tetrabutylammonium salt

CAS Registry Number: 17769-65-2

Source/Synthesis: Synth. from Au + Br₂ + Bu₄NBr

Physical Description: Deep maroon plates

Melting Point: Mp 165-167°

References:

- Inorg. Synth.*, 1953, **4**, 14, (*synth, K salt*)
Sabatini, A. *et al.*, *Inorg. Chem.*, 1964, **3**, 1775, (*ir*)
Ito, H. *et al.*, *Bull. Chem. Soc. Jpn.*, 1967, **40**, 2584, (*uv*)
Faltens, M.O. *et al.*, *J. Chem. Phys.*, 1970, **53**, 4249, (*Mössbauer*)
Bosworth, Y.M. *et al.*, *Inorg. Chem.*, 1975, **14**, 170, (*Raman*)
Straehle, J. *et al.*, *Z. Anorg. Allg. Chem.*, 1979, **456**, 241, (*cryst struct, K salt*)
Cattalini, L. *et al.*, *Inorg. Chem.*, 1985, **24**, 3409, (*synth, H compd*)
Omrani, H. *et al.*, *Acta Cryst. C*, 1986, **42**, 1091, (*cryst struct, K salt, dihydrate*)
Buckley, R.W. *et al.*, *Aust. J. Chem.*, 1997, **50**, 775-778, (*tetrabutylammonium salt, synth*)