



>>Entry Name: Arsenic acid

Synonym(s): Trihydroxyoxoarsenic(*V*). Orthoarsenic acid

CAS Registry Number: 7778-39-4

Related CAS Registry Numbers(s): 15584-04-0 28573-57-1 29285-22-1 29285-23-2

O=As(OH)₃

Molecular Formula: AsH₃O₄

Molecular Weight: 141.943

Accurate Mass: 141.924729

Percentage Composition: As 52.78%; H 2.13%; O 45.09%

General Statement: Tribasic acid. Various metal salts (arsenates) have separate entries.

pKa Value: p*K*_{a1} 2.26; p*K*_{a2} 6.76; p*K*_{a3} 11.29 (25°, H₂O at)

Other Data: Reacts with Na₂S₂O₃ or H₂S → As₂S₅; SO₂ → As₂O₃

>>Derivative: Hydrate (2:1)

Source/Synthesis: Synth. from As₂O₃ + HNO₃ aq., and cryst. at 0-5° from conc. solns. Also from dihydrate at -30°

Physical Description: Large, transparent, hygroscopic cryst.

Melting Point: Mp 35-36°

Other Data: Partially dehydrates easily at 36°. Monoclinic

References:

Mellor Compr. Treat. Inorg. Theor. Chem., 1929, **9**, 137, (rev, bibl)

Gmelin Handbook Inorg. Chem., Syst. No. 17, 1952, 327, (rev, bibl)

Worzala, H., *Acta Cryst. B*, 1968, **24**, 987, (cryst struct)

Lallou, J.P. *et al.*, *Rev. Chim. Miner.*, 1970, **7**, 317, (salts)

Vansant, F.H. *et al.*, *J. Mol. Struct.*, 1973, **15**, 425; 439, (Raman, struct)

Brauer, G., *Handbuch Prap. Anorg. Chem.*, 3rd edn., Ferdinand Enke Verlag, 1975, **1**, 580; 601, (synth)

Tossidas, I., *Inorg. Nucl. Chem. Lett.*, 1976, **12**, 609, (bibl)

Leuchs, M. *et al.*, *Can. J. Chem.*, 1979, **57**, 487, (ir)

Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 8th edn., Van Nostrand Reinhold, 1992, ARB250