



>>Entry Name: Arsenic bromide (AsBr₃)

Synonym(s): Arsenous tribromide, 9Cl. Arsenic tribromide. Tribromoarsine. Tribromoarsenic(III)

CAS Registry Number: 7784-33-0

AsBr₃

Molecular Formula: AsBr₃

Molecular Weight: 314.634

Accurate Mass: 311.736602

Percentage Composition: As 23.81%; Br 76.19%

General Statement: Pyramidal struct. in vapour phase, interatomic distance: As-Br 233 pm; angle: BrAsBr 99.7°

Source/Synthesis: Synth. from As + Br₂; As₂O₃ + S + Br₂; As₂O₃ or As₂O₅, or sulfides + BBr₃

Use/Importance: Commercially available

Physical Description: Colourless, deliquescent rhombic prisms

Melting Point: Mp 32-33° (31.2°)

Boiling Point: Bp 221°. Bp₅ 90°

Solubility: Sol. Et₂O, C₆H₆, CS₂, hydrocarbons

Other Data: Fumes in air. Hydrol. by H₂O → As₂O₃ + HBr. $\Delta H_{f298}^{\circ} -197 \text{ kJ mol}^{-1}$. Exhibits v. low electrical conductivity when pure

Aldrich: 43171-0

>>Derivative: Hexaethylbenzene complex (2:1)

CAS Registry Number: 106988-54-9

Molecular Formula: C₁₈H₃₀As₂Br₆

Molecular Weight: 875.702

Accurate Mass: 869.707954

Percentage Composition: C 24.69%; H 3.45%; As 17.11%; Br 54.75%

Physical Description: Rhombohedral cryst.

Melting Point: Mp 113°

Other Data: Only sl. sensitive to air and moisture. Struct. Br₃As-C₆Et₆-AsBr₃

References:

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