>>**Entry Name: Ammonia,** 11Cl
Synonym(s): Azane. Ammine. Amine

CAS Registry Number: 7664-41-7
Related CAS Registry Numbers(s): 13587-49-0 13767-16-3 19496-55-0 34819-78-8
NH_3 (C_{3v})

Molecular Formula: H_3N
Molecular Weight: 17.03
Accurate Mass: 17.026549
Percentage Composition: H 17.75%; N 82.25%
General Statement: Pyramidal. Interatomic distance: H-N 101.2 pm; angle: HNH 106.7°
Source/Synthesis: Synth. from $N_2 + H_2$. Manuf. via Haber Process
Use/Importance: Commercially available as anhyd. gas and aq. soln. Extensively used in fertiliser industry; in manuf. of HNO_3, explosives, synthetic fibres; in chemical industry. Self-ionising non-aqueous solvent: $2NH_3 << >> NH_4^{(+)} + NH_2^{(-)}$; $K_{-50°} = 10^{-30}$. Important industrial chemical, USA production in 1999 18.99 million tons
Physical Description: Colourless alkaline nonflammable gas with v. pungent odour
Melting Point: Mp –77.8°
Boiling Point: Bp –33.5°
Solubility: V. sol. H_2O, $CHCl_3$, Et_2O
pKa Value: pK_a 9.25 (25°)
Other Data: T_{crit} 133.0; P_{crit} 111.5 atm.
Hazard & Toxicity: Corrosive, toxic, irritant

Aldrich: 39268-5

>>**Derivative:** Trideutero compd.
Synonym(s): Ammonia-d_3. Perdeuteroammonia

CAS Registry Number: 13550-49-7
Molecular Formula: D_3N
Molecular Weight: 20.049
Source/Synthesis: Synth. from $Mg_3N_2 + D_2O$
Use/Importance: Commercially available
Physical Description: Colourless gas, similar to NH_3
Melting Point: Mp –73.6°
Boiling Point: Bp –31.1°
pKa Value: pK_a 9.76 (20°)
Other Data: T_{crit} 132.3°
Aldrich: 42297-5
Fluka: 9704
Sigma: A5266

>>**Derivative:** Hydrate
see Ammonium hydroxide ($(NH_4)(OH)$), HVD34-P

References:

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