



>>Entry Name: Hydrazine

ENTRY UNDER REVIEW

Synonym(s): Diazane

CAS Registry Number: 302-01-2

Related CAS Registry Numbers(s): 7803-57-8 13255-48-6 18500-32-8

$\text{H}_2\text{N}-\text{NH}_2$  ( $\text{C}_2$ )

Molecular Formula:  $\text{H}_4\text{N}_2$

Molecular Weight: 32.045

Accurate Mass: 32.037448

Percentage Composition: H 12.58%; N 87.42%

Source/Synthesis: Synth. from  $\text{NH}_3$  +  $\text{ClO}^-$

Use/Importance: Commercially available. Powerful and versatile reducing agent, esp. in basic soln. Used in plastics and agriculture industries and in  $\text{H}_2\text{O}$  treatment. Rocket fuel. Reducing agent often used in analysis e.g.  $\text{Hg}^{\text{II}}$ ,  $\text{Pt}^{\text{II,IV}}$  (to metal),  $\text{Se}^{\text{IV}}$  to Se,  $\text{NO}_3^{(-)}$  to  $\text{NO}_2^{(-)}$

Physical Description: Colourless oily fuming liq.

Melting Point: Mp  $1.8^\circ$

Boiling Point: Bp  $113.5^\circ$

Solubility: Misc.  $\text{H}_2\text{O}$ , alcohols; sl. sol. org. solvs.

Density:  $d^{25}_4$  1.004

pKa Value:  $\text{p}K_a$  7.96

Refractive Index:  $n^{25}_D$  1.4640

Hazard & Toxicity: Explosive in air if ignited or overheated. Highly toxic, corrosive

Aldrich: 30940-0

Sigma: H2761

>>Derivative: Monohydrate

CAS Registry Number: 10217-52-4

Molecular Formula:  $\text{H}_6\text{N}_2\text{O}$

Molecular Weight: 50.06

Accurate Mass: 50.048013

Percentage Composition: H 12.08%; N 55.96%; O 31.96%

Use/Importance: Commercially available strong base, v. powerful reducing agent, solv., rocket engine propellant. Used in manuf. of Helman catalyst

Physical Description: Fuming liq.

Melting Point: Mp  $-51.7^\circ$

Boiling Point: Bp<sub>740</sub> 118-119°. Bp<sub>47</sub>  $26^\circ$

Solubility: Insol.  $\text{CHCl}_3$ ,  $\text{Et}_2\text{O}$ ; misc.  $\text{H}_2\text{O}$ , alcohols

Other Data: Molecular, not ionic, complex. More convenient to use than pure hydrazine

Hazard & Toxicity: Cancer suspect agent. Toxic. Attacks glass, rubber, v. corrosive

Aldrich: 22581-9

Fluka: 53860

Sigma: H9507

>>Derivative: Hydrochloride

CAS Registry Number: 2644-70-4

Extra CAS Registry Numbers(s): 14011-37-1

Molecular Formula:  $\text{ClH}_5\text{N}_2$

Molecular Weight: 68.506

Accurate Mass: 68.014125

Percentage Composition: Cl 51.75%; H 7.36%; N 40.89%

Physical Description: Liq.

Aldrich: 21619-4

Fluka: 53880