



>>Entry Name: Cyanamide, 9CI

Synonym(s): Carbodiimide. Carbamic acid nitrile. Hydrogen cyanamide. Carbamonitrile. **Carbimide**‡

CAS Registry Number: 420-04-2

$\text{H}_2\text{NC}\equiv\text{N}$ (C_s)

Molecular Formula: CH_2N_2

Molecular Weight: 42.04

Accurate Mass: 42.021798

Percentage Composition: C 28.57%; H 4.79%; N 66.63%

General Statement: Behaves chemically as the diimide $\text{HN}=\text{C}=\text{NH}$

Source/Synthesis: Manuf. from limestone, coke and N_2 . Synth. from $\text{CaCN}_2 + \text{H}_2\text{O}/\text{H}_2\text{SO}_4$

Use/Importance: Aldehyde dehydrogenase inhibitor. Shows herbicidal props. Reportedly in use as a weed killer, e.g. on tobacco plants

Physical Description: White cryst. ($\text{C}_6\text{H}_6/\text{Et}_2\text{O}$)

Melting Point: Mp 46°

Boiling Point: Bp 260° dec.. Bp₁₉ 140°

Solubility: Sol. H_2O , EtOH, Et_2O , CHCl_3 , C_6H_6 , Me_2CO

pKa Value: $\text{pK}_a -1.2$ (H_2O)

Other Data: Steam-volatile; hydrol. by $\text{H}^{(+)}$ or $\text{OH}^{(-)}$ to urea. Converted by dil. $\text{OH}^{(-)}$ into Cyanoguanidine [BKM21-P](#). At 122° , trimerises to 1,3,5-Triazine-2,4,6-triamine [JKW82-Q](#)

Hazard & Toxicity: Fl. p. 141° . May dec. violently $>50^\circ$ in contact with H_2O , acids or alkalis. Max storage temp. 27° recommended. Eye, skin and mucous membrane irritant. Can cause dermatitis. LD₅₀ (rat, orl) 125 mg/kg. Exp. reprod. effects. OES: long-term 2 mg m^{-3}

Aldrich: 18736-4

Fluka: 28335

Sigma: C2388

>>Derivative: *N*-Ac

Synonym(s): *N*-Cyanoacetamide, 9CI

CAS Registry Number: 5634-51-5

Molecular Formula: $\text{C}_3\text{H}_4\text{N}_2\text{O}$

Molecular Weight: 84.077

Accurate Mass: 84.032363

Percentage Composition: C 42.86%; H 4.80%; N 33.32%; O 19.03%

Physical Description: Syrup

>>Derivative: *N*-Benzoyl

Synonym(s): *N*-Cyanobenzamide, 9CI

CAS Registry Number: 15150-25-1

Molecular Formula: $\text{C}_8\text{H}_6\text{N}_2\text{O}$

Molecular Weight: 146.148

Accurate Mass: 146.048013

Percentage Composition: C 65.75%; H 4.14%; N 19.17%; O 10.95%

Physical Description: Prisms (Me_2CO)

Melting Point: Mp 143°

Rare Chemicals Library: S92376-1

>>Derivative: *N*-Me

see Methylcyanamide, [NFR20-G](#)

>>Derivative: *N,N*-Di-Me

see Dimethylcyanamide, [DHM80-H](#)

>>Derivative: *N,N*-Di-Et

see Diethylcarbamic acid, [BGH96-O](#)

>>Derivative: *N,N*-Di-2-propenyl

see Di-2-propenylcyanamide, [CZK89-R](#)

>>Derivative: *N,N*-Dibenzyl