



# Prithvi Dye Chem

No: 1, 20th Cross, Rangaswamy Temple Street, Bangalore 560053

Ph: 080-41223338, M: +91-9341931213, Email: info@prithvidyechem.com, Web:www.prithvidyechem.com



## FORMALDEHYDE

### PRODUCT IDENTIFICATION

CAS NO. 107-16-4  
EINECS NO. 203-469-1  
FORMULA  $\text{OHCH}_2\text{CN}$   
MOL WT. 57.05  
H.S. CODE 2926.90



### TOXICITY

### SYNONYMS

Glycolonitrile; Cyanomethanol; Glycolic nitrile;

Glyconitrile; Hydroxyacetonitrile; Hydroxyactonitrile; Hydroxymethylnitrile; 2-Hydroxyacetonitrile; 2-Hydroxyethanenitrile; Glykolonitril (German); Hydroxymethylkyanid; Glicolonitrilo (Spanish); Glycolonitrile (French);

### SMILES

### CLASSIFICATION

### PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE Clear to pale yellow liquid  
MELTING POINT  $< -72\text{ C}$   
BOILING POINT  
SPECIFIC GRAVITY  
SOLUBILITY IN WATER miscible  
SOLVENT SOLUBILITY Soluble: alcohol, ether, acetone, benzene; Insoluble: petroleum ether  
AUTOIGNITION  
pH 2 - 3 (10% Sol.)  
VAPOR DENSITY  
NFPA RATINGS Health: 4 Flammability: 2 Reactivity: 2  
FLASH POINT  
STABILITY Stable under ordinary conditions.

### APPLICATIONS

Cyanohydrins are organic compounds which contain both cyano and hydroxyl groups linked to the same carbon atom usually. Cyanohydrins are obtained from the reactions of aldehydes (or

ketones) with hydrogen cyanide in base. They are versatile intermediates for the synthesis of organic compounds including amino nitriles; alpha-hydroxy acids, esters and amides; alpha-, beta-unsaturated acids, esters, nitriles as well as beta-aminoalcohols. Formaldehyde cyanohydrin is used to manufacture insecticides, pharmaceuticals and flavouring agents. It is used to prepare certain organic chemicals such as chelating agents.

#### SALES SPECIFICATION

##### 50% SOLUTION IN WATER

APPEARANCE Clear to pale yellow liquid

CONTENT 45 - 50%

HYDROCYANIC ACID 3.0% min

#### TRANSPORTATION

PACKING 180kgs in drum

HAZARD CLASS 6.1 (Packing group: I)

UN NO. 3276

#### OTHER INFORMATION

Hazard Symbols: T+, Risk Phrases: 26/27/28, Safety Phrases: 36/37/39-45

#### GENERAL DESCRIPTION OF NITRILE

Nitrile is an organic compounds containing cyano group ( $-C\ddot{O}N$ , containing trivalent nitrogen) which is attached to one carbon atom with the general formula  $RC\ddot{O}N$ . Their names are corresponding to carboxylic acids by changing '-ic acid' to the suffix, '-onitrile' which denotes only the  $\ddot{O}N$  atom (triple bond) excluding the carbon atom attached to it, or the suffix, '-carbonitrile' where the carbon atom in the  $-CN$  is included, whichever preserves a single letter O. Examples are acetonitrile from acetic acid and benzonitrile from benzoic acid. The prefix, 'cyano-' is used as an alternative naming system to indicate the presence of a nitrile group in a molecule for the compounds of salts and organic derivatives of hydrogen cyanide ( $HC\ddot{O}N$ ). Isocyanides are salts and hydrocarbyl derivatives from the isomer,  $HN^+\ddot{O}C^-$ . Sodium cyanide,  $NaCN$ ; potassium cyanide,  $KCN$ ; calcium cyanide,  $Ca(CN)_2$ ; and hydrocyanic (or prussic) acid,  $HCN$  are examples. Chemically, the simple inorganic cyanides resemble chlorides in many ways. Organic nitriles act as solvents and are reacted further for various application including;

- Extraction solvent for fatty acids, oils and unsaturated hydrocarbons
- Solvent for spinning and casting and extractive distillation based on its selective miscibility with organic compounds.
- Removing agent of colouring matters and aromatic alcohols
- Non-aqueous solvent for titrations and for inorganic salts
- Recrystallization of steroids
- Parent compound for organic synthesis
- Solvent or chemical intermediate in biochemistry (protein sequencing and DNA synthesis)
- High-pressure liquid chromatographic analysis
- Catalyst and component of transition-metal complex catalysts
- Stabilizer for chlorinated solvents
- Chemical intermediate and solvent for perfumes and pharmaceuticals

#### PRODUCT IDENTIFICATION

CAS NO. 1310-73-2

EINECS NO. 215-185-5

FORMULA NaOH

Na — OH

MOL WT.	40
H.S. CODE	2815.12
TOXICITY	
SYNONYMS	Caustic soda; Sodium hydrate; soda lye; Lye; Sodium Hydroxide White Caustic; Caustic Flake; Hydroxyde De Sodium (French); Natriumhydroxid (German); Natriumhydroxyde (Dutch); Sodio(Idrossido Di);
RAW MATERIALS	
CLASSIFICATION	

#### GENERAL DESCRIPTION

Sodium Hydroxide, commonly known as caustic soda, lye, or sodium hydrate, is a caustic compound which attacks organic matter. (caustic soda is sodium hydroxide, caustic potash is potassium hydroxide and silver nitrate is lunar caustic.) Caustic soda is available commercially in various white solid forms and as a solutions of various concentrations in water. It is very soluble in water, alcohol, and glycerin and absorbs carbon dioxide and moisture from the air. Sodium hydroxide is prepared by the reaction of sodium carbonate (soda) in concentrated solution form with calcium hydroxide (slaked lime). But the principal method for its manufacture is by the electrolysis of brine. (the two current technologies are the diaphragm and the membrane). The electrolyte is saturated brine (about 25% aqueous sodium chloride). The chloride ion is oxidized at the anode to chlorine gas. chlorine gas is a coproduct. Sodium hydroxide is a strong base and inexpensive which find many applications in the chemical industry. Sodium hydroxide provides fuctions of neutralisation of acids, hydrolysis, condensation. saponification and replacement of other groups in organic compounds of hydroxyl ions. The major use of sodium hydroxide is as a chemical and in the manufacture of other chemicals. It is used in textile industry. Sodium hydroxide is used mainly for two processes in textile manufacture. Mercerizing of fibre with sodium and hydroxide solution enables greater tensional strength and consistent lustre. It also removes waxes and oils from fibre to make the fibre more receptive to bleaching and dying. Sodium hydroxide is also used in the production of viscose rayon. Cellulose is extracted from pulp using sodium hydroxide and subsequently treated with high purity sodium hydroxide to produce soda cellulose. Further chemical treatment results in a rayon fibre. This is a declining market due to the competition from synthetic (ie petrochemical) fibres. It is used in making paper and pulp. Sodium hydroxide aids separation of cellulose fibres from lignin; this breaks down wood into pulp. Sodium hydroxide also helps bleach paper to required whiteness and brightness. In alumina production industry, a strong alkali solution separates pure alumina from bauxite ore. Alumina is then recovered through precipitation and finally, calcination. Sodium hydroxide is also widely used in making soaps and detergents, Sodium hydroxide was originally used for soap manufacture, but now has a wider variety of functions. As well as an extractant and refining agent for certain oils, sodium hydroxide is used to produce active agents, or builders in modern synthetic detergents. Sodium Hydroxide is used for sodium hypochlorite which is used as a household bleach and disinfectant and for sodium phenolate used in antiseptics and for the manufacture of Aspirin.

#### PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	White, deliquescent pellets or flakes
MELTING POINT	318 C
BOILING POINT	1390 C
SPECIFIC GRAVITY	2.13
SOLUBILITY IN WATER	
pH	13 - 14 (0.5% sol.)
VAPOR DENSITY	
AUTOIGNITION	
NFPA RATINGS	Health: 3; Flammability: 0; Reactivity: 1
REFRACTIVE INDEX	
FLASH POINT	Not considered to be a fire hazard

<b>STABILITY</b>	Stable under ordinary conditions
<b>APPLICATIONS</b>	
Direct application, (pulp and paper, soaps and detergents, alumina, petroleum, textiles, water treatment,); organic chemicals, (propylene oxide, polycarbonate, ethyleneamines, epoxy resins,); inorganic chemicals, (sodium/calcium hypochlorite, sulfur-containing compounds, sodium cyanide, )	
<b>SALES SPECIFICATION</b>	
<b>APPEARANCE</b>	White, Free-flowing, Fast Dissolving Flakes
NaOH	99.0% min
Na <sub>2</sub> O	76.0% min
Na <sub>2</sub> CO <sub>3</sub>	0.5% max
NaCl	0.1% max
NaSO <sub>4</sub>	0.1% max
Fe <sub>2</sub> O <sub>3</sub>	0.004% max
<b>HEAVY METALS</b>	20ppm max
<b>TRANSPORTATION</b>	
<b>PACKING</b>	25kgs, 50kgs, 1mt in Bag
<b>HAZARD CLASS</b>	8 (Packing group: II)
<b>UN NO.</b>	1823
<b>OTHER INFORMATION</b>	
Hazard Symbols: C, Risk Phrases: 35, Safety Phrases: 26-37/39-45	
<b>PRICES</b>	

