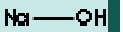
CAUSTIC SODA

PRODUCT IDENTIFICATION

CAS NO.	1310-73-2; 8012-01-9
EINECS NO.	215-185-5
FORMULA	NaOH
MOL WT.	40
H.S. CODE	2815.11.0000
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); Ascarite;
SMILES	O[Na]
CLASSIFICATION	Caustic, Alkalizing agent. Strong base,
EXTRA NOTES	EPA Pesticide Chemical Code 075603. A highly caustic substance that is used to neutralize acids and make sodium salts.



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 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
STABILITY	Stable under ordinary conditions

GENERAL DESCRIPTION & EXTERNAL LINKS

Direct application,(pulp and paper, soaps and detergents, aluminia, petroleum, textiles, water treatment,); organic chemicals, (propylene oxide, polycarbonate, ethyleneamines, epoxy resins,); inorganic chemicals, (sodium/calcium hypochlorite, sulfur-containing compounds, sodium cyanide,)

Product Overview
Caustic soda is an essential ingredient in an array of industrial applications. In addition, consumers use caustic soda when using cleaners, such as oven and drain cleaners. See Product Uses. Caustic soda is highly corrosive and reactive. Caustic soda can be irritating to the skin, eyes and gastrointestinal tract. See Health Information and Physical Hazard Information. Occupational and consumer exposure is dependent upon the conditions under which caustic soda is used. See Exposure Potential. Although caustic is only slightly toxic to aquatic organisms, a large discharge can change the pH of the aquatic system which may be toxic to aquatic organisms. See Environmental Information....

Caustic soda, or sodium hydroxide, is a strong base soluble in water. Produced by the electrolysis of salt brine, it is available on a wide industrial scale. Caustic soda is used in the manufacture of products which form part of our daily lives and in applications or uses as varied as the pulp & paper, detergents, the chemical, building and car industries, packaging, agriculture, environmental protection, water treatment, foodstuffs, health and textiles, and so on. Solvay produces and supplies caustic soda in liquid form (aqueous solution) and solid form (anhydrous), under the main quality international standards, in order to provide efficient services to industry....FMC manufactures caustic soda, the common name for sodium hydroxide (NaOH), in Green River, Wyoming. FMC's product is considered Chemical Grade caustic soda and is produced by reacting soda ash with lime. The product is available in bulk quantities as a 50% liquid solution. Caustic soda is used as the primary strong base in the chemical industry. Applications include cleaning, detergent production, water treatment, oil drilling, fuel processing, pulp & paper manufacturing, biodiesel production, food preparation and more....

Caustic Soda Lye is one of the most widely used chemicals in the industry. Caustic soda is a solution of Sodium hydroxide (NaOH) in water. It is a strong base with a wide range of applications in different industries. We produce caustic soda together with chlorine and hydrogen from the electrolysis of salt brine. With our production in five plants in Europe and our quality commitment, we guarantee a high service level towards our customers. Worldwide, the major users of caustic soda are the aluminum industry, pulp & paper and the chemical industry. The main applications are water treatment and water purification, as cleaning agent, or a wide range of uses in chemical industry like starch production or for the desulphurization in the petrochemical

industry.....

SALES SPECIFICATION	
APPEARANCE	White, Free-flowing, Fast Dissolving Flakes
NaOH	99.0% min
Na_2O	76.0% min
Na_2CO_3	0.5% max
NaCl	0.1% max
$NaSO_4$	0.1% max
Fe_2O_3	0.004% max
HEAVY METALS	20ppm max
TRANSPORTATION	
PACKING	25kgs, 50kgs, 1mt in Bag
HAZARD CLASS	8 (Packing group: II)
UN NO.	1823
OTHER INFORMATION	
Hazard Symbols: C, Risk Phrases: 35, Safety Phrases: 26-37/39-45	