

CLIP, Chemical Laboratory Information Profile

"Only when you know the hazards, can you take the necessary precautionary measures."

Sodium Hydroxide

NaOH

CAS No.: 1310-73-2

Synonyms: Caustic soda, lye

Physical Properties

White, waxy, deliquescent solid; v. sol. in water and alcohol
 Vapor pressure at 20 °C: negligible
 Melting point: approx 318 °C
 Boiling point: approx 1390 °C

Exposure Limits

OSHA PEL: 2mg/m³ Ceiling
 ACGIH TLV: 2mg/m³ Ceiling

Hazardous Characteristics

Overall toxicity	Flammability	Destructive to skin/eye	Absorbed through skin	Sensitizer?	Self-reactive?	Incompatible with:
3	0	4	0	No	No	Acids, reducing sugars, halogenated hydrocarbons, Al, Zn, other metals*

0: None (or very low); 1: Slight; 2: Moderate; 3: High; 4: Severe

***Reaction with:**

Strong and some weak acids is violent and exothermic; less so with weaker acids.
 Reducing sugars in the presence of air produces carbon monoxide.
 Halogenated hydrocarbons can be violent and often produces toxic, reactive products, some of which are flammable.
 Lithium and group II, III, and some IV metals can be violent; typically, hydrogen is a product.
 See Bretherick's *Handbook of Reactive Chemical Hazards* for details and for other incompatibilities.

Cited as known to be or reasonably anticipated to be carcinogenic in NTP-9? No Identified as a reproductive toxin in Frazier and Hage's *Reproductive Hazards of the Workplace*? No

Typical symptoms of acute exposures:

Rapid tissue destruction upon eye or skin contact, typically with no immediate pain or other discomfort, producing severe burns with deep ulcerations. Sore throat, vomiting, diarrhea, abdominal spasm if ingested. From mild irritation to severe pneumonitis depending upon how much dust or solution mist is inhaled.

Principal target organ(s) or system(s):

Eyes, skin, respiratory system

Storage Requirements

Store with other bases in a cool, dry, well-ventilated location, separated from acids, halogenated hydrocarbons, and group I, II, III, and IV metals.

Additional Remarks

When NaOH dissolves in water, the heat released can be sufficient to cause violent boiling and eruptions.

Notes

ReadMe

This Chemical Laboratory Information Profile is *not* a Material Safety Data Sheet. It is a brief summary for teachers and their students that describes some of the hazards of this chemical as it is typically used in laboratories. On the basis of your knowledge of these hazards and before using or handling this chemical, *you need to select the precautions and first-aid procedures to be followed*. For that information as well as for other useful information, refer to Material Safety Data Sheets, container labels, and references in the scientific literature that pertain to this chemical.

Reproductive Toxins

Some substances that in fact are reproductive toxins are not yet recognized as such. For the best readily available and up-to-date information, refer to "DART/ETIC". See the TOXNET home page at www.sis.nlm.nih.gov and click on "Toxicology search". *Note that some of the data in DART/ETIC have not been peer-reviewed*. See also Linda M. Frazier and Marvin L. Hage, *Reproductive Hazards of the Workplace*; Wiley, 1998; and T. H. Shepard, *Catalog of Teratogenic Agents*, 9th ed.; Johns Hopkins University Press, 1998.

Abbreviations

ACGIH TLV—American Conference of Governmental Industrial Hygienists—Threshold Limit Value. C—Ceiling. CAS—Chemical Abstracts Service. mg/m³—milligrams per cubic meter. NA—Not applicable. NE—Not established. NI—No information. NTP-9—National Toxicology Program, Ninth Annual Report on Carcinogens. OSHA PEL—Occupational Safety and Health Administration—Permissible Exposure Limit. ppm—parts per million. STEL/C—Short-term exposure limit and ceiling.

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