

SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Product Name: Denaturation Solution

Product Number: EC-875

1.2 Relevant Identified Uses of the Substance/Mixture and Uses Advised Against

Investigational research by professional users

1.3 Details of the Supplier of the Safety Data Sheet

Manufacturer

National Diagnostics
305 Patton Drive
Atlanta, GA 30036
(404) 699-2121
(800) 526-3867
info@nationaldiagnostics.com

1.4 Emergency Telephone Number

Chemtrec

1-800 424-9300 (U.S. & Canada)
01-703-527-3887 (outside U.S. & Canada)

SECTION 2 - HAZARDS IDENTIFICATION

2.1 Classification of the Substance or Mixture

Classification according to Regulation (EC) No. 1272/2008 [EU-GHS/CLP]

H290 - Corrosive to Metals

H314 - Skin Corrosion/Irritation (Category 1B)

2.2 Label Elements

GHS LABEL ELEMENTS AND CLASSIFICATION

GHS Label Elements



DANGER

H290 - May be corrosive to metals.

H314 - Causes severe skin burns and eye damage.

P260 - Do not breathe dust/fumes/gas/mist/vapors/spray.

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

P302+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse SKIN with water/shower.

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses if present and easy to do. Continue rinsing.

2.3 Other Hazards

None found.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixture

Chemical Names/Description

Aqueous solution of sodium chloride and sodium hydroxide.

Component List

Component	% Comp.	CAS #	EC #	1278/2008 Classification
Sodium Hydroxide	2.0	1310-73-2	215-185-5	H290, H314
Sodium Chloride	8.8	7647-14-5	231-598-3	N.A.

SECTION 4 - FIRST AID MEASURES

4.1 Description of First Aid Measures

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion

Do not induce vomiting. If swallowed and the person is conscious, immediately give large amounts of water. Get medical attention.

Skin

Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eyes

Immediately flush eyes with plenty of water for at least fifteen minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed

Inhalation

Sodium Hydroxide:

Sneezing, sore throat or runny nose.

Sodium Chloride:

No information found.

Ingestion

Sodium Hydroxide:

Bleeding, vomiting, diarrhea, fall in blood pressure. Symptoms may appear days after exposure.

Sodium Chloride:

No information found.

Skin

Sodium Hydroxide:

Redness, pain, burns.

Sodium Chloride:

No information found.

Eyes

Sodium Hydroxide:

Redness, pain, tearing.

Sodium Chloride:

No information found.

4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed

Unknown/not applicable

SECTION 5 - FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use media appropriate to the primary cause of fire.

5.2 Special Hazards Arising from the Substance/Mixture

Hazardous Combustion Products

N.A.

Hazardous Decomposition Products

No hazardous decomposition products.

Hazardous Polymeriation

Will not occur under normal conditions of use (See Sections 10.4 & 10.5).

5.3 Advice for Firefighters

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

5.4 Further Information

No data available.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions

Wear appropriate protective equipment as specified in Section 8.

6.2 Environmental Precautions

Prevent discharge into the environment. Dike spills and stop leakage where practical. Do not allow material to enter drains.

6.3 Methods and Materials for Containment and Cleaning Up

Ventilate and isolate area. Prevent from entering floor drains. Residues can be diluted with water, neutralized with dilute acid. Absorb neutralized residues with clay, vermiculite, or other inert substance. Place in suitable disposal container.

6.4 References to Other Sections

For disposal information, see Section 13. For Protective clothing and equipment, see Section 8.

SECTION 7 - HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Avoid contact and inhalation. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling. Always add the caustic to water while stirring; never the reverse.

7.2 Conditions for Safe Storage (including any incompatibles)

Keep in a tightly closed container, stored in a cooled, dry, ventilated area away from sources of heat, moisture, and incompatibilities. Protect from freezing.

Incompatibles

Sodium Hydroxide:

Acids, aluminum, tin and zinc metals.

Sodium Chloride:

No incompatibility data found.

7.3 Specific End Uses

Investigational research by professional users

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PRECAUTIONS

8.1 Control Parameters

Component: Sodium Hydroxide

ACGIH Threshold Limit Value (TLV): 2 mg/m³ (TLV)

OSHA Permissible Exposure Limit (PEL): 2 mg/m³

Component: Sodium Chloride

ACGIH Threshold Limit Value (TLV): none established

OSHA Permissible Exposure Limit (PEL): None established

8.2 Exposure Controls

Engineering Controls

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source.

Respiratory Protection

For conditions of use where exposure to the dust or mist is apparent, a full-face dust/mist respirator may be worn. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator.

Eye Protection

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Skin Protection

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical & Chemical Properties

a. Appearance	Clear, colorless solution	b. Odor	None
c. Odor Threshold	N.A.	d. pH	14
e. Melting/Freezing Point (°C)	-7	f. Boiling point (°C)	106
g. Flash Point (°C)	N.A.	h. Evaporation Rate	Water
i. Flammability	N.A.	j. Upper/Lower Flammability or Explosive Limits	N.A.
k. Vapor Pressure	Water	l. Vapor Density (Air = 1)	Water
m. Relative Density	1.05	n. Water Solubility	Soluble

o. Partition Coefficient n-octanol/water	Mixture	p. Autoignition Temperature (°C)	N.A.
q. Decomposition Temperature (°C)	N.A.	r. Viscosity	No data available.
s. Explosive Properties	N.A.	t. Oxidizing Properties	not an oxidizer

SECTION 10 - STABILITY AND REACTIVITY

10.1 Reactivity

Alkaline solution- will react violently with strong acids. May corrode metals

10.2 Chemical Stability

Stable under recommended conditions of use and storage.

10.3 Possibility of Hazardous Reactions

Will not occur under normal conditions of use (See Sections 10.4 & 10.5).

10.4 Conditions to Avoid

Heat, moisture, incompatibles.

10.5 Incompatible Materials

Sodium Hydroxide:

Acids, aluminum, tin and zinc metals.

Sodium Chloride:

No incompatibility data found.

10.6 Hazardous Decomposition Products

No hazardous decomposition products.

SECTION 11 - TOXICOLOGICAL INFORMATION

Product LD50 Values

Oral Rat LD50 (mg/kg)

No data.

Dermal Rabbit LD50 (mg/kg)

No data.

Component Cancer List Status

	NTP Carcinogen		IARC Category
	Known	Anticipated	
Sodium Hydroxide	No	No	None
Sodium Chloride	No	No	None

Potential Health Effects

Inhalation

Sodium Hydroxide

Severe irritant. Effects from inhalation of mist vary from mild irritation to serious damage of the upper respiratory tract, depending on severity of exposure. Severe pneumonitis may occur.

Sodium Chloride

May cause respiratory tract irritation.

Ingestion

Sodium Hydroxide

Corrosive! Swallowing may cause severe burns of mouth, throat, and stomach. Severe scarring of tissue and death may result.

Sodium Chloride

Ingestion of large amounts may cause gastrointestinal irritation. Ingestion of large amounts may cause nausea and vomiting, rigidity or convulsions. Continued exposure can produce a coma, dehydration and internal organ congestion.

Skin

Sodium Hydroxide

Corrosive! Contact with skin may cause irritation or severe burns and scarring with greater exposures.

Sodium Chloride

May cause skin irritation.

Eyes

Sodium Hydroxide

Corrosive! Causes irritation of eyes, and with greater exposures it can cause burns that may result in permanent impairment of vision, even blindness.

Sodium Chloride

May cause eye irritation.

Carcinogenicity

Sodium Hydroxide

Not listed as a carcinogen by either NTP or IARC.

Sodium Chloride

Not listed by ACGIH, IARC, NIOSH, NTP or OSHA.

Mutagenicity

Sodium Hydroxide

No information found.

Sodium Chloride

See actual entry in RTECS for complete information.

Reproductive Toxicity

Sodium Hydroxide

No information found.

Sodium Chloride

No data available.

Teratogenic Effects

Sodium Hydroxide

No information found.

Sodium Chloride

No information found.

Routes of Entry

Sodium Hydroxide

Inhalation or ingestion.

Sodium Chloride

No information found.

Target Organ Statement

Sodium Hydroxide

Persons with pre-existing skin disorders or eye problems or impaired respiratory function may be more susceptible to the effects of the substance.

Sodium Chloride

No information found.

SECTION 12 - ECOLOGICAL INFORMATION

12.1 Toxicity

COMPONENT: Sodium Hydroxide

	Vertebrates	Invertebrates	Algae	Microorganisms
Aquatic Toxicity (ppm unless otherwise noted)	LC50 (48hrs, golden orfe) 189mg/L	EC50 (48hr, daphnia) 40mg/L	No data	No data
	Birds	Arthropods	Plants	Microorganisms
Terrestrial Environment Toxicity (ppm unless otherwise noted)	No data	No data	No data	No data

COMPONENT: Sodium Chloride

	Vertebrates	Invertebrates	Algae	Microorganisms
Aquatic Toxicity (ppm unless otherwise noted)	LC50 (96hrs, bluegill) 5480 mg/L	LC50 (48 hr, daphnia) 874mg/L	LC50 (120hrs) 2430 mg/L	No data
	Birds	Arthropods	Plants	Microorganisms

Terrestrial Environment Toxicity (ppm unless otherwise noted)	LD50 (house sparrow) 3500mg/kg	No data	IC50 (7 days) 500-1950mg/kg soil	No data
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12.2 Persistence and Degradability

Sodium Hydroxide
No data

Sodium Chloride
No data

12.3 Bioaccumulative Potential

Sodium Hydroxide
No data

Sodium Chloride
No data

12.4 Mobility in Soil

Sodium Hydroxide
No data

Sodium Chloride
No data

12.5 Results of PBT and vPvB Assessment

Sodium Hydroxide
Mineral salt

Sodium Chloride
Not PBT or vPvB

12.6 Other Adverse Effects

Sodium Hydroxide
None

Sodium Chloride
None

SECTION 13 - DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

Offer surplus or non-recyclable product to licensed disposal company. Disposal is subject to user compliance with applicable law and product characteristics at time of disposal. Dispose of packaging as product.

SECTION 14 - TRANSPORT INFORMATION

	ADR/RID	IATA	IMO	DOT
14.1 UN Number	1824	1824	1824	1824
14.2 Shipping Name	Sodium Hydroxide Solution	Sodium Hydroxide Solution	Sodium Hydroxide Solution	Sodium Hydroxide Solution
14.3 Hazard Class	8	8	8	8
14.4 Packing Group	III	III	III	III
14.5 Environmental Hazards	N.A.	N.A.	N.A.	N.A.
14.6 Special Precautions	N.A.	N.A.	N.A.	N.A.

SECTION 15 - REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance/Mixture United States

TSCA Regulatory Statement

All intentional ingredients are listed on the TSCA Inventory.

SARA 311/312 Hazard Categories

Component	Fire	Pressure	Reactivity	Acute	Chronic
Sodium Hydroxide	No	No	Yes	Yes	No
Sodium Chloride	No	No	No	Yes	No

Europe

EEC Regulatory

All intentional ingredients are listed on the European EINECS Inventory.

SECTION 16 - OTHER INFORMATION

Revisional Updates

5/29/2015 - Updated Sections 2.1 and 3.2

10/9/2013 - Released Version 1.0

NFPA Codes

Health 3 Flammability 0 Reactivity 2

Dangers

Sodium Hydroxide

H290 - May be corrosive to metals.

H314 - Causes severe skin burns and eye damage.

Sodium Chloride

None

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