



**Be Right™**

# SAFETY DATA SHEET

Issue Date 18-Jan-2023

Revision Date 02-Feb-2023

Version 1

## 1. Identification

### Product identifier

**Product Name** Alkali Solution for Calcium and Magnesium Test

### Other means of identification

**Product Code(s)** 2241749

**UN/ID no** UN1824

### Detailed information about the manufacturer, supplier, and/or importer

#### **Manufacturer Address**

Hach Company, P.O.Box 389, Loveland, CO 80539, USA, +1(970) 669-3050

### Recommended use of the chemical and restrictions on use

**Recommended Use** Water Analysis, Buffer

**Restrictions on use** No information available

### Emergency telephone number

+1(303) 623-5716 - 24 Hour Service

## 2. Hazard(s) identification

### Classification of the substance or mixture

Corrosive to metals	Category 1
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1

### Label elements

**Signal word** Danger

#### **Hazard statements**

H290 - May be corrosive to metals

H314 - Causes severe skin burns and eye damage

#### **Precautionary statements**

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

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

P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to

- do. Continue rinsing
- P310 - Immediately call a POISON CENTER or doctor
- P363 - Wash contaminated clothing before reuse
- P405 - Store locked up
- P501 - Dispose of contents/ container to an approved waste disposal plant
- P234 - Keep only in original container
- P390 - Absorb spillage to prevent material damage



**Other hazards which do not result in classification**

Harmful to aquatic life.

**3. Composition/information on ingredients**

**Substance**

Not applicable

**Mixture**

**Product Code(s)** 2241749

Chemical name	CAS No	Weight-%
Sodium hydroxide	1310-73-2	20 - 30%
Triethanolamine	102-71-6	10 - 20%

**4. First-aid measures**

**Description of necessary first aid measures**

- General advice** Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
- Inhalation** Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical attention.
- Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical attention.
- Eye contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical attention.
- Ingestion** Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get immediate medical attention.

**For emergency responders**

**Self-protection of the first aider** Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

**Most important symptoms/effects, acute and delayed**

**Symptoms** Burning sensation.

**Indication of immediate medical attention and special treatment needed, if necessary**

**Note to physicians** Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure.

**5. Fire-fighting measures**

**Suitable Extinguishing Media** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Large Fire** CAUTION: Use of water spray when fighting fire may be inefficient.

**Unsuitable extinguishing media** Do not scatter spilled material with high pressure water streams.

**Specific hazards arising from the chemical** The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.

**Hazardous combustion products** This material will not burn. Carbon monoxide, Carbon dioxide. Nitrogen oxides.

**Special protective actions for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

**6. Accidental release measures**

**Personal precautions, protective equipment and emergency procedures**

**Personal precautions** Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Attention! Corrosive material. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

**Methods and material for containment and cleaning up**

**Methods for cleaning up** Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Take up mechanically, placing in appropriate containers for disposal.

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Other information** Refer to protective measures listed in Sections 7 and 8.

**Environmental precautions**

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

**7. Handling and storage**

**Precautions for safe handling**

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with

skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

**General hygiene considerations**

Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions**

Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

**Incompatible materials**

Oxidizing agent. Acids. Bases.

**8. Exposure controls/personal protection**

**Control parameters**

**Occupational exposure limits**

Chemical name	ACGIH TLV	Philippines
Sodium hydroxide 1310-73-2	Ceiling: 2 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>
Triethanolamine 102-71-6	TWA: 5 mg/m <sup>3</sup>	-

**Biological occupational exposure limits**

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

**Appropriate engineering controls**

**Engineering controls**

Showers  
Eyewash stations  
Ventilation systems.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**

Tight sealing safety goggles. Face protection shield.

**Skin and body protection**

Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

**Hand protection**

Gloves must be inspected prior to use. The selected protective gloves have to satisfy the specifications of EU Directive 2016/425 and the standard EN 374 derived from it. Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374-1:2016. Wear suitable gloves. Impervious gloves.

Gloves			
Duration of contact	PPE - Glove material	Glove thickness	Break through time
Short term	Wear protective nitrile rubber gloves	0,20 mm	>30 minutes
Long term (repeated)	Wear protective Viton™ gloves	0,70 mm	>480 minutes

**Respiratory protection**

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

**General hygiene considerations** Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product.

**9. Physical and chemical properties**

**Information on basic physical and chemical properties**

<b>Appearance</b>	aqueous solution	<b>Odor</b>	Ammonia
<b>Physical state</b>	Liquid	<b>Odor threshold</b>	No data available
<b>Color</b>	Colorless to light yellow		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>Molecular weight</b>	No data available	
<b>pH</b>	13	@ 20 °C
<b>Melting point / freezing point</b>	~ -31 °C / -23.8 °F	
<b>Initial boiling point and boiling range</b>	97 °C / 206.6 °F	
<b>Evaporation rate</b>	0.36 (water = 1)	
<b>Vapor pressure</b>	19.802 mm Hg / 2.64 kPa at 25 °C / 77 °F	
<b>Relative vapor density</b>	0.76	
<b>Specific Gravity</b>	1.258	
<b>Partition coefficient</b>	Not applicable	
<b>Soil Organic Carbon-Water Partition Coefficient</b>	Not applicable	
<b>Autoignition temperature</b>	No data available	
<b>Decomposition temperature</b>	No data available	
<b>Dynamic viscosity</b>	No data available	
<b>Kinematic viscosity</b>	No data available	

**Solubility(ies)**

**Water solubility**

Water solubility classification	Water solubility	Water Solubility Temperature
Soluble	> 1000 mg/L	25 °C / 77 °F

**Solubility in other solvents**

None reported	No information available	No data available	No information available
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**Other information**

**Metal Corrosivity**

Classified as corrosive to metal according to GHS criteria

**Steel Corrosion Rate**

3.05 mm/yr / 0.12 in/yr

Aluminum Corrosion Rate 10160 mm/yr / 400 in/yr

**Volatile Organic Compounds (VOC) Content**

Chemical name	CAS No	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
Sodium hydroxide	1310-73-2	No data available	-
Triethanolamine	102-71-6	No data available	X

**Explosive properties**

Upper explosion limit No data available  
 Lower explosion limit No data available

**Flammable properties**

Flash point No data available

**Flammability Limit in Air**

Upper flammability limit: No data available  
 Lower flammability limit: No data available

**Oxidizing properties**

No data available.

Other information

VOC content 15.72  
 Bulk density No information available

**10. Stability and reactivity**

**Reactivity** Corrosive to metal.  
**Stability** Stable under normal conditions.  
**Possibility of hazardous reactions** None under normal processing.  
**Conditions to avoid** Exposure to air or moisture over prolonged periods.  
**Incompatible materials** Oxidizing agent. Acids. Bases.

**Hazardous Decomposition Products** Thermal decomposition can lead to release of irritating and toxic gases and vapors.

**11. Toxicological information**

Information on likely routes of exposure

**Product Information**

**Inhalation** Corrosive by inhalation. Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal.

**Eye contact** Causes serious eye damage. Corrosive to the eyes and may cause severe damage including blindness. May cause irreversible damage to eyes.

**Skin contact** Corrosive. Causes burns. Causes severe burns. Avoid contact with skin and clothing.

**Ingestion**

Causes burns. Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

**Symptoms related to the physical, chemical and toxicological characteristics****Symptoms**

Redness. Burning. May cause blindness. Coughing and/ or wheezing.

**Acute toxicity****Numerical measures of toxicity****Substance**

Test data reported below.

**Oral Exposure Route**

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Triethanolamine (10 - 20%) CAS#: 102-71-6	LD <sub>50</sub> Rat	4190 mg/kg	None reported	None reported	LOLI

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Triethanolamine (10 - 20%) CAS#: 102-71-6	LD <sub>50</sub> Rabbit	> 20000 mg/kg	14 days	None reported	ECHA LOLI

**Delayed and immediate effects as well as chronic effects from short and long-term exposure****Skin corrosion/irritation**

Causes severe burns.

**Mixture**

No data available.

**Substance**

Test data reported below.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sodium hydroxide (20 - 30%) CAS#: 1310-73-2	Patch test	Human	20 mg	24 hours	Corrosive to skin	RTECS

**Serious eye damage/eye irritation**

Classification based on data available for ingredients. Causes serious eye damage. Causes burns.

**Mixture**

No data available.

**Substance**

Test data reported below.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sodium hydroxide (20 - 30%) CAS#: 1310-73-2	Standard Draize Test	Rabbit	0.05 mg	24 hours	Corrosive to eyes	RTECS

**Respiratory or skin sensitization**

Based on available data, the classification criteria are not met.

**Mixture**

No data available.

**Substance**

No data available.

Chemical name	Test method	Species	Results	Key literature references and sources for data
Triethanolamine (10 - 20%) CAS#: 102-71-6	OECD Test No. 406: Skin Sensitization	Guinea pig	Not confirmed to be a skin sensitizer	ECHA

**Germ cell mutagenicity**

Based on available data, the classification criteria are not met.

**Mixture invitro Data**

No data available.

**Substance invitro Data**

Test data reported below.

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Triethanolamine (10 - 20%) CAS#: 102-71-6	Cytogenetic analysis	Human lymphocyte	0.1 mmol/L	None reported	Positive test result for mutagenicity	RTECS

**Mixture invivo Data**

No data available.

**Substance invivo Data**

No data available.

**Carcinogenicity**

Based on available data, the classification criteria are not met.

**Mixture**

No data available.

**Substance**

No data available.

Chemical name	CAS No	ACGIH	IARC	NTP	OSHA
Sodium hydroxide	1310-73-2	-	-	-	-
Triethanolamine	102-71-6	-	Group 3	-	-

**Legend**

<b>ACGIH (American Conference of Governmental Industrial Hygienists)</b>	Does not apply
<b>IARC (International Agency for Research on Cancer)</b>	Group 3 - Not classifiable as a human carcinogen
<b>NTP (National Toxicology Program)</b>	Does not apply
<b>OSHA</b>	Does not apply

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Triethanolamine (CAS #: 102-71-6)	Rat	250 mg/kg	2 years	Gain in kidney weight	ECHA

**Reproductive toxicity**

Based on available data, the classification criteria are not met.

**Mixture**

No data available.

**Substance**

Test data reported below.

**Oral Exposure Route**

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Triethanolamine (10 - 20%) CAS#: 102-71-6	Mouse LD <sub>Lo</sub>	16000 mg/kg	64 weeks	None reported	No information available



**STOT - single exposure**

Based on available data, the classification criteria are not met.

**Mixture**

No data available.

**Substance**

No data available.

**STOT - repeated exposure**

Based on available data, the classification criteria are not met.

**Mixture**

No data available.

**Substance**

No data available.

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Triethanolamine (10 - 20%) CAS#: 102-71-6	Rat NOAEL	1000 mg/kg	91 days	Weight gain	ECHA
Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Triethanolamine (10 - 20%) CAS#: 102-71-6	NOAEL Rat	125 mg/kg	90 days	Weight gain	ECHA

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**12. Ecological information****Ecotoxicity**

Harmful to aquatic life.

**Unknown aquatic toxicity**

0.01 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

**Mixture****Aquatic Acute Toxicity**

No data available.

**Aquatic Chronic Toxicity**

No data available.

**Substance****Aquatic Acute Toxicity**

Test data reported below.

**Fish**

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Sodium hydroxide (20 - 30%) CAS#: 1310-73-2	96 hours	<i>Oncorhynchus mykiss</i>	LC <sub>50</sub>	45.4 mg/L	IUCLID
Triethanolamine (10 - 20%) CAS#: 102-71-6	96 hours	<i>Lepomis macrochirus</i>	LC <sub>50</sub>	450 mg/L	IUCLID

**Crustacea**

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Sodium hydroxide (20 - 30%) CAS#: 1310-73-2	48 Hours	<i>Daphnia sp.</i>	EC <sub>50</sub>	40.4 mg/L	IUCLID

**Aquatic Chronic Toxicity**

No data available.

**Persistence and degradability**

**Mixture**

No data available.

**Bioaccumulation**

**Mixture**

No data available.

**Partition coefficient** Not applicable

**Mobility**

**Soil Organic Carbon-Water Partition Coefficient** Not applicable

**Other adverse effects**

No information available.

### 13. Disposal considerations

**Disposal methods**

**Waste from residues/unused products** Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

### 14. Transport information

**Note:** No special precautions necessary.

**IMDG**

<b>UN number or ID number</b>	UN1824
<b>Proper shipping name</b>	Sodium Hydroxide Solution
<b>Transport hazard class(es)</b>	8
<b>Packing Group</b>	II

**IATA**

<b>UN number or ID number</b>	UN1824
<b>Proper shipping name</b>	Sodium Hydroxide Solution
<b>Transport hazard class(es)</b>	8
<b>Packing group</b>	II
<b>ERG Code</b>	154

**ADR**

<b>UN number or ID number</b>	UN1824
<b>Proper shipping name</b>	Sodium Hydroxide Solution
<b>Transport hazard class(es)</b>	8
<b>Packing Group</b>	II

**DOT**

<b>UN/ID no</b>	UN1824
<b>Proper shipping name</b>	Sodium Hydroxide Solution
<b>Transport hazard class(es)</b>	8
<b>Packing Group</b>	II
<b>Emergency Response Guide Number</b>	154

**Additional information**

There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is not in a reagent set or kit, the classification given above applies.  
If the item is part of a reagent set or kit the classification would change to the following:  
UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III.  
If the item is not regulated, the Chemical Kit classification does not apply.

**15. Regulatory information**

Regulatory information

National regulations

Chemical Control Order and Priority Chemical List Not applicable

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

International Inventories

PICCS	Complies.
TSCA	Complies.
DSL/NDSL	Complies.
EINECS/ELINCS	Complies.
ENCS	Complies.
IECSC	Complies.
KECL - Existing substances	Complies.
AICS	Complies.
NZIoC	Contact supplier for inventory compliance status.

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
**ENCS** - Japan Existing and New Chemical Substances  
**IECSC** - China Inventory of Existing Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances  
**AICS** - Australian Inventory of Chemical Substances  
**NZIoC** - New Zealand Inventory of Chemicals

**16. Other information**

**Issue Date** 18-Jan-2023  
**Revision Date** 02-Feb-2023  
**Prepared By** Hach Product Compliance Department

Key or legend to abbreviations and acronyms used in the safety data sheet

ACGIH ACGIH (American Conference of Governmental Industrial Hygienists)  
IMDG International Maritime Dangerous Goods (IMDG)  
IATA International Air Transport Association (IATA)  
ADR European Agreement concerning the International Carriage of Dangerous Goods by Road

ATSDR	Agency for Toxic Substances and Disease Registry (ATSDR)
CHEMVIEW not translate code	U.S. Environmental Protection Agency ChemView Database
EFSA not translate code	European Food Safety Authority (EFSA)
EPA not translate code	EPA (Environmental Protection Agency)
EPA_AEGL not translate code	Acute Exposure Guideline Level(s) (AEGL(s))
EPA_FIFRA not translate code	U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
EPA_HPVC not translate code	U.S. Environmental Protection Agency High Production Volume Chemicals
FOOD_JOURN not translate code	Food Research Journal
HSDB not translate code	Hazardous Substance Database
IUCLID not translate code	International Uniform Chemical Information Database (IUCLID)
JAPAN_GHS not translate code	National Institute of Technology and Evaluation (NITE)
NICNAS not translate code	Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH not translate code	NIOSH (National Institute for Occupational Safety and Health)
NLM_CIP not translate code	National Library of Medicine's ChemID Plus (NLM CIP)
NLM_PUBMED not translate code	National Library of Medicine's PubMed database (NLM PUBMED)
NTP not translate code	National Toxicology Program (NTP)
NZ_CCID not translate code	New Zealand's Chemical Classification and Information Database (CCID)
OECD_EHSP not translate code	Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
OECD_HPVC not translate code	Organization for Economic Co-operation and Development High Production Volume Chemicals Program
OECD_SIDS not translate code	Organization for Economic Co-operation and Development Screening Information Data Set
WHO not translate code	World Health Organization
ACGIH	ACGIH (American Conference of Governmental Industrial Hygienists)
ATSDR	ATSDR (Agency for Toxic Substances and Disease Registry)
CCRIS	CCRIS (Chemical Carcinogenesis Research Information System)
CDC	CDC (Center for Disease Control)
CEPA	CEPA (Canadian Environmental Protection Agency)
CICAD	CICAD (Concise International Chemical Assessment Documents)
ECHA	ECHA (The European Chemicals Agency)
EEA	EEA (European Environment Agency)
EPA	EPA (Environmental Protection Agency)
ERMA	ERMA (New Zealand's Environmental Risk Management Authority)
ECOSARS	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™
FDA	FDA (Food & Drug Administration)
GESTIS	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)
HSDB	HSDB (Hazardous Substances Data Bank)
INERIS	INERIS (The National Industrial Environment and Risks Institute)
IPCS INCHEM	IPCS INCHEM (International Programme on Chemical Safety)
IUCLID	IUCLID (The International Uniform Chemical Information Database)
NITE	Japan National Institute of Technology and Evaluation (NITE)
NIH	NIH (National Institutes of Health)
NIOSH	NIOSH (National Institute for Occupational Safety and Health)
LOLI	LOLI (List of Lists - An International Chemical Regulatory Database)
NDF	no data
NICNAS	Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH IDLH	Immediately Dangerous to Life or Health
OSHA	OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEEN	PEEN (Pan European Ecological Network)
RTECS	RTECS (Registry of Toxic Effects of Chemical Substances)
SIDS	SIDS (Screening Information Dataset) for High Volume Chemicals
SYKE	The Finnish Environment Institute (SYKE)
USDA	USDA (United States Department of Agriculture)
USDC	USDC (United States Department of Commerce)
WHO	WHO (World Health Organization)

**Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
MAC	Maximum Allowable Concentration	Ceiling	Ceiling Limit Value

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X	Listed	Vacated	These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations.
SKN*	Skin designation	SKN+	Skin sensitization
RSP+	Respiratory sensitization	**	Hazard Designation
C	Carcinogen	R	Reproductive toxicant
M	mutagen		

**Prepared By** Hach Product Compliance Department  
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**Disclaimer**

**USER RESPONSIBILITY:** Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

**THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.**

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**End of Safety Data Sheet**