

Issue Date 30-Jul-2020

SAFETY DATA SHEET

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Version 1.6

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1. IDENTIFICATION		
Product identifier Product Name	Ammonium Hydroxide Solution 10%	
<u>Other means of identification</u> Product Code(s)	1473632	
Safety data sheet number	M00693	
UN/ID no	UN2672	
Recommended use of the cher	nical and restrictions on use	
Recommended Use	Laboratory reagent.	
Uses advised against	None.	
Restrictions on use	None.	
Details of the supplier of the sa	ifety data sheet	
Manufacturer Address		
Hach Company, P.O.Box 389, Lo	veland, CO 80539, USA, +1(970) 669-3050	
Emergency telephone number +1(303) 623-5716 - 24 Hour Serv		

Revision Date 26-Jan-2024

2. HAZARDS IDENTIFICATION

Classification

Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Signal word Danger



Hazard statements

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, and face protection
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position 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/physician
P363 - Wash contaminated clothing before reuse
P405 - Store locked up

P501 - Dispose of contents/ container to an approved waste disposal plant

Other Hazards Known

May be harmful if swallowed Toxic to aquatic life

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not applicable

<u>Mixture</u>

Percent ranges are used where confidential product information is applicable.

Cher	CAS No	Percent Range	HMRIC #	
Ammon	um hydroxide	1336-21-6	10 - 13%	-
	4. FIRST AID MEASURE	S		
Description of first aid measures				
General advice	Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.			
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 advice/attention.			
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.			
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clo and shoes. Get immediate medical advice/attention.		nated clothe	
Ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.			
Self-protection of the first aider	Ensure that medical personnel are awar	e of the material(s) inv	olved. take prec	autions to

protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Most important symptoms and effects, both acute and delayed

Symptoms Burning sensation.

Indication of any immediate medical attention and special treatment needed

Note to physiciansProduct 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.	
Unsuitable Extinguishing Media	Caution: Use of water spray when fighting fire may be inefficient.	
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. Nitrogen oxides (NOx). Vapors may form explosive mixtures with air.	
Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.	

6. ACCIDENTAL RELEASE MEASURES

	6. ACCIDENTAL RELEASE MEASURES
U.S. Notice	Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.
Personal precautions, protective ed	quipment and emergency procedures
Personal precautions	Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
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.
Methods and material for containm	ent and cleaning up
Methods for containment	Prevent further leakage or spillage if safe to do so.
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.

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 Prevention of secondary hazards
 Clean contaminated objects and areas thoroughly observing environmental regulations.

Reference to other sections

See section 8 for more information. See section 13 for more information.

7. HANDLING AND STORAGE

Precautions for 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. 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.

 Flammability class
 Not applicable

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters	
Exposure Guidelines	This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies
Appropriate engineering controls	Showers
Engineering Controls	Eyewash stations Ventilation systems.
Individual protection measures, su	ch as personal protective equipment
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.
Hand Protection	Wear suitable gloves. Impervious gloves. Barrier creams may help to protect the exposed areas of skin. 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.
Eye/face protection	Face protection shield.
Skin and body protection	Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. Wash contaminated clothing before reuse.
General Hygiene Considerations	Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.
Environmental exposure controls	Local authorities should be advised if significant spillages cannot be contained. Do not allow into any sewer, on the ground or into any body of water.

Thermal hazards

None under normal processing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Appearance Odor	aqueous solution Ammonia	Liquid		Color Odor threshold	colorless No data ava	ilable
Property_			Values			Remarks • Method
Molecular weight	:		No data availat	ble		
рН			11.8			@ 20 °C
Melting point / fre	ezing point		~ -6 °C / 2	1.2 °F		
Initial boiling poi	nt and boiling range	e	100 °C / 212	2 °F		
Evaporation rate			1.41 (water = 1)		
Vapor pressure			23.177 mm Hg	/ 3.09 kPa at 2	5 °C / 77 °I	-
Relative vapor de	ensity		0.64			
Specific gravity -	VALUE 1		0.963			
Partition coefficie	ent		Not applicable			
Soil Organic Carl Coefficient	oon-Water Partition		Not applicable			
Autoignition tem	perature		No data availat	ble		
Decomposition to	emperature		No data availat	ble		
Dynamic viscosit	у		No data availat	ble		
Kinematic viscos	ity		No data availat	ble		

Solubility(ies)

Water solubility

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

Solubility in other solvents

Chemical Name	Solubility classification	<u>Solubility</u>	Solubility Temperature
Acid	Soluble	> 1000 mg/L	25 °C / 77 °F

Other information

Metal Corrosivity

Steel Corrosion Rate Aluminum Corrosion Rate

0.03 mm/yr / 0 in/yr 2.34 mm/yr / 0.09 in/yr

Volatile Organic Compounds (VOC) Content See ingredients information below

Chemical name	CAS No	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
Ammonium hydroxide	1336-21-6	No data available	-

Explosive properties

Upper explosion limit Lower explosion limit	No data available No data available
Flammable properties	
Flash point	No data available
Flammability Limit in Air Upper flammability limit: Lower flammability limit:	No data available No data available
Oxidizing properties	No data available.
Bulk density	No data available

10. STABILITY AND REACTIVITY

Reactivity Not applicable.

<u>Chemical stability</u> Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None. Sensitivity to Static Discharge None.

Possibility of hazardous reactions

None under normal processing.

Hazardous polymerization

None under normal processing.

Conditions to avoid

Exposure to air or moisture over prolonged periods.

Incompatible materials

Acids. Bases. Oxidizing agent.

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,

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	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 burns. Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.
Skin contact	Corrosive. 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	Redness. Burning. May cause blindness. Coughing and/ or wheezing.

Acute toxicity

Based on available data, the classification criteria are not met

Mixture

No data available.

Ingredient Acute Toxicity Data

Test data reported below.

Oral Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Ammonium hydroxide (10 - 13%) CAS#: 1336-21-6	Rat LD ₅₀	350 mg/kg	None reported	None reported	Vendor SDS

Unknown Acute Toxicity

0% of the mixture consists of ingredient(s) of unknown toxicity.

Acute Toxicity Estimations (ATE)

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	3,500.00 mg/kg
ATEmix (dermal)	No information available
ATEmix (inhalation-dust/mist)	No information available
ATEmix (inhalation-vapor)	No information available
ATEmix (inhalation-gas)	No information available

Skin corrosion/irritation

Causes severe burns.

Mixture

No data available.

Ingredient Skin Corrosion/Irritation Data

Test data reported below.

Chemical name Test method Species	Reported dose	Exposure time	Results	Key literature references and sources for data
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Ammonium hydroxide	Existing human	Human	None reported None reported	Corrosive to skin	HSDB
(10 - 13%)	experience				
CAS#: 1336-21-6					

Serious eye damage/irritation

Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.

Mixture

No data available.

Ingredient Eye Damage/Eye Irritation Data

Test data reported below.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Ammonium hydroxide (10 - 13%) CAS#: 1336-21-6	Standard Draize Test	Rabbit	0.044 mg	None reported	Corrosive to eyes	RTECS

Respiratory or skin sensitization

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

Mixture

No data available.

Ingredient Sensitization Data

No data available.

STOT - single exposure

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

Mixture

No data available.

Ingredient Specific Target Organ Toxicity Single Exposure Data

Test data reported below.

Oral Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Ammonium hydroxide (10 - 13%) CAS#: 1336-21-6	Human LDLo	43 mg/kg	None reported	None reported	RTECS

Inhalation (Vapor) Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
	type	u03e	une		Sources for uata
Ammonium hydroxide	Human	408 mg/L	None reported	Lungs, Thorax, or	RTECS
(10 - 13%)	TCLO			Respiration	
CAS#: 1336-21-6				Fibrosis, focal (pneumoconiosis)	
				Acute pulmonary edema	

STOT - repeated exposure

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

Mixture

No data available.

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Ingredient Specific Target Organ Toxicity Repeat Exposure Data

No data available.

Carcinogenicity

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

Mixture

No data available.

Ingredient Carcinogenicity Data

No data available.

Chemical name	CAS No	ACGIH	IARC	NTP	OSHA
Ammonium hydroxide	1336-21-6	-	-	-	-

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)	Does not apply
IARC (International Agency for Research on Cancer)	Does not apply
NTP (National Toxicology Program)	Does not apply
OSHA	Does not apply

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
Ammonium hydroxide (10 - 13%) CAS#: 1336-21-6	Mutation in microorganisms	Salmonella typhimurium	10 mg/disc	None reported	Positive test result for mutagenicity	RTECS

Mixture invivo Data

No data available.

Substance invivo Data

No data available.

Reproductive toxicity

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

Mixture

No data available.

Ingredient Reproductive Toxicity Data

No data available.

Aspiration hazard

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

12. ECOLOGICAL INFORMATION

Ecotoxicity

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

Unknown aquatic toxicity

0% of the mixture consists of components(s) of unknown hazards to the aquatic

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environment.

<u>Mixture</u>

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
Ammonium hydroxide (10 - 13%) CAS#: 1336-21-6	96 hours	Oncorhynchus kisutch	LC ₅₀	0.45 mg/L	PEEN

Crustacea

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Ammonium hydroxide (10 - 13%) CAS#: 1336-21-6	48 Hours	Daphnia magna	LC ₅₀	0.66 mg/L	PEEN

Aquatic Chronic Toxicity

No data available.

Persistence and degradability

Mixture

No data available.

Bioaccumulation MATERIAL DOES NOT BIOACCUMULATE **Mixture** No data available.

Partition coefficient

Mobility

Soil Organic Carbon-Water Partition Coefficient

Not applicable

Not applicable

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

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

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Contaminated packaging	Do not reuse empty containers.
US EPA Waste Number	D002
Special instructions for disposal	Dilute material with excess water making a weaker than 5% solution. Adjust to a pH between 6 and 9 with an acid, such as sulfuric or citric. Open cold water tap completely, slowly pour the reacted material to the drain. Allow cold water to run for 5 minutes to completely flush the system.

14. TRANSPORT INFORMATION

DOT UN/ID no UN2672 Ammonia Solution Proper shipping name Transport hazard class(es) 8 Packing Group Ш **Reportable Quantity (RQ)** Ammonium hydroxide: RQ kg= 4540.00 **Emergency Response Guide** 154 Number TDG UN/ID no UN2672 Ammonia Solution Proper shipping name Transport hazard class(es) 8 **Packing Group** Ш ΙΑΤΑ UN2672 UN number or ID number Proper shipping name Ammonia Solution Transport hazard class(es) 8 Packing group Ш Description UN2672, Ammonia solution, 8, III IMDG UN number or ID number UN2672 Proper shipping name Ammonia Solution Transport hazard class(es) 8 Packing Group Ш F-A, S-B EmS-No Description UN2672, Ammonia solution, 8, III

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

National Inventorie	s
TSCA	
DSL/NDSL	

Complies Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory **DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories	
EINECS/ELINCS	Complies

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ENCS IECSC KECL PICCS TCSI	Complies Complies Complies Complies Complies
AICS	Complies
NZIoC	Complies

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

PICCS - Philippines Inventory of Chemicals and Chemical Substances

TCSI - Taiwan Chemical Substances Inventory

AICS - Australian Inventory of Chemical Substances

NZIOC - New Zealand Inventory of Chemicals

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	SARA 313 - Threshold Values %
Ammonium hydroxide (CAS #: 1336-21-6)	1.0

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Ammonium hydroxide 1336-21-6	1000 lb	-	-	Х

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Ammonium hydroxide	1000 lb	-	RQ 1000 lb final RQ
1336-21-6			RQ 454 kg final RQ

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

This product may contain substances regulated by state right-to-know regulations.

Chemical name	New Jersey	Massachusetts	Pennsylvania

Ammonium hydroxide	Х	X	Х
1336-21-6			

U.S. EPA Label Information

Chemical name	FIFRA	FDA
Ammonium hydroxide	180.0910	21 CFR 184.1139

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Special Comments

Additional information

Global Automotive Declarable Substance List (GADSL) Not applicable NFPA and HMIS Classifications

NFPA	Health hazards - 3	Flammability - 0	Instability - 0	Physical and chemical properties -
HMIS	Health hazards - 3	Flammability - 0	Physical hazards - 0	Personal protection -
			-	X
				- 1

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

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 Zealands 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
Х	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* RSP+ C M	Skin designation Respiratory sensitization Carcinogen mutagen		SKN+ ** R	Skin sensitization Hazard Designation Reproductive toxicant
Prepared By	Hach Product Compliance Department			
Issue Date		30-Jul-2020		
Revision Date		26-Jan-2024		
Revision Note		None		
Disclaimer				

<u>Disclaimer</u>

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.

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End of Safety Data Sheet