

SAFETY DATA SHEET



Sodium Hydroxide Solution 10 - 30%

Version 3.0 Revision Date: 04-21-2023 SDS Number: 10000001222 Date of last issue: 06-14-2021
Date of first issue: 04-21-2023

Olin Corporation (OCAP) encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

SECTION 1. IDENTIFICATION

Product name : Sodium Hydroxide Solution 10 - 30%

Manufacturer or supplier's details

Company name of supplier : Olin Corporation (OCAP)
Address : 190 Carondelet Plaza, Suite 1530
Clayton MO 63105
Telephone : (423) 336-4850
E-mail address : INFO@OLIN.COM
24-Hour Emergency Contact : +1 800 424 9300
Local Emergency Contact : 1-800-424-9300
Identified uses : Pulp and paper industry (pulping and bleaching, de-inking waste paper, water treatment).
Textile industry (fiber processing and dyeing).
Soaps and detergents industry (saponification of fats and oils, anionic surfactant manufacturing).
Bleach manufacturing.
Petroleum exploration and processing.
Aluminum production.
Chemical processing.
Waste neutralization.
Acid gas scrubbing.
Neutralizing of acids and acid gases.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Corrosive to Metals : Category 1

Acute toxicity (Oral) : Category 4

Skin corrosion : **Category 1B**

Serious eye damage : Category 1

GHS label elements

Hazard pictograms :  

Signal Word : Danger

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Hazard Statements : May be corrosive to metals.
Harmful if swallowed.
Causes severe skin burns and eye damage.

Precautionary Statements : **Prevention:**
P234 Keep only in original container.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
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 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P363 Wash contaminated clothing before reuse.
P390 Absorb spillage to prevent material damage.

Storage:
P405 Store locked up.
P406 Store in corrosive resistant container with a resistant inner liner.

Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
Water	7732-18-5	>= 70 - <= 90
Sodium hydroxide	1310-73-2	>= 10 - <= 30

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

If inhaled : Move person to fresh air; if effects occur, consult a physician.

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- In case of skin contact : Immediate continued and thorough washing in flowing water for at least 30 minutes is imperative while removing contaminated clothing. Prompt medical consultation is essential. Wash clothing before reuse. Properly dispose of leather items such as shoes, belts, and watchbands. Suitable emergency safety shower facility should be immediately available.
- In case of eye contact : - Wash eyes with plenty of water for 15 minutes at least. Do not forget to remove contact lenses. Washing with water is the only acceptable method of removal of caustic soda (lye) from the eyes and skin. You may have 10 seconds or less to avoid serious permanent injury. Suitable emergency eye wash facility should be immediately available.
- If swallowed : Do not induce vomiting. Give one cup (8 ounces or 240 ml) of water or milk if available and transport to a medical facility. Do not give anything by mouth unless the person is fully conscious.
- Most important symptoms and effects, both acute and delayed : Aside from the information found under Description of first aid measures(above)any additional important symptoms and effects are described in Section 11: Toxicology Information.
- Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.
- Notes to physician : Eye irrigation may be necessary for an extended period of time to remove as much caustic as possible. Duration of irrigation and treatment is at the discretion of medical personnel.
Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done.
If burn is present, treat as any thermal burn, after decontamination.
No specific antidote.
Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.
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SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : This material does not burn. If exposed to fire from another source, use suitable extinguishing agent for that fire.
- Unsuitable extinguishing media : Do not use water.
- Specific hazards during fire fighting : Product reacts with water. Reaction may produce heat and/or gases.
This reaction may be violent.
Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.
- Hazardous combustion products : Not applicable

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- Further information : Keep people away. Isolate fire and deny unnecessary entry. Water is not recommended, but may be applied in large quantities as a fine spray when other extinguishing agents are not available.
This material does not burn. Fight fire for other material that is burning.
- Special protective equipment for fire-fighters : Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves).
Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location.
For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.
-

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Evacuate area.
Only trained and properly protected personnel must be involved in clean-up operations.
Refer to section 7, Handling, for additional precautionary measures.
Keep upwind of spill.
Ventilate area of leak or spill.
See Section 10 for more specific information.
Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.
- Environmental precautions : Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.
- Methods and materials for containment and cleaning up : Contain spilled material if possible.
Small spills:
Dilute with water.
Large spills:
Dike area to contain spill.
Collect in suitable and properly labeled containers.
Attempt to neutralize by adding materials such as Acetic acid
See Section 13, Disposal Considerations, for additional information.
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SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : Do not get in eyes, on skin, on clothing.
Do not swallow.
Avoid breathing mist.
Wash thoroughly after handling.
Keep container closed.
Use with adequate ventilation.

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ALWAYS add caustic soda solution to water with constant agitation. NEVER add water to the caustic soda solution.
 2. The water should be lukewarm (27-38°C or 80-100°F). NEVER start with hot or cold water. The addition of caustic soda to liquid will cause a rise in temperature. If caustic soda becomes concentrated in one area, is added too rapidly, or is added to hot or cold liquid, a rapid temperature increase can result in DANGEROUS mists, boiling or spattering which may cause an immediate VIOLENT ERUPTION.
 See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage : Keep container closed.
 Do not store in:
 Zinc.
 Aluminum.
 Brass.
 Tin.
 See Section 10 for more specific information.

Recommended storage temperature : > 61 °F / > 16 °C

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Sodium hydroxide	1310-73-2	C	2 mg/m ³	ACGIH
		C	2 mg/m ³	OSHA P0
		TWA	2 mg/m ³	OSHA Z-1

Engineering measures : Use engineering controls to maintain airborne level below exposure limit requirements or guidelines.
 If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation.
 Local exhaust ventilation may be necessary for some operations.

Personal protective equipment

Respiratory protection : Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process.

Filter type : In misty atmospheres, use an approved particulate respirator.
 : The following should be effective types of air-purifying respirators: Particulate filter.

Hand protection

Remarks : Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Natural rubber ('latex'). Neoprene. Nitrile/butadiene rubber ('nitrile' or 'NBR'). Polyethylene. Ethyl

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vinyl alcohol laminate ('EVAL'). Polyvinyl chloride ('PVC' or 'vinyl'). Styrene/butadiene rubber. Viton. Avoid gloves made of: Polyvinyl alcohol ('PVA'). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Eye protection : Use chemical goggles.
 Skin and body protection : Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Liquid above freezing point
Color	: Colorless
Odor	: Odorless
Odor Threshold	: No test data available
pH	: 14 Method: Literature
Freezing point	: 35.01 °F / 1.67 °C Method: Literature
Melting point/range	35.01 °F / 1.67 °C Method: Literature
Pour point	
Softening point	
Boiling point/boiling range	: 235.00 °F / 112.78 °C Method: ASTM D1120
Flash point	: Method: Literature None
Evaporation rate	: No test data available
Flammability (solid, gas)	: Not expected to form explosive dust-air mixtures.
Flammability (liquids)	: Not expected to be a static-accumulating flammable liquid.
Upper explosion limit / Upper flammability limit	: Not applicable
Lower explosion limit / Lower flammability limit	: Not applicable
Vapor pressure	: 23.76 mmHg (77 °F / 25 °C)

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Method: Literature

Relative vapor density : Not applicable

Relative density : 1.112 - 1.331 (68 °F / 20 °C)
Method: Literature

Density : 1.33 g/cm³ (68 °F / 20 °C)
Method: Literature

Solubility(ies)
Water solubility : completely miscible

Autoignition temperature : Not applicable

Decomposition temperature : No test data available
No test data available

Viscosity
Viscosity, dynamic : No data available

Viscosity, kinematic : Method: No information available.

Explosive properties : No

Oxidizing properties : No

Molecular weight : No test data available

Note: These are the Reference Points for these Physical Properties listed above, unless otherwise noted in their respective Physical Property value information: Boiling Point at 760 mmHg; Evaporation Rate Butyl Acetate = 1; Relative Vapor Density Air = 1; and Relative Density Water = 1.

NOTE: The physical data presented above are typical values and should not be construed as a specification.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No data available

Chemical stability : Stable under recommended storage conditions. See Storage, Section 7.

Possibility of hazardous reactions : Polymerization will not occur.

Conditions to avoid : Avoid moisture.
Product absorbs carbon dioxide from the air.

Incompatible materials : Heat is generated when mixed with water. Spattering and boiling can occur.
Caustic soda solution reacts readily with various reducing sugars (i.e. fructose, galactose, maltose, dry whey solids) to produce CO. Take precautions including monitoring the tank atmosphere for CO to ensure safety of personnel before vessel entry.
Avoid contact with:
Acids.

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Hazardous decomposition products : Glycols.
Halogenated organics.
Organic nitro compounds.
Flammable hydrogen may be generated from contact with metals such as:
Zinc.
Aluminum.
Tin.
Brass.
Does not decompose.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Skin contact
Inhalation
Ingestion

Acute toxicity

Harmful if swallowed.
Swallowing may result in burns of the mouth, throat, and gastrointestinal tract.

Product:

Acute oral toxicity : Remarks: Moderate toxicity if swallowed.
Swallowing may result in burns of the mouth and throat.
Swallowing may result in gastrointestinal irritation or ulceration.

Remarks: Single dose oral LD50 has not been determined.

Acute inhalation toxicity : Remarks: Mist may cause severe irritation of upper respiratory tract (nose and throat).

Remarks: As product:
The LC50 has not been determined.

Acute dermal toxicity : Remarks: Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Remarks: The dermal LD50 has not been determined.

Components:

Sodium hydroxide:

Acute oral toxicity : LD50 (Rabbit): 336 mg/kg
Method: Estimated.

Acute inhalation toxicity : Remarks: The LC50 has not been determined.

Acute dermal toxicity : Remarks: The dermal LD50 has not been determined.

Skin corrosion/irritation

Causes severe skin burns and eye damage.

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Product:

Result : Causes burns.
Remarks : Brief contact may cause skin burns. Symptoms may include pain, severe local redness and tissue damage.

Components:**Sodium hydroxide:**

Result : Causes severe burns.
Remarks : Brief contact may cause severe skin burns. Symptoms may include pain, severe local redness and tissue damage.

Serious eye damage/eye irritation

Causes severe skin burns and eye damage.

Product:

Remarks : Due to the pH of the material, it is assumed that exposure may cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Mist may cause eye irritation.

Components:**Sodium hydroxide:**

Result : Corrosive
Remarks : May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur. Dust may irritate eyes.

Respiratory or skin sensitization**Skin sensitization**

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Product:

Remarks : For skin sensitization:
No relevant data found.

Remarks : For respiratory sensitization:
No relevant data found.

Components:**Sodium hydroxide:**

Assessment : Does not cause skin sensitization.
Remarks : Did not cause allergic skin reactions when tested in humans.

Remarks : For respiratory sensitization:
No relevant data found.

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Product:

Assessment : Material is corrosive. Material is not classified as a respiratory irritant; however, upper respiratory tract irritation or corrosivity may be expected.

Components:

Sodium hydroxide:

Assessment : Available data are inadequate to determine single exposure specific target organ toxicity.

STOT-repeated exposure

Not classified based on available information.

Repeated dose toxicity

Product:

Remarks : Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

Components:

Sodium hydroxide:

Remarks : Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

Aspiration toxicity

Not classified based on available information.

Product:

Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

Components:

Sodium hydroxide:

Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Sodium hydroxide:

Toxicity to fish : Remarks: May increase pH of aquatic systems to > pH 10 which may be toxic to aquatic organisms.

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Persistence and degradability**Components:****Sodium hydroxide:**

Biodegradability : Remarks: Biodegradability is not applicable to inorganic substances.

Bioaccumulative potential**Components:****Sodium hydroxide:**

Partition coefficient: n-octanol/water : Remarks: No bioconcentration is expected because of the relatively high water solubility.

Mobility in soil**Components:****Sodium hydroxide:**

Distribution among environmental compartments : Koc: 14
Method: Estimated.
Remarks: Potential for mobility in soil is very high (Koc between 0 and 50).

Other adverse effects**Components:****Sodium hydroxide:**

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL.
THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information.
All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations.
Regulations may vary in different locations.
Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.
DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER.

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SARA 311/312 Hazards : Corrosive to Metals
Acute toxicity (any route of exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations

Pennsylvania Right To Know

Sodium hydroxide 1310-73-2

California Prop. 65

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

International Regulations

Montreal Protocol : Not applicable

Rotterdam Convention (Prior Informed Consent) : Not applicable

Stockholm Convention (Persistent Organic Pollutants) : Not applicable

The ingredients of this product are reported in the following inventories:

TCSI : All intentional components are listed on the inventory, are exempt, or are supplier certified.

TSCA : All substances listed as active on the TSCA Inventory or are not required to be listed.

AICS : All intentional components are listed on the inventory, are exempt, or are supplier certified.

DSL : All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

ENCS : All intentional components are listed on the inventory, are exempt, or are supplier certified.

ISHL : All intentional components are listed on the inventory, are exempt, or are supplier certified.

KECI : All intentional components are listed on the inventory, are exempt, or are supplier certified.

PICCS : All intentional components are listed on the inventory, are exempt, or are supplier certified.

IECSC : All intentional components are listed on the inventory, are exempt, or are supplier certified.

NZIoC : All intentional components are listed on the inventory, are exempt, or are supplier certified.

CH INV : All intentional components are listed on the inventory, are exempt, or are supplier certified.

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

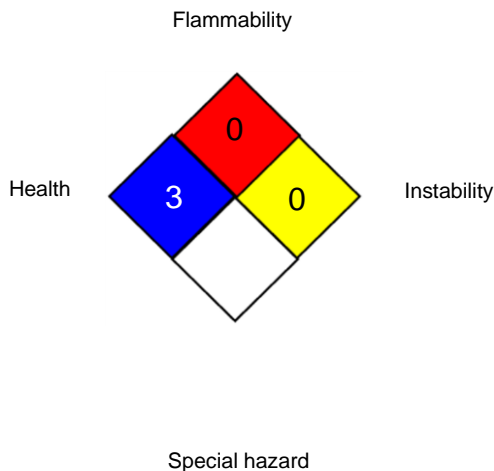
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SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
OSHA P0	:	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / C	:	Ceiling limit
OSHA P0 / C	:	Ceiling limit
OSHA Z-1 / TWA	:	8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Oth-

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erwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECL - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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Olin Corporation (OCAP) urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

US / Z8