

Hydrochloric acid, < 37%

Version	Revision Date:	SDS Number:	Date of last issue: 03-05-2020
5.0	04-13-2021	10000001219	Date of first issue: 04-13-2021

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 : Hydrochloric acid, < 37%
Other means of identification : No data available

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
Local Emergency Contact : +1 800-567-7455
Identified uses : For industrial formulation as a food processing agent.
Pharmaceuticals.
Organic Chemical Synthesis
Oil and gas extraction.
Water treatment.

SECTION 2. HAZARDS IDENTIFICATION**GHS classification in accordance with the Hazardous Products Regulations**

Corrosive to metals : Category 1
Skin corrosion : Category 1B
Serious eye damage : Category 1
Specific target organ toxicity : Category 3 (Respiratory system)
- single exposure

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : May be corrosive to metals.
Causes severe skin burns and eye damage.
May cause respiratory irritation.

Precautionary statements : **Prevention:**
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

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P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

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.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
IN CASE OF EYE CONTACT, seek medical attention immediately. Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist.
P363 Wash contaminated clothing before reuse.
P390 Absorb spillage to prevent material damage.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal:

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

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance
Substance name : Hydrochloric acid, < 37%
CAS-No. : 7647-01-0
Synonyms : No data available

Components

Chemical name	CAS-No.	Concentration (% w/w)
Hydrochloric acid	7647-01-0	>= 30 - < 60

SECTION 4. FIRST AID MEASURES

If inhaled : Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

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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 : In case of contact, immediately flush eyes with plenty of water for at least 30 minutes. Remove contact lenses. 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 : Maintain adequate ventilation and oxygenation of the patient. May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids may be of help. Material may cause severe pulmonary edema. For persons receiving significant exposure to this material, consider chest x-ray and keep under observation for 48 - 72 hr. for delayed onset of pulmonary edema. Humidified oxygen, intermittent positive pressure breathing, assisted respiration/CPAP and steroid therapy should be considered in treatment. Physical exertion may potentiate exposure effects during the first 24 - 72 hours. Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. If burn is present, treat as any thermal burn, after decontamination. Repeated exposure to acid fumes or mists may be associated with bleeding, ulceration of nose, mouth and gums and erosion of dental enamel. 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. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).

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SECTION 5. FIREFIGHTING 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.
- Hazardous combustion products : Fire conditions may cause this product to decompose. Refer to section 10 - Thermal Decomposition.
- 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.
Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage.
Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.
- Special protective equipment for firefighters : 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.
Keep upwind of spill.
Ventilate area of leak or spill.
Only trained and properly protected personnel must be involved in clean-up operations.
Refer to section 7, Handling, for additional precautionary measures.
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 : Small spills:
Dilute with large quantities of water.
Collect in suitable and properly labeled containers.
Large spills:

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Contain spilled material if possible.
 Attempt to neutralize by adding materials such as Limestone.
 Lime.
 Soda ash.
 Pump into suitable and properly labeled containers.
 Contact your supplier for clean-up assistance.
 See Section 13, Disposal Considerations, for additional information.

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : Do not get in eyes, on skin, on clothing.
 Do not swallow.
 Do not breathe vapour.
 Wash thoroughly after handling.
 Keep container closed.
 Use with adequate ventilation.
 See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.
- Conditions for safe storage : Store in the following material(s):
 Plastic.
 Polyethylene-lined container.
 Natural rubber.
 See Section 10 for more specific information.
 Store away from incompatible materials. See STABILITY AND REACTIVITY section.
 Additional storage and handling information on this product may be obtained by calling your sales or customer service contact.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Hydrochloric acid	7647-01-0	(c)	2 ppm 3 mg/m ³	CA AB OEL
		C	2 ppm	CA BC OEL
		C	5 ppm 7.5 mg/m ³	CA QC OEL
		C	2 ppm	ACGIH

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Hydrochloric acid	7647-01-0				100 mg/g	

- 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.

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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, use an approved respirator. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus.
- Filter type : The following should be effective types of air-purifying respirators: Acid gas cartridge with particulate pre-filter.
- Hand protection
- Remarks : Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Polyethylene. Neoprene. Polyvinyl chloride ("PVC" or "vinyl"). Styrene/butadiene rubber. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Viton. Chlorinated polyethylene. Natural rubber ("latex"). Nitrile/butadiene rubber ("nitrile" or "NBR"). 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. If exposure causes eye discomfort, use a full-face respirator.
- 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.
- Colour : White to yellow
- Odour : acidic
- Odour Threshold : No test data available
- pH : < 2
Method: Literature
- Freezing point : -27 - 57.22 °C
- Melting point/range : -27 - 57.22 °C

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Boiling point/boiling range : 53 - 107.78 °C

Flash point : Method: Not applicable
None

Evaporation rate : No test data available

Flammability (solid, gas) : Not applicable to liquids

Upper explosion limit / Upper flammability limit : Method: Literature
Not applicable

Lower explosion limit / Lower flammability limit : Method: Literature
Not applicable

Relative vapour density : 11
Method: Literature

Relative density : 1.01 - 1.186 (20 °C)
Method: Literature

Density : 71.6 - 72.6 lb/ft³ (20 °C)
Method: Estimated.

Solubility(ies)
Water solubility : Miscible in water

Partition coefficient: n-octanol/water : log Pow: -2.65

Auto-ignition temperature : Method: Literature
Not applicable

Decomposition temperature : No test data available
No test data available

Viscosity
Viscosity, kinematic : 2 m²/s
Method: Calculated.

Explosive properties : No data available

Oxidizing properties : No data available

Molecular weight : 36.46 g/mol

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

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Reactivity	:	No data available
Chemical stability	:	Thermally stable at typical use temperatures.
Possibility of hazardous reactions	:	Polymerization will not occur.
Conditions to avoid	:	Vapors can be released at elevated temperatures.
Incompatible materials	:	Heat is generated when mixed with water. Spattering and boiling can occur. Avoid contact with strong bases. Avoid contact with: Sulfuric acid. Amines. Bases. Carbonates. Oxidizers. Corrosive to some metals. Contact with common metals can generate flammable hydrogen gas.
Hazardous decomposition products	:	Decomposition products can include and are not limited to: Hydrogen chloride.

SECTION 11. TOXICOLOGICAL INFORMATION**Acute toxicity****Components:****Hydrochloric acid:**

Acute oral toxicity	:	Remarks: Swallowing may result in gastrointestinal irritation or ulceration. Swallowing may result in burns of the mouth and throat. Assessment: The substance or mixture has no acute oral toxicity Remarks: Oral LD50 has not been determined due to corrosivity.
Acute inhalation toxicity	:	Remarks: Brief exposure (minutes) to easily attainable concentrations may cause adverse effects. Mist may cause severe irritation of the upper respiratory tract (nose and throat) and lungs. Vapor may cause severe irritation of the upper respiratory tract (nose and throat) and lungs. May cause severe pulmonary edema (fluid in the lungs). Excessive exposure may cause lung injury. LC50 (Rat): 1.03 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	Assessment: The substance or mixture has no acute dermal toxicity Remarks: The dermal LD50 has not been determined.

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Skin corrosion/irritation**Components:****Hydrochloric acid:**

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

Serious eye damage/eye irritation**Components:****Hydrochloric acid:**

Result : Corrosive
Remarks : May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.
Vapor may cause lacrimation (tears).

Respiratory or skin sensitisation**Components:****Hydrochloric acid:**

Remarks : For skin sensitization:
No relevant information found.

Remarks : For respiratory sensitization:
No relevant information found.

Germ cell mutagenicity**Components:****Hydrochloric acid:**

Genotoxicity in vitro : Remarks: No relevant data found.

Carcinogenicity**Components:****Hydrochloric acid:**

Remarks : Did not cause cancer in laboratory animals.
An epidemiology study of workers did not show any association between hydrogen chloride exposure and lung cancer.

Reproductive toxicity**Components:****Hydrochloric acid:**

Effects on fertility : Remarks: No relevant data found.

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Effects on foetal development : Remarks: No relevant data found.

STOT - single exposure**Components:****Hydrochloric acid:**

Exposure routes : Inhalation
Target Organs : Respiratory Tract
Assessment : May cause respiratory irritation.

Repeated dose toxicity**Components:****Hydrochloric acid:**

Remarks : Repeated excessive exposure may cause erosion of teeth and bleeding and ulceration of nose, mouth and gums.

Aspiration toxicity**Components:****Hydrochloric acid:**

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

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:****Hydrochloric acid:**

Toxicity to fish : Remarks: May decrease pH of aquatic systems to < pH 5 which may be toxic to aquatic organisms.

Persistence and degradability**Components:****Hydrochloric acid:**

Biodegradability : Remarks: Biodegradation is not applicable.

Bioaccumulative potential**Components:****Hydrochloric acid:**

Partition coefficient: n-octanol/water : log Pow: -2.65
Remarks: Partitioning from water to n-octanol is not applicable.

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No bioconcentration is expected because of the relatively high water solubility.

Mobility in soil**Components:****Hydrochloric acid:**

Distribution among environmental compartments : Remarks: No data available for assessment due to technical difficulties with testing.

Other adverse effects**Components:****Hydrochloric acid:**

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.

SECTION 14. TRANSPORT INFORMATION**International Regulations****UNRTDG**

UN number : UN 1789
Proper shipping name : HYDROCHLORIC ACID
Class : 8
Packing group : II
Labels : 8

IATA-DGR

UN/ID No. : UN 1789
Proper shipping name : Hydrochloric acid

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Class : 8
Packing group : II
Labels : Corrosive
Packing instruction (cargo aircraft) : 855
Packing instruction (passenger aircraft) : 851

IMDG-Code

UN number : UN 1789
Proper shipping name : HYDROCHLORIC ACID
Class : 8
Packing group : II
Labels : 8
EmS Code : F-A, S-B
Marine pollutant : no
Remarks : Stowage category CAcids

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

TDG

UN number : UN 1789
Proper shipping name : HYDROCHLORIC ACID
Class : 8
Packing group : II
Labels : 8
ERG Code : 157
Marine pollutant : no
Remarks : Terrapure Env##+1800-567-7455 # ERAP 2-1502

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

International Regulations

Montreal Protocol (Ozone Depleting Substances) : Not applicable
Rotterdam Convention (Prior Informed Consent) : Not applicable
Stockholm Convention (Persistent Organic Pollutants) : Not applicable

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

CH INV : 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.
AICS : All intentional components are listed on the inventory, are

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

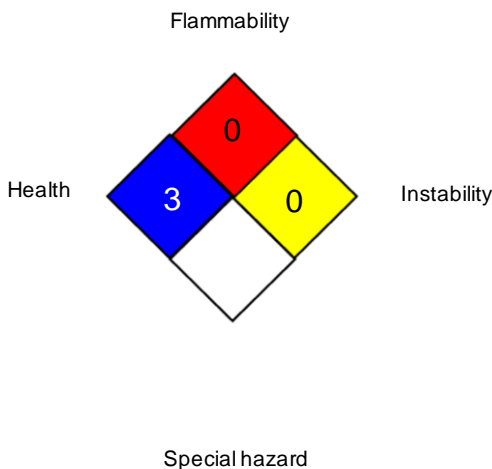
Canadian lists

No substances are subject to a Significant New Activity Notification.

SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



Full text of other abbreviations

- ACGIH : USA. ACGIH Threshold Limit Values (TLV)
- CA AB OEL : Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
- CA BC OEL : Canada. British Columbia OEL
- CA QC OEL : Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants

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ACGIH / C	:	Ceiling limit
CA AB OEL / (c)	:	ceiling occupational exposure limit
CA BC OEL / C	:	ceiling limit
CA QC OEL / C	:	Ceiling

AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; 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; 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; KECl - 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; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIcC - 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; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; 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; WHMIS - Workplace Hazardous Materials Information System

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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.

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CA / EN