SAFETY DATA SHEET

12.5% High Alkalinity Sodium Hypochlorite Solution

Version	Revision Date:	SDS Number:	Date of last issue: 03-05-2020
5.0	04-14-2021	10000001203	Date of first issue: 04-14-2021

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 : 12.5% High Alkalinity Sodium Hypochlorite Solution
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 : Disinfectant.
Paper bleaching agent
Water treatment chemicals
Biocidal product
Bleaching agents, activators and stabilisers
Textile bleaching agent

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

GHS label elements

Hazard pictograms :

Signal word : Danger

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

Precautionary statements :

Prevention:

P264 Wash skin thoroughly after handling.
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.
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.

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	:	12.5% High Alkalinity Sodium Hypochlorite Solution
CAS-No.	:	7681-52-9
Synonyms	:	No data available

Components

Chemical name	CAS-No.	Concentration (% w/w)
Sodium hydroxide	1310-73-2	>= 0 - <= 3.5
Sodium hypochlorite	7681-52-9	>= 12.5 - <= 15.6
Sodium Carbonate	497-19-8	>= 0 - <= 10

SECTION 4. FIRST AID MEASURES

If inhaled	:	Move person to fresh air; if effects occur, consult a physician.
In case of skin contact	:	Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing. Seek medical attention if symptoms occur or irritation persists. Wash clothing before reuse. 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.
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 : May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids may be of help.
Maintain adequate ventilation and oxygenation of the patient.
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.
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.
Repeated excessive exposure may aggravate preexisting lung disease.

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.
In case of fire, use water fog, foam, dry powder, carbon dioxide.

Unsuitable extinguishing media : Do NOT use water jet.
May spread fire.
Dry chemical extinguishing agents may react with product; use with caution.

Hazardous combustion products : During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating.

Further information : Keep people away. Isolate fire and deny unnecessary entry.
Burning liquids may be extinguished by dilution with water.
Do not use direct water stream. May spread fire.
This material does not burn. Fight fire for other material that is burning.
Burning liquids may be moved by flushing with water to pro-

tect personnel and minimize property damage.
Water fog, applied gently may be used as a blanket for fire extinguishment.
For safety reasons in case of fire, containers should be stored separately in closed containments.
Do not breathe fumes.
For safety reasons in case of fire, containers should be stored separately in closed containments.
Do not breathe fumes.

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).
If protective equipment is not available or not used, fight fire from a protected location or safe distance.
Wear full protective clothing and self-contained breathing apparatus.
Wear full protective clothing and self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Keep unnecessary and unprotected personnel from entering the area.
Wear suitable protective equipment.
Avoid breathing vapor.
Avoid all contact.
Keep people away from and upwind of spill/leak.
Wear suitable protective clothing.
Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.
Ventilate area of leak or spill.

Environmental precautions : Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.
Do not discharge directly to a water source.
See Section 13, Disposal Considerations, for additional information.

Methods and materials for containment and cleaning up : Contain spilled material if possible.
Small spills:
Large spills:
Absorb with materials such as:
Vermiculite.
Cover with absorbent or contain. Collect and dispose.
Dike and transfer to suitable and properly labeled containers.
This material is corrosive. See SECTION 8, Exposure Controls/Personal Protection, prior to handling.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Store in tightly closed, properly vented containers.
Do not get in eyes, on skin, or on clothing.
Wear personal protective equipment.

Use with adequate ventilation.
Use good general industrial hygiene practices for handling.
Wash thoroughly after handling.
Protect from direct exposure to sunlight.

Conditions for safe storage : Store away from incompatible materials. See STABILITY AND REACTIVITY section.
Store under cover in a dry, clean, cool, well ventilated place away from sunlight.
Store away from oxidizing materials.
Store in original vented container.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components 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/m3	CA AB OEL
		C	2 mg/m3	CA BC OEL
		C	2 mg/m3	CA QC OEL
		C	2 mg/m3	ACGIH

Engineering measures : Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations.
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. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.

Filter type : 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: Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). 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. Reports indicate that sodium hypochlorite can react with various fabrics usually increasing with concentration. Reactions vary significantly depending on strength of chemical, material, fabric treatment and color of dyes. Fire resistant clothing treated cotton has a stronger response than plain cotton. Poly blend fabrics and meta aramid fabric have a weaker response than natural fibers. Contact the Personal Protective Equipment manufacturer for specific information about their products.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Liquid above freezing point
Colour	:	No data available
Odour	:	pungent
Odour Threshold	:	0.3 ppm
pH	:	12 Method: Theoretical
Freezing point	:	-4 °F Method: Theoretical
Melting point/range		-4 °F Method: Theoretical
Pour point		No data available
Softening point		No data available
Flash point	:	Not applicable
Evaporation rate	:	No test data available
Flammability (solid, gas)	:	No
Upper explosion limit / Upper flammability limit	:	Not applicable
Lower explosion limit / Lower flammability limit	:	Not applicable
Vapour pressure	:	12 mmHg (20 °C)

		Method: Theoretical
Relative vapour density	:	Not applicable
Relative density	:	1.228 (20 °C) Method: Theoretical
Solubility(ies)		
Water solubility	:	completely miscible
Partition coefficient: n-octanol/water	:	No data available.
Auto-ignition temperature	:	Not applicable
Decomposition temperature	:	No test data available
Viscosity		
Viscosity, kinematic	:	Method: No information available.
Explosive properties	:	No
Oxidizing properties	:	No
Molecular weight	:	74.5 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

Chemical stability	:	Stable.
Possibility of hazardous reactions	:	Polymerization will not occur. Stable under recommended storage conditions.
Conditions to avoid	:	contact with incompatible materials Avoid direct sunlight or ultraviolet sources. Excessive heat. May develop chlorine if mixed with acidic solutions.
Incompatible materials	:	Metals Acids
Hazardous decomposition products	:	Does not normally decompose.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

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.

Sodium hypochlorite:

Acute oral toxicity	:	LD50 (Rat): 805 mg/kg Method: Estimated.
Acute inhalation toxicity	:	LC50 (Rat): > 10.5 mg/l Test atmosphere: dust/mist Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rat): > 1,000 mg/kg

Sodium Carbonate:

Acute oral toxicity	:	LD50 (Rat): 2,800 mg/kg Symptoms: No deaths occurred at this concentration. Assessment: The substance or mixture has no acute oral toxicity
Acute inhalation toxicity	:	Remarks: Dust may cause irritation to upper respiratory tract (nose and throat). For narcotic effects: Relevant data not available. Remarks: The LC50 has not been determined.
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg Symptoms: No deaths occurred at this concentration. Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

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.

Sodium hypochlorite:

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

damage.

Sodium Carbonate:

Result : No skin irritation
Remarks : Prolonged exposure not likely to cause significant skin irritation.
May cause more severe response if skin is abraded (scratched or cut).
May cause more severe response on covered skin (under clothing, gloves).

Serious eye damage/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.

Sodium hypochlorite:

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

Sodium Carbonate:

Result : Eye irritation
Remarks : May cause slight eye irritation.
May cause slight corneal injury.

Respiratory or skin sensitisation

Components:

Sodium hydroxide:

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

Remarks : For respiratory sensitization:
No relevant data found.

Sodium hypochlorite:

Assessment : Does not cause skin sensitisation.
Remarks : Did not cause allergic skin reactions when tested in guinea pigs.

Remarks : For respiratory sensitization:

No relevant data found.

Sodium Carbonate:

Remarks : For skin sensitization:
No relevant data found.

Remarks : For respiratory sensitization:
No relevant data found.

Germ cell mutagenicity

Components:

Sodium hydroxide:

Genotoxicity in vitro : Remarks: In vitro genetic toxicity studies were negative.

Sodium hypochlorite:

Genotoxicity in vitro : Remarks: In vitro genetic toxicity studies were negative in some cases and positive in other cases.
Animal genetic toxicity studies were predominantly negative.

Sodium Carbonate:

Genotoxicity in vitro : Remarks: No relevant data found.

Carcinogenicity

Components:

Sodium hydroxide:

Remarks : No relevant data found.

Sodium hypochlorite:

Remarks : Did not cause cancer in laboratory animals.

Sodium Carbonate:

Remarks : No relevant data found.

Reproductive toxicity

Components:

Sodium hydroxide:

Effects on fertility : Remarks: No relevant data found.

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

Sodium hypochlorite:

Effects on fertility : Remarks: For similar material(s):

In animal studies, did not interfere with reproduction.
In animal studies, did not interfere with fertility.

Effects on foetal development : Remarks: Did not cause birth defects or any other fetal effects in laboratory animals.

Sodium Carbonate:

Effects on fertility : Remarks: Relevant data not available.

Effects on foetal development : Remarks: Did not cause birth defects or any other fetal effects in laboratory animals.

STOT - single exposure

Components:

Sodium hydroxide:

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

Sodium hypochlorite:

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

Sodium Carbonate:

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

Repeated dose toxicity

Components:

Sodium hydroxide:

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

Sodium hypochlorite:

Remarks : Repeated exposures to dusts of this material are not anticipated to result in systemic toxicity or permanent lung injury; however, excessive exposures may cause less severe respiratory effects.

Sodium Carbonate:

Remarks : No relevant data found.

Aspiration toxicity

Components:

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

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

Sodium Carbonate:
Based on physical properties, not likely to be an aspiration hazard.

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.

Sodium hypochlorite:

Toxicity to fish	:	Remarks: Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species). LC50 (Pimephales promelas (fathead minnow)): 0.22 - 0.62 mg/l Exposure time: 96 h Method: Method Not Specified.
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0.035 mg/l Exposure time: 48 h Test Type: flow-through test Method: OECD Test Guideline 202
M-Factor (Acute aquatic toxicity)	:	10
Toxicity to fish (Chronic toxicity)	:	NOEC (Menidia peninsulae (tidewater silverside)): 0.04 mg/l Exposure time: 28 d Test Type: flow-through test Method: Other guidelines
M-Factor (Chronic aquatic toxicity)	:	1
Toxicity to microorganisms	:	EC50 (activated sludge): 28.7 mg/l

Sodium Carbonate:

Toxicity to fish : Remarks: Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).

LC50 (Pimephales promelas (fathead minnow)): 32.7 mg/l
Exposure time: 96 h
Method: Method Not Specified.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna): 265 mg/l
Exposure time: 48 h
Test Type: Static
Method: Method Not Specified.

EC50 (Daphnia magna (Water flea)): 390 mg/l
Exposure time: 48 h
Test Type: Immobilization
Method: Method Not Specified.

Persistence and degradability

Components:

Sodium hydroxide:

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

Sodium hypochlorite:

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

Sodium Carbonate:

Biodegradability : Remarks: Biodegradation is not applicable.

Bioaccumulative potential

Components:

Sodium hydroxide:

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

Sodium hypochlorite:

Partition coefficient: n-octanol/water : Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partitioning from water to n-octanol is not applicable.

Sodium Carbonate:

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

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).

Sodium hypochlorite:

Distribution among environmental compartments : Remarks: No relevant data found.

Sodium Carbonate:

Distribution among environmental compartments : Remarks: Relevant data not available.

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).

Sodium hypochlorite:

Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Sodium Carbonate:

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

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER.
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.
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.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	:	UN 1791
Proper shipping name	:	HYPOCHLORITE SOLUTION
Class	:	8
Packing group	:	II
Labels	:	8

IATA-DGR

UN/ID No.	:	UN 1791
Proper shipping name	:	Hypochlorite solution
Class	:	8
Packing group	:	II
Labels	:	Corrosive
Packing instruction (cargo aircraft)	:	855
Packing instruction (passenger aircraft)	:	851

IMDG-Code

UN number	:	UN 1791
Proper shipping name	:	HYPOCHLORITE SOLUTION (sodium hypochlorite)
Class	:	8
Packing group	:	II
Labels	:	8
EmS Code	:	F-A, S-B
Marine pollutant	:	yes
Remarks	:	Stowage category BHypochlorites

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 1791
Proper shipping name	:	HYPOCHLORITE SOLUTION
Class	:	8
Packing group	:	II
Labels	:	8
ERG Code	:	154
Marine pollutant	:	yes(sodium hypochlorite)

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 exempt, or are supplier certified.
NZIoC	:	not determined
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.

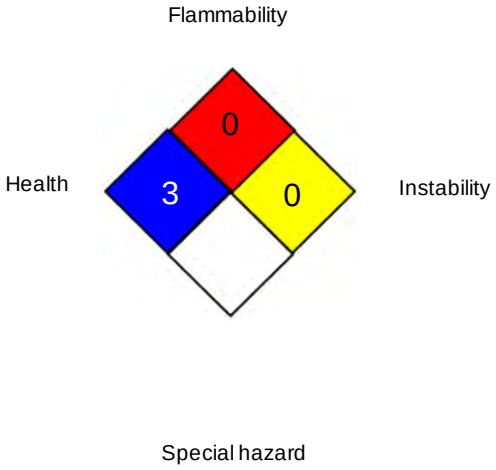
Canadian lists

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
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; 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; 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; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Develop-

ment; 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

Revision Date : 04-14-2021

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.

CA / EN