SAFETY DATA SHEET
OLIN CORPORATION

Product name: Sodium Hypochlorite, 17-30%

Issue Date: 03/22/2017
Print Date: 03/23/2017

OLIN CORPORATION 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.

1. IDENTIFICATION

Product name: Sodium Hypochlorite, 17-30%

Recommended use of the chemical and restrictions on use
Identified uses: Disinfectant. Paper bleaching agent Water treatment chemicals Biocidal product Bleaching agents, activators and stabilisers Textile bleaching agent

COMPANY IDENTIFICATION
OLIN CORPORATION
190 CARONDELET PLAZA
CLAYTON MO 63105
UNITED STATES

Customer Information Number: +1 844-238-3445
INFO@OLINBC.com

EMERGENCY TELEPHONE NUMBER
Local Emergency Contact: 1 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification
This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.
Corrosive to metals - Category 1
Skin corrosion - Category 1B
Serious eye damage - Category 1

Label elements
Hazard pictograms

Signal word: **DANGER!**

Hazards
May be corrosive to metals.
Causes severe skin burns and eye damage.

Precautionary statements

Prevention
Keep only in original container.
Wash skin thoroughly after handling.
Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
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.
Wash contaminated clothing before reuse.
Absorb spillage to prevent material damage.

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

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

Other hazards
Contact with acids liberates toxic gas.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Sodium Hypochloride
This product is a substance.

Component	CASRN	Concentration
Sodium hypochlorite	7681-52-9	>= 5.0 - <= 17.0 %
Sodium hydroxide	1310-73-2	>= 0.1 - < 4.5 %
Water	7732-18-5	>= 83.0 - <= 95.0 %

4. FIRST AID MEASURES

Description of first aid measures

General advice: 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.

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

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.

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.

Ingestion: 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) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed
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.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: 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.

Special hazards arising from the substance or mixture
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.

Unusual Fire and Explosion Hazards: No data available

Advice for firefighters
Fire Fighting Procedures: 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 full protective clothing and self-contained breathing apparatus.

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.

7. HANDLING AND STORAGE

Precautions for safe handling: Keep container closed. 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: Keep container tightly closed. 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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Sodium hypochlorite	US WEEL	STEL	2 mg/m3
Sodium hydroxide	ACGIH	C	2 mg/m3
	OSHA Z-1	TWA	2 mg/m3
	OSHA P0	C	2 mg/m3

Exposure controls

Engineering controls: 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.

Individual protection measures

Eye/face protection: Use chemical goggles.

Skin protection

Hand protection: 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.

Other 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.

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.
The following should be effective types of air-purifying respirators: Particulate filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	liquid
Color	Yellow or yellow-green
Odor	pungent
Odor Threshold	No data available
pH	12
Melting point/range	-27.22 °C (-17.00 °F) *Literature*
Freezing point	-27.22 °C (-17.00 °F) *Measured*
Boiling point (760 mmHg)	No data available
Flash point	Not applicable
Evaporation Rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	Not expected to form explosive dust-air mixtures.
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapor Pressure	12 mmHg
Relative Vapor Density (air = 1)	Not available
Relative Density (water = 1)	1.187 - 1.333 at 20 °C (68 °F)
Water solubility	completely miscible
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	Not applicable
Decomposition temperature	No data available No data available No test data available

Kinematic Viscosity	No data available
Explosive properties	Not applicable
Oxidizing properties	No information available. Not applicable
Molecular weight	74.5 g/mol

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

10. STABILITY AND REACTIVITY

Reactivity: No data available

Chemical stability: No data available

Possibility of hazardous reactions: Polymerization will not occur.
Polymerization will not occur.
Stable under recommended storage conditions.

Conditions to avoid: contact with incompatible materials Avoid direct sunlight or ultraviolet sources. Excessive heat. contact between acids and chlorates, a component of this product mixture, can cause the generation of chlorine gas.

Incompatible materials: No data available

Hazardous decomposition products: Does not decompose.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity
Very low toxicity if swallowed. Swallowing may result in burns of the mouth and throat. Swallowing may result in gastrointestinal irritation or ulceration. May cause nausea and vomiting. May cause abdominal discomfort or diarrhea.

LD50, Rat, > 5,000 mg/kg

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

LD50, Rabbit, > 5,000 mg/kg

Acute inhalation toxicity
Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs.

LC50, Rat, dust/mist, > 10.5 mg/l

Skin corrosion/irritation
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.

Serious eye damage/eye irritation
May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

Sensitization
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)
Material is corrosive. Material is not classified as a respiratory irritant; however, upper respiratory tract irritation or corrosivity may be expected.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
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.

Carcinogenicity
Did not cause cancer in laboratory animals.

Teratogenicity
For similar material(s): Has been toxic to the fetus in laboratory animal tests.

Reproductive toxicity
For similar material(s): In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

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

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

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity

Acute toxicity to fish
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), 96 Hour, 0.22 - 0.62 mg/l, Method Not Specified.

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), flow-through test, 48 Hour, 0.035 mg/l, OECD Test Guideline 202

Toxicity to bacteria
EC50, activated sludge, 28.7 mg/l

Chronic aquatic toxicity
Chronic toxicity to fish
NOEC, Menidia peninsulae (tidewater silverside), flow-through test, 28 d, 0.04 mg/l

Persistence and degradability
Biodegradability: Biodegradation is not applicable.

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

Mobility in soil
No relevant data found.

13. DISPOSAL CONSIDERATIONS

Disposal methods: 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. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler.

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Hypochlorite solutions
UN number	UN 1791
Class	8
Packing group	II
Marine pollutant	Sodium hypochlorite
Reportable Quantity	Sodium hypochlorite, Sodium hydroxide

Classification for SEA transport (IMO-IMDG):

Proper shipping name	HYPOCHLORITE SOLUTION

UN number	UN 1791
Class	8
Packing group	II
Marine pollutant	Sodium hypochlorite
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	Hypochlorite solution
UN number	UN 1791
Class	8
Packing group	II

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312
Acute Health Hazard
Chronic Health Hazard

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 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.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103

Components	CASRN	RQ (RCRA Code)
Sodium hypochlorite	7681-52-9	100 lbs RQ
Sodium hydroxide	1310-73-2	1000 lbs RQ

Pennsylvania Worker and Community Right-To-Know Act:
The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components	CASRN
Sodium hydroxide	1310-73-2
Sodium hypochlorite	7681-52-9

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

United States TSCA Inventory (TSCA)
All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

16. OTHER INFORMATION

Hazard Rating System
NFPA

Health	Fire	Reactivity
3	0	1

Revision
Identification Number: 10000001224 / A619 / Issue Date: 03/22/2017 / Version: 1.2
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

ACGIH	USA. American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV)
C	Ceiling limit
OSHA P0	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
STEL	Short-Term TWA
TWA	8-hour time weighted average
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)

Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

OLIN CORPORATION 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.