

III. SAFE HANDLING AND STORAGE

DO NOT TAKE INTERNALLY. AVOID CONTACT WITH SKIN OR EYES. UPON CONTACT WITH SKIN OR EYES, WASH OFF WITH WATER. AVOID BREATHING MIST OR VAPOR.

DANGER: Corrosive, may cause severe skin irritation or chemical burns to broken skin. Causes eye damage. Do not get in eyes, on skin or clothing. Wear safety goggles or face shield and rubber gloves when handling this product. Wash after handling. Avoid breathing vapors. Vacate poorly ventilated areas as soon as possible. Do not return until strong odors have dissipated.

STORAGE CONDITIONS: Store in a cool, dry, well-ventilated area. Avoid high temperatures and exposure to and direct sunlight.
DO NOT STORE AT TEMPERATURES ABOVE: 15-21 C (60-70 F)

OTHER: Store in the dark at the lowest possible temperature, but keep from freezing.

PRODUCT STABILITY AND COMPATIBILITY:

SHELF LIFE LIMITATION:	Up to 6 months at 60 F or lower
INCOMPATIBLE MATERIALS FOR PACKAGING:	Metal containers
INCOMPATIBLE MATERIALS FOR STORAGE OR TRANSPORT:	Oxidizers, acids, nitrogen containing material such as quaternary ammonium salts.

IV. PHYSICAL DATA

APPEARANCE:	Greenish - yellow liquid
FREEZING POINT:	-15 F
BOILING POINT:	Decomposes on heating
DECOMPOSITION TEMPERATURE:	Decomposition rate increases as heated
SPECIFIC GRAVITY @ 68 F:	1.1980 - 1.2100
BULK DENSITY:	9.98 - 10.08 lb/gl
PH @ 68 F:	12
VAPOR PRESSURE @ 68 F:	No data
SOLUBILITY IN WATER:	Miscible
VOLATILES, PERCENT BY VOLUME:	87.5-94.5
EVAPORATION RATE:	No data
VAPOR DENSITY:	No data
MOLECULAR WEIGHT:	74.5 (active ingredient - NaOCl)
ODOR:	Chlorine - like

V. PERSONAL PROTECTIVE EQUIPMENT

PERSONAL PROTECTION FOR ROUTINE USE OF PRODUCT:

RESPIRATORY PROTECTION: Respirator protection not normally needed since the volatility and toxicity are low. If vapors, mists, or aerosols are generated, wear a NIOSH / MSHA approved respirator.

VENTILATION: Local exhaust ventilation is recommended if vapors, mists or aerosols are generated. Otherwise, use general exhaust ventilation.

SKIN and EYE PROTECTION: Use chemical safety goggles and impermeable gloves.

OTHER: Emergency eye wash and safety showers must be provided in the immediate work area.

EQUIPMENT SPECIFICATIONS:

RESPIRATOR TYPE: NIOSH / MSHA approved respirator equipped with chemical cartridges for protection against chlorine gas and dust mist pre-filters.

PROTECTIVE CLOTHING TYPE: Neoprene

(This includes: gloves, boots, apron, protective suit.)

VI. FIRE & EXPLOSION HAZARDS**FLAMMABILITY DATA:**

FLAMMABLE: No
COMBUSTIBLE: No
PYROPHORIC: No
FLASH POINT: Not applicable
AUTOIGNITION TEMPERATURE: Not applicable
**FLAMMABLE LIMITS AT NORMAL ATMOSPHERIC TEMPERATURE AND PRESSURE
(PERCENT VOLUME IN AIR):** LEL - Not Applicable UEL - Not Applicable

NFPA RATINGS: Not established

HMIS RATINGS:

Health: 3
Flammability: 0
Reactivity: 2

EXTINGUISHING MEDIA: Not applicable

FIRE FIGHTING TECHNIQUES AND COMMENTS: Use water to cool containers exposed to fire. On small fire, use dry chemical, Carbon dioxide or water spray. On large fires, use water in flooding quantities as fog. In case of fire, hazardous concentrations of chlorine may be formed. See Section XI for personal protective equipment for fire fighting.

VII. REACTIVITY**CONDITIONS UNDER WHICH THIS PRODUCT MAY BE UNSTABLE :**

TEMPERATURES ABOVE: Decomposition rate increases as heated
MECHANICAL SHOCK OR IMPACT: No
ELECTRICAL (STATIC) DISCHARGE: No
OTHER: Decomposition will result in formation of oxygen from contact with iron, copper, nickel and cobalt
HAZARDOUS POLYMERIZATION: Will not occur
INCOMPATIBLE MATERIALS: Iron, copper, nickel, cobalt, acids, ammonium compounds, organics, other oxidizers
HAZARDOUS DECOMPOSITION PRODUCTS: Chlorine gas
OTHER CONDITIONS TO AVOID: High heat, sunlight and ultra - violet light

SUMMARY OF REACTIVITY:

OXIDIZER: Yes
PYROPHORIC: No
ORGANIC PEROXIDE: No
WATER REACTIVE: No

VIII. FIRST AID

Eyes: Immediately flush with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Remove contact lenses if present after the first 5 minutes then continue rinsing eye. Call a physician at once.

SKIN: Immediately flush with water for at least 15 minutes. Call a physician. If clothing comes in contact with the product, the clothing should be removed immediately and should be laundered before re-use.

INGESTION: Immediately drink large quantities of water. DO NOT induce vomiting. Call a physician at once. DO NOT give anything by mouth if the person is unconscious or if having convulsions.

INHALATION: If person experiences nausea, headache or dizziness, person should stop work immediately and move to fresh air until these symptoms disappear. If breathing is difficult, administer oxygen, keep the person warm and at rest. Call a physician. In the event that an individual inhales enough vapor to lose consciousness, person should be moved to fresh air at once a physician should be called immediately. If breathing has stopped, artificial respiration should be given immediately. In all cases, ensure adequate ventilation and provide respiratory protection before the person returns to work.

IX. TOXICOLOGY & HEALTH

ROUTES OF ABSORPTION: Inhalation, skin, eye and ingestion.

WARNING STATEMENTS AND WARNING PROPERTIES:

HARMFUL IF INHALED OR INGESTED. HARMFUL IF EXPOSED TO SKIN OR EYES.

DANGER: Corrosive, may cause severe skin irritation or chemical burns to broken skin. Causes eye damage. Do not get in eyes, on skin or clothing. Wear safety goggles or face shield and rubber gloves when handling this product. Wash after handling. Avoid breathing vapors. Vacate poorly ventilated areas as soon as possible. Do not return until strong odors have dissipated.

HUMAN THRESHOLD RESPONSE DATA:

ODOR THRESHOLD: Approximately 0.9 mg / m3 (0.3 ppm) based on odor of chlorine.

IRRITATION THRESHOLD: There is no data for irritation threshold. Sodium hypochlorite has the potential to be immediately dangerous to life or health.

SIGNS, SYMPTOMS, AND EFFECTS OF EXPOSURE:

INHALATION

ACUTE: Inhalation of this material is irritating to the nose, mouth, throat and lungs. It may also cause burns to the respiratory tract with the production of lung edema which can result in shortness of breath.

CHRONIC: Repeated inhalation exposure may cause impairment of lung function and permanent lung damage.

EYE: Severe irritation and / or burns can occur following eye exposure. Contact may cause impairment of vision and corneal damage.

SKIN:

ACUTE: Dermal exposure can cause severe irritation and / or burns characterized by redness, swelling and scab formation. Prolonged skin exposure may cause destruction of the dermis with impairment of the skin at site of contact to regenerate.

CHRONIC: Effects from chronic skin exposure would be similar to those from single exposure except for effects secondary to tissue destruction.

INGESTION:

ACUTE: Irritation and / or burns can occur to the entire gastrointestinal tract, including the stomach and intestines, characterized by nausea, vomiting, diarrhea, abdominal pain, bleeding and / or tissue ulceration.

CHRONIC: There are no known or reported effects from chronic exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Asthma and respiratory and cardiovascular disease.

INTERACTIONS WITH OTHER CHEMICALS WHICH ENHANCE TOXICITY:

None known or reported.

ANIMAL TOXICOLOGY:

ACUTE TOXICITY:

INHALATION LC50: No available data
ORAL LD50: Approximately 3-5 g / kg (rat)
DERMAL LD50: > 2 g / kg (rabbit)

Causes burns to eyes and skin

AQUATIC TOXICITY:

Aquatic LC50 - Approximately 0.6 mg / l (bluegill)
 Approximately 1 mg / l (daphnia, 48 hours)

This pesticide is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or public waters unless this product is specifically identified and addressed in an NPDES permit. Do not discharge to sewer systems.

CHRONIC TOXICITY:

There are no known or reported effects from repeated exposure.

REPRODUCTIVE TOXICITY:

There are no known or reported effects on reproductive function or fetal development.

CARCINOGENICITY:

This product has been shown not to be carcinogenic. It is not included as a carcinogen by IARC, OSHA, NTP, OR EPA.

MUTAGENICITY:

Sodium hypochlorite has been shown to produce damage to genetic material when tested in vitro. Studies in vivo have shown no evidence of mutagenic potential for this material. Chemicals with potent biocidal activity, typical of hypochlorite compounds, may compromise the integrity of many of the treated cells which remain viable during an in vitro assay. This result would likely produce cellular changes an in vitro assay. This result would likely produce cellular changes giving rise to a response indicative of mutation. It is judged that the risk of genetic damage is insignificant for sodium hypochlorite because of its biocidal activity, lack of mutagenicity in vivo, and failure to produce a carcinogenic response.

X. TRANSPORTATION

THIS MATERIAL IS REGULATED AS A DOT HAZARDOUS MATERIAL.

DOT DESCRIPTION FROM THE HAZARDOUS MATERIALS TABLE 49 CFR 172.101:

LAND (U.S. DOT) : HYPOCHLORITE SOLUTIONS, 8, UN1791, PG III
WATER (IMO) : Same as above.
AIR (IATA / ICAO) : Same as above.

HAZARD LABEL / PLACARD: CORROSIVE
REPORTABLE QUANTITY: 100 LBS. as sodium hypochlorite (Per 49 CFR 172.101, Appendix)
EMERGENCY GUIDE NO: 154

XI. SPILL & LEAKAGE

FOR ALL TRANSPORTATION ACCIDENTS: CALL CHEMTREC AT 800-242-9300.

REPORTABLE QUANTITY (Pounds): 100 lbs. as sodium hypochlorite (Per 40 CFR 302.4)

SPILL MITIGATION PROCEDURES:

Hazardous concentrations in air may be found in local spill area and immediately downwind.

AIR RELEASE: Vapors may be suppressed by the use of a water fog. Capture all run off water for treatment and disposal.

WATER RELEASE: This material is soluble in water. Dike or contain material via use of compatible absorbents. Remove material with use of vacuum or pump operation and treat before disposition. This material is harmful to aquatic life.

LAND SPILL: Compatible absorbents: Sand, clay soil, commercial absorbents.

SPILL RESIDUES: Dispose of per guidelines under Section XII, WASTE DISPOSAL. This material may be neutralized for disposal; you are requested to contact SURPASS CHEMICAL CO. at 800-289-8101 before beginning any such operation.

PERSONAL PROTECTION FOR EMERGENCY SPILL AND FIRE-FIGHTING SITUATIONS:

Response to this material requires the use of self contained breathing apparatus (SCBA). Additional protective clothing must be worn to prevent personal contact with this material. These items include but are not limited to boots, gloves, hard hat, impervious clothing, i.e. chemically impermeable suit. Compatible materials for response to this material are neoprene, butyl rubber, viton and saranex.

XII. WASTE DISPOSAL

If this product becomes a waste, it meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA waste number: D002

As a hazardous liquid waste, it must be disposed of in accordance with local, state and federal regulations in a permitted hazardous waste treatment, storage and disposal facility by treatment.

CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THIS MATERIAL. THE USER OF THIS MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES.

XIII. ADDITIONAL REG STATUS

TOXIC SUBSTANCES CONTROL ACT: This substance is listed on the Toxic Substances Control Act inventory.

NSF LIMITS: NSF Maximum Drinking Water Usage Concentration - 250 mg/l as sodium hypochlorite

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT TITLE III: None Established.

HAZARD CATEGORIES, PER 40 CFR 370.2:

HEALTH: Immediate (Acute)
Delayed (Chronic)
PHYSICAL: Fire
Reactivity

EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW, PER 40 CFR 355, AOO. A:
EXTREMELY HAZARDOUS SUBSTANCE - THRESHOLD PLANNING QUANTITY:
None Established

PRODUCT: SURCHLOR

SUPPLIER NOTIFICATION REQUIREMENTS, PER 40 CFR 372.45:
None Established

XIV. ADDITIONAL INFORMATION

MSDS REVISION STATUS:

XV. MAJOR REFERENCES

OLIN: Olin MSDS Control Group
Olin Corporation
120 Long Ridge Road
Stamford, CT 06904

Phone Number: (203) 356-3449

Prepared / Reviewed by:
Thomas F.C. Russell
Leonard J. Smith

Title:
Health, Safety & Compliance Manager
Vice President / General Manager

As of the date of preparation of this document, the forgoing information is believed to be accurate and is provided in good faith to comply with applicable federal and state law(s). However, no warranty or representation with respect to such information is intended or given. It is the user's obligation to determine the condition of safe use of this product. Each user should study this material safety data sheet to become aware of the product hazards. Additional resources may have to be consulted to insure safe handling, storage and use.

surchlor.wpd