
Section 01 – Product and Company Identification

Product Identifier	TMR - 100
Other Means of Identification	
Product Use and Restrictions on Use	Mould and Mildew Stain Remover
Initial Supplier Identifier	M2 Enterprises Ltd. 3973 Rainbow St Victoria BC, Canada V8X 2A5
Prepared By	Mark McArthur Phone: 1 (250) 592 - 6999
24-Hour Emergency Phone	Phone: 1 (613) 996 – 6666

Section 02 - Hazard Identification

GHS-Classification

Skin Corrosion/Irritation	Category 1B
Serious Eye Damage/Irritation	Category 1

Physical Hazards

Corrosive to Metals	Category 1
----------------------------	------------

Danger

Hazard Statements

H314 – Causes severe skin burns and eye damage.
H318 – Causes serious eye damage.
H290 – May be corrosive to metals.
EUH 031 – Contact with acids liberates toxic gas.

Pictograms



Precautionary Statements

P234 – Keep only in original container.

P405 – Store locked up.

P260 – Do not breathe dust/fume/gas/mist/vapours/spray.

P280 – Wear protective gloves/protective clothing/eye protection/face protection.

P301 + P330 + P331 – IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353 – IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin.

P363 – Wash contaminated clothing before reuse.

P304 + P340 – IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P310 – Immediately call a POISON CENTER or doctor/physician.

P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P390 – Absorb spillage to prevent material damage.

P501 – Dispose of contents/container in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act

Section 03 - Composition / Information on Ingredients

Chemical Name	CAS Number	Weight %	Unique Identifiers
Sodium Hypochlorite	7681-52-9	10-12%	None
Water	7732-18-5	88-90%	

Section 04 - First Aid Measures

Inhalation

Can release corrosive chlorine gas

Remove victim to fresh air. Give artificial respiration only if breathing has stopped. If breathing is difficult, give oxygen. DO NOT allow victim to move about unnecessarily. Symptoms of pulmonary edema can be delayed up to 48 hours after exposure. Seek immediate medical attention.

Skin Contact / Absorption

As quickly as possible, flush with lukewarm, gently flowing water for at least 20 minutes, or until the chemical is removed. If irritation persists, repeat flushing. Under running water, remove contaminated clothing, shoes and leather goods. Completely decontaminate clothing, shoes and leather goods before reuse, or discard. Obtain medical advice immediately.

Eye Contact	Contact lenses should never be worn when working with this product. Flush immediately with lukewarm, gently flowing water for at least 30 minutes. Forcibly hold eyelids apart to ensure complete irrigation of eye tissue. DO NOT INTERRUPT FLUSHING. Take care not to rinse contaminated water into the unaffected eye or onto the face. Seek immediate medical attention.
Ingestion	NEVER give anything by mouth if victim is rapidly losing consciousness, is unconscious or convulsing. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. Have victim drink 240 to 300 mL (8 to 10 oz.) of water to dilute material in stomach. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Rinse mouth and repeat administration of water. Quickly transport victim to an emergency care facility.
Additional Information	Provide general supportive measures (comfort, warmth, rest). Consult a doctor and/or the nearest Poison Control Centre for all exposures except minor instances of inhalation or skin contact.

Section 05 - Fire Fighting Measures

Suitable Extinguishing Media	Sodium hypochlorite solutions do not burn. Extinguish fire using extinguishing agents suitable for the surrounding fire and not contraindicated for use with sodium hypochlorite. Cool exposed containers with water.
Unsuitable Extinguishing Media	DO NOT use dry chemical fire extinguishing agents containing ammonium compounds (such as some A:B:C agents), since an explosive compound can be formed.
Specific Hazards Arising From the Chemical	Chlorine, hydrogen chloride gas, oxygen gas and disodium oxide. NOTE: releases chlorine when heated above 35°C.
Special Protective Equipment for Fire-Fighters	Wear NIOSH-approved self-contained breathing apparatus and protective clothing. The decomposition products of sodium hypochlorite, such as chlorine and hydrogen chloride are extremely hazardous to health. Do not enter without wearing specialized protective equipment suitable for the situation. Firefighter's normal protective equipment (Bunker Gear) will not provide adequate protection.
Further Information	Sodium hypochlorite solutions will not accumulate static charge. Since these solutions do not burn, they will not be ignited by a static discharge. Sodium hypochlorite is not combustible (will not burn). It decomposes when heated, giving off corrosive chlorine gas and hydrogen chloride. Solutions decompose when exposed to sunlight, giving off oxygen gas. However, the amount of oxygen produced is not sufficient to cause combustion. Explosive decomposition may occur under fire conditions and closed containers may rupture violently due to rapid decomposition, if exposed to fire or excessive heat for a sufficient period of time.

Section 06 - Accidental Release Measures

Personal Precautions / Protective Equipment / Emergency Procedures	Wear appropriate personal protective equipment. Ventilate area. Only enter area with PPE. Stop or reduce leak if safe to do so. Flush with water to remove any residue.
Environmental Precautions	Harmful to aquatic life in very low concentrations. May be dangerous if it enters water intakes. Prevent material from entering sewers or confined spaces. Notify local health and wildlife officials. Notify operators of nearby water intakes.

Methods and Materials for Containment and Cleaning Up

SMALL SPILLS: Soak up spill with absorbent material which does not react with spilled chemical. Put material in suitable, covered, labelled containers. Flush area with water.

Contaminated absorbent material may pose the same hazards as the spilled product. Small spills of sodium hypochlorite solutions can be broken down by covering it with a reducing agent such as sodium thiosulfate, sodium metabisulfite, or a ferrous salt. With the sulfite or ferrous salt, add some dilute (2 M) sulfuric acid to speed up the reaction. Transfer the mixture into large containers of water and neutralize with soda ash (sodium carbonate).

LARGE SPILLS: Contact fire and emergency services and supplier for advice.

Section 07 - Handling and Storage

Precautions for Safe Handling

This material is a CORROSIVE liquid.

Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure. Avoid generating mists. Prevent the release of mists into the workplace air. Inspect containers for damage or leaks before handling. Label containers. Never add water to a corrosive. Always add corrosives to water. When mixing with water, stir small amounts in slowly. Use cold water to prevent excessive heat generation. Never return contaminated material to its original container. Have suitable emergency equipment for fires, spills and leaks readily available.

Conditions for Safe Storage

Store in a cool, dry, well-ventilated area, out of direct sunlight and away from heat sources. Strong solutions (greater than 10% available chlorine) may slowly give off chlorine during storage, especially when warm (above 18°C). Vent caps may be required to prevent a build-up of pressure that could cause containers to burst. Always store in original labelled container. Keep containers tightly closed when not in use and when empty. Empty containers may contain hazardous residues. Protect label and keep it visible.

Incompatibilities

Keep away from incompatible materials, such as acids, metals, primary or aromatic amines, ammonia and ammonia salts. – see section 10 for more information

Section 08 - Exposure Controls and Personal Protection

Exposure Limit(s)

Component	Regulation	Type of Listing	Value
Sodium hypochlorite	AIHA	WEEL-STEL	2mg/m ³ (15 min)
Chlorine	ACGIH	TLV-TWA	0.5 ppm

Engineering Control(s)

Ventilation Requirements

Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions must be provided in accordance with all fire codes and regulatory requirements. Supply sufficient replacement air to make up for air removed by exhaust systems.

Other

Emergency shower and eyewash must be available and tested in accordance with regulations and be in close proximity.

Protective Equipment

Eyes/Face	Chemical goggles, full-face shield, or a full-face respirator is to be worn at all times when product is handled. Contact lenses should never be worn; they may contribute to severe eye injury.
Hand Protection	Impervious gloves of chemically resistant material (rubber or PVC) should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.
Skin and Body Protection	<p>Body suite, aprons, and/or coveralls of chemical resistant material should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.</p> <p>Guidelines for sodium hypochlorite, less than 30%: RECOMMENDED (resistance to breakthrough longer than 8 hours): Butyl rubber, Natural rubber, Neoprene rubber, Nitrile rubber, Polyethylene, Polyvinyl chloride, Viton(TM), Silver Shield/4H(TM) (polyethylene/ethylene vinyl alcohol), Tychem(TM) SL (Saranex(TM)).</p> <p>There is evidence that this material can cause serious skin injury (e.g. corrosion or absorption hazard). Recommendations are NOT valid for very thin natural rubber, neoprene, nitrile and PVC gloves (0.3 mm or less). Resistance of specific materials can vary from product to product. Breakthrough times are obtained under conditions of continuous contact, generally at room temperature. Evaluate resistance under conditions of use and maintain clothing carefully.</p> <p>Impervious boots of chemically resistant material should be worn at all times. No special footwear is required other than what is mandated at place of work.</p>
Respiratory Protection	<p>No specific guidelines are available. Contact chemical manufacturer/supplier for advice. Respiratory protection guidelines for chlorine gas are available.</p> <p>NIOSH RECOMMENDATIONS FOR CHLORINE CONCENTRATIONS IN AIR: Up to 5 ppm: (APF = 10) Chemical cartridge respirator*; SAR*. Up to 10 ppm: (APF = 25) SAR operated in a continuous-flow mode;* Powered, air-purifying respirator with cartridge(s)*. (APF = 50) Chemical cartridge respirator with a full facepiece and cartridge(s); Air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted canister; SCBA with a full facepiece; Full facepiece SAR. A NIOSH-approved respirator suitable for chlorine is recommended. Where a higher level of protection is required, use a self-contained breathing apparatus.</p>
Thermal Hazards	Not Available

Section 09 - Physical and Chemical Properties

Appearance

Physical State	Liquid
Colour	Clear, greenish-yellow solution.
Odour	Strong chlorine odour.
Odour Threshold	Not Available

Property

pH	11.8-13
Melting Point/Freezing Point	~ -15°C (12% solution); -6°C (5% solution)
Initial Boiling Point and Boiling Range	Slowly decomposes above 40°C
Flash Point	Not Applicable
Evaporation Rate	Not Available
Flammability	Non-Flammable
Upper Flammable Limit	Not Applicable
Lower Flammable Limit	Not Applicable
Vapour Pressure (mm Hg, 20°C)	12.1 mmHg at 20°C (12.5 wt. %)
Vapour Density (Air=1)	Not Available
Relative Density	Not Available
Solubility(ies)	Completely soluble in water
Partition Coefficient: n-octanol/water	Log P _{ow} = -3.42 (estimated)
Auto-ignition Temperature	Not Applicable
Decomposition Temperature	Slowly decomposes above 40°C
Viscosity	Not Available
Explosive Properties	Pressure buildup in containers could result in an explosion when heated or in contact with acidic fumes. Vigorous reaction with oxidizable organic materials may result in a fire.
Specific Gravity (Water=1)	1.13 at 20°C
% Volatiles by Volume	Not Available
Formula	NaOCl
Molecular Weight	74.44 g/mol

Section 10 - Stability and Reactivity

Reactivity	Sodium hypochlorite solutions decompose slowly at normal temperatures releasing low concentrations of corrosive chlorine gas. Decomposition is influenced by temperature, concentration, pH, ionic strength, exposure to light and the presence of metals, such as copper, nickel or cobalt, metal oxides, e.g. rust and other impurities, such as acids and amines. Hypochlorites react with urea to form nitrogen trichloride which explodes spontaneously in air.
Stability	Unstable at temperatures above 40°C, in sunlight, and in contact with acid.
Possibility of Hazardous Reactions	Hazardous polymerization will not occur. Reacts exothermically with acids. Reacts with ammonia, amines and ammonia salts to produce chloramines. Decomposes on heating to produce chlorine gas.
Conditions to Avoid	Heat, sunlight, acidic conditions, the presence of metals and other impurities.
Incompatible Materials	<p>PRIMARY AMINES: (e.g. ethylamine) and AROMATIC AMINES (e.g. aniline) - react to form explosively unstable N-mono- or di- chloramines.</p> <p>AMMONIUM SALTS: (e.g. ammonium sulfate and ammonium nitrate), AMMONIA, UREA or PHENYLACETONITRILE: - form explosive nitrogen trichloride, if acid is present.</p> <p>ACIDS: (especially hydrochloric acid) - contact releases corrosive chlorine gas.</p> <p>METALS: (especially copper, aluminum, nickel, and cobalt) - accelerate decomposition.</p> <p>REDUCING AGENTS: (e.g. hydrides, such as lithium aluminum hydride) - cause a violent reaction.</p> <p>ETHYLENEIMINE (AZIRIDINE): - form the explosive N- chloroethyleneimine.</p> <p>METHANOL: - can form explosive methyl hypochlorite, especially in the presence of acids or other etherification catalysts.</p> <p>FORMIC ACID: - becomes explosive at 55°C.</p> <p>FURFURALDEHYDE: - drop wise addition of the aldehyde to a 10% excess of sodium hypochlorite solution at 20-25°C can lead to a violent explosion.</p> <p>ETHANEDIOL (ETHYLENE GLYCOL): erupts violently after an induction period of about 4 to 8 minutes.</p> <p>SODIUM ETHYLENEDIAMINETETRACETATE (EDTA) SOLUTION and SODIUM HYDROXIDE SOLUTION: mixing the three solutions leads to vigorous foaming decomposition.</p>
Hazardous Decomposition Products	Chlorine (by reaction with acids), oxygen (by reaction with nickel, copper, tin, manganese, iron), sodium chloride, sodium chlorate, with increased temperature.

Section 11 - Toxicological Information

Acute Toxicity

	Component	Oral LD₅₀	Dermal LD₅₀	Inhalation LC₅₀	
Sodium Hypochlorite	8910mg/kg (rat, undiluted)	> 10000mg/kg (rabbit, undiluted)	5800mg/kg (mouse)	> 5250mg/m ³ (rat, 4hr)	

Chronic Toxicity – Carcinogenicity

Component IARC

Sodium Hypochlorite Group 3: Not classifiable as to its carcinogenicity to humans. [hypochlorite salts]

Skin Corrosion/Irritation

Very dilute solutions have caused negligible irritation, while more concentrated solutions have caused corrosive injury to skin and eyes.

Ingestion	Burning of the mouth and throat, abdominal cramps, nausea, vomiting, diarrhea, shock. May lead to convulsions, coma, and even death.
Inhalation	Irritant of the nose and throat, causing coughing, difficulty breathing, and pulmonary edema.
Serious Eye Damage/Irritation	Very dilute solutions have caused no irritation. More concentrated solutions have caused corrosive injury, which did not heal within 21 days.
Respiratory or Skin Sensitization	Negative results (0/20 guinea pigs sensitized) have been obtained for 8% sodium hypochlorite solution in a skin sensitization test. Insufficient details are available to evaluate a report of a positive result (positive reactions in 2/10 animals) obtained using 6% sodium hypochlorite (pH 11.2) with the guinea pig ear swelling test for non-immunological contact urticaria.
Germ Cell Mutagenicity	The available information does not suggest that sodium hypochlorite is mutagenic.
Reproductive Toxicity	There is insufficient information available to draw conclusions.
STOT-Single Exposure	May cause respiratory irritation.
STOT-Repeated Exposure	Not Available
Aspiration Hazard	Prolonged or repeated overexposure causes lung damage.
Synergistic Materials	Not Available

Section 12 - Ecological Information

Ecotoxicity

Component	Toxicity to Algae	Toxicity to Fish	Toxicity to Daphnia and Other Aquatic Invertebrates
Sodium Hypochlorite	EC ₅₀ (Red algae, 96hr):	46mg/LLC ₅₀ (Salmo gairdneri, 48hr):	0.07mg/L LC ₅₀ (Daphnia magna, 48hr): 0.032mg/L

Biodegradability	Not Available
Bioaccumulation	No evidence to support any rating.
Mobility	Not Available
Other Adverse Effects	Not Available

Section 13 - Disposal Considerations

Waste From Residues/Unused Products	Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.
Contaminated Packaging	Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

Section 14 - Transport Information

M2 Enterprises Ltd.
3973 Rainbow St
Victoria BC V8X-2A5 Canada
Office 1 (250) 592.6999

24 Hour Emergency Number - Canada - 1 (613) 996 6666