



Storm System Mold & Mildew Stain Remover 40210

ICP Construction

Version No: 2.3

Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: 04/28/2017

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S.GHS.USA.EN

SECTION 1 IDENTIFICATION

Product Identifier

Product name	Storm System Mold & Mildew Stain Remover 40210
Synonyms	Not Available
Proper shipping name	Corrosive liquid, basic, inorganic, n.o.s.
Other means of identification	Not Available

Recommended use of the chemical and restrictions on use

Relevant identified uses	Mold & Mildew Stain Remover
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Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	ICP Construction
Address	150 Dascomb Road Massachusetts Andover United States
Telephone	978-623-9980
Fax	Not Available
Website	Not Available
Email	Not Available

Emergency phone number

Association / Organisation	Chemtel
Emergency telephone numbers	1-800-255-3924
Other emergency telephone numbers	1-813-248-0585

SECTION 2 HAZARD(S) IDENTIFICATION

Classification of the substance or mixture

Classification	Serious Eye Damage Category 1, Acute Aquatic Hazard Category 2, Metal Corrosion Category 1, Skin Corrosion/Irritation Category 1C
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Label elements

Hazard pictogram(s)	
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SIGNAL WORD	DANGER
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Hazard statement(s)

H401	Toxic to aquatic life
H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.

Hazard(s) not otherwise specified

Not Applicable

Precautionary statement(s) Prevention

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

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P234	Keep only in original container.

Precautionary statement(s) Response

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

Precautionary statement(s) Storage

P405	Store locked up.
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Precautionary statement(s) Disposal

P501	Dispose of contents/container in accordance with local regulations.
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SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS**Substances**

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
7681-52-9	1-10	sodium hypochlorite
6834-92-0	1-5	sodium metasilicate, anhydrous

SECTION 4 FIRST-AID MEASURES**Description of first aid measures**

Eye Contact	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> ▶ Immediately hold eyelids apart and flush the eye continuously with running water. ▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. ▶ Transport to hospital or doctor without delay. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> ▶ Immediately flush body and clothes with large amounts of water, using safety shower if available. ▶ Quickly remove all contaminated clothing, including footwear. ▶ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre. ▶ Transport to hospital, or doctor.
Inhalation	<ul style="list-style-type: none"> ▶ If fumes or combustion products are inhaled remove from contaminated area. ▶ Lay patient down. Keep warm and rested. ▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▶ Transport to hospital, or doctor, without delay. ▶ Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema. ▶ Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs). ▶ As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested. ▶ Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered. <p>This must definitely be left to a doctor or person authorised by him/her. (ICSC13719)</p>
Ingestion	<ul style="list-style-type: none"> ▶ For advice, contact a Poisons Information Centre or a doctor at once. ▶ Urgent hospital treatment is likely to be needed. ▶ If swallowed do NOT induce vomiting. ▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▶ Observe the patient carefully. ▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▶ Transport to hospital or doctor without delay.

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

For acute or short-term repeated exposures to highly alkaline materials:

- ▶ Respiratory stress is uncommon but present occasionally because of soft tissue edema.
- ▶ Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary.
- ▶ Oxygen is given as indicated.
- ▶ The presence of shock suggests perforation and mandates an intravenous line and fluid administration.
- ▶ Damage due to alkaline corrosives occurs by liquefaction necrosis whereby the saponification of fats and solubilisation of proteins allow deep penetration into the tissue.

Alkalis continue to cause damage after exposure.

INGESTION:

- ▶ Milk and water are the preferred diluents

No more than 2 glasses of water should be given to an adult.

- ▶ Neutralising agents should never be given since exothermic heat reaction may compound injury.

* Catharsis and emesis are absolutely contra-indicated.

* Activated charcoal does not absorb alkali.

* Gastric lavage should not be used.

Supportive care involves the following:

- ▶ Withhold oral feedings initially.
- ▶ If endoscopy confirms transmucosal injury start steroids only within the first 48 hours.
- ▶ Carefully evaluate the amount of tissue necrosis before assessing the need for surgical intervention.
- ▶ Patients should be instructed to seek medical attention whenever they develop difficulty in swallowing (dysphagia).

SKIN AND EYE:

- ▶ Injury should be irrigated for 20-30 minutes.

Eye injuries require saline. [Ellenhorn & Barceloux: Medical Toxicology]

For acute or repeated exposures to hypochlorite solutions:

- ▶ Release of small amounts of hypochlorous acid and acid gases from the stomach following ingestion, is usually too low to cause damage but may be irritating to mucous membranes. Buffering with antacid may be helpful if discomfort is evident.
- ▶ Evaluate as potential caustic exposure.
- ▶ Decontaminate skin and eyes with copious saline irrigation. Check exposed eyes for corneal abrasions with fluorescein staining.
- ▶ Emesis or lavage and catharsis may be indicated for mild caustic exposure.
- ▶ Chlorine exposures require evaluation of acid/base and respiratory status.
- ▶ Inhalation of vapours or mists may result in pulmonary oedema.

ELLENHORN and BARCELOUX: Medical Toxicology.

Excellent warning properties force rapid escape of personnel from chlorine vapour thus most inhalations are mild to moderate. If escape is not possible, exposure to high concentrations for a very short time can result in dyspnea, haemoptysis and cyanosis with later complications being tracheobroncho-pneumonitis and pulmonary oedema. Oxygen, intermittent positive pressure breathing apparatus and aerosolised bronchodilators are of therapeutic value where chlorine inhalation has been light to moderate. Severe inhalation should result in hospitalisation and treatment for a respiratory emergency.

Any chlorine inhalation in an individual with compromised pulmonary function (COPD) should be regarded as a severe inhalation and a respiratory emergency. [CCINFO, Dow 1988]

Effects from exposure to chlorine gas include pulmonary oedema which may be delayed. Observation in hospital for 48 hours is recommended

Diagnosed asthmatics and those people suffering from certain types of chronic bronchitis should receive medical approval before being employed in occupations involving chlorine exposure.

If burn is present, treat as any thermal burn, after decontamination.

Depending on the degree of exposure, periodic medical examination is indicated. The symptoms of lung oedema often do not manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation is therefore essential. Immediate administration of an appropriate spray, by a doctor or a person authorised by him/her should be considered.

(ICSC24419/24421

SECTION 5 FIRE-FIGHTING MEASURES

Extinguishing media

- ▶ There is no restriction on the type of extinguisher which may be used.
- ▶ Use extinguishing media suitable for surrounding area.

Special hazards arising from the substrate or mixture

Fire Incompatibility	None known.
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Special protective equipment and precautions for fire-fighters

Fire Fighting	
Fire/Explosion Hazard	<ul style="list-style-type: none"> ▶ Non combustible. ▶ Not considered a significant fire risk, however containers may burn. ▶ May emit corrosive fumes.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	<ul style="list-style-type: none"> ▶ Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material. ▶ Check regularly for spills and leaks. ▶ Clean up all spills immediately. ▶ Avoid breathing vapours and contact with skin and eyes. ▶ Control personal contact with the substance, by using protective equipment. ▶ Contain and absorb spill with sand, earth, inert material or vermiculite. ▶ Wipe up. ▶ Place in a suitable, labelled container for waste disposal.
Major Spills	#

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area. ▶ Avoid contact with moisture.
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	<ul style="list-style-type: none"> ▶ Avoid contact with incompatible materials. ▶ When handling, DO NOT eat, drink or smoke. ▶ Keep containers securely sealed when not in use. ▶ Avoid physical damage to containers. ▶ Always wash hands with soap and water after handling. ▶ Work clothes should be laundered separately. Launder contaminated clothing before re-use. ▶ Use good occupational work practice. ▶ Observe manufacturer's storage and handling recommendations contained within this SDS. ▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
Other information	<ul style="list-style-type: none"> ▶ Store in original containers. ▶ Keep containers securely sealed. ▶ Store in a cool, dry, well-ventilated area. ▶ Store away from incompatible materials and foodstuff containers. ▶ Protect containers against physical damage and check regularly for leaks. ▶ Observe manufacturer's storage and handling recommendations contained within this SDS. ▶ DO NOT store near acids, or oxidising agents ▶ No smoking, naked lights, heat or ignition sources.

Conditions for safe storage, including any incompatibilities

Suitable container	<p>Liquid inorganic hypochlorites shall not be transported in unlined metal drums. Inner packagings shall be fitted with vented closures and plastics drums and carboys shall have vented closures or be performance tested to a minimum of 250 kPa. All non-vented packagings shall be filled so that the ullage is at least 10% at 21-25 deg.C. Vented packagings may be filled to an ullage not less than 5% at 21-25 deg.C, provided that this ullage does not result in leakage from, nor distortion of, the packaging.</p> <ul style="list-style-type: none"> ▶ Lined metal can, lined metal pail/ can. ▶ Plastic pail. ▶ Polyliner drum. ▶ Packing as recommended by manufacturer. ▶ Check all containers are clearly labelled and free from leaks. <p>For low viscosity materials</p> <ul style="list-style-type: none"> ▶ Drums and jerricans must be of the non-removable head type. ▶ Where a can is to be used as an inner package, the can must have a screwed enclosure. <p>For materials with a viscosity of at least 2680 cSt. (23 deg. C) and solids (between 15 C deg. and 40 deg C.):</p> <ul style="list-style-type: none"> ▶ Removable head packaging; ▶ Cans with friction closures and ▶ low pressure tubes and cartridges <p>may be used.</p> <p>-</p> <p>Where combination packages are used, and the inner packages are of glass, porcelain or stoneware, there must be sufficient inert cushioning material in contact with inner and outer packages unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.</p>
Storage incompatibility	<ul style="list-style-type: none"> ▶ Contact with acids produces toxic fumes ▶ Presence of rust (iron oxide) or other metal oxides catalyses decomposition of inorganic hypochlorites. ▶ Contact with water can cause heating and decomposition giving off chlorine and oxygen gases. Solid hypochlorites in contact with water or moisture may generate sufficient heat to ignite combustible materials. Thermal decomposition can be sustained in the absence of oxygen. ▶ Contact with acids produces toxic fumes of chlorine. ▶ Bottles of strong sodium hypochlorite solution (10-14% available chlorine) burst in storage due to failure of the cap designed to vent oxygen slowly during storage. A hot summer may have exacerbated the situation. Vent caps should be checked regularly (using full personal protection) and hypochlorites should not be stored in direct sunlight or at temperatures exceeding 18 deg. C ▶ Anhydrous solid hypochlorite may decompose violently on heating or if subject to friction. ▶ Inorganic hypochlorites reacts violently with many incompatible materials including fuels, oils, wood, paper, etc. which become readily ignitable. Avoid contact with peroxides glycerine, lubricating oil, combustibles, amines, solvents, charcoal, metal oxides and salts, copper , mercaptan, sulfur, organic sulfides, turpentine. ▶ Contact of hypochlorites with nitromethane, alcohols, glycerol, phenol or diethylene glycol monomethyl ether results in ignition. ▶ Ammonia or primary aliphatic or aromatic amines may react with hypochlorites to form N-mono- or di-chloramines which are explosively unstable (but less so than nitrogen trichloride). Contact in drains between effluents containing ammonium salts and hypochlorites and acid lead to the formation of nitrogen trichloride which decomposed explosively. Whilst cleaning a brewery tank, reaction between an acidified ammonium sulfate cleaning preparation and sodium hypochlorite, lead nitrogen chloride formation and violent explosion ▶ Interaction of ethyleneimine (aziridine) with hypochlorites gives an explosive N-chloro compound ▶ Interaction of metal hypochlorites with nitrogenous materials may lead to the formation of nitrogen trichloride with explosive decomposition. ▶ Metal oxides catalyse the oxygen decomposition of the hypochlorite. ▶ Heating with carbon under confinement can result in explosion. Explosive interaction has occurred with carbonised food residues. After an attempt to clean these using bleach, and after heating, sodium chlorate appears to have been formed with consequent violent explosion ▶ Removal of formic acid from industrial waste streams with sodium hypochlorite solutions produced explosion at 55 deg. C. ▶ Explosions following reaction with methanol are attributed to formation of methyl hypochlorite. ▶ When finely divided materials such as sugar, wood dust and paper are contaminated with hypochlorite solution they burn more readily when dry. ▶ Calcium hypochlorite with over 60% "active" chlorine ignites on contact with lubricating oils, damp sulfur, organic thiols or sulfides ▶ Incompatible with sanitising bowl cleaners containing bisulfites. <p>Contact with acids produces toxic fumes of chlorine</p> <ul style="list-style-type: none"> ▶ Avoid contact with copper, aluminium and their alloys.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US OSHA Permissible Exposure Levels (PELs) - Table Z1	sodium metasilicate, anhydrous	Silicates - Mica / Silicates - Soapstone / Silicates- Soapstone / Silicates - Talc / Silicates - Tremolite,	0.1 mg/m3	Not Available	Not Available	See Table Z-3;less than 1% crystalline silica(respirable dust) / See Table Z-3;less than 1% crystalline silica, total dust / See Table Z-3;less than 1% crystalline silica, respirable dust / less than 1% crystalline silica;see 29 CFR 1910.1001;See Table Z-3;(containing asbestos); use asbestos limit; (STEL (Excursion limit)(as averaged over a sampling

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		asbestiform				period of 30 minutes) / less than 1% crystalline silica; See Table Z-3, (containing no asbestos), respirable dust / (as quartz), respirable dust; less than 1% crystalline silica; see 1910.1001; (STEL (Excursion limit) (as averaged over a sampling period of 30 minutes))
US OSHA Permissible Exposure Levels (PELs) - Table Z3	sodium metasilicate, anhydrous	Silicates: Mica / Silicates: Soapstone / Silicates: Talc / Silicates: Tremolite, asbestiforms	0.1 f/cc / 20 mppcf	Not Available	Not Available	(less than 1% crystalline silica) / (containing asbestos) Use asbestos limit; (less than 1% crystalline silica) / (see 29 CFR 1910.1001); (less than 1% crystalline silica)

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
sodium hypochlorite	Sodium hypochlorite pentahydrate	13 mg/m3	140 mg/m3	290 mg/m3
sodium hypochlorite	Sodium hypochlorite	2 mg/m3	54 mg/m3	630 mg/m3
sodium metasilicate, anhydrous	Sodium metasilicate pentahydrate	6.6 mg/m3	73 mg/m3	440 mg/m3
sodium metasilicate, anhydrous	Sodium silicate; (Sodium metasilicate)	3.8 mg/m3	42 mg/m3	250 mg/m3

Ingredient	Original IDLH	Revised IDLH
sodium hypochlorite	Not Available	Not Available
sodium metasilicate, anhydrous	Not Available	Not Available

Exposure controls

Appropriate engineering controls	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.</p> <p>Employers may need to use multiple types of controls to prevent employee overexposure.</p> <p>Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection.</p> <p>An approved self contained breathing apparatus (SCBA) may be required in some situations.</p> <p>Provide adequate ventilation in warehouse or closed storage area. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.</p>																			
	<table border="1"> <thead> <tr> <th>Type of Contaminant:</th> <th>Air Speed:</th> </tr> </thead> <tbody> <tr> <td>solvent, vapours, degreasing etc., evaporating from tank (in still air).</td> <td>0.25-0.5 m/s (50-100 f/min.)</td> </tr> <tr> <td>aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)</td> <td>0.5-1 m/s (100-200 f/min.)</td> </tr> <tr> <td>direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)</td> <td>1-2.5 m/s (200-500 f/min.)</td> </tr> <tr> <td>grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).</td> <td>2.5-10 m/s (500-2000 f/min.)</td> </tr> </tbody> </table> <p>Within each range the appropriate value depends on:</p> <table border="1"> <thead> <tr> <th>Lower end of the range</th> <th>Upper end of the range</th> </tr> </thead> <tbody> <tr> <td>1: Room air currents minimal or favourable to capture</td> <td>1: Disturbing room air currents</td> </tr> <tr> <td>2: Contaminants of low toxicity or of nuisance value only.</td> <td>2: Contaminants of high toxicity</td> </tr> <tr> <td>3: Intermittent, low production.</td> <td>3: High production, heavy use</td> </tr> <tr> <td>4: Large hood or large air mass in motion</td> <td>4: Small hood-local control only</td> </tr> </tbody> </table> <p>Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.</p>	Type of Contaminant:	Air Speed:	solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25-0.5 m/s (50-100 f/min.)	aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)	direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)	grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10 m/s (500-2000 f/min.)	Lower end of the range	Upper end of the range	1: Room air currents minimal or favourable to capture	1: Disturbing room air currents	2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity	3: Intermittent, low production.	3: High production, heavy use	4: Large hood or large air mass in motion
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Personal protection																				
Eye and face protection	<ul style="list-style-type: none"> Chemical goggles. Full face shield may be required for supplementary but never for primary protection of eyes. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent] 																			

Skin protection	See Hand protection below
Hands/feet protection	<ul style="list-style-type: none"> ▶ Wear chemical protective gloves, e.g. PVC. ▶ Wear safety footwear or safety gumboots, e.g. Rubber ▶ When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.
Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"> ▶ Overalls. ▶ PVC Apron. ▶ PVC protective suit may be required if exposure severe. ▶ Eyewash unit. ▶ Ensure there is ready access to a safety shower.
Thermal hazards	Not Available

Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:001, ANSI Z88 or national equivalent)

- ▶ Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- ▶ The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- ▶ Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
- ▶ Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- ▶ Use approved positive flow mask if significant quantities of dust becomes airborne.
- ▶ Try to avoid creating dust conditions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Text		
Physical state	liquid	Relative density (Water = 1)	Not Available
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	12	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	93.3	Molecular weight (g/mol)	Not Available
Flash point (°C)	Not Available	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Available	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water (g/L)	Immiscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	1.1-1.2	VOC g/L	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> ▶ Unstable in the presence of incompatible materials. ▶ Product is considered stable. ▶ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhaling corrosive bases may irritate the respiratory tract. Symptoms include cough, choking, pain and damage to the mucous membrane.
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	The material has NOT been classified by EC Directives or other classification systems as "harmful by inhalation". This is because of the lack of corroborating animal or human evidence.
Ingestion	The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion. The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. Swallowing hypochlorites may cause burning in the mouth and throat, abdominal cramps, nausea, vomiting, diarrhea, pain, inflammation of the mouth and stomach, low blood pressure, shock, confusion and delirium. Severe poisonings may lead to convulsion, coma and death. Hypochlorites irritate the mouth, throat and stomach; the hypochlorous acid liberated in the stomach can cause tearing of the stomach wall, with bleeding, and can be fatal.
Skin Contact	The material can produce chemical burns following direct contact with the skin. Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions. Contact may cause severe itchiness, skin lesions and mild eczema. Exudation and sloughing may occur. Two patients were reported with chronic allergic dermatitis of the hand, related to sensitization to sodium hypochlorite as the active component of laundry bleach. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
Eye	The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating. If applied to the eyes, this material causes severe eye damage. Hypochlorite in pool water at concentrations of 1 ppm chlorine or less is non irritating to eyes if the pH is higher than 7.2 (slightly alkaline); At lower pH sensation of stinging, smarting of eyes with transient reddening may occur but generally no injury. Eye contact with a 5% hypochlorite solution may produce a temporary burning discomfort and slight irritation of the epithelium of the cornea, but without injury.
Chronic	Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue. Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Reduced breathing capacity may result from chronic low level exposure to chlorine gas. Chronic poisoning may result in cough, severe chest pains, sore throat and blood in the phlegm. Moderate to severe exposures over 3 years produced decreased lung capacity in a number of workers. Delayed effects can include shortness of breath, violent headaches, lung swelling and pneumonia. Chloralkali workers exposed over many years showed fatigue, and a modest increase in anxiety and dizziness. There may be an increase in white blood cell and decrease in red blood cell count. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.

Storm System Mold & Mildew Stain Remover 40210	TOXICITY	IRRITATION
	Not Available	Not Available
sodium hypochlorite	TOXICITY	IRRITATION
	Oral (rat) LD50: >237 mg/kg ^[1]	Eye (rabbit): 10 mg - moderate
		Eye (rabbit): 100 mg - moderate
		Skin (rabbit): 500 mg/24h-moderate
sodium metasilicate, anhydrous	TOXICITY	IRRITATION
	dermal (rat) LD50: >5000 mg/kg ^[1]	Skin (human): 250 mg/24h SEVERE
	Oral (rat) LD50: >1000 mg/kg ^[2]	Skin (rabbit): 250 mg/24h SEVERE

Legend: 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

SODIUM HYPOCHLORITE	Hypochlorite salts are classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing. The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. Hypochlorite salts are extremely corrosive and can cause severe damage to the eyes and skin. A number of skin cancers have been observed in mice, when applied to their skin. as sodium hypochlorite pentahydrate
SODIUM METASILICATE, ANHYDROUS	The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration.
SODIUM HYPOCHLORITE & SODIUM METASILICATE, ANHYDROUS	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant.

Acute Toxicity	☐	Carcinogenicity	☐
Skin Irritation/Corrosion	✓	Reproductivity	☐
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	☐
Respiratory or Skin sensitisation	☐	STOT - Repeated Exposure	☐
Mutagenicity	☐	Aspiration Hazard	☐

Legend: ✗ – Data available but does not fill the criteria for classification
 ✓ – Data available to make classification
 ☐ – Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

Storm System Mold & Mildew Stain Remover 40210	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
		Not Applicable	Not Applicable	Not Applicable	Not Applicable

sodium hypochlorite	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	0.032mg/L	4
	EC50	48	Crustacea	0.026mg/L	2
	EC50	72	Algae or other aquatic plants	0.0183mg/L	2
	EC50	0.08	Crustacea	0.002mg/L	4
	NOEC	72	Algae or other aquatic plants	0.0054mg/L	2

sodium metasilicate, anhydrous	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	180mg/L	1
	EC50	96	Crustacea	160mg/L	1

Legend: Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

For Chlorine:

Atmospheric Fate: Atmospheric chlorine forms hydrochloric or hypochlorous acid in the atmosphere, either through reactions with hydroxyl radicals or, other trace species, such as hydrocarbons. These acids are believed to be removed from the atmosphere primarily through precipitation washout/dry deposition. When chlorine, hypochlorous acid or hydrogen chloride mixes in the atmosphere with water vapor, dilute solutions of strong mineral acids form which fall to earth as acid rain, snow, fog, or acidified dry particles.

Terrestrial Fate: Soil - Chlorine may react with soil components to form chlorides; depending on their water solubility, these chlorides are easily washed out from the soil. Plants - Vegetation acts as an important artificial reservoir, (sink), for chlorine air pollution. Elevated levels of chlorine can cause plant injury; however chlorine tends to be rapidly converted to other less toxic forms. Chlorine is toxic to plant growth, however; it is also essential to plant growth - crops need around 2 kg or more of chlorine per acre. Acute toxicity is characterized by defoliation, with no leaf symptoms and, in higher plant forms, by spotting of the leaves.

Aquatic Fate: Water chlorination initially introduces chlorine into the water as chlorine gas, hypochlorite ion, or its salt. Chlorine in aqueous systems evaporates, or quickly decays, to residual forms, such as hypochlorous acid, chloramine and/or chlorinated organics. Chlorine, added to drinking water as chlorine gas, or hypochlorite salts, can inactivate bacteria in 20 minutes at very low concentrations, (pH range 7.0 to 8.5). Chlorine disinfectants in wastewater react with organic substances, giving rise to organic chlorine compounds, which are toxic to aquatic organisms and are persistent. In fresh, and wastewaters, (pH>6), complete evaporation occurs, with the formation of hypochlorous acid and chloride ions. Chlorines ultimate aqueous fate is transformation to chloride. Evaporation of molecular chlorine, (Cl₂), from water to the atmosphere may be significant at low pH values and high concentrations, but, is insignificant at neutral pH and low concentrations.

Ecotoxicity: The reactions of chlorine in water produce a number of by-products, many of which may be toxic to genes or tumor promoting. The substance is not expected to accumulate or concentrate in aquatic organisms. Chlorine has high acute toxicity to aquatic organisms. The substance is highly toxic to Daphnia magna and Daphnia pulex water fleas, moderately toxic to Nitocra spinipes snails, and highly toxic to brook/rainbow trout, and green sunfish. Benign, oral skin tumors have been observed in fish exposed to chlorinated water supplies. Data from experimental studies indicate that injury to animals occurs only in the presence of high concentrations of chlorine, either in drinking water or the ambient atmosphere.

In freshwater, the hypochlorites break down rapidly into non-toxic compounds when exposed to sunlight. While chlorine levels decline rapidly in seawater, hypobromite (which is acutely toxic to aquatic organisms) is formed. Sodium and calcium hypochlorite exhibit low levels of toxicity to birds, but they are highly toxic to freshwater fish and invertebrates. As hypochlorite is a highly reactive chemical, it undergoes a series of reactions, including oxidation of inorganic and organic species, and chlorination, forming organohalogen by-products. With a half-life of around 0.6 minutes, hypochlorite is rapidly broken down during use, in the sewer, and during sewage treatment. Due to its reaction with ammonia, concentration levels are predicted to drop substantially by the time it reaches the end of the sewer, and while chloramine will subsequently be increased, both these levels are significantly below the lowest acute EC50s determined for sodium hypochlorite and monochloramine. The organohalogen produced are low and are not expected to have an adverse effect on the environment. The levels of organohalogen in sewage effluent arising from bleach use is comparable with, and sometimes less, than drinking water that is disinfected by chlorination. After secondary sewage treatment, the levels entering receiving waters will be similar to background levels present in rivers. The AOX present is not believed to pose a risk of bioaccumulation to aquatic organisms.

Prevent, by any means available, spillage from entering drains or water courses.

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients

Mobility in soil

Ingredient	Mobility
	No Data available for all ingredients

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods


Product / Packaging disposal	
	<ul style="list-style-type: none"> ▶ Containers may still present a chemical hazard/ danger when empty. ▶ Return to supplier for reuse/ recycling if possible.

Continued...

Otherwise:

- ▶ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
- ▶ Where possible retain label warnings and SDS and observe all notices pertaining to the product.
- ▶ Recycle wherever possible.
- ▶ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- ▶ Treat and neutralise at an approved treatment plant.
- ▶ Treatment should involve: Neutralisation with suitable dilute acid followed by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material).
- ▶ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

SECTION 14 TRANSPORT INFORMATION**Labels Required**

	
Marine Pollutant	NO

Land transport (DOT)

UN number	3266	
UN proper shipping name	Corrosive liquid, basic, inorganic, n.o.s.	
Transport hazard class(es)	Class	8
	Subrisk	Not Applicable
Packing group	III	
Environmental hazard	Not Applicable	
Special precautions for user	Hazard Label	8
	Special provisions	IB3, T7, TP1, TP28

Air transport (ICAO-IATA / DGR)

UN number	3266	
UN proper shipping name	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.	
Transport hazard class(es)	ICAO/IATA Class	8
	ICAO / IATA Subrisk	Not Applicable
	ERG Code	8L
Packing group	III	
Environmental hazard	Not Applicable	
Special precautions for user	Special provisions	A3A803
	Cargo Only Packing Instructions	856
	Cargo Only Maximum Qty / Pack	60 L
	Passenger and Cargo Packing Instructions	852
	Passenger and Cargo Maximum Qty / Pack	5 L
	Passenger and Cargo Limited Quantity Packing Instructions	Y841
	Passenger and Cargo Limited Maximum Qty / Pack	1 L

Sea transport (IMDG-Code / GGVSee)

UN number	3266	
UN proper shipping name	Corrosive liquid, basic, inorganic, n.o.s. *	
Transport hazard class(es)	IMDG Class	8
	IMDG Subrisk	Not Applicable
Packing group	III	
Environmental hazard	Not Applicable	
Special precautions for user	EMS Number	F-A, S-B

Special provisions	223 274
Limited Quantities	5 L

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

SECTION 15 REGULATORY INFORMATION**Safety, health and environmental regulations / legislation specific for the substance or mixture****SODIUM HYPOCHLORITE(7681-52-9) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
 US - Massachusetts - Right To Know Listed Chemicals
 US - Pennsylvania - Hazardous Substance List

US AIHA Workplace Environmental Exposure Levels (WEELs)
 US CWA (Clean Water Act) - List of Hazardous Substances
 US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

SODIUM METASILICATE, ANHYDROUS(6834-92-0) IS FOUND ON THE FOLLOWING REGULATORY LISTS

US - Idaho - Limits for Air Contaminants
 US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants
 US - Washington Permissible exposure limits of air contaminants

US OSHA Permissible Exposure Levels (PELs) - Table Z1
 US OSHA Permissible Exposure Levels (PELs) - Table Z3
 US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

Federal Regulations**Superfund Amendments and Reauthorization Act of 1986 (SARA)****SECTION 311/312 HAZARD CATEGORIES**

Immediate (acute) health hazard	Yes
Delayed (chronic) health hazard	No
Fire hazard	No
Pressure hazard	No
Reactivity hazard	No

US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)

Name	Reportable Quantity in Pounds (lb)	Reportable Quantity in kg
Sodium hypochlorite	100	45.4

State Regulations**US. CALIFORNIA PROPOSITION 65**

None Reported

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (sodium metasilicate, anhydrous; sodium hypochlorite)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	Y
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y
Legend:	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)

SECTION 16 OTHER INFORMATION**CONTACT POINT**

PLEASE NOTE THAT TITANIUM DIOXIDE IS NOT PRESENT IN CLEAR OR NEUTRAL BASES

Other information**Ingredients with multiple cas numbers**

Name	CAS No
sodium hypochlorite	7681-52-9, 10022-70-5

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

Continued...

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit.
IDLH: Immediately Dangerous to Life or Health Concentrations
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index

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