

SAFETY DATA SHEET

SEPTONE BLEACH CONCENTRATE

Infosafe No.: K1H3I
ISSUED Date : 22/04/2014
ISSUED by: ITW AAMTECH

1. IDENTIFICATION

GHS Product Identifier

SEPTONE BLEACH CONCENTRATE

Product Code

HLBC5, HLBC20, HLBC200

Company Name

ITW AAMTECH

Address

100 Hassall Street Wetherill Park
NSW 2164 Australia

Telephone/Fax Number

Tel: +61 2 9828 0900

Fax: +61 2 9725 4698

Emergency phone number

1800 039 008 (24 hours) | +61 3 9573 3112 (24 hours)

Recommended use of the chemical and restrictions on use

Relevant identified uses: Concentrated sanitising and bleaching agent.

2. HAZARD IDENTIFICATION

GHS classification of the substance/mixture

Corrosive to Metals: Category 1

Eye Damage/Irritation: Category 1

Hazardous to the Aquatic Environment - Acute Hazard: Category 2

Skin Corrosion/Irritation: Category 1B

Signal Word (s)

DANGER

Hazard Statement (s)

AUH031 Contact with acids liberates toxic gas.

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

H401 Toxic to aquatic life.

Pictogram (s)

Corrosion



Precautionary statement – Prevention

P234 Keep only in original container.

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

P273 Avoid release to the environment.

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

Precautionary statement – 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.

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

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

P310 Immediately call a POISON CENTER or doctor/physician.

P321 Specific treatment (see advice on this label).

P363 Wash contaminated clothing before reuse.

P390 Absorb spillage to prevent material damage.

Precautionary statement – Storage

P405 Store locked up.

Precautionary statement – Disposal

P501 Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration

Other Information

Legend: 1. Classified by; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Name	CAS	Proportion
Sodium hypochlorite	7681-52-9	10-20 %w
Sodium Hydroxide	1310-73-2	0-1 %w
Ingredients determined not to be hazardous	Not Available	10-30 %w
Water	7732-18-5*	>60 %w

Other Information

Substances:

See section below for composition of Mixtures

(10% available chlorine)

4. FIRST-AID MEASURES

Inhalation

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.

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.

This must definitely be left to a doctor or person authorised by him/her.

(ICSC13719)

Ingestion

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.

Skin

If skin contact occurs:

Immediately remove all contaminated clothing, including footwear.

Flush skin and hair with running water (and soap if available).

Seek medical attention in event of irritation.

Eye contact

If this product comes in contact with the eyes:

Wash out immediately with fresh 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.

Seek medical attention without delay; if pain persists or recurs seek medical attention.

Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Indication of immediate medical attention and special treatment needed if necessary

Treat symptomatically.

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.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Water spray or fog.

Foam.

Dry chemical powder.

BCF (where regulations permit).

Carbon dioxide.

Specific Methods

Alert Fire Brigade and tell them location and nature of hazard.

Wear full body protective clothing with breathing apparatus.

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

Use fire fighting procedures suitable for surrounding area.

Do not approach containers suspected to be hot.

Cool fire exposed containers with water spray from a protected location.

If safe to do so, remove containers from path of fire.

Equipment should be thoroughly decontaminated after use.

Specific Hazards Arising From The Chemical

Fire Incompatibility: None known.

Fire/Explosion Hazard:

Non combustible.

Not considered to be a significant fire risk.

Expansion or decomposition on heating may lead to violent rupture of containers.

Decomposes on heating and may produce toxic/ irritating fumes.

May emit acrid smoke.

Decomposition may produce toxic fumes of:
, hydrogen chloride
May emit corrosive fumes.

Hazchem Code

2X

Decomposition Temperature

Not Available

6. ACCIDENTAL RELEASE MEASURES

Clean-up Methods - Small Spillages

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.

Clean-up Methods - Large Spillages

Clear area of personnel and move upwind.

Alert Fire Brigade and tell them location and nature of hazard.

Wear full body protective clothing with breathing apparatus.

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

Consider evacuation (or protect in place).

Stop leak if safe to do so.

Contain spill with sand, earth or vermiculite.

Collect recoverable product into labelled containers for recycling.

Neutralise/decontaminate residue (see Section 13 for specific agent).

Collect solid residues and seal in labelled drums for disposal.

Wash area and prevent runoff into drains.

After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.

If contamination of drains or waterways occurs, advise emergency services.

Other Information

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

7. HANDLING AND STORAGE

Precautions for Safe Handling

Safe handling:

Limit all unnecessary personal contact.

Wear protective clothing when risk of exposure occurs.

Use in a well-ventilated area.

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.

Use good occupational work practice.

Observe manufacturer's storage and handling recommendations contained within this MSDS.

Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

DO NOT allow clothing wet with material to stay in contact with skin

Other information:

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 MSDS.

Protect from light.

Conditions for safe storage, including any incompatibilities

Suitable container:

Liquid inorganic hypochlorites shall not to 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.

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.

Storage incompatibility:

Contact with acids produces toxic fumes

Contact with acids produces toxic fumes of chlorine

Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous

Incompatible with amines, ammonium salts, aziridine, methanol and phenylacetonitrile.

Other Information

PACKAGE MATERIAL INCOMPATIBILITIES

Not Available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limit values

INGREDIENT DATA

Source: Australia Exposure Standards

Ingredient: sodium hypochlorite

Material name: Chlorine

TWA: Not Available

STEL: Not Available

Peak: 3 (mg/m3) / 1 (ppm)

Notes: Not Available

Source: Australia Exposure Standards
Ingredient: sodium hydroxide
Material name: Sodium hydroxide
TWA: Not Available
STEL: Not Available
Peak: 2 (mg/m³)
Notes: Not Available

EMERGENCY LIMITS

Ingredient: sodium hypochlorite
TEEL-0: 0.6 / 0.5 / 0.075(ppm)
TEEL-1: 0.2 / 0.5 / 2(ppm)
TEEL-2: 50 / 2 / 1.5(ppm)
TEEL-3: 500 / 20(ppm)

Ingredient: sodium hydroxide
TEEL-0: 0.5(ppm)
TEEL-1: 0.5(ppm)
TEEL-2: 5(ppm)
TEEL-3: 50(ppm)

Ingredient: water
TEEL-0: 500(ppm)
TEEL-1: 500(ppm)
TEEL-2: 500(ppm)
TEEL-3: 500(ppm)

Ingredient: sodium hypochlorite
Original IDLH: 30(ppm)
Revised IDLH: 10(ppm)

Ingredient: sodium hydroxide
Original IDLH: 250(mgm³)
Revised IDLH: 10(mgm³)

Appropriate Engineering Controls

Use in a well-ventilated area
General exhaust is adequate under normal operating conditions.

Respiratory Protection

Type B-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.

Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor: up to 10 x ES
Half-Face Respirator: B-AUS P3
Full-Face Respirator: -
Powered Air Respirator: B-PAPR-AUS / Class 1 P3

Required Minimum Protection Factor: up to 50 x ES
Half-Face Respirator: -
Full-Face Respirator: B-AUS / Class 1 P3
Powered Air Respirator: -

Required Minimum Protection Factor: up to 100 x ES
Half-Face Respirator: -
Full-Face Respirator: B-2 P3

Powered Air Respirator: B-PAPR-2 P3 ^

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gases, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

Eye Protection

- 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]

Hand Protection

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.

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the computer-generated selection:

Septone Bleach Concentrate

Material: NEOPRENE

CPI: A

Material: NATURAL RUBBER

CPI: C

Material: sodium

CPI: hydroxide

Material: sodium

CPI: hypochlorite

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Thermal Hazards

Not Available

Body Protection

Other protection:

Overalls.

PVC Apron.

PVC protective suit may be required if exposure severe.

Eyewash unit.

Ensure there is ready access to a safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form

Liquid

Appearance

Clear pale yellow highly alkaline mobile liquid with distinctive hypochlorite odour; mixes with water. Contains a minimum of 100 g/L (10.0% w/v) available chlorine as Sodium Hypochlorite, when packed.

Odour

Not Available

Decomposition Temperature

Not Available

Solubility in Water

Miscible

pH

12.5-13.5 (as supplied)

Not Available as a solution(1%)

Vapour Pressure

Not Available

Vapour Density (Air=1)

Not Available

Evaporation Rate

As for water

Odour Threshold

Not Available

Viscosity

Not Available

Volatile Component

80 w/w %vol

Partition Coefficient: n-octanol/water

Not Available

Surface tension

Not Available

Flash Point

Not Applicable

Flammability

Not Available

Auto-Ignition Temperature

Not Applicable

Explosion Limit - Upper

Not Applicable

Explosion Limit - Lower

Not Applicable

Explosion Properties

Not Available

Molecular Weight

Not Applicable

Oxidising Properties

Not Available

Initial boiling point and boiling range

100 °C

Relative density

1.17-1.19 @ 25 deg C (Water = 1)

Melting/Freezing Point

Not Available

Other Information

Taste: Not Available

Gas group: Not Available

VOC g/L: Not Available

10. STABILITY AND REACTIVITY

Reactivity

See section 7

Chemical Stability

Presence of incompatible materials.

Product is considered stable.

Hazardous polymerisation will not occur.

Conditions to Avoid

See section 7

Incompatible materials

See section 7

Hazardous Decomposition Products

See section 5

Possibility of hazardous reactions

See section 7

11. TOXICOLOGICAL INFORMATION

Toxicology Information

Septone Bleach Concentrate

TOXICITY: Not Available

IRRITATION: Not Available

Sodium hypochlorite

TOXICITY:

Oral (mouse) LD50: 5800 mg/kg

Oral (rat) LD50: 8910 mg/kg

Not Available

IRRITATION:

Eye (rabbit): 10 mg - moderate

Eye (rabbit): 100 mg - moderate

Skin (rabbit): 500 mg/24h-moderate

Not Available

Sodium hydroxide

TOXICITY:

Not Available

IRRITATION:

Eye (rabbit): 0.05 mg/24h SEVERE

Eye (rabbit): 1 mg/24h SEVERE

Eye (rabbit): 1 mg/30s rinsed-SEVERE

Skin (rabbit): 500 mg/24h SEVERE

Not Available

Water

TOXICITY: Not Available

IRRITATION: Not Available

Not available. Refer to individual constituents.

SODIUM HYPOCHLORITE

Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance.

Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.

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.

Most of the data for toxicity of hypochlorites by the oral route are from studies performed with sodium hypochlorite or chlorine gas. In biological systems, characterised by pH values in the range of 6-8, the most abundant active chemical species is (hypochlorous acid) HOCl, in equilibrium with hypochlorite anion (ClO⁻). Such available chlorine is readily absorbed via the oral route and distributed into plasma, bone marrow, testis, skin, kidney and lung. Only about 50% is excreted mainly with the urine followed by excretion with faeces. HOCl is not enzymatically metabolised.

Acute toxicity: The acute oral LD50 of calcium hypochlorite was 790 mg/kg in male rats. Inhalation exposures to concentrations of greater than about 500 ppm (10 min or more) may be fatal for rats. Based on human experience and control studies in volunteers, it can be concluded that the acute NOAEL for humans was considered to be 0.5 ppm (1.5 mg/m³).

Hypochlorite salts are extremely corrosive and can cause severe damage to the eyes and skin. Calcium hypochlorite is reported to be corrosive to the skin and has severe effects that can be expected from exposure to the eyes, which is ascribable to the alkalinity of calcium cation (pH=12.0 at 1 % as free available chlorine (FAC^{*})). Moderate to severe lesions in the respiratory tract were reported after exposure to chlorine that may emerge in case of accidental

misuse of hypochlorite salts. Exposure to chlorine at 9 ppm (27 mg/m³) for 6 h/day during 1, 3 and 5 days was reported to cause epithelial necrosis, cellular exfoliation, erosion, ulceration and squamous metaplasia in the nasal passage of rats and mice. For either of Ca or Na salt, reliable skin sensitisation studies are not available and case reports are available but no reliable case report could be found showing a sensitisation potential in humans.

Repeat dose toxicity: In a 13-week study, male and female F-344 rats (10/sex/group) received sodium hypochlorite (NaClO) in drinking water at level of 0.025, 0.05, 0.1, 0.2, or 0.4 %. A weight gain was significantly decreased in male rats at 0.2 and 0.4 % and in females at 0.4 %. These effects were dose related and obviously correlated with reduced water consumption. No histopathological changes attributable to the treatment were found. But an increase of AAT in the blood gave evidence of the adverse effects on the liver. Based on significant body-weight reduction at the top dose, a subchronic NOAEL of 59.5 mg/kg bw/day as free available chlorine (FAC^{*}) (at 0.1% NaClO level in the drinking water) can be calculated for male rats.

For female rats a subchronic NOAEL of 215.7 mg/kg bw/day as FAC (at 0.2 % NaClO level in the drinking water) can be calculated. A NOAEL of 950 ppm available chlorine (59.5 mg/kg bw/day) can be derived from a 13-week rat study with sodium hypochlorite in drinking water.

In a life-time guideline NTP-study, 70 male and female F344 rats and B6C3F1 mice were administered chlorine via drinking water at dose levels of 0, 70, 140 and 275 mg (equivalent to FAC)/L in buffered water. These concentrations were equivalent to 0, 4.8, 7.5 and 13.9 mg/kg bw/day for male rats and 0, 3.8, 6.9 and 13.2 mg/kg

bw/day for female rats. Mean body weights of male and female rats were similar among treated and control groups at both 14-week and 66-week interim evaluations. Those of male mice were significantly lower at week 66. Dose-related decrease in water consumption was observed throughout the study in both species and sexes. Food

consumption was comparable among chlorine-treated and control groups. There were no clinical findings, alterations in haematological parameters and biologically significant differences in relative organ weights attributable to the treatment at 14/15-week and 66-week interim evaluations. Survival rate in chlorine-treated groups of rats and mice

were similar to those of the controls after two groups. There was no evidence for non-neoplastic lesions to be associated with the consumption of chlorinated drinking water [NTP, 1992]. Based on these findings, a NOAEL (chronic) can be calculated to be approximately 14 mg available chlorine /kg bw/day for rats and 22.5 mg available

chlorine /kg bw/day for mice.

Reproductive toxicity: No reproductive toxic effects were shown up to 5 mg/kg (highest dose tested) of sodium salt (equivalent to 4.8 mg/kg of calcium salt) in a one generation oral study in rats. No evidence of adverse developmental effects were reported in animals.

Moreover, epidemiological studies in humans did not show any evidence of toxic effects on reproduction and development.

Genotoxicity: There are data from in vitro studies to suggest that solutions of chlorine/hypochlorite have some mutagenic potential, but it can be concluded that they are not mutagenic in vivo.

No carcinogenicity was observed in mice or rats exposed by inhalation to chlorine and orally to sodium hypochlorite, except some equivocal results were reported for female rats by oral route. For human carcinogenicity, no causal relationship between hypochlorite exposure and tumour incidence was observed. The observation is applicable to calcium hypochlorite.

A number of fibrosarcomas and squamous cell carcinomas were observed in mice treated dermally with repeated subcarcinogenic doses of 4-nitroquinoline-1-oxide, followed by dermal treatment with sodium hypochlorite.

as sodium hypochlorite pentahydrate

SODIUM HYDROXIDE

Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance.

Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.

The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

The material may produce severe skin irritation after prolonged or repeated exposure, and may produce a contact dermatitis (nonallergic).

This form of dermatitis is often characterised by skin redness (erythema) thickening of the epidermis.

Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.

Prolonged contact is unlikely, given the severity of response, but repeated exposures may produce severe ulceration.

WATER

No significant acute toxicological data identified in literature search.

Acute Toxicity: Data Not Available to make classification

CMR STATUS

Not Applicable

Ingestion

The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion.

Ingestion of hypochlorites may cause burning in the mouth and throat, abdominal cramps, nausea, vomiting, diarrhoea, pain and inflammation of the mouth and stomach, fall of blood pressure, shock, confusion, and delirium. Severe poisonings may lead to convulsion, coma and death.

Ingestion irritates the mouth, throat, and stomach. The hypochlorous acid liberated in the stomach can cause wall perforation, toxemia, haemorrhage and death.

Necrosis and haemorrhage of the upper digestive tract, oedema and pulmonary emphysema were found on autopsy after suicidal ingestion, and methaemoglobinaemia was also reported in another fatal case

Inhalation

Chlorine vapour is extremely irritating to the upper respiratory tract and lungs

Symptoms of exposure to chlorine include coughing, choking, breathing difficulty, chest pain, headache, vomiting, pulmonary oedema. Inhalation may cause lung congestion, bronchitis and loss of consciousness. Effects may be delayed. Delayed effects of exposure to chlorine vapour can include shortness of breath, violent headaches, pulmonary oedema and pneumonia.

Earlier reports suggested that concentrations around 5 ppm chlorine caused respiratory complaints, corrosion of the teeth, inflammation of the mucous membranes of the nose and increased susceptibility to tuberculosis in chronically-exposed workers. Recent studies have not confirmed these findings. Concentrations too low to effect the lower respiratory tract may however irritate

the eyes, nose and throat.

Amongst 29 volunteers exposed at 0.5, 1 or 2 ppm chlorine for 4 to 8 hours the following responses were recorded: itching or burning of the nose, itching or burning of the throat, production of tears, urge to cough, runny nose, nausea, headache, general discomfort, dizziness, drowsiness and shortness of breath

Skin

The material can produce chemical burns following direct contact with the skin.

Skin contact will result in rapid drying, bleaching, leading to chemical burns on prolonged contact

Open cuts, abraded or irritated skin should not be exposed to this material

Eye

The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating.

Skin corrosion/irritation

Data available to make classification

Serious eye damage/irritation

Data available to make classification

Mutagenicity

Data Not Available to make classification

Respiratory sensitisation

Data Not Available to make classification

Skin Sensitisation

Data Not Available to make classification

Carcinogenicity

Data Not Available to make classification

Reproductive Toxicity

Data Not Available to make classification

STOT-single exposure

Data Not Available to make classification

STOT-repeated exposure

Data Not Available to make classification

Aspiration Hazard

Data Not Available to make classification

Chronic Effects

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. Gastrointestinal disturbances may also occur. Chronic exposures may result in dermatitis and/or conjunctivitis.

There exists limited evidence that shows that skin contact with the material is capable either of inducing a sensitisation reaction in a significant number of individuals, and/or of producing positive response in experimental animals.

Reduced respiratory capacity may result from chronic low level exposure to chlorine gas. Chronic poisoning may result in coughing, severe chest pains, sore throat and haemoptysis (bloody sputum). 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, pulmonary oedema and pneumonia.

Amongst chloralkali workers exposed to mean concentrations of 0.15 ppm for an average of 10.9 years a generalised pattern of fatigue (exposures of 0.5 ppm and above) and a modest increased incidence of anxiety and dizziness were recorded. Leukocytosis and a lower haematocrit showed some relation to exposure.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic 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: Not Available

Persistence: Water/Soil: Not Available

Persistence: Air: Not Available

Mobility

Ingredient: Not Available

Bioaccumulation: Not Available

Bioaccumulative Potential

Ingredient: Not Available

Mobility: Not Available

13. DISPOSAL CONSIDERATIONS

Disposal considerations

Product / Packaging disposal:

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 followed by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or Incineration in a licenced apparatus (after admixture with suitable combustible material)

Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

14. TRANSPORT INFORMATION

U.N. Number

1791

UN proper shipping name

HYPOCHLORITE SOLUTION

Transport hazard class(es)

8

Packing Group

III

Hazchem Code

2X

IERG Number

37

Other Information

Labels Required:

Marine Pollutant: NO

HAZCHEM: 2X

Land transport (ADG)

UN number: 1791

Packing group: III

UN proper shipping name: HYPOCHLORITE SOLUTION

Environmental hazard: No relevant data

Transport hazard class(es):

Class: 8

Special precautions for user:

Special provisions: 223

limited quantity: 5 L

Air transport (ICAO-IATA / DGR)

UN number: 1791

Packing group: III

UN proper shipping name: Hypochlorite solution †

Environmental hazard: No relevant data

Transport hazard class(es):

ICAO/IATA Class: 8

ERG Code: 8L
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: 1791
Packing group: III
UN proper shipping name: HYPOCHLORITE SOLUTION
Environmental hazard: No relevant data
Transport hazard class(es):
IMDG Class: 8
Special precautions for user:
EMS Number: F-A,S-B
Special provisions: 223
Limited Quantities: 5 L

15. REGULATORY INFORMATION

Regulatory information

Sodium hypochlorite(7681-52-9) is found on the following regulatory lists

"Australia Inventory of Chemical Substances (AICS)", "Australia Hazardous Substances Information System - Consolidated Lists", "International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index", "OECD Existing Chemicals Database", "Australia FAISD Handbook - First Aid Instructions, Warning Statements, and General Safety Precautions", "Australia - New South Wales -Work Health and Safety Regulation 2011 - Hazardous chemicals", "OECD List of High Production Volume (HPV) Chemicals", "Australia High Volume Industrial Chemical List (HVICL)", "International Council of Chemical Associations (ICCA) - High Production Volume List", "Fisher Transport Information", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "IMO IBC Code Chapter 17: Summary of minimum requirements", "International Air Transport Association (IATA) Dangerous Goods Regulations", "International Maritime Dangerous Goods Requirements (IMDG Code)", "Australia Dangerous Goods Code (ADG Code) - List of Emergency Action Codes", "Belgium Federal Public Service Mobility and Transport, Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (Dutch)", "Australia Dangerous Goods Code (ADG Code) - Dangerous Goods List", "Australia Quarantine and Inspection Service List of chemical compounds that are accepted solely for use at establishments registered to prepare meat and meat products for the purpose of the Export Control Act 1982", "Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm - Domestic water supply quality", "Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (Domestic water supply - disinfection by-products)", "WHO Guidelines for Drinking-water Quality - Guideline values for chemicals that are of health significance in drinking-water", "Australia Drinking Water Guideline Values For Physical and Chemical Characteristics", "International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs", "UNECE - Kiev Protocol on Pollutant Release and Transfer Registers - Annex II", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix F (Part 3)", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix E (Part 2)", "Australia National Pollutant Inventory", "WHO Model List of Essential Medicines - Adults"

Sodium hydroxide(1310-73-2) is found on the following regulatory lists

"Australia Inventory of Chemical Substances (AICS)", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6", "Australia Hazardous Substances Information System - Consolidated Lists", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix F (Part 3)", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix E (Part 2)", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix C", "United Nations Consolidated List of Products Whose Consumption and/or Sale Have Been Banned, Withdrawn, Severely Restricted or Not Approved by Governments", "OECD Existing Chemicals Database", "Australia FAISD Handbook - First Aid Instructions, Warning Statements, and General Safety Precautions", "OECD List of High Production Volume (HPV) Chemicals", "Australia High Volume Industrial Chemical List (HVICL)", "International Numbering System for Food Additives", "International Council of Chemical Associations (ICCA) - High Production Volume List", "International Fragrance Association (IFRA) Survey: Transparency List", "Fisher

Transport Information", "Sigma-Aldrich Transport Information", "Acros Transport Information", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "IMO IBC Code Chapter 17: Summary of minimum requirements", "CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food in General, Unless Otherwise Specified, in Accordance with GMP", "Australia Illicit Drug Reagents/Essential Chemicals - Category III", "Australia Exposure Standards", "International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index", "International Air Transport Association (IATA) Dangerous Goods Regulations", "International Maritime Dangerous Goods Requirements (IMDG Code)", "Australia Dangerous Goods Code (ADG Code) - List of Emergency Action Codes", "Belgium Federal Public Service Mobility and Transport, Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (Dutch)", "Australia Dangerous Goods Code (ADG Code) - Dangerous Goods List", "Australia Quarantine and Inspection Service List of chemical compounds that are accepted solely for use at establishments registered to prepare meat and meat products for the purpose of the Export Control Act 1982"

Water(7732-18-5*) is found on the following regulatory lists

"Australia Inventory of Chemical Substances (AICS)", "OSPAR National List of Candidates for Substitution - Norway", "OECD List of High Production Volume (HPV) Chemicals", "Australia High Volume Industrial Chemical List (HVICL)", "WHO Model List of Essential Medicines - Adults", "International Fragrance Association (IFRA) Survey: Transparency List", "Sigma-Aldrich Transport Information", "IMO IBC Code Chapter 18: List of products to which the Code does not apply"

Poisons Schedule

S6

16. OTHER INFORMATION

Empirical Formula & Structural Formula

Not Applicable

Other Information

Version No: 6.1.1.1

Safety Data Sheet according to WHS and ADG requirements

Initial Date: Not Available

S.GHS.AUS.EN

The (M)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.

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END OF SDS

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