

SODIUM CHLORITE

GHS Safety Data Sheet

Version No:4

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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

SODIUM CHLORITE

OTHER NAMES

Cl-Na-O₂, NaClO₂, "chlorite salt", "chlorous acid, sodium salt"

PROPER SHIPPING NAME

SODIUM CHLORITE

PRODUCT USE

For improving taste and odour of potable water (as oxidising agent); waste water treatment. Bleaching agent for textiles, paper pulp, vegetable oils, shellacs, waxes and straw products. Oxidising agent; reagent.

SUPPLIER

Company: S D FINE- CHEM LIMITED

Address:

315- 317, T.V. INDUSTRIAL ESTATE,

248, WORLI,

MUMBAI- 400030.INDIA.

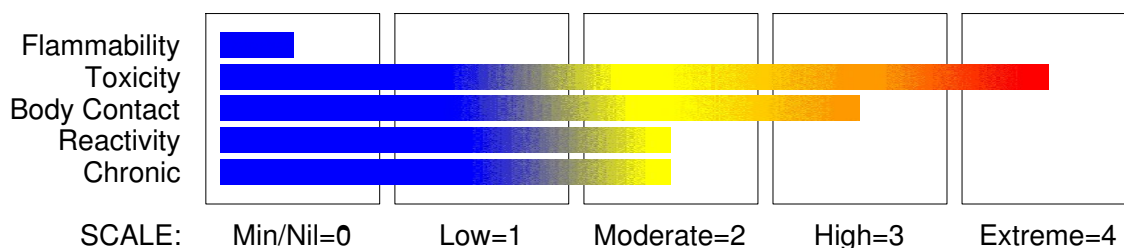
technical@sdfine.com

Telephone: 91- 22- 24959898

Telephone: 91- 22- 24959899

Fax: 91- 22- 24937232

HAZARD RATINGS



Section 2 - HAZARDS IDENTIFICATION

GHS Classification

Acute Aquatic Hazard Category 1

Acute Toxicity (Dermal) Category 4

Acute Toxicity (Inhalation) Category 2

Acute Toxicity (Oral) Category 3

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Section 2 - HAZARDS IDENTIFICATION

Organ Damage Category 2
Oxidizing Solid Category 2
Reproductive Toxicity Category 1B
Skin Corrosion/Irritation Category 1C



EMERGENCY OVERVIEW

HAZARD

DANGER

Determined by using GHS criteria:

H272 H330 H301 H312 H360 H373 H314 H400

May intensify fire; oxidizer

Fatal if inhaled

Toxic if swallowed

Harmful in contact with skin

May damage the unborn child

May cause damage to organs through prolonged or repeated exposure.

Causes severe skin burns and eye damage

Very toxic to aquatic life

PRECAUTIONARY STATEMENTS

Prevention

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

Wash hands thoroughly after handling.

Do not eat, drink or smoke when using this product.

Do not breathe dust or mist.

Wear protective gloves/clothing

Wear protective gloves/clothing and eye/face protection.

Wash thoroughly after handling.

Do not handle until all safety precautions have been read and understood.

Obtain special instructions before use.

Wear respiratory protection.

Use personal protective equipment as required.

Keep away from heat.

Take any precaution to avoid mixing with combustible or incompatible materials.

Use only outdoors or in a well ventilated area.

Response

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

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

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

If exposed or concerned: Get medical attention advice.

Keep container tightly closed.

Wash contaminated clothing before reuse.

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

Specific treatment: refer to Label or MSDS.

Get medical advice/attention if you feel unwell.

If on skin or hair: remove/take off immediately all contaminated clothing. Rinse with

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Section 2 - HAZARDS IDENTIFICATION

water/shower.

Call a POISON CENTER or doctor/physician if you feel unwell.

IF ON SKIN: Gently wash with plenty of soap and water.

Immediately call a POISON CENTER or doctor/physician.

Storage

Store away from combustibles and incompatible materials

Store locked up.

Disposal

Dispose of contents and container in accordance with relevant legislation.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
sodium chlorite	7758-19-2	> 80
sodium chloride	7647-14-5	Unspec ^
sodium hydroxide	1310-73-2	Unspec
No other ingredient information supplied.		

Section 4 - FIRST AID MEASURES

SWALLOWED

- 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.

EYE

If this product comes in contact with the eyes:

- 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

If skin or hair contact occurs:

- 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.

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Section 4 - FIRST AID MEASURES

INHALED

- 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.

NOTES TO PHYSICIAN

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].

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

FOR SMALL FIRE:

- USE FLOODING QUANTITIES OF WATER.
- DO NOT use dry chemicals, CO₂ or foam.

FOR LARGE FIRE:

- Flood fire area with water from a protected position.

FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.

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Section 5 - FIRE FIGHTING MEASURES

- Prevent, by any means available, spillage from entering drains or water courses.
- Fight fire from a safe distance, with adequate cover.
- Extinguishers should be used only by trained personnel.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- Avoid spraying water onto liquid pools.
- 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.
- If fire gets out of control withdraw personnel and warn against entry.
- Equipment should be thoroughly decontaminated after use.

FIRE/EXPLOSION HAZARD

- Will not burn but increases intensity of fire.
 - Heating may cause expansion or decomposition leading to violent rupture of containers.
 - Heat affected containers remain hazardous.
 - Contact with combustibles such as wood, paper, oil or finely divided metal may produce spontaneous combustion or violent decomposition.
 - May emit irritating, poisonous or corrosive fumes.
- Combustion products include: hydrogen chloride, metal oxides.

FIRE INCOMPATIBILITY

Avoid storage with reducing agents.

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

Personal Protective Equipment

Gas tight chemical resistant suit.

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS

- Clean up all spills immediately.
- No smoking, naked lights, ignition sources.
- Avoid all contact with any organic matter including fuel, solvents, sawdust, paper or cloth and other incompatible materials, as ignition may result.
- Avoid breathing dust or vapours and all contact with skin and eyes.
- Control personal contact by using protective equipment.
- Contain and absorb spill with dry sand, earth, inert material or vermiculite.
- DO NOT use sawdust as fire may result.
- Scoop up solid residues and seal in labelled drums for disposal.
- Neutralise/decontaminate area.

MAJOR SPILLS

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

DO NOT touch the spill material.

- 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 courses.
- No smoking, flames or ignition sources. Increase ventilation.
- Contain spill with sand, earth or other clean, inert materials.
- NEVER USE organic absorbents such as sawdust, paper or cloth.
- Use spark-free and explosion-proof equipment.
- Collect any recoverable product into labelled containers for possible recycling.

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Section 6 - ACCIDENTAL RELEASE MEASURES

- Avoid contamination with organic matter to prevent subsequent fire and explosion.
- DO NOT mix fresh with recovered material.
- Collect residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- Decontaminate equipment and launder all protective clothing before storage and re-use.
- If contamination of drains or waterways occurs advise emergency services.

EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:

sodium chlorite 75 mg/m³

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:

sodium chlorite 15 mg/m³

other than mild, transient adverse effects without perceiving a clearly defined odour is:

sodium chlorite 2.5 mg/m³

The threshold concentration below which most people will experience no appreciable risk of health effects:

sodium chlorite 0.75 mg/m³

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

Very Toxic (T+)	$\geq 0.1\%$	Toxic (T)	$\geq 3.0\%$
R50	$\geq 0.25\%$	Corrosive (C)	$\geq 5.0\%$
R51	$\geq 2.5\%$		
else	$\geq 10\%$		

where percentage is percentage of ingredient found in the mixture

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

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Avoid personal contact and inhalation of dust, mist or vapours.
 - Provide adequate ventilation.
 - Always wear protective equipment and wash off any spillage from clothing.
 - Keep material away from light, heat, flammables or combustibles.
 - Keep cool, dry and away from incompatible materials.
 - Avoid physical damage to containers.
 - DO NOT repack or return unused portions to original containers. Withdraw only sufficient amounts for immediate use.
 - Contamination can lead to decomposition leading to possible intense heat and fire.
 - When handling NEVER smoke, eat or drink.
 - Always wash hands with soap and water after handling.
 - Use only good occupational work practice.
 - Observe manufacturer's storing and handling directions.
- DO NOT use aluminium, galvanised or tin-plated containers.

SUITABLE CONTAINER

Glass container.

- DO NOT repack. Use containers supplied by manufacturer only.
- For low viscosity materials

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Section 7 - HANDLING AND STORAGE

- 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.
- For materials with a viscosity of at least 2680 cSt. (23 deg. C) and solids:

- Removable head packaging and
- cans with friction closures may be used.

-
Where combination packages are used, and the inner packages are of glass, there must be sufficient inert cushioning material in contact with inner and outer packages *.

-
In addition, where inner packagings are glass and contain liquids of packing group I and II there must be sufficient inert absorbent to absorb any spillage *.

-
* unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.

STORAGE INCOMPATIBILITY

In presence of moisture, the material is corrosive to aluminium, zinc and tin producing highly flammable hydrogen gas.

Contact with acids produces toxic fumes.

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

Avoid contact with copper, aluminium and their alloys.

Avoid storage with reducing agents.

Oxidising agents as a class are not necessarily combustible themselves, but can increase the risk and intensity of fire in many other substances.

Metals and their oxides or salts may react violently with chlorine trifluoride. Chlorine trifluoride is a hypergolic oxidiser. It ignites on contact (without external source of heat or ignition) with recognised fuels - contact with these materials, following an ambient or slightly elevated temperature, is often violent and may produce ignition. The state of subdivision may affect the results.

Segregate from ammonium compounds, cyanides, sulfur and sulfur containing compounds, red phosphorous, combustible materials (e.g. wood).

STORAGE REQUIREMENTS

Store in an upright position.

Material is hygroscopic, i.e. absorbs moisture from the air. Keep containers well sealed in storage.

- Store in original containers.
- Keep containers securely sealed as supplied.
- Store in a cool, well ventilated area.
- Keep dry.
- Store under cover and away from sunlight.
- Store away from flammable or combustible materials, debris and waste. Contact may cause fire or violent reaction.
- Store away from incompatible materials and foodstuff containers.
- DO NOT stack on wooden floors or pallets.
- Protect containers from physical damage.
- Check regularly for leaks.
- Observe manufacturer's storage and handling recommendations.

In addition, Goods of Class 5.1, packing group II should be:

- stored in piles so that
- the height of the pile does not exceed 1 metre
- the maximum quantity in a pile or building does not exceed 1000 tonnes unless the area is provided with automatic fire extinguishers
- the maximum height of a pile does not exceed 3 metres where the room is provided with automatic fire extinguishers or 2 meters if not.
- the minimum distance between piles is not less than 2 metres where the room is provided with automatic fire extinguishers or 3 meters if not.

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Section 7 - HANDLING AND STORAGE

- the minimum distance to walls is not less than 1 metre.

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



- +: May be stored together
O: May be stored together with specific precautions
X: Must not be stored together

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- sodium chlorite: CAS:7758- 19- 2 CAS:66554- 51- 6
- sodium hydroxide: CAS:1310- 73- 2

EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (mg/m ³)	Revised IDLH Value (ppm)
sodium hydroxide	10	

MATERIAL DATA

It is the goal of the ACGIH (and other Agencies) to recommend TLVs (or their equivalent) for all substances for which there is evidence of health effects at airborne concentrations encountered in the workplace.

At this time no TLV has been established, even though this material may produce adverse health effects (as evidenced in animal experiments or clinical experience). Airborne concentrations must be maintained as low as is practically possible and occupational exposure must be kept to a minimum.

NOTE: The ACGIH occupational exposure standard for Particles Not Otherwise Specified (P.N.O.S) does NOT apply.

Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable. An additional approach, typically used by the TLV committee (USA) in determining respiratory standards for this group of chemicals, has been to assign ceiling values (TLV C) to rapidly acting irritants and to assign short-term exposure limits (TLV STELs) when the weight of evidence from irritation, bioaccumulation and other endpoints combine to warrant such a limit. In contrast the MAK Commission (Germany) uses a five-category system based on intensive odour, local irritation, and elimination half-life. However this system is being replaced to be consistent with the European Union (EU) Scientific Committee for Occupational Exposure Limits (SCOEL); this is more closely allied to that of the USA.

OSHA (USA) concluded that exposure to sensory irritants can:

- cause inflammation
- cause increased susceptibility to other irritants and infectious agents
- lead to permanent injury or dysfunction

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

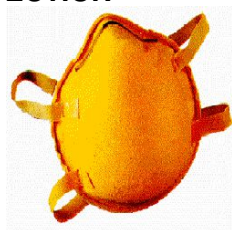
- permit greater absorption of hazardous substances and
- acclimate the worker to the irritant warning properties of these substances thus increasing the risk of overexposure.

INGREDIENT DATA

SODIUM HYDROXIDE:

The TLV-C is recommended based on concentrations that produce noticeable but not excessive, ocular and upper respiratory tract irritation.

PERSONAL PROTECTION



EYE

- 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 lens 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].

HANDS/FEET

Neoprene rubber gloves.

Wear chemical protective gloves, eg. PVC.

Wear safety footwear or safety gumboots, eg. Rubber.

DO NOT wear cotton or cotton-backed gloves.

DO NOT wear leather gloves.

Promptly hose all spills off leather shoes or boots or ensure that such footwear is protected with PVC over-shoes.

Suitability and durability of glove type is dependent on usage. Factors such as:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity,

are important in the selection of gloves.

OTHER

- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.
- Ensure there is ready access to a safety shower.

RESPIRATOR

Protection Factor
10 x ES

Half- Face Respirator
P1 Air- line*

Full- Face Respirator
- -

Powered Air Respirator
PAPR- P1 -

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

50 x ES	Air- line**	P2	PAPR- P2
100 x ES	-	P3	-
		Air- line*	-
100+ x ES	-	Air- line**	PAPR- P3

* - Negative pressure demand ** - Continuous flow.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.

For further information consult your Occupational Health and Safety Advisor.

ENGINEERING CONTROLS

- Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
- Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.
- If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered. Such protection might consist of:
 - (a): particle dust respirators, if necessary, combined with an absorption cartridge;
 - (b): filter respirators with absorption cartridge or canister of the right type;
 - (c): fresh-air hoods or masks
- Build-up of electrostatic charge on the dust particle, may be prevented by bonding and grounding.
- Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to efficiently remove the contaminant.

Type of Contaminant:	Air Speed:
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.)

Within each range the appropriate value depends on:

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	4: Small hood- local control only

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 4-10

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

m/s (800-2000 f/min) for extraction of crusher dusts generated 2 metres 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.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Material is hygroscopic, absorbs moisture from surrounding air.
White crystals or flakes with no odour. Does not cake. Deliquescent.
Soluble in water (39 g/l). Readily decomposed by acids
Technical grades may contain 10-20% sodium chloride, less than 5% sodium hydroxide.

PHYSICAL PROPERTIES

Solid.
Mixes with water.
Alkaline.
Contact with acids liberates very toxic gas.

Molecular Weight: 90.44
Melting Range (°C): 175 decomposes
Solubility in water (g/L): Miscible
pH (1% solution): Not available.
Volatile Component (%vol): Nil @ 38 C.
Relative Vapour Density (air=1): Not applicable.
Lower Explosive Limit (%): 7 as dust
Autoignition Temp (°C): Not applicable
State: Divided solid

Boiling Range (°C): Not applicable.
Specific Gravity (water=1): > 1
pH (as supplied): Not applicable
Vapour Pressure (kPa): Negligible
Evaporation Rate: Not applicable
Flash Point (°C): 180
Upper Explosive Limit (%): Not applicable
Decomposition Temp (°C): 175
Viscosity: Not Applicable

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Presence of incompatible materials.
 - Product is considered stable under normal handling conditions.
 - Prolonged exposure to heat.
 - Hazardous polymerisation will not occur.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

Toxic effects may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 40 gram may be fatal or may produce serious damage to the health of the individual.
The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion.

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Section 11 - TOXICOLOGICAL INFORMATION

EYE

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

When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation.

SKIN

Solution of material in moisture on the skin, or perspiration, may markedly increase skin corrosion and accelerate tissue destruction.

Skin contact with the material may be harmful; systemic effects may result following absorption.

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

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.

INHALED

Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

Limited evidence or practical experience suggests that the material may produce irritation of the respiratory system, in a significant number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system.

CHRONIC HEALTH EFFECTS

On the basis, primarily, of animal experiments, concern has been expressed by at least one classification body that the material may produce carcinogenic or mutagenic effects; in respect of the available information, however, there presently exists inadequate data for making a satisfactory assessment.

Long term exposure to high dust concentrations may cause changes in lung function (i.e. pneumoconiosis) caused by particles less than 0.5 micron penetrating and remaining in the lung. A prime symptom is breathlessness. Lung shadows show on X-ray.

Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems.

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 is some evidence that human exposure to the material may result in developmental toxicity. This evidence is based on animal studies where effects have been observed in the absence of marked maternal toxicity, or at around the same dose levels as other toxic effects but which are not secondary non-specific consequences of the other toxic effects. Prolonged exposure to chlorites might cause anaemia and kidney or liver damage.

Consumption of chlorite in drinking water caused small changes in thyroid hormone levels [CCINFO].

TOXICITY AND IRRITATION

unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY

Oral (rat) LD50: 165 mg/kg

Dermal (rabbit) LD50: 2000 mg/kg [VW&R]

Oral (Human) TDLo: 143 mg/kg

IRRITATION

Nil Reported

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Section 11 - TOXICOLOGICAL INFORMATION

Inhalation (Rat) LC50: 230 mg/m³/4h

Oral (Rat) TDLo: 200 mg/kg

Oral (Mouse) LD50: 350 mg/kg

Oral (Rat) LD50: 350 mg/kg

Oral (Guinea pig) LD50: 300 mg/kg

The material may produce severe irritation to the eye causing pronounced inflammation.

Repeated or prolonged exposure to irritants may produce conjunctivitis.

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

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 substance is 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.

SODIUM HYDROXIDE:

unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY

IRRITATION

Skin (rabbit): 500 mg/24h SEVERE

Eye (rabbit): 0.05 mg/24h SEVERE

Eye (rabbit): 1 mg/24h SEVERE

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

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.

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

continued...

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Section 11 - TOXICOLOGICAL INFORMATION

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.

Section 12 - ECOLOGICAL INFORMATION

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

DO NOT discharge into sewer or waterways.

The material is classified as an ecotoxin* because the Daphnia EC50 (48 hours) is less than or equal to 0.1 mg/l

* Classification of Substances as Ecotoxic (Dangerous to the Environment)

Appendix 8, Table 1

Compiler's Guide for the Preparation of International Chemical Safety Cards: 1993

Commission of the European Communities.

Refer to data for ingredients, which follows:

SODIUM HYDROXIDE:

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

DO NOT discharge into sewer or waterways.

Ecotoxicity:

Fish LC50 (96h): 43mg/l

Section 13 - DISPOSAL CONSIDERATIONS

- 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.
 - Dispose of by: Burial in a licenced land-fill 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.
 - Containers may still present a chemical hazard/ danger when empty.
 - Return to supplier for reuse/ recycling if possible.
- 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 MSDS and observe all notices pertaining to the product.

Section 14 - TRANSPORTATION INFORMATION

continued...

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Section 14 - TRANSPORTATION INFORMATION



Labels Required: OXIDIZING AGENT
HAZCHEM: 2X

UNDG:

Dangerous Goods Class:	5.1	Subrisk:	None
UN Number:	1496	Packing Group:	II
Shipping Name: SODIUM CHLORITE			

Air Transport IATA:

ICAO/IATA Class:	5.1	ICAO/IATA Subrisk:	None
UN/ID Number:	1496	Packing Group:	II
Special provisions:	None		
Shipping Name: SODIUM CHLORITE			

Maritime Transport IMDG:

IMDG Class:	5.1	IMDG Subrisk:	None
UN Number:	1496	Packing Group:	II
EMS Number:	F- H, S- Q	Special provisions:	None
Shipping Name: SODIUM CHLORITE			

Section 15 - REGULATORY INFORMATION

REGULATIONS

sodium chlorite (CAS: 7758-19-2) is found on the following regulatory lists;
International Agency for Research on Cancer (IARC) Carcinogens
International Air Transport Association (IATA) Dangerous Goods Regulations
International Council of Chemical Associations (ICCA) - High Production Volume List
OECD Representative List of High Production Volume (HPV) Chemicals
WHO Guidelines for Drinking-water Quality - Guideline values for chemicals that are of health significance in drinking-water

No data available for sodium chlorite as CAS: 66554-51-6.

Section 16 - OTHER INFORMATION

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name	CAS
sodium chlorite	7758- 19- 2, 66554- 51- 6

REPRODUCTIVE HEALTH GUIDELINES

Ingredient	ORG	UF	Endpoi nt	CR	Adeq TLV
sodium chlorite	6.84 mg/m3	1000	D	NA	-

These exposure guidelines have been derived from a screening level of risk assessment and

continued...

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Section 16 - OTHER INFORMATION

should not be construed as unequivocally safe limits. ORGS represent an 8-hour time-weighted average unless specified otherwise.

CR = Cancer Risk/10000; UF = Uncertainty factor:

TLV believed to be adequate to protect reproductive health:

LOD: Limit of detection

Toxic endpoints have also been identified as:

D = Developmental; R = Reproductive; TC = Transplacental carcinogen

Jankovic J., Drake F.: A Screening Method for Occupational Reproductive

American Industrial Hygiene Association Journal 57: 641-649 (1996).

MSDS SECTION CHANGES

The following table displays the version number of and date on which each section was last changed.

Section Name	Version	Date	Section Name	Version	Date	Section Name	Version	Date
First Aid (inhaled)	4	13- Feb- 2007	Storage (storage requirement)	4	13- Feb- 2007	Acute Health (eye)	4	13- Feb- 2007
First Aid (skin)	4	13- Feb- 2007	Storage (suitable container)	4	13- Feb- 2007	Acute Health (inhaled)	4	13- Feb- 2007
First Aid (swallowed)	4	13- Feb- 2007	Engineering Control	4	13- Feb- 2007	Acute Health (skin)	4	13- Feb- 2007
Fire Fighter (extinguishing media)	4	13- Feb- 2007	Exposure Standard	4	13- Feb- 2007	Acute Health (swallowed)	4	13- Feb- 2007
Fire Fighter (fire fighting)	4	13- Feb- 2007	Personal Protection (eye)	4	13- Feb- 2007	Chronic Health	4	13- Feb- 2007
Fire Fighter (fire incompatibility)	4	13- Feb- 2007	Personal Protection (hands/feet)	4	13- Feb- 2007	Toxicity and Irritation (Other)	4	13- Feb- 2007
Fire Fighter (fire/explosion hazard)	4	13- Feb- 2007	Personal Protection (other)	4	13- Feb- 2007	Toxicity and Irritation (Toxicity Figure)	4	13- Feb- 2007
Spills (major)	4	13- Feb- 2007	Appearance	4	13- Feb- 2007	Environmental Disposal	4	13- Feb- 2007
Spills (minor)	4	13- Feb- 2007	Physical Properties	4	13- Feb- 2007	Transport	4	13- Feb- 2007
Handling Procedure	4	13- Feb- 2007	Instability	4	13- Feb- 2007			
Storage (storage incompatibility)	4	13- Feb- 2007	Condition					

The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to determine the suitability of the information for their particular purpose.

Issue Date: 13-Feb-2018