CHLORAMINE-T

GHS Safety Data Sheet

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
CHLORAMINE-T

OTHER NAMES
C7-H13-Cl-N-NaO5-S, C7-H7-Cl-N-O2S.3H2O, CH3-C6H4-SO2-N-NaCl.3H2O, "chloramine-T trihydrate", "chloramine T hydrate CAS 149358-73-6)", "sodium p-toluenesulphochloramine", "sodium p-toluenesulfochloramine", "sodium p-toluenesulphonylchloramide", "sodium p-toluenesulfonylchloramide", "sodium p-toluenesulphonchloramide", "sodium p-toluenesulfonchloramide", "N-chloro-4-methylbenzenesulphonamide sodium salt", "N-chloro-4-methylbenzenesulfonamide sodium salt", "N-chloro-p-toluenesulphonamide, sodium salt", "N-chloro-p-toluenesulfonamide, sodium salt", "tosyl-chloramidum natricum", "tosylchloramide sodium", 27670, Halasept, Holimen

PROPER SHIPPING NAME
CORROSIVE SOLID, BASIC, ORGANIC, N.O.S.(contains chloramine-T)

PRODUCT USE
Used in medicine as antiseptic and as reagent.

SUPPLIER
Company: S D FINE- CHEM LIMITED
Address:
315- 317, T.V.Ind.Estate,
248, Worli Road,
Mumbai- 400030, India
www.sdfine.com
Telephone: 91- 22 24959898/99
Fax: 91- 22 2493 7232
Email: technical@sdfine.com

Section 2 - HAZARDS IDENTIFICATION

GHS Classification
Acute Aquatic Hazard Category 1
Acute Toxicity Category 4
Metal Corrosion Category 1
Respiratory Sensitizer Category 1
Serious Eye Damage Category 1
Skin Corrosion/Irritation Category 1B

EMERGENCY OVERVIEW

HAZARD
DANGER

Determined by using GHS criteria

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H400	Very toxic to aquatic life.

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PRECAUTIONARY STATEMENTS

Prevention

Code	Phrase
P234	Keep only in original container.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash ... thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P285	In case of inadequate ventilation wear respiratory protection.

Response

Code	Phrase
P301+P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
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.
P304+P341	IF INHALED: If breathing is difficult, 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.
P330	Rinse mouth.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
P391	Collect spillage.

Storage

Code	Phrase
P405	Store locked up.
P406	Store in corrosive resistant container or with a resistant inner liner.

Disposal

Code	Phrase
P501	Dispose of contents/container to ...

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
chloramine- T	127-65-1	95
decomposition in air may produce chlorine	7782-50-5	

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.

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.

SKIN

■ If skin or hair contact occurs:

- Immediately flush body and clothes with large amounts of water, using safety shower if available.

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• 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.

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.
• If dust is inhaled, remove from contaminated area.
• Encourage patient to blow nose to ensure clear breathing passages.
• Ask patient to rinse mouth with water but to not drink water.
• Seek immediate medical attention.
• 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.

NOTES TO PHYSICIAN
■ 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, haemophysis and cyanosis with later complications being tracheobroncho-pneumonitis and pulmonary oedema.
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.
Releases active chlorine. Intoxication may respond to similar regime to that suggested for hypochlorites.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA
• Foam.
• Dry chemical powder.
• BCF (where regulations permit).
• Carbon dioxide.

FIRE FIGHTING
• 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.

FIRE/EXPLOSION HAZARD
■ WARNING: May EXPLODE on heating!!!.
• Combustible solid which burns but propagates flame with difficulty; it is estimated that most organic dusts are combustible (circa 70%) - according to the circumstances under which the combustion process occurs, such materials may cause fires and / or dust explosions.
• Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions).
• Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust (420 micron or less) may burn rapidly and fiercely if ignited - particles exceeding this limit will generally not form flammable dust clouds; once initiated, however, larger particles up to 1400 microns diameter will contribute to the propagation of an explosion.
• In the same way as gases and vapours, dusts in the form of a cloud are only ignitable over a range of concentrations; in principle, the concepts of lower explosive limit (LEL) and upper explosive limit (UEL) are applicable to dust clouds but only the LEL is of practical use; - this is because of the inherent difficulty of achieving homogeneous dust clouds at high temperatures (for dusts the LEL is often called the "Minimum Explosible Concentration", MEC).
Combustion products include: carbon monoxide (CO), carbon dioxide (CO_2), hydrogen chloride, phosgene, nitrogen oxides (NOx), sulfur oxides (SOx), other pyrolysis products typical of burning organic material.
May emit corrosive fumes.

FIRE INCOMPATIBILITY
• Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

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Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS
■ Environmental hazard - contain spillage.
• Remove all ignition sources.
• Clean up all spills immediately.
• Avoid contact with skin and eyes.
• Control personal contact with the substance, by using protective equipment.
• 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.

MAJOR SPILLS
■ Environmental hazard - contain spillage.
• 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.

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

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING
• Avoid all personal contact, including inhalation.
• Wear protective clothing when risk of exposure occurs.
• Use in a well-ventilated area.
• Avoid contact with moisture.
• Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions)
• Minimise airborne dust and eliminate all ignition sources. Keep away from heat, hot surfaces, sparks, and flame.
• Establish good housekeeping practices.
• Remove dust accumulations on a regular basis by vacuuming or gentle sweeping to avoid creating dust clouds.

PACKAGING MATERIAL INCOMPATIBILITIES

Chemical Name	Container Type
	" Acetal (Delrinr)" , " Cast iron" , Neoprene

SUITABLE CONTAINER
• Glass container is suitable for laboratory quantities.
• Lined metal can, lined metal pail/ can.
• Plastic pail.
• Polyliner drum.
• Packing as recommended by manufacturer.
For low viscosity materials
• 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. <</>.

STORAGE INCOMPATIBILITY
• Contact with acids produces toxic fumes.
Chlorine:
• is a strong oxidiser
• reacts explosively with acetylene, boron, diborane, or other boron hydrides at ordinary temperatures
• forms easily ignited, sensitive explosive mixtures with gases and vapours such as anhydrous ammonia, benzene, butane, ethane, ethylene, fluorine, hydrocarbons, formaldehyde, hydrogen, hydrogen bromide, hydrogen chloride, oxygen, propane, propene in the presence of heat, hot surfaces, welding arc, sparks, strong sunlight, UV light, or a catalyst such as mercury oxide
• contact with 2-carboxymethylisothiouronium chloride or s-ethylisothiouronium hydrogen sulfate may form nitrogen trichloride. a dangerous explosive.
• Segregate from alcohol, water.
• Avoid contact with copper, aluminium and their alloys.
• Avoid reaction with oxidising agents.
• NOTE: May develop pressure in containers; open carefully. Vent periodically.
Reacts explosively on warming with isonitriles and calcium carbonate.

STORAGE REQUIREMENTS
• DO NOT store near acids, or oxidising agents.
• Store in original containers.

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• Keep containers securely sealed.
• Store in a cool, dry, well-ventilated area.
• Store away from incompatible materials and foodstuff containers.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m³	STEL ppm	STEL mg/m³
India Permissible Levels of Certain Chemical Substances in Work Environment	chlorine (Chlorine)	1	3	3	9

The following materials had no OELs on our records
• chloramine- T: CAS:127- 65- 1 CAS:7080- 50- 4 CAS:149358- 73- 6

MATERIAL DATA
CHLORAMINE-T:
CHLORINE:
■ for chlorine:
Odour Threshold Value: 0.08 ppm (detection) - olfactory fatigue may develop
NOTE: Detector tubes for chlorine, measuring in excess of 0.2 ppm, are commercially available. Long-term measurements may be conducted to detect concentrations exceeding 0.13 ppm. <</>.

PERSONAL PROTECTION

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

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], [AS/NZS 1336 or national equivalent].

HANDS/FEET
• Wear chemical protective gloves, e.g. PVC.
• Wear safety footwear or safety gumboots, e.g. Rubber.
NOTE:
• The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.
• Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.
Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:

OTHER
• Overalls.
• PVC Apron.
• PVC protective suit may be required if exposure severe.
• Eyewash unit.

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ENGINEERING CONTROLS
■ 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.
The basic types of engineering controls are:
Process controls which involve changing the way a job activity or process is done to reduce the risk.
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.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE
White or slightly yellow crystals or powder, slight chlorine odour. Soluble in water, insoluble in benzene, chloroform and ether. Soluble in 95% alcohol (7.5%) with decomposition Decomposes slowly in air, liberating chlorine. Decomposes violently @ 130 C.

PHYSICAL PROPERTIES
Corrosive.
Contact with acids liberates toxic gas.

State	DIVIDED SOLID	Molecular Weight	Not available
Melting Range (°C)	167- 170 (decomoses)	Viscosity	Not Applicable
Boiling Range (°C)	Not available.	Solubility in water (g/L)	Reacts
Flash Point (°C)	Not available	pH (1% solution)	7- 9
Decomposition Temp (°C)	130	pH (as supplied)	Not applicable
Autoignition Temp (°C)	Not available.	Vapour Pressure (kPa)	Not applicable
Upper Explosive Limit (%)	Not applicable	Specific Gravity (water=1)	1.43
Lower Explosive Limit (%)	Not applicable	Relative Vapour Density (air=1)	0.6
Volatile Component (%vol)	Not applicable	Evaporation Rate	Not Applicable

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY
• Presence of incompatible materials.
• Product is considered stable.
• Hazardous polymerisation will not occur.
For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

Health hazard summary table:

Acute toxicity	Acute Tox. (oral) 4
Skin corrosion/irritation	Skin Corr. 1 B
Serious eye damage/irritation	Eye Dam. 1
Respiratory or skin sensitization	Resp. Sens. 1
Germ cell mutagenicity	Not applicable
Carcinogenicity	Not applicable
Reproductive toxicity	Not applicable
STOT- single exposure	Not applicable
STOT- repeated exposure	Not applicable
Aspiration hazard	Not applicable

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED
■ Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 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.
■ Sulfonamides and their derivatives can cause extensive kidney damage, and destroy red blood cells.
Overdose may cause an accumulation of acid in the blood or a diminished blood sugar level with confusion and coma resulting.

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■ The substance and/or its metabolites may bind to haemoglobin inhibiting normal uptake of oxygen.
This condition, known as "methaemoglobinemia", is a form of oxygen starvation (anoxia).

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.
■ Eye drops with sulfonamides can cause local irritation, sensations of burning and stinging, blurred vision and loss of depth perception.
The conjunctiva and cornea may become inflamed, and the cornea and lens may become clouded.

SKIN
■ The material can produce chemical burns following direct contactwith the skin.
■ Skin contact is not thought to produce harmful health effects (as classified under EC Directives using animal models).
Systemic harm, however, has been identified following exposure of animals by at least one other route and the material may still produce health damage following entry through wounds, lesions or abrasions.
■ 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.

INHALED
■ The material is not thought to produce adverse health effects following inhalation (as classified by EC Directives using animal models).
Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
■ 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.
If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result□□in excessive exposures.
■ Chlorine vapour is extremely irritating to the airways and lungs, causing coughing, choking, breathing difficulty, chest pain, headache, vomiting, fluid accumulation in the lungs, chest infection and loss of consciousness.
Effects may be delayed.

CHRONIC HEALTH 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.
Inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population.
There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.
Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.
There is limited evidence that, skin contact with this product is more likely to cause a sensitisation reaction in some persons compared to the general population.
There is some evidence from animal testing that exposure to this material may result in reduced fertility.
Based on experience with animal studies, there is a possibility that exposure to the material may result in toxic effects to the development of the foetus, at levels which do not cause significant toxic effects to the mother.
Prolonged oral treatment with sulfonamides has caused nausea, vomiting, diarrhoea, abdominal pain, loss of appetite, inflammation of the mouth cavity, impaired folic acid absorption, exacerbation of porphyria, acidosis, liver damage with impaired blood clotting, jaundice and inflammation of the pancreas. Effects on the kidney include blood and crystals in the urine, painful and frequent urination or lack of urine with nitrogen retention. Nervous system symptoms include headache, drowsiness, trouble sleeping, dizziness, ringing in the ears, hearing loss, depression, hallucinations, inco-ordination, paralysis of muscles, numbness in the extremities, spinal cord damage and inflammation, convulsions and unconsciousness. Effects on the blood include a change in blood cell distribution with loss of white blood cells and platelets, and anaemia, which Africans seem to be more prone to developing than Europeans. Cyanosis can occur owing to complexes being formed by haemoglobin. Eye effects include inflamed cornea and conjunctiva with eyelid swelling and in severe cases, fear of the light. Allergies and cross-sensitivity is common, and can cause itches, wheals and sometimes a severe red rash with blisters that is often fatal. This class of drugs can scar the cornea and conjunctiva, cause swelling around the eyes, painful and inflamed joints, reduced sperm counts, pneumonia, fever, chills, hair loss, inflammation of vessels, lupus, reduced lung function, infertility, hypothyroidism and goitre, and increased urinary output. More seriously, the lungs may become permanently scarred and there may be irreversible damage to the nervous system and muscles. Inflammation of the skin has occurred after the drug is ingested and has travelled through the bloodstream. Skin effects often occur when there has been exposure in conjunction with UV light. Clothed areas are initially less likely to be affected but may be in later stages. Rarely there may be persistence of inflammation on light contact even after the drug has been removed.
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).
Delayed effects can include shortness of breath, violent headaches, pulmonary oedema and pneumonia.
Workers exposed to chloramine-T powders have developed occupational asthma and inflammation of the nose, characterised by wheal and skin flare. This may be due to the p-toluenesulfonyl group of the molecule. Aerosols and vapours of the substance (due to spraying) can cause allergies, leading to hypersensitivity reactions, inflammation of the nose and asthma.

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TOXICITY AND IRRITATION

■ Allergic reactions involving the respiratory tract are usually due to interactions between IgE antibodies and allergens and occur rapidly. Allergic potential of the allergen and period of exposure often determine the severity of symptoms. Some people may be genetically more prone than others, and exposure to other irritants may aggravate symptoms. Allergy causing activity is due to interactions with proteins.
Attention should be paid to atopic diathesis, characterised by increased susceptibility to nasal inflammation, asthma and eczema.
Exogenous allergic alveolitis is induced essentially by allergen specific immune-complexes of the IgG type; cell-mediated reactions (T lymphocytes) may be involved. Such allergy is of the delayed type with onset up to four hours following exposure.
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.
Chloramine-T is considered harmful if swallowed, inhaled or absorbed through the skin and eyes. Symptoms include a burning sensation, coughing, wheeze, throat inflammation, shortness of breath, inflammation of the airways and lung, and possibly, fluid build-up in the lung. The substance is irritating to the eyes, skin and digestive tract. Skin contact produces redness, itching and pain, with the potential to develop an allergic skin reaction. Animal testing showed that chloramine-T can affect the liver and kidneys and case anaemia. Exposure to chloramine-T can also potentially cause hypersensitivity (allergic) reactions, including asthma, with cases of hives being reported.

Section 12 - ECOLOGICAL INFORMATION

chlorine 96 hr LC50 (0.84) mg/L Green sunfish Fish Source:

Very toxic to aquatic organisms.
Toxic to soil organisms.
This material and its container must be disposed of as hazardous waste.
Avoid release to the environment.
Refer to special instructions/ safety data sheets.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
chlorine	No Data Available	No Data Available	LOW	No Data Available

Section 13 - DISPOSAL CONSIDERATIONS

• 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.
Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area.
A Hierarchy of Controls seems to be common - the user should investigate:
• Reduction.
• DO NOT allow wash water from cleaning or process equipment to enter drains.
• It may be necessary to collect all wash water for treatment before disposal.
• In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
• Where in doubt contact the responsible authority.
• 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: Mixing or slurrying in water; Neutralisation with suitable dilute acid 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).

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Section 14 - TRANSPORTATION INFORMATION

Labels Required: CORROSIVE

HAZCHEM:
2X

Land Transport UNDG:

Class or division:	8	Subsidiary risk:	None
UN No.:	3263	UN packing group:	III

Shipping Name:CORROSIVE SOLID, BASIC, ORGANIC, N.O.S. (contains chloramine-T)

Air Transport IATA:

ICAO/IATA Class:	8	ICAO/IATA Subrisk:	None
UN/ID Number:	3263	Packing Group:	III
Special provisions:	A3A803		

Shipping name:CORROSIVE SOLID, BASIC, ORGANIC, N.O.S.(contains chloramine-T)

Maritime Transport IMDG:

IMDG Class:	8	IMDG Subrisk:	None
UN Number:	3263	Packing Group:	III
EMS Number:	F- A, S- B	Special provisions:	223 274
Limited Quantities:	5 kg	Marine Pollutant:	Yes

Shipping name:CORROSIVE SOLID, BASIC, ORGANIC, N.O.S.(contains chloramine-T)

Section 15 - REGULATORY INFORMATION

REGULATIONS

chloramine-T (CAS: 127-65-1,7080-50-4,149358-73-6) is found on the following regulatory lists;
"Acros Transport Information","India Hazardous Wastes (Management, Handling and Transboundary Movement) Rules - Schedule 2: List of Wastes Constituents with Concentration Limits","OECD List of High Production Volume (HPV) Chemicals","Sigma-AldrichTransport Information"

Regulations for ingredients

chlorine (CAS: 7782-50-5) is found on the following regulatory lists;
"Acros Transport Information","India Chemical Accidents Rules - Schedule 1: List of Hazardous Chemicals","India Chemical Accidents Rules - Schedule 2: Threshold Quantities","India Chemical Accidents Rules - Schedule 3: Named Chemicals","India Hazardous Wastes (Management, Handling and Transboundary Movement) Rules - Schedule 2: List of Wastes Constituents with Concentration Limits","India Manufacture, Storage and Import of Hazardous Chemical Rules - Schedule 1: List of Hazardous and Toxic Chemicals","India Manufacture, Storage and Import of Hazardous Chemical Rules - Schedule 2: Isolated storage at Installations other than those covered by Schedule 4","India Manufacture, Storage and Import of Hazardous Chemical Rules - Schedule 3: List of Hazardous Chemicals for Application of Rules 5 and 7 to 15","India Permissible Levels of Certain Chemical Substances in Work Environment","International Council of Chemical Associations (ICCA) - High Production Volume List", "International Numbering System for Food Additives","OECD List of High Production Volume (HPV) Chemicals","Sigma-AldrichTransport Information","WHO Guidelines for Drinking-water Quality - Guideline values for chemicals that are of health significance in drinking-water"

Section 16 - OTHER INFORMATION

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name	CAS
chloramine- T	127- 65- 1, 7080- 50- 4, 149358- 73- 6

■ Classification of the preparation and its individual components has drawn on official and authoritative sources using available literature references.

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■ 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.

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.

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