Section 1: Product and Company Identification

Product Name: Chloramine-T Algicide
Synonym: N-Chloro-p-toluenesulfonamide, sodium salt; Tosylchloramide sodium.

Company Name
Ted Pella, Inc., P.O. Box 492477, Redding, CA 96049-2477
   Inside USA and Canada 1-800-237-3526 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)
   Outside USA and Canada 1-530-243-2200 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)
CHEMTREC USA and Canada Emergency Contact Number 1-800-424-9300 24 hours a day
CHEMTREC Outside USA and Canada Emergency Contact Number +1-703-741-5970 24 hours a day

Section 2: Hazard Identification

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
GHS Pictograms:

Health hazard  Corrosive  Irritant

GHS Categories:
Acute toxicity, Oral (Category 4), H302
Skin corrosion (Category 1B), H314
Serious eye damage (Category 1), H318
Respiratory sensitisation (Category 1), H334

Signal Word: DANGER

Hazard statement(s):
H302 - Harmful if swallowed.
H314 - Causes severe skin burns and eye damage.
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary statement(s):
P260 - Do not breathe dust or mist.
P264 - Wash skin thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection.
P285 - In case of inadequate ventilation wear respiratory protection.
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.
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 supplemental first aid instructions on this label).
P363 - Wash contaminated clothing before reuse.
P405 - Store locked up.
P501 - Dispose of contents/container to an approved waste disposal plant.
Hazards not otherwise classified (HNOC) or not covered by GHS: Contact with acids liberates toxic gas.

European Labeling in Accordance with EC Directives
Hazard Symbols: C

Risk Phrases:
R 22 Harmful if swallowed.
R 31 Contact with acids liberates toxic gas.
R 34 Causes burns.
R 42 May cause sensitization by inhalation.

Safety Phrases:
S 7 Keep container tightly closed.
S 22 Do not breathe dust.
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Health Effects:
NFPA Hazard Rating: Health: 3; Fire: 1; Reactivity: 0
HMIS® Hazard Rating: Health: 3; Fire: 1; Reactivity: 0 - Chronic Health Hazard: *
(0=least, 1=Slight, 2=Moderate, 3=High, 4=Extreme)

Results of PBT and vPvB assessment: Assessment not available as chemical safety assessment not required/not conducted.
PBT: NA
vPvB: NA

Emergency overview
Appearance: Crystalline powder, Color: white to off-white.
Immediate effects: Danger! May cause allergic respiratory reaction. Harmful if swallowed. Causes burns by all exposure routes. Contact with acids liberates toxic gas.
Target Organs: Central nervous system, respiratory system, gastrointestinal system, eyes, skin.

Potential Health Effects
Primary Routes of entry: Inhalation, ingestion, eye and skin contact.
Signs and Symptoms of Overexposure: ND
Eyes: Causes eye burns.
Skin: Causes skin burns. May be harmful if absorbed through the skin.
Ingestion: Harmful if swallowed. Causes gastrointestinal tract burns.
Inhalation: May cause allergic respiratory reaction. Causes chemical burns to the respiratory tract. May be harmful if inhaled
Chronic Exposure: Laboratory experiments have resulted in mutagenic effects. Repeated or prolonged exposure may cause allergic reactions in sensitive individuals. Exposure to high concentrations may cause central nervous system depression
Chemical Listed As Carcinogen Or Potential Carcinogen: None.
See Toxicological Information (Section 11)

Potential environmental effects
See Ecological Information (Section 12)

Section 3: Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Principle Hazardous Component(s) (chemical and common name(s)) (Cas. No)</th>
<th>%</th>
<th>OSHA PEL mg/m³</th>
<th>ACGIH TLV mg/m³</th>
<th>NTP</th>
<th>IARC</th>
<th>OSHA regulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloramine T trihydrate (7080-50-4) EC-No.: 204-854-7 Index-No.: 616-010-00-9</td>
<td>98</td>
<td>NE</td>
<td>NE</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Acute Tox. 4; Skin Corr. 1B; Eye Dam. 1; Resp. Sens. 1; H302, H314, H334

Section 4: First Aid Measures

If accidental overexposure is suspected
General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
Eye(s) Contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.
Skin Contact: Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.
Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
Ingestion: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Note to physician
Treatment: ND
Medical Conditions generally Aggravated by Exposure: ND

Section 5: Fire Fighting Measures

Flash Point: 192 °C (378 °F) - closed cup.
Flammable Limits: ND
Auto-ignition point: ND
Fire Extinguishing Media: Dry powder
Special Fire Fighting Procedures: Advice for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.
Unusual Fire and Explosion Hazards: ND
Hazardous combustion products: ND
Special hazards arising from the substance or mixture: Carbon oxides, nitrogen oxides (NOx), Sulphur oxides, Hydrogen chloride gas, Sodium oxides.
DOT Class: Corrosive.

Section 6: Accidental Release Measures

Steps to be Taken in Case Material is Released or Spilled: Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. Environmental precautions: Do not let product enter drains. Methods and materials for containment and cleaning up: Pick up and arrange disposal without creating dust. Sweep up and shovel. Do not
flush with water. Keep in suitable, closed containers for disposal.
Waste Disposal Methods: Dispose of waste according to Federal, State and Local Regulations.

Section 7: Handling and Storage
Precautions to be taken in Handling and Storage: Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Keep container tightly closed in a dry and well-ventilated place. Never allow product to get in contact with water during storage. Do not store near acids. If possible store under inert gas, air sensitive. Keep in a dry place.
Storage temperature: Room temperature.
Storage Pressure: NA

Section 8: Exposure Controls / Personal Protection
Engineering Controls
Ventilation required: Use only under a chemical fume hood.

Personal Protection Equipment
Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Protective gloves: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Skin protection: Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Eye protection: Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Additional clothing and/or equipment: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Exposure Guidelines
See Composition/Information on Ingredients (Section 3)

Section 9 Physical and Chemical Properties
Appearance and Physical State: Crystalline powder, Color: white to off-white.
Odor (threshold): Chlorine-like (ND)
Specific Gravity (H2O=1): Bulk density 0.5 - 0.7 g/l
Vapor Pressure (mm Hg): ND
Vapor Density (air=1): ND
Percent Volatile by volume: ND
Evaporation Rate (butyl acetate=1): ND
Boiling Point: ND
Freezing point / melting point: 170 - 177 deg. C (decomposes)
PH: 8 - 10 (5% aq.sol.)
Solubility in Water: Soluble
Molecular Weight: 281.69 g/mol
Section 10: Stability and Reactivity
Stability: Contact with acid liberates gas. Air sensitive.
Conditions to Avoid: Incompatible materials, exposure to air, excess heat, temperatures above 130°C.
Materials to Avoid (Incompatibility): Strong oxidizing agents, acids.
Hazardous Polymerization: Will not occur.

Section 11: Toxicological Information
Results of component toxicity test performed: Acute toxicity: No data available.
Acute toxicity: No data available.
Inhalation: No data available.
Dermal: No data available.
Skin corrosion/irritation: No data available.
Serious eye damage/eye irritation: No data available.
Respiratory or skin sensitisation:
Germ cell mutagenicity: No data available.
Carcinogenicity:
IARC: No component of this product is present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: No data available.
Specific target organ toxicity - single exposure: No data available.
Specific target organ toxicity - repeated exposure: No data available.
Aspiration hazard: No data available.
Additional Information:
RTECS: Not available.
Human experience: Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer., Cough, Shortness of breath, Headache, Nausea, Vomiting. Repeated exposure may cause asthma., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Stomach - Irregularities - Based on Human Evidence.
Stomach - Irregularities - Based on Human Evidence.
This product does not contain any compounds listed by NTP or IARC or regulated by OSHA as a carcinogen.

Section 12: Ecological Information
Ecological Information:
Toxicity: No data available.
Persistence and degradability: No data available.
Bioaccumulative potential: No data available.
Mobility in soil: No data available.
Other adverse effects: No data available.
Chemical Fate Information: ND

Section 13 Disposal Considerations
RCRA 40 CFR 261 Classification: ND
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Federal, State and local laws governing disposal of materials can differ. Ensure proper disposal compliance with proper authorities before disposal.

Section 14: Transportation Information
US DOT Information: Proper shipping name: Corrosive solid, basic, organic, n.o.s. (Chloramine T trihydrate)
Hazard Class: 8
Packaging group: III
UN Number: UN3263
IATA: Proper shipping name: Corrosive solid, basic, organic, n.o.s. (Chloramine T trihydrate)
Hazard Class: 8
Packaging group: III
UN Number: UN3263
Marine Pollutant: No
Canadian TDG: Corrosive solid, basic, organic, n.o.s. (Chloramine T trihydrate)

Section 15: Regulatory Information
United States Federal Regulations
SARA: SARA 311/312 Hazards; Acute Health Hazard, Chronic Health Hazard.
SARA Title III:
SARA Section 302: No chemicals in this material are subject to the reporting requirements of SARA Title III.
SARA 313 Components: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
RCRA: ND
TSCA: CAS# 7080-50-4 is not on the TSCA Inventory because it is a hydrate. It is considered to be listed if the CAS number for the anhydrous form (127-65-1) is on the Inventory (40CFR720.3(u)(2)).
CERCLA: ND

State Regulations
California Proposition 65: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

International Regulations
Canada WHMIS: CAS# 127-65-1 is listed on Canada's DSL List.
Canadian WHMIS Classifications: E, D1B, D2A, D2B
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.
CAS# 127-65-1 is listed on Canada's Ingredient Disclosure List.
CAS# 7080-50-4 is not listed on Canada's Ingredient Disclosure List.
Europe EINECS Numbers: 204-854-7

Section 16: Other Information
Label Information: Corrosive
European Risk and Safety Phrases: See Section 2.
European symbols needed: C
Canadian WHMIS Symbols: ND

Abbreviations used in this document:
NE= Not established
NA= Not applicable
NIF= No Information Found
ND= No Data
Disclaimer
Ted Pella, Inc. makes no warranty of any kind regarding the information furnished herein. Users should independently determine the suitability and completeness of information from all sources. While this data is presented in good faith and believed to be accurate, it should be considered only as a supplement to other information gathered by the user. It is the User's responsibility to assure the proper use and disposal of these materials as well as the safety and health of all personnel who may work with or otherwise come in contact with these materials.

SDS Form 0013FI V4