

# TRICHLORO-S-TRIAZINETRIONE

TCT

## CAUTIONARY RESPONSE INFORMATION

|  |   |  |  |
|--|---|--|--|
| <b>Common Synonyms</b><br>Trichloroiminoisocyanuric acid<br>Trichloroisocyanuric acid<br>Trichlorotriazinetrione<br>Trichloro-s-triazine-2,4,6-(1h, 3h, 5h)-trione |   |  | Solid                      White                      Bleach-like odor |
| Sinks and mixes slowly with water.   |   |  |  |
| Keep people away.<br>Shut off ignition sources and call fire department.<br>Notify local health and pollution control agencies.<br>Protect water intakes.          |   |  |  |
| <b>Fire</b>  | Not flammable.<br>May cause fire on contact with combustibles.<br>POISONOUS GASES ARE PRODUCED IN FIRE.<br>Containers may explode in fire.<br>Wear goggles and self-contained breathing apparatus.<br>Flood discharge area with water.<br>Cool exposed containers with water.   |  |  |
| <b>Exposure</b>  | Call for medical aid.<br>DUST<br>Irritating to eyes, nose and throat.<br>If inhaled will cause coughing or difficult breathing.<br>Move victim to fresh air.<br>If in eyes, hold eyelids open and flush with plenty of water.<br>If breathing is difficult, give oxygen.<br><br>SOLID<br>Irritating to skin and eyes.<br>Harmful if swallowed.<br>Remove contaminated clothing and shoes.<br>Flush affected areas with plenty of water.<br>IF IN EYES, hold eyelids open and flush with plenty of water.<br>IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk and have victim induce vomiting.<br>IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm. |  |  |
| <b>Water Pollution</b>   | Effect of low concentrations on aquatic life is unknown.<br>May be dangerous if it enters water intakes.<br>Notify local health and wildlife officials.<br>Notify operators of nearby water intakes.  |  |  |

### 1. CORRECTIVE RESPONSE ACTIONS

Dilute and disperse  
 Stop discharge  
 Chemical and Physical Treatment: Burn;  
 Neutralize

### 2. CHEMICAL DESIGNATIONS

2.1 **CG Compatibility Group:** Not listed.  
 2.2 **Formula:** Cl<sub>3</sub>(NCO)<sub>3</sub>  
 2.3 **IMO/UN Designation:** 5.1/12468  
 2.4 **DOT ID No.:** 2468  
 2.5 **CAS Registry No.:** 87-90-1  
 2.6 **NAERG Guide No.:** 141  
 2.7 **Standard Industrial Trade Classification:** 51577

### 3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Dust mask or chlorine canister mask; goggles; rubber gloves  
 3.2 **Symptoms Following Exposure:** Inhalation causes sneezing and coughing. Contact with dust causes moderate irritation of eyes and itching and redness of skin. Ingestion causes burns of mouth and stomach.  
 3.3 **Treatment of Exposure:** INHALATION: remove victim to fresh air. EYES: irrigate with running water for 15 min.; call physician. SKIN: flush with water. INGESTION: induce vomiting and call physician.  
 3.4 **TLV-TWA:** Not listed.  
 3.5 **TLV-STEL:** Not listed.  
 3.6 **TLV-Ceiling:** Not listed.  
 3.7 **Toxicity by Ingestion:** Grade 2; oral LD<sub>50</sub> = 750 mg/kg (rat)  
 3.8 **Toxicity by Inhalation:** Currently not available.  
 3.9 **Chronic Toxicity:** Currently not available  
 3.10 **Vapor (Gas) Irritant Characteristics:** Currently not available  
 3.11 **Liquid or Solid Characteristics:** Currently not available  
 3.12 **Odor Threshold:** Currently not available  
 3.13 **IDLH Value:** Not listed.  
 3.14 **OSHA PEL-TWA:** Not listed.  
 3.15 **OSHA PEL-STEL:** Not listed.  
 3.16 **OSHA PEL-Ceiling:** Not listed.  
 3.17 **EPA AEGL:** Not listed

### 4. FIRE HAZARDS

- 4.1 **Flash Point:**  
 Not flammable but may cause fire on contact with ordinary combustibles  
 4.2 **Flammable Limits in Air:** Not pertinent  
 4.3 **Fire Extinguishing Agents:** Water in large amounts  
 4.4 **Fire Extinguishing Agents Not to Be Used:** Not pertinent  
 4.5 **Special Hazards of Combustion Products:** Toxic chlorine or nitrogen trichloride may be formed in fires.  
 4.6 **Behavior in Fire:** Containers may explode when heated.  
 4.7 **Auto Ignition Temperature:** Not pertinent  
 4.8 **Electrical Hazards:** Not pertinent  
 4.9 **Burning Rate:** Not pertinent  
 4.10 **Adiabatic Flame Temperature:** Currently not available  
 4.11 **Stoichiometric Air to Fuel Ratio:** Not pertinent.  
 4.12 **Flame Temperature:** Currently not available  
 4.13 **Combustion Molar Ratio (Reactant to Product):** Not pertinent.  
 4.14 **Minimum Oxygen Concentration for Combustion (MOCC):** Not listed

### 5. CHEMICAL REACTIVITY

- 5.1 **Reactivity with Water:** Reacts to form a bleach solution. The reaction is not hazardous.  
 5.2 **Reactivity with Common Materials:** Contact with most foreign material, organic matter, or easily chlorinated or oxidized materials may result in fire. Avoid oil, grease, sawdust, floor sweepings, other easily oxidized organic compounds.  
 5.3 **Stability During Transport:** Stable  
 5.4 **Neutralizing Agents for Acids and Caustics:** Not pertinent  
 5.5 **Polymerization:** Not pertinent  
 5.6 **Inhibitor of Polymerization:** Not pertinent

### 6. WATER POLLUTION

- 6.1 **Aquatic Toxicity:**  
 Currently not available  
 6.2 **Waterfowl Toxicity:** Currently not available  
 6.3 **Biological Oxygen Demand (BOD):**  
 Currently not available  
 6.4 **Food Chain Concentration Potential:**  
 None  
 6.5 **GESAMP Hazard Profile:** Not listed

### 7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 39-90% available chlorine  
 7.2 **Storage Temperature:** Ambient Avoid elevated temperatures.  
 7.3 **Inert Atmosphere:** No requirement if dry  
 7.4 **Venting:** Pressure-vacuum  
 7.5 **IMO Pollution Category:** Currently not available  
 7.6 **Ship Type:** Currently not available  
 7.7 **Barge Hull Type:** Currently not available

### 8. HAZARD CLASSIFICATIONS

- 8.1 **49 CFR Category:** Oxidizer  
 8.2 **49 CFR Class:** 5.1  
 8.3 **49 CFR Package Group:** II  
 8.4 **Marine Pollutant:** No  
 8.5 **NFPA Hazard Classification:**  

|                           |                |
|---------------------------|----------------|
| Category                  | Classification |
| Health Hazard (Blue)..... | 3              |
| Flammability (Red).....   | 0              |
| Instability (Yellow)..... | 2              |
| Special (White).....      | OX             |

 8.6 **EPA Reportable Quantity:** Not listed.  
 8.7 **EPA Pollution Category:** Not listed.  
 8.8 **RCRA Waste Number:** Not listed  
 8.9 **EPA FWPCA List:** Not listed

### 9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 **Physical State at 15° C and 1 atm:** Solid  
 9.2 **Molecular Weight:** 232.5  
 9.3 **Boiling Point at 1 atm:** Not pertinent (decomposes)  
 9.4 **Freezing Point:** Not pertinent  
 9.5 **Critical Temperature:** Not pertinent  
 9.6 **Critical Pressure:** Not pertinent  
 9.7 **Specific Gravity:** (est.) >1 at 20°C (solid)  
 9.8 **Liquid Surface Tension:** Not pertinent  
 9.9 **Liquid Water Interfacial Tension:** Not pertinent  
 9.10 **Vapor (Gas) Specific Gravity:** Not pertinent  
 9.11 **Ratio of Specific Heats of Vapor (Gas):**  
 Not pertinent  
 9.12 **Latent Heat of Vaporization:** Not pertinent  
 9.13 **Heat of Combustion:** Not pertinent  
 9.14 **Heat of Decomposition:** Not pertinent  
 9.15 **Heat of Solution:** Not pertinent  
 9.16 **Heat of Polymerization:** Not pertinent  
 9.17 **Heat of Fusion:** Currently not available  
 9.18 **Limiting Value:** Currently not available  
 9.19 **Reid Vapor Pressure:** Currently not available

### NOTES

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| 9.20<br>SATURATED LIQUID DENSITY |  | 9.21<br>LIQUID HEAT CAPACITY |  | 9.22<br>LIQUID THERMAL CONDUCTIVITY |  | 9.23<br>LIQUID VISCOSITY   |  |
|----------------------------------|--|------------------------------|--|-------------------------------------|--|----------------------------|--|
| Temperature<br>(degrees F)       | Pounds per cubic foot  | Temperature<br>(degrees F)   | British thermal unit per<br>pound-F                          | Temperature<br>(degrees F)          | British thermal unit inch<br>per hour-square foot-F          | Temperature<br>(degrees F) | Centipoise   |
|                                  | N<br>O<br>T<br><br>P<br>E<br>R<br>T<br>I<br>N<br>E<br>N<br>T |                              | N<br>O<br>T<br><br>P<br>E<br>R<br>T<br>I<br>N<br>E<br>N<br>T |                                     | N<br>O<br>T<br><br>P<br>E<br>R<br>T<br>I<br>N<br>E<br>N<br>T |                            | N<br>O<br>T<br><br>P<br>E<br>R<br>T<br>I<br>N<br>E<br>N<br>T |

| 9.24<br>SOLUBILITY IN WATER |                                   | 9.25<br>SATURATED VAPOR PRESSURE |  | 9.26<br>SATURATED VAPOR DENSITY |  | 9.27<br>IDEAL GAS HEAT CAPACITY |  |
|-----------------------------|-----------------------------------|----------------------------------|--|---------------------------------|--|---------------------------------|--|
| Temperature<br>(degrees F)  | Pounds per 100 pounds<br>of water | Temperature<br>(degrees F)       | Pounds per square inch                                       | Temperature<br>(degrees F)      | Pounds per cubic foot  | Temperature<br>(degrees F)      | British thermal unit per<br>pound-F                          |
| 77                          | 1.200                             |                                  | N<br>O<br>T<br><br>P<br>E<br>R<br>T<br>I<br>N<br>E<br>N<br>T |                                 | N<br>O<br>T<br><br>P<br>E<br>R<br>T<br>I<br>N<br>E<br>N<br>T |                                 | N<br>O<br>T<br><br>P<br>E<br>R<br>T<br>I<br>N<br>E<br>N<br>T |