



CAMACHEM

www.camachem.com

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## Material Safety Data Sheet (MSDS)

Section 1: Chemical Product and Company Identification	
<b>Product Name</b>	Trichloroisocyanuric Acid 90% / (TCCA 90%) / Granules & Powder
<b>CAS Number</b>	87-90-1
<b>Chemical Formula</b>	C3 Cl3 N3 O3
<b>Company Name</b>	CAMACHEM (Part of CAMAL Group) 3F Jinlong East Beijing Station Road Chaoyang District, Beijing, China
<b>Contact</b>	<a href="mailto:sales@camachem.com">sales@camachem.com</a>
<b>Company Website</b>	<a href="http://www.camachem.com">www.camachem.com</a>
Section 2: Composition and Information on Ingredients	
<b>Component</b>	Trichloro-S-triazinetriene
<b>Weight%</b>	97
Section 3: Hazards Identification	
<b>Physical State</b> Powder Solid	
<b>Appearance</b> White	
<b>Odor</b> Odorless	
<b>Emergency Overview</b> May intensify fire; oxidizer. Harmful if swallowed. Causes serious eye irritation. May cause respiratory irritation. Very toxic to aquatic life with long lasting effects. Contact with acids liberates toxic gas. hygroscopic.	
<b>Classification of the substance or mixture</b>	
Oxidizing solids	Category 2
Acute Oral Toxicity	Category 4
Serious Eye Damage/Eye Irritation	Category 2
Specific target organ toxicity - (single	Category 3

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exposure)	
Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1
<p><b>Hazard Statements</b></p> <p>H272 - May intensify fire; oxidizer H302 - Harmful if swallowed  H319 - Causes serious eye irritation H335 - May cause respiratory irritation  H410 - Very toxic to aquatic life with long lasting effects</p> <p><b>Precautionary Statements</b></p> <p><b>Prevention</b></p> <p>P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking P220 - Keep/Store away from clothing/ combustible materials  P221 - Take any precaution to avoid mixing with combustibles P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray  P264 - Wash face, hands and any exposed skin thoroughly after handling P270 - Do not eat, drink or smoke when using this product  P271 - Use only outdoors or in a well-ventilated area  P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection</p> <p><b>Response</b></p> <p>P304 + P340 - IF INHALED: Remove 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  P312 - Call a POISON CENTER or doctor/ physician if you feel unwell P330 - Rinse mouth  P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction</p> <p><b>Storage</b></p> <p>P403 + P233 - Store in a well-ventilated place. Keep container tightly closed</p> <p><b>Disposal</b></p> <p>P501 - Dispose of contents/ container to an approved waste disposal plant</p> <p><b>Physical and Chemical Hazards</b></p> <p>Oxidizing. Contact with combustible material may cause fire. Contact with acids liberates toxic gas. Hygroscopic.</p> <p><b>Health Hazards</b></p> <p>Causes serious eye irritation. May cause respiratory irritation. Harmful if swallowed.</p> <p><b>Environmental hazards</b></p>	

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Very toxic to aquatic life with long lasting effects. Will likely be mobile in the environment due to its water solubility. The product is water soluble, and may spread in water systems.

## Section 4: First Aid Measures

### Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

### Skin Contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Obtain medical attention.

Take off contaminated clothing and shoes immediately.

### Inhalation

Remove from exposure, lie down. Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Obtain medical attention.

### Ingestion

Clean mouth with water. Get medical attention.

### Most important symptoms and effects

No information available.

### Self-Protection of the First Aider

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

### Notes to Physician

Treat symptomatically

## Section 5: Fire and Explosion Data

### Suitable Extinguishing Media

Water spray. Carbon dioxide (CO<sub>2</sub>). Dry chemical. Chemical foam.

### Extinguishing media which must not be used for safety reasons

No information available.

### Specific Hazards Arising from the Chemical

Oxidizer: Contact with combustible/organic material may cause fire. May ignite combustibles (wood, paper, oil, clothing, etc.). Do not allow run-off from fire fighting to enter drains or water courses.

### Protective Equipment and Precautions for Firefighters

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As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## Section 6: Accidental Release Measures

### Personal Precautions

Ensure adequate ventilation.

### Environmental Precautions

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

### Methods for Containment and Clean Up

Sweep up or vacuum up spillage and collect in suitable container for disposal. Do not let this chemical enter the environment. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

Refer to protective measures listed in Sections 8 and 13.

## Section 7: Handling and Storage

### Handling

Avoid contact with skin and eyes. Do not breathe dust. Do not ingest. Keep away from clothing and other combustible materials.

### Storage

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Do not store near combustible materials. Store under an inert atmosphere.

### Specific Use(s)

Use in laboratories

## Section 8: Exposure Controls/Personal Protection

### Control Parameters

#### Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust

#### Exposure Controls

#### Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control

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hazardous materials at source.

### **Personal protective equipment**

Eye Protection Goggles (European standard - EN 166)

Hand Protection Protective gloves

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

### **Skin and body protection**

Wear appropriate protective gloves and clothing to prevent skin exposure

### **Respiratory Protection**

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

### **Large scale/emergency use**

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

Recommended Filter type: Particulates filter conforming to EN 143

### **Small scale/Laboratory use**

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended half mask:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141

When RPE is used a face piece Fit Test should be conducted

### **Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

### **Environmental exposure controls**

Prevent product from entering drains. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

## **Section 9: Physical and Chemical Properties**

Appearance	White
Physical State	Powder Solid
Odor	Odorless

Odor Threshold	No data available	
pH	3.0 1% aq.sol	
Melting Point/Range	245 - 251 °C / 473 - 483.8 °F	
Softening Point	No data available	
Boiling Point/Range	No information available	
Flash Point	No information available	Method-No information available
Evaporation Rate	Not applicable	Solid
Flammability (solid,gas)	No information available	
Explosion Limits	No data available	
Vapor Pressure	No data available	
Vapor Density	Not applicable	Solid
Specific Gravity / Density	No data available	
Bulk Density	No data available	
Water Solubility	12 g/L (25°C)	
Solubility in other solvents	No information available	Partition Coefficient (n-octanol/water)
Autoignition Temperature		
Decomposition Temperature	225 °C	
Viscosity	Not applicable	Solid
Explosive Properties	No information available	
Oxidizing Properties	Oxidizer	
Molecular Formula	C3 Cl3 N3 O3	
Molecular Weight	232.41	

### Section 10: Stability and Reactivity Data

<b>Stability</b>	Stable under normal conditions. Hygroscopic. Oxidizer: Contact with combustible/organic material may cause fire.
<b>Hazardous Reactions</b>	No information available.
<b>Hazardous Polymerization</b>	No information available.
<b>Conditions to Avoid</b>	Incompatible products. Exposure to moist air or water. Excess heat. Combustible material.
<b>Materials to avoid</b>	Strong oxidizing agents. Strong bases. Strong reducing agents. Combustible material.
<b>Hazardous Decomposition Products</b>	Hydrogen chloride gas. Nitrogen oxides (NOx). Carbon monoxide (CO). Carbon dioxide (CO2).

### Section 11: Toxicological Information

Component	LD 50 Oral	LD50 Dermal	LC50 Inhalation
Trichloro-S-triazinetriene	LD 50 =	LD50 > 2000 mg/kg ( Rabbit )	LC50 0.09 - 0.29 mg/L ( Rat ) 4

	40 6 mg /kg ( R at )			
<p>(a) <b>skin corrosion/irritation;</b> No data available          (b) <b>serious eye damage/irritation;</b> Category 2          (c) <b>respiratory or skin sensitization;</b>              <b>Respiratory</b> No data available              <b>Skin</b> No data available          (d) <b>germ cell mutagenicity;</b> No data available          (e) <b>carcinogenicity;</b> No data available            There are no known carcinogenic chemicals in this product          (f) <b>reproductive toxicity;</b> No data available          (g) <b>STOT-single exposure;</b> Category 3          (h) <b>STOT-repeated exposure;</b> No data available              <b>Target Organs</b> No information available.          (i) <b>aspiration hazard;</b> Not applicable Solid  <b>Other Adverse Effects</b> The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information</p> <p><b>Symptoms / effects, both acute and delayed</b>          No information available</p>				
<b>Section 12: Ecological Information</b>				
<b>Ecotoxicity effects</b>		The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.		
<b>Component</b>	<b>Freshwater Fish</b>	<b>Water Flea</b>	<b>Freshwater Algae</b>	<b>Microtox</b>
Trichloro-S-triazinetriene	LC50: 0.13 - 0.5 mg/L, 96h static (Lepomis macrochirus) LC50: 0.06 - 0.11 mg/L, 96h static (Oncorhynchus mykiss)	EC50: 0.16 - 0.18 mg/L, 48h Static (Daphnia magna) EC50: = 0.21 mg/L, 48h		

		(Daphnia magna)		
<b>Persistence and Degradability</b>				
<b>Persistence</b>				
Soluble in water, Persistence is unlikely, based on information available.				
<b>Degradation in sewage treatment plant</b>				
Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.				
<b>Bioaccumulative Potential</b>				
Bioaccumulation is unlikely				
<b>Mobility in soil</b>				
The product is water soluble, and may spread in water systems Will likely be mobile in the environment due to its water solubility Highly mobile in soils				
<b>Endocrine Disruptor Information</b>				
<b>Persistent Organic Pollutant</b>				
This product does not contain any known or suspected substance				
<b>Ozone Depletion Potential</b>				
This product does not contain any known or suspected substance				
<b>Section 13: Disposal Considerations</b>				
<b>Waste from Residues / Unused Products</b>	Should not be released into the environment. Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.			
<b>Contaminated Packaging</b>	Dispose of this container to hazardous or special waste collection point.			
<b>Other Information</b>	Do not dispose of waste into sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Do not let this chemical enter the environment.			
<b>Section 14: Transport Information</b>				
<b>Road and Rail Transport</b>				
<b>UN-No</b>	UN2468			
<b>Proper Shipping Name</b>	TRICHLOROISOCYANURIC ACID, DRY			
<b>Hazard Class</b>	5.1			
<b>Packing Group</b>	II			
<b>IMDG/IMO</b>				



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<b><u>IATA</u></b>	
<b>UN-No</b>	UN2468
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<b>Hazard Class</b>	5.1
<b>Packing Group</b>	II
<b>Special Precautions for User</b>	No special precautions required
<b>Section 15: Other Regulatory Information</b>	
<b>International Inventories</b>	X = listed
<b>Component</b>	Trichloro-S-triazinetriene
<b>The Inventory of Hazardous Chemicals (2015 Edition)</b>	X
<b>List of dangerous goods GB 12268 - 2012</b>	X
<b>Taiwan Toxic Chemical Substances Inventor</b>	X
<b>IECSC</b>	X
<b>EINECS</b>	201-782-8
<b>TSCA</b>	X
<b>DSL</b>	X
<b>PICCS</b>	X
<b>ENCS</b>	X
<b>AICS</b>	X
<b>KECL</b>	X
<b>Section 16: Other Information</b>	

*The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall we be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if we have been advised of the possibility of such damages.*