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SAFETY DATA SHEET

Trichloroisocyanuric acid 90% granules

SECTION 1: Identification of the substance/mixture and of the company/undertaking Trade name:

1.1 Product identifier:	
CAS Number:	87-90-1
EC number:	201-782-8
1.2 SYNONYMS	1,3,5-Trichloro-1-Triazine-2,4,6(1H,3H,5H)-Trione. TCCA

SECTION 2: Hazards identification:

2.1 Classification of the substance or mixture:	Classification according to Regulation (EC) No 201-782-8 The substance is classified as hazardous substance according to the CLP and GHS regulation.
2.2 Label elements:	Labelling according to Regulation (EC) No 201-782-8
Hazard Pictograms:	
Signal Word:	Danger
Hazard statements:	**H271**: May cause fire or explosion; strong oxidizer. **H314**: Causes severe skin burns and eye damage. **H332**: Harmful if inhaled. **H400**: Very toxic to aquatic life. **H410**: Very toxic to aquatic life with long-lasting effects.
Precautionary Statements:	**P210**: Keep away from heat, sparks, open flames, and hot surfaces. No smoking. **P220**: Keep/Store away from clothing/combustible materials. **P280**: Wear protective gloves, eye protection, and face protection. **P303 + P361 + P353**: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

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	P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. **P501**: Dispose of contents/container in accordance with local/regional/national/international regulations.
2.3 Other hazards:	
Inhalation:	Causes respiratory tract irritation. May cause acute pulmonary edema, asphyxia, chemical pneumonitis, and upper airway obstruction caused by edema.
Ingestion:	Harmful if swallowed. May cause liver and kidney damage. May cause nausea, vomiting, and diarrhea, possibly with blood
Skin Contact:	May cause severe irritation and possible burns
Eye contact:	May cause conjunctivitis. May cause permanent corneal opacification.
Chronic Exposure:	May cause liver and kidney damage. Effects may be delayed
Aggravation of pre-existing conditions :	No data

SECTION 3: Composition/information on ingredients

3.1 Chemical characterisation:	Substances
CAS No:	Description: 87-90-1 Trichloroisocyanuric Acid 90% granules
Identification number(s):	EC number: 201-782-8

SECTION 4: First aid measures

4.1 Description of first aid measures	
General information:	
After inhalation:	Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, artificial respiration. If breathing is difficult, give oxygen.

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After skin contact:	Get medical aid. Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Remove contaminated clothing and shoes.
After eye contact:	Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Get medical aid immediately ,or take to a doctor

After swallowing:	No data
4.2 Most important symptoms and effects, both acute and delayed:	**Acute Symptoms** **Skin**: Severe burns, irritation, and possible ulceration. **Eyes**: Intense pain, burning, and potential permanent eye damage. **Inhalation**: Coughing, difficulty breathing, and chemical pneumonia. **Ingestion**: Severe burning sensation, abdominal pain, nausea, and vomiting. **Delayed Symptoms:** **Skin**: Scarring or permanent damage from burns. **Eyes**: Permanent vision impairment if untreated. **Inhalation**: Chronic respiratory issues or lung fibrosis. **Ingestion**: Long-term gastrointestinal damage or organ complications.
4.3 Indication of any immediate medical attention and special treatment needed:	Special treatment may include flushing the eyes or skin with water, administering oxygen if needed, and seeking emergency medical care for inhalation or ingestion of the substance.

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SECTION 5: Firefighting measures

5.1 Extinguishing media	In case of fire, use water, dry chemical ,chemical foam, or alcohol-resistant foam, Use agent most appropriate to extinguish fire.
5.2 Special hazards arising from the substance or mixture	No data
5.3 Advice for firefighters	No data
5.4 further information	No data

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures	Wear appropriate protective equipment (gloves, goggles, respirator) to prevent skin and eye contact and inhalation.
6.2 Environmental precautions:	Prevent the chemical from entering drains, sewers, or watercourses. Avoid contamination of water sources.
6.3 Methods and material for containment and cleaning up:	Contain the spill using inert materials like sand or earth to prevent spread. Collect the spilled TCCA with non-combustible tools and place it in a sealed, labeled container. Dispose of the waste according to local hazardous waste regulations and ensure proper ventilation.

SECTION 7: Handling and storage

7.1 Precautions for safe handling	Avoid contact with clothing and other combustible materials
7.2 Conditions for safe storage, including any incompatibilities	Do not store near combustible materials. Corrosives area.
Requirements to be met by storerooms and receptacles:	cool, dry, well-ventilated area, away from incompatible materials. Use corrosion-resistant, sealed containers, and ensure proper

	labeling. Provide spill containment and fire protection measures
7.3 Specific end uses	no data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters	
Additional information about design of technical facilities:	A system of local and general exhaust is recommended
8.2 Exposure controls	
Appropriate engineering controls	Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels .
Personal protective equipment:	**Eyes:** Wear chemical goggles,Wear safety glasses and chemical goggles if splashing is poddible. **Skin:** Wear appropriate protective gloves and clothing to prevent skin exposure. **Clothing :** Wear appropriate protective clothing to minimize contact with shin.
General protective and hygienic measures:	No data
Respiratory protection:	Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepiece airline respirator in the positive pressure mode with emergency escape provisions.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties General Information	
Appearance: Form:	granules
Colour:	White
Odour:	Chlorine-like
pH-value:	2.7-3.3

Melting point/Melting range:	250 °C (482 °F)
Boiling point/Boiling range:	Not applicable; decomposes before boiling
Flammability (solid, gaseous):	Not applicable
Ignition temperature:	No data available
Decomposition temperature:	225 deg C.
Self-igniting:	No data available
Flash point:	Not applicable
Danger of explosion:	No data available
Explosion limits: Lower:	No data available
Explosion limits: Upper:	No data available
Vapour pressure:	No data available
Density at 20 °C:	1.75 g/cm³
Relative density:	1.5 to 1.6 g/cm³
Vapour density:	No data available
Evaporation rate:	No data available
Solubility in / Miscibility with-·water at 20 °C:	quite soluble
Partition coefficient:(n-octanol/water)	No data available
Viscosity:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity	No data available
10.2 Chemical stability	Stable under normal temperatures and pressures
10.3 Possibility of hazardous reactions	No data available
10.4 Conditions to avoid	Incompatible materials ,strong oxidants.
10.5 Incompatible materials	Strong reducing agents-string bases-moist air or water
10.6 Hazardous decomposition products	Hydrogen chloride, nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, nitrogen.

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SECTION 11: Toxicological information

11.1 Information on toxicological effects	
Acute Toxicity:	**LD50/LC50**: CAS#87-90-1: Oral, rat: **LD50**=700-800mg/kg. Carcinogenicity: Trichloroisocyanuric acid Not listed by ACGIH,IARC, NIOSH, NTP, or OSHA
Skin corrosion/Irritation:	no data available
Serious eye damage/irritation:	no data available
Respiratory damage/irritation:	No data available
Ingestion:	No data available
Germ cell mutagenicity:	No data available
Carcinogenicity:	No data available
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
Signs and Symptoms of Exposure:	Refer section 2.3
11.2 Additional toxicological information	
Aquatic Toxicity:	No data available
Biodegradability:	No data available

SECTION 12: Ecological information

12.1 Toxicity Aquatic toxicity:	No data available
12.2 Persistence and degradability:	No data available
12.3 Bioaccumulative potential:	No data available
12.4 Mobility in soil:	No data available
12.5 Other adverse effects	No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods	
Uncleaned packaging Recommendation:	should be handled with care. Residual chemical residues can be hazardous, so wear appropriate PPE (gloves, goggles) and use mild detergents to clean the packaging. If cleaning is not possible, dispose of the packaging according to local hazardous waste regulations. Always store in a dry, cool area to avoid reactions with moisture.
Recommended cleansing agents:	Water, Mild Detergent Solutions, Sodium Thiosulfate Solution, Dilute Acids (e.g., Vinegar)

SECTION 14: Transport information

14.1 UN-Number · ADR, ADN, IMDG, IATA:	UN2468
14.2 UN proper shipping name · ADR, ADN, IMDG, IATA:	TRICHLOROISOCYANURIC ACID
14.3 Transport hazard class(es) · ADR, ADN, IMDG, IATA :	5.1
14.4 Packing group · ADR, IMDG, IATA:	II
14.5 Environmental hazards:	No data available
14.6 Special precautions for user	No data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture Directive 2012/18/EU	**Trichloroisocyanuric acid (TCCA)** falls under the category of **oxidizing agents** and is commonly used as a disinfectant and a pool sanitizer.
Named dangerous substances	**Trichloroisocyanuric acid (TCCA)** is classified as a **dangerous substance**
15.2 Chemical safety assessment:	Chemical assessment has been carried out under **REACH** regulation.

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SECTION 16: Other information

The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product