

Material Safety Data Sheet (MSDS / SDS)

TCCA 90 (Trichloroisocyanuric Acid) - Granular

SECTION 1: Identification

Product Name	Trichloroisocyanuric Acid (TCCA), 90% Available Chlorine
Synonyms	TCCA, TCCA 90, Trichloro-s-triazinetriene, Symclosene, Trichlorocyanuric Acid
CAS No.	87-90-1
Recommended Use	Oxidising biocide for swimming pool/spa, drinking water and industrial water disinfection
Manufacturer / Supplier	Ochnology Solution Pvt. Ltd., B-153, Sector-4 Defence Colony, Dehradun, Uttarakhand, India – 248001
Telephone	+91 9286823642/43
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SECTION 2: Hazard(s) Identification

GHS Classification: Oxidising Solid Category 2 (H272); Acute Toxicity, Oral Category 4 (H302); Skin Irritation Category 2 (H315); Serious Eye Damage Category 1 (H318); Specific Target Organ Toxicity - Single Exposure, Respiratory Irritation Category 3 (H335); Aquatic Acute Category 1 (H400); Aquatic Chronic Category 1 (H410)

Signal Word: Danger

Hazard Statements:

- H272 – May intensify fire; oxidiser
- H302 – Harmful if swallowed
- H315 – Causes skin irritation
- H318 – Causes serious eye damage
- H335 – May cause respiratory irritation
- H410 – Very toxic to aquatic life with long lasting effects

Precautionary Statements:

- P210 – Keep away from heat, hot surfaces, sparks, open flames – No smoking
- P220 – Keep away from clothing and other combustible materials
- P221 – Take all precautions to avoid mixing with combustibles/reducing agents
- P273 – Avoid release to the environment
- P280 – Wear protective gloves/eye protection/face protection
- 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/doctor
- P371+P380+P375 – In case of major fire, evacuate area; fight fire remotely due to explosion risk

SECTION 3: Composition / Information on Ingredients

Component	CAS No.	Concentration (w/w)
Trichloroisocyanuric Acid (TCCA)	87-90-1	Min. 97% (delivering min. 90% available chlorine)
Moisture / Minor Isocyanurate By-products	–	< 3% (combined)

SECTION 4: First-Aid Measures

Eye Contact	Rinse immediately with plenty of water for at least 15–20 minutes, holding eyelids open. Remove contact lenses if present. This product causes serious eye damage – seek immediate medical attention.
Skin Contact	Remove contaminated clothing immediately. Wash affected area with plenty of water for at least 15 minutes. Seek medical attention if irritation persists.
Inhalation	Move to fresh air immediately. If breathing is difficult, give oxygen if trained to do so. Seek medical attention immediately – chlorine gas may be released on decomposition.
Ingestion	Do NOT induce vomiting. Rinse mouth with water. Give water to drink if conscious and able to swallow. Seek medical attention immediately – call a poison center.

SECTION 5: Fire-Fighting Measures

- Strong oxidiser – may intensify fire and support combustion of other materials even without atmospheric oxygen
- In case of fire, flood the area with copious quantities of water from a safe distance; small/limited amounts of water can trigger a hazardous exothermic reaction – flood, do not sprinkle
- Do not use dry chemical or CO₂ extinguishers as the sole agent – they do not address the oxidiser's self-sustaining decomposition
- Burning or heated product releases toxic and corrosive gases including chlorine, nitrogen trichloride and hydrogen chloride
- Fire-fighters must wear full protective equipment and self-contained breathing apparatus (SCBA); evacuate the area in case of major fire due to explosion/toxic gas risk

SECTION 6: Accidental Release Measures

- Evacuate non-essential personnel; keep away from heat, moisture and combustible/organic materials
- Do not use combustible materials (sawdust, cloth, cellulose-based absorbents) to absorb spilled product
- Sweep up dry material into a clean, dry, non-combustible container for reuse or disposal – do not return spilled material to its original container
- Do not allow product or contaminated wash-water to enter drains or waterways – very toxic to aquatic life
- Wear full PPE (chemical goggles, gloves, respiratory protection) during clean-up; avoid mixing with any other chemical residues

SECTION 7: Handling and Storage

- Handle in a well-ventilated area; avoid generating dust and avoid contact with eyes, skin and clothing
- Keep strictly dry – moisture contact can trigger decomposition and release of chlorine gas
- Store in a cool, dry, well-ventilated area away from direct sunlight, heat and ignition sources
- Segregate from ammonia, amines, reducing agents, organic/combustible materials, acids, metals and other oxidisers or chlorine products of a different chemical type

- Never mix with other pool or water-treatment chemicals directly – cross-contamination is a well-documented cause of fires and toxic gas releases
- Keep containers tightly closed when not in use; do not reuse empty containers

SECTION 8: Exposure Controls / Personal Protection

Occupational Exposure Limits	Chlorine (decomposition product) ACGIH TLV-STEL: 0.5 ppm; OSHA PEL (Cl ₂ , ceiling): 1 ppm. No specific OEL established for TCCA itself – treat per chlorine-releasing precautions
Engineering Controls	Use in a well-ventilated area; local exhaust ventilation where dust or decomposition gas may be generated
Eye/Face Protection	Chemical splash goggles or face shield required – this product causes serious eye damage
Hand Protection	Chemical-resistant gloves (PVC, neoprene or nitrile) required
Respiratory Protection	Dust mask for routine handling; full-face respirator with acid-gas cartridge or SCBA required if chlorine odour is detected or ventilation is inadequate

SECTION 9: Physical and Chemical Properties

Property	Unit	Value
Appearance	–	White granular powder
Odour	–	Strong, characteristic chlorine odour
pH (1% aqueous solution)	–	2.7 – 3.3 (acidic)
Bulk Density	g/cm ³	0.80 – 1.00
Solubility in Water @ 25°C	g/100mL	≈ 1.2 (slow-dissolving)
Melting / Decomposition Point	°C	≈ 225 – 230 (decomposes, does not melt cleanly)
Flash Point	–	Not applicable (non-flammable oxidising solid)

SECTION 10: Stability and Reactivity

- Stable when stored dry, cool and away from incompatible materials
- Decomposes on contact with moisture or heat, releasing chlorine gas and other chlorinated by-products (e.g. nitrogen trichloride)
- Strong oxidiser – violently incompatible with reducing agents, ammonia/ammonium compounds, amines, organic and combustible materials, and other types of chlorine/pool chemicals
- Cross-contamination with incompatible materials can cause fire, explosion or release of toxic gas – a recognised hazard in pool-chemical storage and transport

SECTION 11: Toxicological Information

- Harmful if swallowed (H302); causes skin irritation (H315) and serious eye damage (H318) on direct contact
- May cause respiratory irritation (H335), primarily via chlorine gas released on decomposition/contact with moisture
- Not classified as carcinogenic, mutagenic, or toxic to reproduction based on available data
- Repeated or prolonged exposure to chlorinating agents of this type may cause sensitisation in some individuals – avoid repeated skin/respiratory contact

SECTION 12: Ecological Information

- Very toxic to aquatic life with long lasting effects (H410) – significant environmental hazard
- Must not be released to drains, surface water or groundwater under any circumstances
- Degrades in the environment but is acutely toxic to fish and aquatic organisms at low concentrations before full degradation

SECTION 13: Disposal Considerations

- Dispose of product and contaminated packaging strictly in accordance with local, state and national hazardous waste regulations
- Do not mix with other chemicals or waste streams for disposal – risk of hazardous reaction
- Do not discharge to sewer or waterways without prior treatment/neutralisation as required by local regulation
- Empty containers may retain hazardous residue – handle per label and local regulations; do not reuse

SECTION 14: Transport Information

UN Number	UN 2468
Proper Shipping Name	TRICHLOROISOCYANURIC ACID, DRY
Transport Hazard Class	5.1 (Oxidising Substance)
Packing Group	II
Environmental Hazards	Marine Pollutant – very toxic to aquatic life (H410); requires Marine Pollutant marking where applicable under IMDG

SECTION 15: Regulatory Information

- Classified as a Dangerous Good (Class 5.1 Oxidiser, UN 2468) under IMDG/ADR/IATA – requires full DG documentation, UN-rated packaging and DG-compliant freight booking for all shipment modes
- TCCA and similar pool-chemical oxidisers have been linked to serious shipboard container fires when mis-declared, cross-contaminated, or improperly stowed – buyers and freight-forwarders should ensure strict compliance with carrier DG acceptance requirements
- Widely listed on major chemical inventories (TSCA, REACH, ECL) as an existing/registered substance
- Buyers/importers should confirm import permit and biocide/pesticide registration requirements applicable to their destination market, as TCCA is regulated as a biocidal product in many jurisdictions

SECTION 16: Other Information

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This SDS has been compiled based on general industry data and knowledge for TCCA 90 products of this type as commercially supplied. TCCA is a reactive oxidising Dangerous Good – this document is intended as a general handling and safety guide only and does not replace a batch-specific SDS from the manufacturing mill or a professional Dangerous Goods compliance review, both of which should be obtained before shipment, storage, or handling decisions are finalised.

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