

TRICHLOROISOCYANURIC ACID (TCCA)

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SECTION 1: IDENTIFICATION

1.1 GHS Product identifier:

TRICHLOROISOCYANURIC ACID (TCCA)
Synonyms: Symclosene; Trichloro-s-triazinetrione; TCCA 90%
CAS: 87-90-1

Other means of identification:

Not relevant

1.2 Recommended use of the chemical and restrictions on use:

Relevant uses: Swimming pool and water disinfectant, bleaching and sanitizing agent, industrial/institutional water treatment biocide. For industrial user only.
Uses advised against: All uses not specified in this section or in section 7.3.

1.3 Supplier's details:

SURAJ CHEMICALS
No 92, Govindappa Naicken Street, Shiva Complex, Chennai – 600001, Tamil Nadu, India
Tel: +91 - 7092722822, +91 - 9840284032 / +91 - 44 - 25393652, 42130281
Email: sales@surajchemicals.com | Website: www.surajchemicals.com
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1.4 Emergency phone number:

Emergency Contact No: +91 - 7092722822, +91 - 9840284032

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

GHS:
Classification of this product has been carried out in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Ox. Sol. 2	Oxidizing solids, Category 2, H272
Acute Tox. 4 (oral)	Acute oral toxicity, Category 4, H302
Skin Irrit. 2	Skin irritation, Category 2, H315
Eye Dam. 1	Serious eye damage, Category 1, H318
STOT SE 3	Respiratory tract irritation, single exposure, Category 3, H335
Aquatic Acute 1	Hazardous to the aquatic environment, acute hazard, Category 1, H400

2.2 GHS label elements, including precautionary statements:

GHS: Danger

Hazard statements:

H272 – May intensify fire; oxidizer.
H302 – Harmful if swallowed.
H315 – Causes skin irritation.
H318 – Causes serious eye damage.
H335 – May cause respiratory irritation.
H400 – Very toxic to aquatic life.

Precautionary statements:

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.
P220: Keep away from clothing and other combustible materials.
P221: Take any precaution to avoid mixing with combustibles/acids.
P261: Avoid breathing dust.
P280: Wear protective gloves/protective clothing/eye 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 or doctor/physician.
P370+P378: In case of fire: Use water spray/fog to extinguish – do NOT use dry chemical or CO₂ near the product mass.
P501: Dispose of contents/container in accordance with local/national regulations on hazardous waste.

2.3 Other hazards which do not result in classification:

Contact with acids, ammonia, amines or organic/combustible materials releases toxic chlorine-containing gases. Not a PBT/vPvB substance per current assessment criteria.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances:

Chemical description: Trichloroisocyanuric acid
In accordance with Annex 4.3.3 of the GHS, the product contains:

Identification	Chemical Name / Classification	Concentration
CAS: 87-90-1	Trichloroisocyanuric acid — Ox. Sol. 2: H272; Acute Tox. 4: H302; Skin Irrit. 2: H315; Eye Dam. 1: H318; STOT SE 3: H335; Aquatic Acute 1: H400 – Danger	≥90%

To obtain more information on the hazards of the substances, consult sections 11, 12 and 16.

3.2 Mixtures:

Non-applicable (supplied as granules/tablets of a technical-grade single substance – see current specification sheet for available-chlorine assay).

SECTION 4: FIRST AID MEASURES

4.1 Description of necessary first-aid measures:

Request medical assistance immediately, showing the SDS of this product.

By inhalation:

Remove the person affected to fresh air and keep at rest. Seek medical attention if breathing difficulty occurs.

By skin contact:

Remove contaminated clothing. Wash skin thoroughly with plenty of water for at least 15 minutes. Seek medical attention if irritation persists.

By eye contact:

Rinse eyes thoroughly with lukewarm water for at least 15 minutes, holding eyelids open. Remove contact lenses if present and easy to do. Seek immediate medical attention.

By ingestion/aspiration:

Rinse mouth with water. Do NOT induce vomiting. Give water to drink if conscious. Seek immediate medical attention.

4.2 Most important symptoms/effects, acute and delayed:

Acute and delayed effects are indicated in sections 2 and 11.

4.3 Indication of immediate medical attention and special treatment needed, if necessary:

Treat symptomatically. No specific antidote known.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media:

Suitable: Water spray/fog in large quantities.

Unsuitable: Dry chemical powder, CO₂ and foam extinguishers are not recommended directly on the burning mass.

5.2 Specific hazards arising from the chemical:

Non-combustible but a strong oxidizer; intensifies fire. On heating or contact with acids/ammonia/organic matter, releases toxic and corrosive chlorine, nitrogen oxides and hydrogen chloride fumes.

5.3 Special protective actions for fire-fighters:

Evacuate non-essential personnel. Wear SCBA and full protective clothing. Cool containers with water spray from a safe distance. Prevent fire-fighting run-off from entering drains/watercourses.

Additional provisions:

Do not allow the product to contact other chemicals, especially acids, during fire-fighting operations.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Evacuate the area. Avoid raising dust. Use PPE per section 8. Keep away from combustibles, acids and reducing agents.

For emergency responders:

Wear full protective equipment including respiratory protection. Keep unprotected persons away.

6.2 Environmental precautions:

Prevent entry into drains, watercourses and soil. Notify authorities if a significant release reaches the environment.

6.3 Methods and materials for containment and cleaning up:

Sweep up carefully with clean, dry tools and place in a clean, dry, labelled container for disposal. Do not use combustible absorbents. Do not return spilled material to original container. Flush residual area with large amounts of water.

6.4 Reference to other sections:

See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

A. General precautions for safe use:

Avoid generating dust. Keep away from acids, ammonia, amines, reducing agents, combustible/organic materials and moisture. Handle in well-ventilated areas with clean, dry equipment.

B. Technical recommendations for the prevention of fires and explosions:

Store away from all other chemicals, particularly acids and combustibles. Keep containers tightly closed and dry.

C. Technical recommendations on general occupational hygiene:

Do not eat, drink or smoke while handling. Wash hands and exposed skin thoroughly after use.

D. Technical recommendations to prevent environmental risks:

Avoid release to drains and watercourses. Contain and collect spillage; see section 6.

7.2 Conditions for safe storage, including any incompatibilities:

A. Specific storage requirements:

Minimum Temp.	5°C
Maximum Temp.	30°C
Maximum time	24 Months (unopened, original packaging)

B. General conditions for storage:

Store in a cool, dry, well-ventilated place away from direct sunlight, moisture, acids, combustibles and reducing agents. Keep containers tightly closed. Segregate from all other chemical classes per local dangerous-goods storage rules.

7.3 Specific end use(s):

Except for the instructions already specified, it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters:

No specific occupational exposure limit is established for trichloroisocyanuric acid in India.

Identification	Occupational Exposure Limit Type	Value
TCCA (as total dust) CAS: 87-90-1	Time Weighted average concentration (8 hrs)	Typical value – refer to current specification sheet

8.2 Appropriate engineering controls:

Use local exhaust/dust extraction when handling powder/granules/tablets to minimize airborne dust, supplemented by PPE.

B. Respiratory protection:

Dust mask/respirator with P2 (or equivalent) particulate filter where dust is generated; full-face respirator with appropriate filter in case of thermal decomposition fumes.

C. Specific protection for the hands:

Chemical-resistant gloves (nitrile or PVC).

D. Eye and face protection:

Chemical safety goggles or face shield.

E. Bodily protection:

Chemical-resistant apron/coveralls and closed footwear.

F. Additional emergency measures:

Emergency shower and eyewash stations should be available.

Environmental exposure controls:

Avoid environmental release of both product and container.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance	
Physical state at 20°C	Solid (granules, powder or tablets)
Appearance	White solid
Color	White
Odor	Strong chlorine-like odor
Odour threshold	Typical value – refer to current specification sheet
Volatility	
Boiling point at atmospheric pressure	Non-applicable (solid; decomposes before boiling)
Vapour pressure at 20°C / 50°C	Not relevant *
Evaporation rate at 20°C	Not relevant *
Product Description	
Density / Relative density at 20°C	Typical value – refer to current specification sheet
Dynamic / Kinematic viscosity	Non-applicable (solid)
Concentration (available chlorine)	≥90% typical (as TCCA)
pH (1% aqueous solution)	2.7 – 3.3 (typical, acidic)
Vapour density at 20°C	Not relevant *
Partition coefficient n-octanol/water 20°C	Not relevant *
Solubility in water at 20°C	Slightly soluble, approx. 12 g/L
Decomposition temperature	~225°C (decomposes)
Melting point/freezing point	~225°C (with decomposition)
Flammability	
Flash Point	Non-applicable (solid oxidizer)
Flammability (solid, gas)	Non-flammable; strong oxidizer
Autoignition temperature	Not relevant *
Lower / Upper flammability limit	Not relevant *
Particle Characteristics	
Median equivalent diameter	Typical value – refer to current specification sheet

* Not relevant due to the nature of the product, not providing information on the properties of its hazards.

9.2 Other information:

Explosive properties	Not an explosive; may intensify fire
Oxidising properties	H272 – May intensify fire; oxidizer
Corrosive to metals	Not relevant *
Heat of combustion	Not relevant *
Surface tension at 20°C	Not relevant *
Refraction index	Not relevant *

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

Reacts with acids to release toxic chlorine gas. Reacts with ammonia, amines and other nitrogen-containing compounds to form explosive nitrogen trichloride. Reacts with reducing agents, combustible and organic materials, generating heat and potential fire.

10.2 Chemical stability:

Stable under recommended storage conditions. Hygroscopic; absorbs moisture which accelerates decomposition.

10.3 Possibility of hazardous reactions:

Contamination with moisture, acids or organic matter can cause self-heating, decomposition and release of chlorine gas; pressure build-up possible in confined spaces.

10.4 Conditions to avoid:

Shock/Friction	Contact with Air	Increase in Temperature	Sunlight	Humidity
Not applicable	Not applicable	Accelerates decomposition	Avoid direct exposure	Avoid contact with moisture

10.5 Incompatible materials:

Acids	Ammonia / Amines	Reducing Materials	Combustible / Organic Materials	Metals (powdered)
Avoid contact – releases Cl ₂ gas	Avoid contact – explosion risk	Avoid direct contact	Avoid contact – fire risk	Avoid contact

10.6 Hazardous decomposition products:

Chlorine gas, nitrogen oxides, hydrogen chloride and cyanuric acid derivatives on thermal decomposition or contact with acids.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

In case of exposure that is repetitive, prolonged, or at concentrations higher than the recommended occupational exposure limits, adverse health effects may result depending on the means of exposure:

A. Ingestion (acute effect):

Harmful if swallowed. May cause irritation/corrosive effects to the mouth, throat, oesophagus and gastrointestinal tract.

B. Inhalation (acute effect):

May cause respiratory tract irritation; dust/decomposition fumes may cause coughing and breathlessness.

C. Contact with skin and eyes (acute effect):

Causes skin irritation. Causes serious eye damage.

D. CMR effects (carcinogenicity, mutagenicity, reproductive toxicity):

Classification criteria are not met based on available data.

E. Sensitizing effects:

Classification criteria for respiratory or skin sensitisation are not met based on available data.

F. Specific target organ toxicity (STOT) – single exposure:

May cause respiratory irritation (H335).

G. Specific target organ toxicity (STOT) – repeated exposure:

Classification criteria are not met based on available data.

H. Aspiration hazard:

Classification criteria are not met based on available data.

Product-specific toxicological information:

Identification	Acute Toxicity	Genus
Trichloroisocyanuric acid CAS: 87-90-1	LD50 oral: 410 mg/kg	Rat
	LD50 dermal: >2,000 mg/kg	Rabbit
	LC50 inhalation: Not established	–

SECTION 12: ECOLOGICAL INFORMATION

Very toxic to aquatic life.

12.1 Toxicity:

Identification	Acute Toxicity	Species	Genus
Trichloroisocyanuric acid CAS: 87-90-1	LC50: 0.33 mg/L (96h)	Oncorhynchus mykiss	Fish
	EC50: 0.19 mg/L (48h)	Daphnia magna	Crustacean

12.2 Persistence and degradability:

Hydrolyses rapidly in water to cyanuric acid and hypochlorous acid/hypochlorite; not considered persistent.

12.3 Bioaccumulative potential:

Low bioaccumulation potential expected based on physicochemical properties.

12.4 Mobility in soil:

Koc	Henry	Dry Soil	Moist Soil
Not relevant	Not relevant	No	No

12.5 Results of PBT and vPvB assessment:

Non-applicable

12.6 Other adverse effects:

Not described

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

Dissolve small quantities in large volumes of water and allow chlorine to dissipate before neutral disposal, or treat with a reducing agent (e.g. sodium thiosulfate/sodium sulfite) under controlled conditions. Do not mix with acids or combustible waste. For packaging: use dedicated, clean containers; do not re-use.
Refer to national and local regulations on hazardous waste management.

SECTION 14: TRANSPORT INFORMATION

Transport of dangerous goods by land (ADR 2023 / RID 2023):

14.1 UN number	UN2468
14.2 UN proper shipping name	TRICHLOROISOCYANURIC ACID, DRY
14.3 Transport hazard class(es)	5.1
14.4 Packing group	II
14.5 Environmental hazard	Yes
14.6 Special precautions for user	Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by sea (IMDG 41-22):

14.1 UN number	UN2468
14.2 UN proper shipping name	TRICHLOROISOCYANURIC ACID, DRY
14.3 Transport hazard class(es)	5.1
14.4 Packing group	II
14.5 Marine pollutant	Yes
14.6 Special precautions for user	EmS Codes: F-A, S-Q
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by air (IATA/ICAO 2024):

14.1 UN number	UN2468
14.2 UN proper shipping name	TRICHLOROISOCYANURIC ACID, DRY
14.3 Transport hazard class(es)	5.1
14.4 Packing group	II
14.5 Environmental hazard	Yes
14.6 Special precautions for user	Physico-chemical properties: see section 9

14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant
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SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations specific for the product in question:

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of local circumstances, in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

Other legislation:

- Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989
- The Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987)
- The Insecticides Act, 1968 (where applicable to biocidal end-use)
- Public Liability Insurance Act, 1991

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with Annex 4 – Guidance on the preparation of Safety Data Sheets of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Texts of the legislative phrases mentioned in sections 2 and 3:

- H272: May intensify fire; oxidizer.
- H302: Harmful if swallowed.
- H315: Causes skin irritation.
- H318: Causes serious eye damage.
- H335: May cause respiratory irritation.
- H400: Very toxic to aquatic life.

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3.

Advice related to training:

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources:

United Nations GHS (Rev. 8); European Chemicals Agency (ECHA) classification and labelling inventory; publicly available chemical supplier safety data sheets for this CAS number.

Abbreviations and acronyms:

ADR: European agreement concerning the international carriage of dangerous goods by road | IMDG: International maritime dangerous goods code | IATA: International Air Transport Association | ICAO: International Civil Aviation Organisation | LD50: Lethal Dose 50 | LC50: Lethal Concentration 50 | EC50: Effective Concentration 50

The information contained in this safety data sheet is based on sources, technical knowledge and current legislation, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product; it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within Suraj Chemicals' awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

END OF SAFETY DATA SHEET