

**MATERIAL SAFETY DATA SHEET**
**1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION**

Trade Name : **AQUA CARE CHEMICALS 90**  
 Product Name : TICA-G (Granular)  
 Company : SHIKOKU CHEMICALS CORPORATION  
 Address : 8-537-1, DOKI-CHO-HIGASHI, MARUGAME, KAGAWA 764-8504 JAPAN  
 Telephone : +81-877-21-4119  
 Fax : +81-877-22-4118  
 Emergency Phone Number : CHEMTREC +1-703-527-3887  
 E-mail Address : cgyousui@shikoku.co.jp  
 Recommended Use of the Chemical and Restrictions on Use : Sanitizers, disinfectants, fungicides, bactericides, algaecides for swimming pools, spas, hot tubs, septic tanks, and sewage treatments, dish-washing detergents and bleach

**2. HAZARDS IDENTIFICATION**

GHS Classification

PHYSICAL HAZARDS : Oxidizing solid Category 2

HEALTH HAZARDS

Acute Toxicity (Oral) : Category 4  
 Acute Toxicity (Dermal) : Classification not possible  
 Acute Toxicity (Inhalation) : Classification not possible  
 Skin Corrosion / Irritation : Category 2  
 Serious Eye Damage / Eye Irritation : Category 2A  
 Respiratory Sensitization : Classification not possible  
 Skin Sensitization : Classification not possible  
 Germ Cell Mutagenicity : Not classified  
 Carcinogenicity : Classification not possible  
 Reproductive Toxicity : Classification not possible  
 Specific Target Organ Toxicity Single Exposure : Classification not possible  
 Specific target organ toxicity repeated exposure : Classification not possible  
 Aspiration Hazard : Classification not possible

ENVIRONMENTAL HAZARDS

Hazardous to the Aquatic Environment (Acute Hazard) : Category 1  
 Hazardous to the Aquatic Environment (Chronic Hazard) : Classification not possible

GHS Label Element

Symbol



Signal Word

: Danger

Hazard Statement

: May intensify fire ; oxidizer  
 : Harmful if swallowed (oral)  
 : Causes skin irritation  
 : Causes serious eye irritation  
 : Very toxic to aquatic life

**MATERIAL SAFETY DATE SHEET**

## Precautionary Statements

## [Prevention]

- : Wash face, hands and any exposed skin thoroughly after handling.
- : Do not eat, drink, or smoke when using this product.
- : Wear protective gloves/eye protection/face protection..
- : Avoid release to the environment.
- : Keep away from heat.
- : Keep/Store away from clothing/combustible materials.
- : Take any precaution to avoid mixing with combustibles.

## [Response]

- : Rinse mouth.
- : If skin irritation occurs : Get medical advise/attention.
- : Take off contaminated clothing and wash before reuse.
- : If eye irritation persists : Get medical advise/attention.
- : Collect spillage.
- : In case of fire : Use plenty of water for extinction.

## (IF ON SKIN)

- : Wash with plenty of soap and water.

## (IF IN EYES)

- : Rinse cautiously with water for 15–20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

## (IF SWALLOWED)

- : Call a POISON CENTER or doctor/physician if you feel unwell.

## [Disposal]

- : Dispose of contents/container to in accordance with local regulations.

**MATERIAL SAFETY DATA SHEET****3. COMPOSITION / INFORMATION ON INGREDIENTS**

Substance / Mixture	: Substance
Chemical Identify	: Trichloroisocyanuric acid
Synonym	: 1,3,5-Trichloro-1,3,5-triazine-2,4,6(1H,3H,5H)-trione
Chemical Formula	: C3N3O3Cl3
CAS Number	: 87-90-1
EINECS	: 2017828
TSCA	: Listed
Concentration	: (Trichloroisocyanuric acid) 99% (Other) 1%

Impurities and stabilizing additives which are themselves classified and which contribute to the classification of the substance.

: Nothing

**4. FIRST-AID MEASURES**

Inhalation	: Move person to fresh air. If person is not breathing, give artificial respiration, preferable by mouth-to-mouth, if possible. Get medical attention for further treatment advice.
Skin Contact	: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Get medical attention for treatment advice.
Eye Contact	: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Get medical attention for further treatment advice.
Ingestion	: Get medical advice IMMEDIATELY. Have a person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so.
Note to Physician	: Probable mucosal damage may contraindicate the use of gastric lavage.

**5. FIRE FIGHTING MEASURES**

Extinguishing Media	: Large amounts of water. Do not use dry chemicals, carbon dioxide or halogenated extinguishing agents.
Specific Hazards Arising from the Chemical	: Chlorine, Nitrogen trichloride, Hydrogen chloride, Nitrogen oxide, and carbon monoxide.
Protective Equipment and Precautions for Fire-fighters	: Wear self-contained breathing apparatus in pressure-demand mode and full protective gear.

**MATERIAL SAFETY DATA SHEET****6. ACCIDENTAL RELEASE MEASURES**

- Personal Precautions : Avoid inhalation and contact with eyes and skin. Use personal protective equipment.
- Environmental Precautions : Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, and oceans. Do not flush into surface water or sanitary sewer systems.
- Methods and Material for Containment and Cleaning Up : Sweep up spills or leaks with dry broom into suitable container for disposal.

**7. HANDLING AND STORAGE**

- Handling : Wear proper protective equipments in order to avoid contact with skin or eyes. Remove and wash contaminated clothing before re-use. Do not breathe vapors/dust. Do not eat, drink or smoke when using this product. Uses only in area provided with appropriate exhaust ventilation.
- Storage : Keep product in tightly closed container when not in use. Store in a cool, dry, well-ventilated area away from heat or open flame. Keep out of reach of children.
- Incompatible Products : Strong bases. Strong oxidizing agents.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

- Engineering Measures : Showers, eyewash stations, and ventilation systems
- Exposure Limits : Trichloroisocyanuric acid  
(As chlorine gas concentration) 1 ppm (1994year JAPAN)  
TLV-TWA(8hours): 0.5ppm(ACGIH.1993-1994)  
TLV-STEL(15minintes): 1ppm(ACGIH 1993-1994)

Personal Protective Equipment

- Respirator : A NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations.
- Gloves : Wear appropriate chemical resistant gloves.
- Eye Protection : Wear chemical safety goggles.
- Skin Protection : Wear impervios, long-sleeved clothing to minimize skin contact.
- Hygiene Measures : When using, do not eat, drink or smoke. Remove and wash contaminated clothing before re-use. Provide regular cleaning of equipment, work area and clothing.

**MATERIAL SAFETY DATA SHEET****9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance (Physical State / Color)	: Solid / White
Odor	: Chlorine Odor
Molecular Weight	: 232.41
pH	: Approx. 2.8 (1% solution)
Melting Point	: 225 – 230 degree C
Boiling Point	: Not applicable
Flash Point	: Not applicable
Ignition Point	: Not applicable
Flammability (Solid, Gas)	: Not available
Explosive Limit	: Not available
Vapour Pressure	: Not available
Vapour Density	: Not available
Evaporation Rate	: Not available
Gravity	: 2.1 (Absolute Specific Gravity)
Water Solubility	: 1.2g/100g (25 degree C)
Partition Coefficient : n-octanol / water	: Not available
Decomposition Temperature	: Approx. 250 degree C

**10. STABILITY AND REACTIVITY**

Stability	: Stable under recommended storage conditions. : Occur hypochlorous acid when dissolve product in water.
Condition to Avoid	: Protect from moisture. Incompatible products.
Incompatible Products	: Acid, Alkali, Other chlorine agents, oils/fats and flammable materials
Hazardous Decomposition Products	: Chlorine, Nitrogen Trichloride, Nitrogen Oxide, Hydrogen Chloride, Carbon Monoxide
Hazardous Reactions	: None under normal processing

**MATERIAL SAFETY DATA SHEET****11. TOXICOLOGICAL INFORMATION**

Acute Toxicity	(oral)	: Mouse LD <sub>50</sub> 1,060mg/kg
	(dermal)	: Not available
	(inhalation)	: Not available
Skin Corrosion / Irritation		: Corrosive
Serious Eye Damage / Eye Irritation		: Irritant to mucous membrane
Respiratory Sensation		: Not available
Skin Sensation		: Not available
Germ Cell Mutagenicity		: Negative (1)
Carcinogenicity		: Not available
Reproductive Toxicity		: Not available
Specific Target Organ Toxicity - Single Exposure		: Not available
Specific Target Organ Toxicity - Repeated Exposure		: Not available
Aspiration Hazard		: Not available
Other Information		: Not available

**12. ECOLOGICAL INFORMATION**

Ecotoxicity		: Fish toxicity 1.5ppm (ORYZIAS LATIPES ; 48H-TLM)
Persistence and Degradability		: Decomposable in the nature Resolve carbon dioxide and ammonia by way of isocyanurate (2)
Bioaccumulation		: Not available
Mobility in Soil		: Not available
Other Adverse Effect		: Not available

**MATERIAL SAFETY DATA SHEET****13. DISPOSAL CONSIDERATIONS**

- Waste Disposal Methods : This material, as supplied, is a hazardous waste. Follow instructions by local authorities.
- Contaminated Packaging : Dispose of in accordance with local regulations. Do not re-use empty containers.

**14. TRANSPORT INFORMATION**IMDG/IMO

- Proper Shipping Name : Trichloroisocyanuric acid, dry  
Hazard Class : 5.1  
UN No. : 2468  
Packing Group : II  
EmS No. : F-A, S-Q

ICAO/IATA

- Proper Shipping Name : Trichloroisocyanuric acid, dry  
Hazard Class : 5.1  
UN No. : 2468  
Packing Group : II  
ERG Code : 5L

**15. REGULATORY INFORMATION**

- US toxic substance control act (TSCA) – inventory  
European Union – European inventory of existing commercial chemical substances (EINECS)

**16. OTHER INFORMATION**

- Excerpt (1)[A Review of Toxicology Studies on Cyanurate and it's Chlorinated Derivatives]  
Environmental Health Perspectives Vol. 69. 278 (1986)  
(2)[Biodegradation of Cyanuric Acid] Applied Microbiology.28(6)1004(1974)

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