

**Safety Data Sheet**  
**According to Regulation (EC) No 1907/2006, Annex II,**  
**Amended by REGULATION (EU) No 453/2010,**

**According to Regulation (EC) No 1272/2008**

**TRICHLOROISOCYANURIC ACID (POWDER , GRANULAR , TABLET)**

**SDS Record Number: CSSS-TCO-010-112274**

Printing date: 06/11/2012

Version 1.1

Revision date: 06/11/2012

**Section 1 Identification of the substance and of the company/undertaking**

**1.1 Product identifier:**

Identification on the label/Trade name: TRICHLOROISOCYANURIC ACID (POWDER , GRANULAR , TABLET)  
Additional identification: 1,3,5-Trichloro-1-triazine-2,4,6(1H,3H,5H)-trione;  
1,3,5-Trichloroisocyanuric acid  
Identification of the product: CAS# 87-90-1; EC# 201-782-8  
Index Number: 613-031-00-5  
REACH registration No.: Not available

**1.2 Relevant identified uses of the substance and uses advised against:**

**1.2.1 Identified uses:**

Water treatment and disinfectant. Used as biocide in swimming pool, industrial cycling water, drinking water.

**1.2.2 Uses advised against:**

Not available.

**1.3 Details of the supplier of the safety data sheet:**

Supplier(Only representative): Chemical Inspection & Regulation Service Limited  
Supplier(Manufacturer): PUYANG CLEANWAY CHEMICALS LTD.  
Address: Wanglou Industry Zone, Fan County, Puyang, Henan Prov  
Contact person(E-mail): liyawang@cleanwaychem.cn  
Telephone: +86-393-8948200  
Fax: +86-393-4638678

**1.4 Emergency telephone Number:**

+86-393-4630477, 4616168

Available outside office hours?

YES

NO

**Section 2 Hazards Identification**

**2.1 Classification of the substance**

**2.1.1 Classification:**

The substance is classified as following according to 67/548/EEC and REGULATION (EC) No 1272/2008:

REGULATION (EC) No 1272/2008	
Hazard classes/Hazard categories	Hazard statement
Ox. Sol. 2	H272
Acute Tox. 4	H302
Eye Irrit. 2	H319
STOT SE 3	H335
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

For full text of H- phrases: see section 2.2.

67/548/EEC	
Hazards characteristics	R-Phrases
O	R8
Xn	R22
-	R31

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Xi	R36/37
N	R50-53

For full text of R- phrases: see section 16.

**2.1.2 The most important adverse effects**

**2.1.2.1 The most important adverse physicochemical effects:**

May intensify fire; oxidizer.

**2.1.2.2 The most important adverse human health effects:**

Harmful if swallowed. Causes serious eye irritation. May cause respiratory irritation.

**2.1.2.3 The most important adverse environmental effects:**

Very toxic to aquatic life with long lasting effects.

**2.2 label elements**

According to Regulation(EC) No 1272/2008 (CLP):

**Hazard Pictograms:**



**Signal Word(S):**

Danger

**Hazard Statement:**

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.

**Precautionary Statement:**

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/vapours/spray.

P264: Wash hands thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P271: Use only outdoors or in a well-ventilated area.

P273: Avoid release to the environment.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P304 + P340: IF INHALED: Remove victim 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.

P337 + P313: If eye irritation persists: Get medical advice/attention.

P370 + P378: In case of fire: Use water, foam for extinction.

P391: Collect spillage.

P403 + P233: Store in a well-ventilated place. Keep container tightly closed.

P405: Store locked up.

P501: Dispose of contents/container to local/regional/national/ international regulation.

**2.3 Other hazards**

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Not available (PBT, vPvB, Substance is an endocrine disruptor etc.)

**Section 3 Composition/information on ingredients**

**Substance/Mixture:** Substance

**Ingredient(s):**

Chemical Name	Registration No.	Index No.	CAS No.	EC No.	Concentration
TRICHLOROISOCYANURIC ACID (POWDER , GRANULAR , TABLET)	N/A	613-031-00-5	87-90-1	201-782-8	100%

**Section 4 First aid measures**

**4.1 Description of first aid measures:**

In all cases of doubt, or when symptoms persist, seek medical attention.

**4.1.1 In case of inhalation:**

Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

**4.1.2 In case of skin contact:**

Remove soiled clothes and shoes. Wash with plenty of water immediately after skin contact. Seek medical treatment.

**4.1.3 In case of eyes contact:**

Protect unharmed eye. Rinse the eyes with open eyelids for 10-15 minutes with water. Then consult an eye specialist immediately.

**4.1.4 In case of ingestion:**

Rinse mouth with water. Drink plenty of water, but never give anything to an unconscious person. Do not induce vomiting. Immediately call an emergency physician to the place of accident. Do not use acids or acidic substances as an antidot.

**4.2 Most important symptoms and effects, both acute and delayed**

Harmful if swallowed. Causes serious eye irritation. May cause respiratory irritation.

**4.3 Indication of any immediate medical attention and special treatment needed**

If skin irritation or rash occurs, get medical advice/attention.

**Section 5 Fire-Fighting measures**

**5.1 Extinguishing media:**

**Suitable extinguishing media:** For safety reasons: water, foam.

**Unsuitable extinguishing media:** Not available.

**5.2 Special hazards arising from the substance or mixture**

During heating or in case of fire poisonous gases are produced: nitrogen oxides (NOx), hydrogen chloride (HCl), chlorine.

**5.3 Advice for fire-fighters:**

Fire-fighters should wear full protective clothing and self-contained breathing apparatus (SCBA).

**Section 6 Accidental release measures**

**6.1 Personal precautions, protective equipment and emergency procedures:**

**6.1.1 For non-emergency personnel:**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

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**6.1.2 For emergency responders:**

Wear an appropriate NIOSH/MSHA approved respirator if mist, vapor or dust is generated.

**6.2 Environmental Precautions:**

Do not allow material to be released to the environment without proper governmental permits. Very toxic to aquatic life with long lasting effects.

**6.3 Methods for Containment and Cleaning up:**

Sweep up, avoiding generation of dust, then immediately spread as a thin layer in an uncontaminated, dry open area, to avoid the possibility of hot spots forming. Gradually hose to drain ensuring large dilution. Do not store or transport swept up material. Do not return spilled material to original container. Do not add small amount of water to material. Where a spill has occurred in a confined space or an unventilated building and the material is damp and evolving chlorine, the rate of chlorine evolution can be reduced by covering the thinly spread solid with soda ash. For large spills notify Emergency Services.

**6.4 Reference to other sections:**

See Section 7 for information on safe handling.  
See section 8 for information on personal protection equipment.  
See Section 13 for information on disposal.

**6.5 Additional information:**

Not applicable.

**Section 7 Handling and storage**

**7.1 Precautions for safe handling:**

**7.1.1 Protective measures:**

Strong oxidising agent. Do not mix with other chemicals. Mix only with water. Never add water to product. Always add product to water. Use clean dry dispensing equipment. Avoid contact with the skin and the eyes.

**7.1.2 Advice on general occupational hygiene:**

Do not eat, drink and smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas. Provide adequate ventilation. Avoid contact with the skin and eyes.

**7.2 Conditions for safe storage, including any incompatibilities:**

Store container tightly sealed at a cool and dry place with sufficient ventilation. Suitable material: Steel, Stainless steel. Protect from humidity and water. This product is hygroscopic. Do not use wooden shelves. Maximum storage temperature: 25°C.

**7.3 Specific end use(s):**

Not applicable.

**Section 8 Exposure control/personal protection**

**8.1 Control parameters:**

**8.1.1 Occupational exposure limits:** Not available.  
**8.1.2 Additional exposure limits under the conditions of use:** Not available.  
**8.1.3 DNEL/DMEL and PNEC-Values:** Not available.

**8.2 Exposure controls**

**8.2.1 Appropriate engineering controls:**

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

**8.2.2 Individual protection measures, such as personal protective equipment:**

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Eye/face protection	Tightly sealed goggles.
Hand protection	Type of gloves recommended –Nitrile rubber. Minimum breakthrough time / gloves: 480 min. Minimum thickness / gloves 0.11 mm.
Body protection	Plastic apron, sleeves, boots-if handling large quantities.
Respiratory protection	Use respiratory protection for chlorine and dust inhalation protection.
Thermal hazards	Wear suitable protective clothing to prevent heat.

### 8.2.3 Environmental exposure controls:

- Avoid discharge into the environment.
- According to local regulations, Federal and official regulations.

## Section 9 Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Appearance:	Crystalline
Colour:	White
Odour:	Like chlorine, pungent
Odour threshold:	Not available
pH:	2.0-2.7 (10 g/l) at 20°C
Melting point/range (°C):	Not available
Boiling point/range (°C) :	Not available
Flash point (°C) :	Not available
Evaporation rate:	Not available
Flammability:	Not available
Ignition temperature (°C) :	Not available
Upper/lower flammability/explosive limits:	Not available
Vapour pressure (25°C) :	Not available
Vapour density:	Not available
Relative Density (20°C):	2.07 g/cm <sup>3</sup>
Bulk density (kg/m <sup>3</sup> ) :	~ 850 kg/m <sup>3</sup>
Water solubility (g/l) at 25°C :	< 0.1 g/l decomposes slowly
n-Octanol/Water (log Po/w) :	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	225-230°C
Viscosity, dynamic (mPa s) :	Not available
Explosive properties:	Product is not explosive.
Oxidising properties:	The substance is classified as oxidizing with the subcategory 2.

### 9.2. Other information:

Fat solubility(solvent– oil to be specified) etc:	Not available
Surface tension:	Not available
Dissociation constant in water( pKa):	Not available
Oxidation-reduction Potential:	Not available
Specific gravity:	Not available
Molecular Formula:	C <sub>3</sub> Cl <sub>3</sub> N <sub>3</sub> O <sub>3</sub>
Molecular Weight:	232.41

## Section 10 Stability and reactivity

### 10.1 Reactivity:

The substance is stable under normal storage and handling conditions.

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## 10.2 Chemical stability:

Stable at room temperature in closed containers under normal storage and handling conditions.

## 10.3 Possibility of hazardous reactions:

Gives off hydrogen by reaction with metals. Reacts exothermic with water.

## 10.4 Conditions to avoid:

Incompatible materials. High temperature. Poor ventilation. Contamination. Moisture/high humidity.

## 10.5 Incompatible materials:

Avoid contact with easily oxidisable material such as organic compounds, reducing agents, Nitrogen containing compounds, Sodium or Calcium hypochlorite, other oxidisers, acids and alkalis.

## 10.6 Hazardous decomposition products:

Upon contact with water or humidity following substances are formed: nitrogen trichloride. During heating or in case of fire poisonous gases are produced: nitrogen oxides (NOx), hydrogen chloride (HCl), chlorine.

## Section 11 Toxicological information

### 11.1 Toxicokinetics, metabolism and distribution

**Non-human toxicological data:** Not available

### 11.2 Information on toxicological effects

#### Acute toxicity:

LD50( Oral, Rat):	490 mg/kg
LD50(Dermal Rabbit):	7600 mg/kg
LC50(Inhalation, Rat):	Not available.

**Skin corrosion/irritation:** Not classified

**Serious eye damage/irritation:** Causes serious eye irritation.

**Respiratory or skin sensitization:** Not classified

**Germ cell mutagenicity:** Not classified

**Carcinogenicity:** Not classified

**Reproductive toxicity:** Not classified

**STOT- single exposure:** May cause respiratory irritation.

**STOT-repeated exposure:** Not classified

**Aspiration hazard:** Not classified

## Section 12 Ecological information

### Toxicity:

Acute toxicity		Time	Species	Method	Evaluation	Remarks
LC50	N/A	96h	Fish	OECD 203	N/A	N/A
EC50	N/A	48h	Daphnia	OECD 202	N/A	N/A
EC50	N/A	72h	Algae	OECD 201	N/A	N/A

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<b>Persistence and degradability:</b>	Not available.
<b>Bioaccumulative potential:</b>	Not available.
<b>Mobility in soil:</b>	Not available.
<b>Results of PBT&amp;vPvB assessment:</b>	Not available.
<b>Other adverse effects:</b>	Do not empty into drains.

## Section 13 Disposal considerations

### 13.1 Waste treatment methods

Disposal together with normal waste is not allowed. Special disposal is required according to local regulations. Do not let product enter drains. Contact waste disposal services.

### 13.2 Product / Packaging disposal:

Empty contaminated packaging thoroughly. They can be re-cycled after thorough and proper cleaning. Packaging that cannot be cleaned is to be disposed of in the same manner as the product.

## Section 14 Transport information

	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO/IATA)
<b>UN-Number:</b>	2468	2468	2468
<b>UN Proper shipping name:</b>	TRICHLOROISOCYANURIC ACID, DRY	TRICHLOROISOCYANURIC ACID, DRY	TRICHLOROISOCYANURIC ACID, DRY
<b>Transport hazard Class:</b>	5.1	5.1	5.1
<b>Packaging group:</b>	II	II	II
<b>Environmental hazards:</b>	Yes	Yes	Yes
<b>Special precautions for user:</b>	See section 2.2	See section 2.2	See section 2.2
<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	IBC08	IBC08	IBC08

## Section 15 Regulation information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

<b>Relevant information regarding authorization:</b>	Not applicable.
<b>Relevant information regarding restriction:</b>	Not applicable.
<b>Other EU regulations:</b>	Employment restrictions concerning young person must be observed. For use only by technically qualified individuals.
<b>Other National regulations:</b>	Not applicable
<b>Chemical Safety Assessment has been carried out?</b>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>

## Section 16 Other information

### 16.1 Indication of changes

Version 1.1 Amended by EU No 453/2010

### 16.2 Relevant R- phrases (number and full text):

R8 Contact with combustible material may cause fire.  
R22 Harmful if swallowed.  
R31 Contact with acids liberates toxic gas.  
R36/37 Irritating to eyes and respiratory system.

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R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

## 16.3 Training instructions:

Not applicable.

## 16.4 Further information:

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

## 16.5 Notice to reader:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees.

This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

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