

# SAFETY DATA SHEET

<b>Product name</b>	<b>TCPP</b>	
<b>Product id</b>	7002	
<b>Revision date</b>	07/08/2017	<b>Revision: 7</b>
<b>Supersedes</b>	10/06/2014	

## 1. Identification of the substance & the company

<b>Product identifier</b>	TCPP
<b>Chemical name</b>	Tris(2-chloro-1-methylethyl) phosphate (TCPP)
<b>Synonym(s)</b>	2-Propanol, 1-chloro-, phosphate (3:1). Tris(2-chloroisopropyl) phosphate. 2-Propanol, 1-chloro-, 2,2',2"-phosphate. Reaction mass of tris(2-chloropropyl) phosphate and tris(2-chloro-1-methylethyl) phosphate and Phosphoric acid, bis(2-chloro-1-methylethyl) 2-chloropropyl ester and Phosphoric acid, 2-chloro-1-methylethyl bis(2-chloropropyl) ester.
<b>Chemical formula</b>	C <sub>9</sub> H <sub>18</sub> Cl <sub>3</sub> O <sub>4</sub> P
<b>Chemical family</b>	Alkyl phosphate
<b>Molecular weight</b>	ca.328
<b>Type of product and use</b>	Flame retardant
<b>Company</b>	Dongguan Baoxu Chemical Technology Ltd Caijing Business Bldg Dongguan CN 523071
<b>Emergency Telephone</b>	+1(213) 632-9361 between 0800-1700 (GMT-8)

## 2. Hazards identification

<b>GHS classification</b>	Acute Tox. 4, H302 Harmful if swallowed
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<b>Signal Word</b>	WARNING
<b>Hazard statements</b>	H302 - Harmful if swallowed

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**Precautionary statements** P264 - Wash hands thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
P330 - Rinse mouth  
P501 - Dispose of contents/container in accordance with national and international regulations

**NFPA Ratings (Scale 0-4)** Health = 1, Fire = 1, Reactivity = 0

## 3. Composition / information on ingredients

Components	Weight %	Index No.	EC No.	EU Classification
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	99.5		911-815-4	Acute Tox. 4 H302

This product can also be described as: Phosphoric trichloride, reaction products with propylene oxide CAS No. 1244733-77-4

## 4. First-aid measures

**Eye contact** Holding the eyelids apart, flush eyes promptly with copious flowing water for at least 20 minutes. Get medical attention immediately.

**Skin contact** Remove contaminated clothing. Wash skin thoroughly with mild soap and plenty of water for at least 15 minutes. Wash clothing before reuse. Get medical attention if irritation occurs.

**Inhalation** In case of inhalation, remove person to fresh air. Keep him quiet and warm. Apply artificial respiration if necessary and get medical attention immediately.

**Ingestion** If swallowed, wash mouth thoroughly with plenty of water. Get medical attention immediately.

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NOTE: Never give an unconscious person anything to drink  
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### Most important symptoms and effects, acute or delayed

Harmful if swallowed

**Notes to the physician** Treat symptomatically and supportively.

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## 5. Fire - fighting measures

**Suitable extinguishing media** Material is not combustible. Use extinguishing media appropriate to surrounding fire conditions.

**Unusual fire and explosion hazards** When heated to decomposition, may release poisonous and corrosive fumes of Carbon Dioxide, Carbon Monoxide, Hydrogen Chloride and Phosphorus Oxides.

**Fire fighting procedure** Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA). Contain runoff to prevent entry into water or drainage systems.

## 6. Accidental release measures

**Personal precautions** Wear appropriate safety clothing and eye/face protection (see Section 8).

**Methods for cleaning up** Soak up with sand or other suitable absorbent and dispose of as solid waste. Collect in suitable and properly labeled containers. Ventilate area and wash spill site after material pickup is complete.

**Environmental precautions** Prevent product from entering drains, ditches and rivers. Avoid access to streams, lakes or ponds.

## 7. Handling and storage

**Handling** Keep containers tightly closed.  
Avoid bodily contact.

**Storage** Store in a dry, cool, well-ventilated area away from incompatible materials (see "materials to avoid"). Maximum recommended storage temperature of 50°C (122°F)

## 8. Exposure controls / personal protection

Exposure Limits :

Components	ACGIH-TLV Data	Korea OEL	OSHA (PEL) Data
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	Not determined	Not determined	Not determined

**Ventilation requirements** Provide adequate ventilation.

**Personal protective equipment:**  
- **Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment.

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<b>- Hand protection</b>	Rubber gloves
<b>- Eye protection</b>	Chemical safety goggles
<b>- Skin and body protection</b>	Use protective clothing impervious to this material.

**Hygiene measures** Do not eat, smoke or drink where material is handled, processed or stored. Wash hands thoroughly after handling and before eating or smoking. Safety shower and eye bath should be provided.

## 9. Physical and chemical properties

<b>Appearance</b>	Clear colorless liquid
<b>Odor</b>	Slightly sweetish.
<b>Melting point/range</b>	-20°C
<b>Boiling point/range</b>	288°C (decomposes)
<b>Flash point</b>	>245°C (closed cup)
<b>Flammable/Explosion limits</b>	Not flammable/Not explosive
<b>Vapor pressure</b>	1.4x10 <sup>(-5)</sup> hPa (25°C)
<b>Density</b>	1.290 (20°C)
<b>Solubility:</b>	
<b>- Solubility in water</b>	1.08 g/l at 20°C
<b>Partition coefficient (n-octanol/water)</b>	Log Pow : 2.68
<b>Auto-ignition temperature</b>	> 400°C
<b>Decomposition temperature</b>	245°C
<b>Viscosity</b>	68.5 cP (20°C)
<b>Explosive properties</b>	There are no chemical groups associated with explosive properties present in the molecule
<b>Oxidising properties</b>	The structure indicates non oxidizing properties

## 10. Stability and reactivity

<b>Stability</b>	Stable under normal conditions
<b>Conditions to avoid</b>	Heating above decomposition temperature.
<b>Materials to avoid</b>	Strong oxidizers, strong acids and strong alkalis. It hydrolyzes slowly at normal temperatures in acidic or alkaline aqueous solutions.
<b>Hazardous decomposition products</b>	Carbon dioxide and carbon monoxide. Hydrogen Chloride,. Phosphorus oxides.

## 11. Toxicological information

**Acute toxicity:**

<b>- Rat oral LD50</b>	630 - 2000 mg/kg
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- Rabbit dermal LD50 > 2000 mg/kg

- Rat dermal LD50 >2000 mg/kg  
- Rat inhalation LC50 > 7 mg/l (4-hr)

**Skin corrosion/irritation** Not irritant

**Serious eye damage/ irritation** Not irritant

**Respiratory or skin sensitisation** Not a skin sensitizer

**Sub-chronic toxicity:**

- NOEL > 20,000 ppm (13 weeks oral rat)

**Chronic toxicity** No data available

**Mutagenicity** Not mutagenic by the Ames Test.  
Mutagenic in the mouse lymphoma L5178Y test system.  
Non genotoxic in an in-vivo micronucleus test in mice

**Carcinogenicity** Not included in NTP 14th Report on Carcinogens  
Not classified by IARC  
Not classified as a carcinogen by USA OSHA.

**Reproductive toxicity** No significant adverse effects on the reproductive parameters evaluated

**Specific Target Organ Toxicity (STOT) - Repeat exposure** No effects on specific target organs have been identified.

**Neurotoxicity** Not neurotoxic

## 12. Ecological information

**Aquatic toxicity :**

- 96 Hour-LC50, Fish 56.2 mg/L

- 48 Hour-EC50, Daphnia magna 131 mg/L

- EC50, Freshwater algae 47 mg/l (96 hr)

- 72 Hour-EC50, Freshwater algae 82 mg/L

**Chronic toxicity** The No Observed Effect Concentration (NOEC) in Daphnia magna is 32 mg/l.

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<b>Biodegradation</b>	Not readily biodegradable. Inherently biodegradable
<b>Bioaccumulative potential</b>	The bioaccumulation potential is expected to be low Measured BCF of 0.8- <14
<b>Mobility in soil</b>	Based on measured results the adsorption coefficient for TCPP is derived to be 174, indicating a moderate adsorption potential.
<b>Note:</b>	Does not meet the criteria for PBT or vPvB assessment

## 13. Disposal considerations

<b>Waste disposal</b>	Dispose of in a safe manner in accordance with local/national regulations.
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## 14. Transportation information

<b>IMDG</b>	Not regulated
<b>ADR/RID</b>	Not regulated
<b>ICAO/IATA</b>	Not regulated
<b>DOT</b>	Not regulated

## 15. Regulatory information

<b>EU</b>	Reported in EINECS
<b>USA</b>	Reported in the EPA TSCA Inventory.
<b>Australia</b>	Listed in AICS
<b>Canada</b>	Listed in DSL
<b>China - China inventory</b>	Listed in IECSC
<b>Japan</b>	Listed in ENCS
<b>Korea</b>	listed in KECI
<b>Mexico</b>	Listed in the National Inventory of Chemical Substances (INSQ).
<b>New Zealand Inventory</b>	Listed in NZIoC
<b>Philippines</b>	Listed in PICCS

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<b>Taiwan</b>	Listed (TCSI)
<b>Vietnam</b>	Listed
<b>Thailand</b>	Listed

## 16. Other information

**This data sheet contains changes from the previous version in section(s)**  
1, 2, 3, 9, 11, 12, 15

### Health, Safety & Environment Policy

We will strive to ensure that our operations and products meet the needs of the present global community without compromising the ability of future generations to meet their needs We accept that the success of our business is dependent on the supply of products and services that will benefit society whilst ensuring human safety and protection of the environment and natural resources Within the framework of our commitment to the Responsible Care program, we will provide a healthy and safe work environment for employees and will responsibly manage our products at all stages of their life cycle in order to protect human health and the environment whilst maintaining high production standards of operation

TO MEET THIS COMMITMENT WE WILL: Comply with or exceed applicable national and international regulatory requirements and other requirements to which we subscribe Communicate openly and actively encourage dialogue with employees, customers and community concerning our products and operations Implement documented management systems consistent with and for promotion of the Responsible Care ethics

Develop and supply products that can be manufactured, transported, used and disposed of safely whilst best meeting the needs of our customers Regularly assess, continually improve and responsibly manage health, safety and environmental risks associated with products and processes throughout their life-cycles Share knowledge and expertise with others and seek to learn from and incorporate improved practices into our own operations

Educate and train employees, contractors and customers to improve their HSE performance Communicate up-to-date information to enable our workers, customers and other interested parties to handle our products in a safe and environmentally responsible manner Endeavor to work with customers, suppliers, distributors and contractors to foster the safe use, transport and disposal of our chemicals Support Product Stewardship programs in cooperation with customers, distributors and transporters

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, we make no representations as to the completeness or accuracy thereof. Information is supplied to you upon the condition that the persons receiving the information will make their own determination as to its safety and suitability for their purposes prior to use. In no event will we be responsible for damages of any nature whatsoever resulting from the use of or reliance upon the information. In addition, we shall not be liable for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices or from any hazards inherent in the nature of the product. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE, ARE MADE HEREUNDER WITH RESPECT TO THIS INFORMATION OR THE PRODUCT TO WHICH THE INFORMATION REFERS.

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**End of safety data sheet**