1. Identification of the substance & the company

Chemical name: Tris(2-chloroisopropyl) phosphate
Chemical formula: C9H18Cl3O4P
Chemical family: Alkyl phosphate
Molecular weight: ca. 327.57
Type of product and use: Flame retardant
Supplier: ICL-IP America Inc.
622 Emerson Road - Suite 500
St Louis, Missouri 63141, USA
Tel: (314)983-7884 Fax: (314)983-7607
Emergency Telephone: Chemtrec (800)424-9300
Medical: PROSAR 1-888-875-1685 (24HRS)

2. Hazards identification

Emergency overview: May be harmful if swallowed
May cause mild irritation to the eyes. May cause skin and respiratory tract irritation.

NFPA Ratings (Scale 0-4): Health = 1, Fire = 1, Reactivity = 0
HMIS Ratings (Scale 0-4): Health = 1, Fire =1, Reactivity = 0.

3. Composition / information on ingredients

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric trichloride, reaction products with propylene oxide</td>
<td>1244733-77-4</td>
<td>99.5</td>
</tr>
</tbody>
</table>
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
Get medical attention if irritation occurs. Remove contaminated clothing. Wash skin thoroughly with mild soap and plenty of water for at least 15 minutes. Wash clothing before re-use.

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.

NOTE: Never give an unconscious person anything to drink.

Notes to the physician
Treat symptomatically and supportively.

5. Fire - fighting measures

Suitable extinguishing media
Use extinguishing media appropriate to surrounding fire conditions.

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

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.
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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 absorbant 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.

7. Handling and storage

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

<table>
<thead>
<tr>
<th>Components</th>
<th>ACGIH-TLV Data</th>
<th>OSHA (PEL) Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric trichloride, reaction products with propylene oxide 1244733-77-4</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

Ventilation requirements: Provide adequate ventilation.

Personal protective equipment:
- Respiratory protection: In case of insufficient ventilation wear suitable respiratory equipment.
- Hand protection: Rubber gloves
- Eye protection: Chemical safety goggles
- Skin and body protection: Use protective clothing impervious to this material.
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Hygiene measures: Safety shower and eye bath should be provided. Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking.

9. Physical and chemical properties

Appearance: Clear colorless liquid
Odour: Slightly sweetish
Boiling point/range: 288°C (decomposes)
Melting point/range: -20°C
Flash point: >245°C (closed cup)
Flammable/Explosion limits: Not explosive/Not flammable
Auto-ignition temperature: > 400°C
Vapour pressure: 1.4x10(-3)Pa (25°C)
Viscosity: 71mPas (25°C)
Solubility:
- Solubility in water: 1.08g/l at 20°C
Density: 1.290 (20°C)
Decomposition temperature: 245°C
Partition coefficient: Log Pow = 2.68
(n-octanol/water)
Explosive properties: There are no chemical groups associated with explosive properties present in the molecule
Oxidising properties: The structure indicates non oxidizing properties

10. Stability and reactivity

Stability: Stable under normal conditions
Materials to avoid: Strong oxidizers, strong acids and strong alkalis.
Conditions to avoid: It hydrolyzes slowly at normal temperatures in acidic or alkaline aqueous solutions.
Hazardous decomposition products: Hydrogen Chloride
Hazardous polymerization: Not expected to occur
11. Toxicological information

Acute toxicity:
- Rat oral LD50 < 2000 mg/kg
- Rabbit dermal LD50 > 5000 mg/kg
- Rat dermal LD50 > 2000 mg/kg
- Rat inhalation LC50 > 7 mg/l (4-hr)
- Eye irritation (rabbit) Not irritant
- Dermal irritation (rabbit) Mild irritant.

Dermal sensitization Not a 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 11th Report on Carcinogens
Not classified by IARC
Not classified as a carcinogen by USA OSHA

Reproductive toxicity In a two-generation oral reproductive toxicity study a LOAEL of 99 mg/kg/day is derived for effects on fertility and for developmental toxicity.

Neurotoxicity Not neurotoxic

12. Ecological information

Aquatic toxicity:
- 96 Hour-LC50, Fish 56.2 mg/L
- LC50, Crustacea &0.39&Mysid shrimp, 96-hours
- 48 Hour-EC50, Daphnia magna 131 mg/L
- 72 Hour-EC50, Freshwater algae 82 mg/L

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

Biodegradation Not readily biodegradable
13. Disposal considerations

Waste disposal
Observe all federal, state and local environmental regulations when disposing of this material.

14. Transportation information

UN No. Not regulated
DOT Not regulated
IMO Not regulated
ICAO/IATA Not regulated

15. Regulatory information

USA
- SARA 313
  Reported in the EPA TSCA Inventory.
  This product does not contain a chemical listed at or above de minimis concentrations.

- California-Prop 65
  WARNING: This product contains a chemical(s) known to the State of California to cause cancer, or birth defects or other reproductive harm (concentration < 0.1%)

- Waste Classifications
  This material does not meet RCRA’s characteristic definition of ignitability, corrosivity, or reactivity, and is not listed in 40CFR 261.33.

- Workplace Classification
  This product is considered hazardous under the OSHA Hazard Communication Standard (29CFR 1910.1200).

Canada
Listed in DSL

-WHMIS hazard class
Non-controlled

EU
Reported in EINECS

Japan
Listed in ENCS

Australia
Listed in AICS
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New Zealand Inventory: Listed in NZIoC
China inventory: Listed in IECSC
Korea: Listed in ECL
Philippines: Listed in PICCS

16. Other information

GHS classification

Signal word: Warning
Hazard statements: H302 - Harmful if swallowed
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

This data sheet contains changes from the previous version in section(s)
1, 3

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.
MATERIAL SAFETY DATA SHEET

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Supersedes: 29/11/2010

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
Share knowledge and expertise with others and seek to learn from and incorporate improved practices into our own operations
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
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

Educate and train employees, contractors and customers to improve their HSE performance

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, ICL-IP America Inc. makes no representations as to the completeness or accuracy thereof.
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End of safety data sheet