

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard 29 CFR 1910.1200 (HAZCOM 2012 - GHS)  
According to Canada Hazardous Products Regulation (WHMIS 2015)

<b>Product name</b>	<b>LINDOL XP PLUS</b>	
<b>Product id</b>	7035	
<b>Revision date</b>	19/12/2017	<b>Revision: 4</b>
<b>Supersedes</b>	05/11/2014	

## 1. Identification of the substance & the company

<b>Chemical name</b>	Tricresyl phosphate
<b>Synonym(s)</b>	Tritolyl phosphate; Phosphoric acid, tris (methylphenyl) ester, TCP
<b>Chemical family</b>	Aryl phosphate
<b>Type of product and use</b>	Flame-retardant plasticizer
<b>Supplier</b>	ICL-IP America Inc. 622 Emerson Road - Suite 500 St. Louis, Missouri 63141, USA Tel:(314)983-7884 Fax:(314)983-7607 e-mail:msdsinfo@icl-group.com
<b>Emergency Telephone</b>	Chemtrec: (800) 424-9300 Medical: PROSAR 1-888-875-1685 (24HRS)

## 2. Hazards identification

<b>GHS classification</b>	Rep. 2 H361 - Suspected of damaging fertility or the unborn child Aquatic Chronic 1, H410 - Very toxic to aquatic life with long lasting effects
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**Labels and other form of warning** .



<b>Signal Word</b>	WARNING
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<b>Hazard statements</b>	H361 - Suspected of damaging fertility or the unborn child H410 - Very toxic to aquatic life with long lasting effects
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**Precautionary statements**

P202 - Do not handle until all safety precautions have been read and understood  
P273 - Avoid release to the environment  
P391 - Collect spillage  
P280 - Wear protective gloves/protective clothing/eye protection/face protection  
P308 + P313 - IF exposed or concerned: Get medical advice/attention  
P405 - Store locked up  
P501 - Dispose of contents/container in accordance with local/ regional/ national/ international regulations.

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

**HMIS Ratings (Scale 0-4)** Health = 0\*, Fire = 0, Reactivity = 0

### 3. Composition / information on ingredients

Components	CAS No.	Weight %
Tricresyl phosphate (mixed isomers)	1330-78-5	99 - 100

Tris(methylphenyl)phosphate with <1% ortho isomer species

### 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.

NOTE: Never give an unconscious person anything to drink

#### Most important symptoms and effects, acute or delayed

Suspected of damaging fertility or the unborn child.

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

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### 5. Fire - fighting measures

<b>Suitable extinguishing media</b>	Use extinguishing media appropriate to surrounding fire conditions.
<b>Unusual fire and explosion hazards</b>	When heated to decomposition, may release poisonous and corrosive fumes of carbon dioxide, carbon monoxide and phosphorus oxides.
<b>Fire fighting procedure</b>	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

<b>Personal precautions</b>	Wear appropriate safety clothing and eye/face protection (see Section 8).
<b>Methods for cleaning up</b>	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.
<b>Environmental precautions</b>	Prevent product from entering drains, ditches and rivers.

### 7. Handling and storage

<b>Handling</b>	Avoid bodily contact. Keep containers tightly closed.
<b>Storage</b>	Store in a dry, well-ventilated area. away from incompatible materials (see "materials to avoid"). Maximum recommended storage temperature of 65°C (149°F). Store above 4.4°C (40° F) for improved pumping rates. Temperatures between 27 - 37.8°C (80 - 100°F) provide good flow rates.

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### 8. Exposure controls / personal protection

#### Exposure Limits :

Components	ACGIH-TLV Data	Korea OEL	OSHA (PEL) Data
Tricresyl phosphate (mixed isomers) 1330-78-5	Not determined	Not determined	Not determined

**Ventilation requirements** Adequate ventilation is recommended to control potential employee exposure.

#### Personal protective equipment:

- **Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment.
- **Hand protection** Neoprene gloves
- **Eye protection** Chemical safety goggles
- **Skin and body protection** Body covering clothes and boots

**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, colourless to slightly brownish liquid
<b>Odor</b>	Slight.
<b>Odor threshold</b>	Not determined
<b>pH</b>	Not determined
<b>Boiling point/range</b>	>400°C
<b>Freezing point/range</b>	<-20°C
<b>Pour point</b>	-25°C (-13 °F)
<b>Flash point</b>	>200°C
<b>Evaporation rate (ether=1)</b>	Not determined
<b>Flammability (solid, gas)</b>	Not flammable
<b>Flammable/Explosion limits</b>	Not flammable/Not explosive
<b>Vapor pressure</b>	0.1 mmHg (155°C)
<b>Vapor density</b>	Not available
<b>Density</b>	1.172 (20°C)
<b>Solubility:</b>	
- <b>Solubility in water</b>	0.271 mg/L
- <b>Solubility in other solvents</b>	Soluble in common solvents
<b>Partition coefficient (n-octanol/water)</b>	Log Pow : 5.93
<b>Auto-ignition temperature</b>	Not self-ignitable
<b>Viscosity</b>	32.4 mPa (35°C)

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Explosive properties	Not explosive
Oxidising properties	No oxidising properties can be predicted on the basis of chemical structure

### 10. Stability and reactivity

Reactivity	It hydrolyzes slowly at normal temperatures in acidic or alkaline aqueous solutions.
Stability	Stable under normal conditions
Conditions to avoid	Prolonged storage at elevated temperatures.
Materials to avoid	Strong oxidizers, strong acids and strong alkalis.
Hazardous decomposition products	Phosphorus oxides. Carbon dioxide and carbon monoxide.

### 11. Toxicological information

Acute toxicity:	
- Rat oral LD50	> 20,000 mg/kg
- Rabbit dermal LD50	> 10,000 mg/kg
- Rat inhalation LC50	>5.2 mg/L
Skin corrosion/irritation	Not irritant
Serious eye damage/ irritation	Not irritant
Specific Target Organ Toxicity (STOT) - Single exposure	No data available
Specific Target Organ Toxicity (STOT) - Repeat exposure	In two-year feeding studies in rats and mice, tricresyl phosphate showed no evidence of carcinogenic activity. The NOELs (no observable effect levels) in rats and mice were 300 ppm and 250 ppm, respectively.
Mutagenicity	Not mutagenic in several in vitro assays.
Carcinogenicity	Not classified by IARC Not included in NTP 14th Report on Carcinogens Not classified as a carcinogen by USA OSHA

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<b>Reproductive toxicity</b>	<p>Sperm concentration, motility, and progressive movement were decreased in the male rats that received 200 mg/kg/day. A dose-dependent increase in abnormal sperm morphology was observed in the males from both treatment groups. The number of female rats delivering live pups was severely decreased by TCP exposure. Litter size and pup viability were decreased in the 400 mg/kg/day dose group. Pup body weight and developmental parameters were unaffected by TCP exposure.</p> <p>Significant histopathological changes were observed in the testes and epididymides of male rats and in the ovaries of female rats exposed to TCP. There was no NOAEL identified in this study.</p>
<b>Neurotoxicity</b>	<p>A single oral dose of 2000 mg/kg of tricresyl phosphate to hens resulted in no effects in neurotoxic esterase activity and no clinical signs of neurotoxicity. Five consecutive daily oral doses of 2000 mg/kg of this product to hens resulted in a slight decrease in neurotoxic esterase activity but no clinical signs of neurotoxicity. In a recently conducted neurotoxicity test, this product did not express neurotoxic activity.</p>

## 12. Ecological information

<b>Aquatic toxicity :</b>	
- 96 Hour-LC50, Fish	0.6 mg/L
- 48 hour-LC50, Daphnia magna	146 ug/L
- 96 Hour - EC50, Algae	>2500 µg/L (20 C)
<b>Persistence and degradability</b>	<p>Tricresyl phosphate displays a low ready biodegradability</p> <p>Tricresyl phosphate is expected to hydrolyse slowly under normal environmental conditions.</p> <p>Therefore, abiotic processes would contribute significantly to the depletion of the substance within the environment.</p> <p>As such, the substance does not fulfill the requirements of Annex XIII, Para 1.1 and cannot be considered a "P" and "vP" .</p>
<b>Biodegradation</b>	Not readily biodegradable.
<b>Bioaccumulative potential</b>	The calculated bioconcentration factor (BCF) is lower than 2000. As such, the substance does not fulfil the requirement of Annex XIII, Para 1.2 and cannot be considered to be "B" or "vB".
<b>Mobility in soil</b>	The adsorption of the substance to soil has been demonstrated to be high (log Koc 4.31)

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### 13. Disposal considerations

<b>Waste disposal</b>	Observe all federal, state and local environmental regulations when disposing of this material
<b>Disposal of Packaging</b>	Dispose of in a safe manner in accordance with local/national regulations.

### 14. Transportation information

<b>UN No.</b>	3082
<b>DOT</b>	<p>Proper shipping name: Environmentally hazardous substances, liquid , n.o.s (Tricresyl phosphate { &lt; 1% ortho isomer})</p> <p>Class: 9 - Miscellaneous Hazardous Materials</p> <p>Labels: 9</p> <p>Packing Group: III</p> <p>Not regulated for surface and air transport in non-bulk (&lt;119 gallons) packagings. (contains tricresyl phosphate which is a Marine Pollutant per 49CFR 172.101 Appendix B)</p>
<b>IMDG</b>	<p>Proper shipping name: Environmentally hazardous substance, liquid, n.o.s (Tricresyl phosphate (less than 1% ortho isomer),</p> <p>Class: 9 - Miscellaneous Dangerous Substances and Articles</p> <p>Labels: 9</p> <p>Packing Group: III</p> <p>Mark: MARINE POLLUTANT</p>
<b>ICAO/IATA</b>	<p>Proper shipping name: Environmentally hazardous substance, liquid , n.o.s (Tricresyl phosphate (less than 1% ortho isomer)</p> <p>Class: 9</p> <p>Hazard label(s): Miscellaneous</p> <p>Packing group: III</p> <p>Marking: Environmentally hazardous substance</p>

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### 15. Regulatory information

<b>USA</b>	Reported in the EPA TSCA Inventory.
<b>- SARA 313</b>	This product does not contain a chemical listed at or above de minimis concentrations
<b>- New Jersey Right-to-Know Hazardous Substances list</b>	Listed
<b>- California-Prop 65</b>	This product does not contain any ingredient known to the State of California to cause cancer or reproductive toxicity as listed under the State drinking Water and Toxic Enforcement Act of 1986.
<b>Canada</b>	Listed in DSL
<b>EU</b>	Reported in EINECS
	Regulated in France - Possible work-related illnesses, Tables A and B (Code de la Sécurité Sociale, Section III, Annex A, Article D.461-1, July 1999)
<b>Australia</b>	Listed in AICS
<b>- China inventory</b>	Listed in IECSC
<b>Japan</b>	Listed in ENCS Listed in ISHL
<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
<b>Taiwan</b>	Listed (TCSI)
<b>Vietnam</b>	Listed
<b>Thailand</b>	Listed



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### 16. Other information

This data sheet contains changes from the previous version in section(s)  
7, 14, 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.

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**End of safety data sheet**