



MATERIAL SAFETY DATA SHEET

Product name **PHOSFLEX T-BEP**
Product id 7068
Revision date 08/11/2012 **Revision: 2**
Supersedes 24/12/2008

1. Identification of the substance & the company

Chemical name Tris(2-butoxyethyl) phosphate
Synonym(s) Ethanol, 2-butoxy, phosphate (3:1) Tributoxyethyl phosphate Phosphoric acid, tributoxyethyl ester
Chemical formula C18 H39 O7 P
Chemical family Alkyl phosphate
Type of product and use Flame-retardant plasticizer
Leveling Agent
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 cause mild eye, skin and respiratory tract irritation*
May cause cholinesterase inhibition
May cause nerve damage.
NFPA Ratings (Scale 0-4) Health = 1, Fire = 1, Reactivity = 0
HMIS Ratings (Scale 0-4) Health = 2, Fire = 1, Reactivity = 0.

3. Composition / information on ingredients

Components	CAS No.	Weight %
Tris(2-butoxyethyl) phosphate	78-51-3	100

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.



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Skin contact Remove contaminated clothing. Wash skin thoroughly with mild soap and plenty of water for at least 15 minutes. Wash clothing before re-use. 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

Notes to the physician Treat symptomatically and supportively.

5. Fire - fighting measures

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

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.

Unusual fire and explosion hazards When heated to decomposition, may release poisonous and corrosive fumes of carbon dioxide, carbon monoxide, phosphorus oxides and phosphoric acid.

6. Accidental release measures

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

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

Environmental precautions Prevent product from entering drains, ditches and rivers.



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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"). Noncorrosive to glass or metals. May soften or deteriorate certain plastics and elastomers (vinyl-based resins, neoprene and natural rubbers).

8. Exposure controls / personal protection

Exposure Limits :

Components	ACGIH-TLV Data	OSHA (PEL) Data
Tris(2-butoxyethyl) phosphate 78-51-3	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** Use protective clothing impervious to this material.

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

9. Physical and chemical properties

Appearance Clear colorless liquid
Odour Mild
Boiling point/range 231°C (448°F) @ 6 mmHg
Melting point/range -70°C (-94°F)
Flash point 132°C (270°F) (closed cup)
Flammable/Explosion limits Not flammable/Not explosive
Auto-ignition temperature Not self-ignitable
Vapour pressure 0.03 mmHg (150°C)
Evaporation rate (ether=1) < 1
Viscosity 12mPas (20°C)
Solubility:
- **Solubility in water** < 2 g/l @ 20°C



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Density 1.012 - 1.018 g/mL (25°C)

10. Stability and reactivity

Stability Stable under normal conditions
Materials to avoid Strong oxidizers, strong acids and strong alkalis.
It hydrolyzes slowly at normal temperatures in acidic or alkaline aqueous solutions.
Conditions to avoid Exposure to air and moisture
Hazardous decomposition products Carbon dioxide and carbon monoxide Phosphorus oxides, Phosphoric acids
Hazardous polymerization Not expected to occur

11. Toxicological information

Acute toxicity:
- Rat oral LD50 > 5000 mg/kg
- Rabbit dermal LD50 > 5000 mg/kg
- Eye irritation (rabbit) Mild irritant
- Dermal irritation (rabbit) Mild irritant.

Dermal sensitization Not a sensitizer.

Sub-chronic toxicity: In some repeated dose studies in which the animals received relatively high doses, mild plasma cholinesterase was observed.

Chronic toxicity No data available

Mutagenicity Not mutagenic by the Ames Test and by mouse lymphoma assay.

Carcinogenicity Not included in NTP 12th Report on Carcinogens
Not classified by IARC
Not classified as a carcinogen by USA OSHA

Neurotoxicity The product was examined for acute delayed neurotoxicity potential in hens which were administered at the dose limit of 5 g/kg. The product did not express acute delayed peripheral neurotoxicity.

Developmental toxicity In a developmental toxicity study conducted in rats, the product did not adversely affect fetal development or cause terata.



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12. Ecological information

Aquatic toxicity :
- 48 Hour-EC50, Daphnia magna 75 ppm

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
IMDG Not regulated
ICAO/IATA Not regulated

15. Regulatory information

USA Reported in the EPA TSCA Inventory.

- **SARA 313** This substance is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372. Chemical Category: Glycol Ether (100%)

- **California-Prop 65** 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.

- **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



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EU	Reported in EINECS
Japan	Listed in ENCS
Australia	Listed in AICS
New Zealand Inventory	Listed in NZIoC
CHINA - China inventory	Listed in IECSC
Korea	Listed in ECL
Philippines	Listed in PICCS

16. Other information

GHS

Product is not subject to classification according to GHS. No label elements required.

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

1, 16

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.



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End of safety data sheet