SAFETY DATA SHEET


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

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier: Tris(2-butoxyethyl) phosphate

Synonym(s): Ethanol, 2-butoxy, phosphate (3:1) Tributoxyethyl phosphate Phosphoric acid, tributoxyethyl ester

Chemical formula: C18 H39 O7 P

REACH Registration No.: The transition time according to REACH Regulation, Article 23 is still not expired

Chemical family: Alkyl phosphate

1.2. Relevant identified uses of the substance or mixture and uses advised against: Flame-retardant plasticizer

Leveling Agent

1.3. Details of the supplier of the Safety Data Sheet: ICL-IP Europe B.V.
P.O.Box 465
1000 AL Amsterdam, Netherlands
Tel: +31 20 800 5 800
Fax:+31 20 800 5 805
e-mail: msdsinfo@icl-ip.com

Emergency telephone number:
- For Europe: +32 (0) 3 575 5555 SGS

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification in accordance with Regulation (EC) No 1272/2008 [CLP/GHS]: Not Classified

Classification in accordance with Directive 67/548/EEC, 1999/45/EC: Not Classified

2.2. Label elements: Not subject to labelling in accordance with Regulation (EC) No. 1272/2008 (CLP)
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SECTION 3: Composition/information on ingredients

<table>
<thead>
<tr>
<th>Components</th>
<th>Weight %</th>
<th>Index No.</th>
<th>EC No.</th>
<th>EU Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tris(2-butoxyethyl) phosphate 78-51-3</td>
<td>100</td>
<td></td>
<td>201-122-9</td>
<td>None</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1. Description of 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 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.

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

None known

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

Treat symptomatically and supportively.
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SECTION 5: Fire-fighting measures

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

5.2 Special hazards arising from the substance or mixture
When heated to decomposition, may release poisonous and corrosive fumes of carbon dioxide, carbon monoxide, phosphorus oxides and phosphoric acid.

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Wear appropriate safety clothing and eye/face protection (see Section 8)

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

6.3. Methods and materials for containment and 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.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Keep containers tightly closed
Avoid bodily contact.

7.2. Conditions for safe storage, including any incompatibilities
Store in a dry, cool, well-ventilated area, away from incompatible materials (see Section 10)
Noncorrosive to glass or metals. May soften or deteriorate certain plastics and elastomers (vinyl-based resins, neoprene and natural rubbers).

7.3. Specific end use(s)
No specific requirements
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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>Weight %</th>
<th>ACGIH-TLV Data</th>
<th>UK (WEL) - TWA</th>
<th>Germany MAK (TRGS 900) data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tris(2-butoxyethyl) phosphate 78-51-3</td>
<td>100</td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

8.2. Exposure controls

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. Do not eat, smoke or drink where material is handled, processed or stored. Safety shower and eye bath should be provided.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance: Clear colorless liquid
Odour: Mild
Melting point/range: -70°C (-94°F)
Boiling point/range: 231°C (448°F) @ 6 mmHg
Evaporation rate (ether=1): < 1
Vapour pressure: 0.03 mmHg (150°C)
Flash point: 132°C (270°F) (closed cup)
Flammable/Explosion limits: Not flammable/Not explosive
Auto-ignition temperature: Not self-ignitable
Density: 1.012 - 1.018 g/mL (25°C)
Solubility:
- Solubility in water: < 2 g/l @ 20°C
Viscosity: 12mPas (20°C)
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SECTION 10: Stability and reactivity

10.1 Reactivity: It hydrolyzes slowly at normal temperatures in acidic or alkaline aqueous solutions.
10.2 Chemical stability: Stable under normal conditions.
10.3 Possibility of hazardous reactions: Not expected to occur
10.4 Conditions to avoid: Exposure to air and moisture.
10.5 Incompatible materials: Strong oxidizers, strong acids and strong alkalis.
10.6 Hazardous decomposition products: Carbon dioxide and carbon monoxide, Phosphorus oxides, Phosphoric acids

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity:
- Rat oral LD50: > 5000 mg/kg
- Rabbit dermal LD50: > 5000 mg/kg
Serious eye damage/irritation: Mild irritant
Skin corrosion/irritation: Mild irritant

Respiratory or skin sensitisation: Not a skin sensitizer.

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

Carcinogenicity: Not classified by IARC
Not included in NTP 12th Report on Carcinogens

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

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.

SECTION 12: Ecological information

12.1 Toxicity
Aquatic toxicity:
- 48 Hour-EC50, Daphnia magna: 75 ppm
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12.2 Persistence and degradability: No data available
12.3 Bioaccumulative potential: No data available
12.4 Mobility in soil: No data available
12.5 Results of PBT and vPvB assessment: No data available
12.6 Other adverse effects: None known

SECTION 13: Disposal considerations
13.1 Waste treatment methods
Waste disposal: Dispose of in a safe manner in accordance with local/national regulations.

SECTION 14: Transport information
ADR/RID: Not regulated
IMDG: Not regulated
ICAO/IATA: Not regulated

SECTION 15: Regulatory information
15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
EU: Reported in EINECS
USA: Reported in the EPA TSCA Inventory.
Australia: Listed in AICS
Canada: Listed in DSL
CHINA - China inventory: Listed in IECSC
Japan: Listed in ENCS
Korea: Listed in ECL
New Zealand Inventory: Listed in NZIoC
Philippines: Listed in PICCS
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15.2 Chemical Safety Assessment
A Chemical Safety Assessment has not yet been carried out under the REACH Regulation.

SECTION 16: Other information

Note:
All sections reformatted in accordance with REACH Annex II revision

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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In an event of discrepancy between the contents of this MSDS and the English version of it, the English version shall prevail.

Prepared by
HERA Division in ISRAEL
telephone: +/972-8-6297835
telefax: +/972-8-6297832
www.icl-ip.com
e-mail:msdsinfo@icl-ip.com

End of safety data sheet