



Safety Data Sheet (SDS)

Revision / Review Date: 12/23/15

1. Chemical Product and Company Identification

Product Name:	TBEP
Distributed By:	HB Chemical 1665 Enterprise Parkway Twinsburg Oh 44087 Phone - 330-920-8023
SDS Prepared By (w Suppliers Input):	HB Chemical
Chemical Name / Family:	Tributoxyethyl Phosphate
Molecular Formula:	C18H39O7P
Molecular Weight via GPC, Mn:	398.47
Product Use:	Plasticizer
OSHA Status:	Non hazardous
CAS No:	78-51-3, 111-76-2

For emergency health, safety, and environmental information, calls 330-920-8023

For emergency transportation information, in the United States: call CHEMTREC at 800-424-9300

2. Hazard(s) Identification

OSHA Haz Com: CFR 1910.1200: Eye Damage/Irritation [Category 2B]

Signal word: Warning!

Hazard Statement(s): Causes eye irritation

Pictogram(s) or Symbol(s):



Precautionary Statement(s):

Prevention: Wash hands and face thoroughly after handling.

Response If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.

Storage: None.

Disposal: None.

Hazards not otherwise classified: [HNOC] Causes mild skin irritation. May be harmful if swallowed.

<u>Signs and Symptoms of Exposure:</u>	Eye contact may result in redness or pain. Skin contact may result in redness, pain or dry skin. Overexposure may result in serious illness or death.
<u>Primary Routes of Entry:</u>	Inhalation, Eye contact, Ingestion, Skin contact.
<u>Medical Conditions Generally Aggravated by Exposure:</u>	Skin contact may aggravate existing skin disease.
<u>Eye Contact:</u>	May cause redness and slight irritation.
<u>Skin Contact:</u>	May cause redness and slight irritation.
<u>Ingestion:</u>	Low acute oral toxicity. May cause nausea, diarrhea and abdominal cramps.
<u>Inhalation:</u>	May cause upper respiratory tract irritation.
<u>NFPA Rating:</u>	Health-1, Fire-1, Reactivity- 1
<u>HMIS Hazard Ratings:</u>	Health-1 , Flammability -1, Reactivity -1
<u>HMIS limitation statement:</u>	The HMIS hazard ratings numbers are meant to give a quick indication of the relative hazards associated with the product. All of the information contained in the SDS should be consulted to assist with the safe handling of this material.

3. Composition / Information on Ingredients

Weight Percent / Typical	Component Identity	CAS Registry Number
98%	Tris(2-butoxyethyl) phosphate	78-51-3
1%	2-butoxyethanol	111-76-2

4. First Aid Measures

<u>Inhalation:</u>	Remove to fresh air. Seek medical attention if irritation occurs.
<u>Eyes:</u>	Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes, seek medical attention.
<u>Skin:</u>	Immediately wash with plenty of soap and water for at least 5 minutes. Remove contaminated clothing and shoes, clean before re-use. Seek medical attention.
<u>Ingestion:</u>	If conscious, give 1-2 glasses of water. Do not give anything g by mouth to an unconscious person. Seek medical attention.

5. Fire-Fighting Measures

<u>Suitable Extinguishing Media:</u>	Water Spray, Dry Chemical, CO2, Foam.
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<u>Special Fire Fighting Procedures:</u>	Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Closed containers may explode from heat of a fire.
<u>Hazardous Combustion Products:</u>	Oxides of phosphorus and oxides of carbon.
<u>Unusual fire and explosion hazards:</u>	Product with burn under fire conditions.

6. Accidental Release Measures

<u>Steps to be taken in case material is Spilled:</u>	Wear appropriate personal protective equipment. Absorb with an inert absorbent. Sweep up and place in an appropriate closed container. Clean up residue material by washing area with water.
<u>Environmental Disposal Information:</u>	Do not flush down the drain.
<u>Waste Disposal:</u>	In accordance with local, state, and federal regulations.

7. Handling and Storage

<u>Empty Containers:</u>	Not available.
<u>Precautions to be taken in handling:</u>	Avoid breathing vapors and mist. Use non sparking tools and grounded equipment and containers when transferring.
<u>Storage:</u>	Store in a cool, dry, ventilated area. Keep containers tightly closed when not in use. Do not store near extreme heat, open flame, or sources of ignition.

8. Exposure Controls / Personal Protection

<u>Exposure Controls:</u>	Not available.
<u>Respiratory Protection:</u>	NIOSH approved equipment used if respirators required.
<u>Ventilation:</u>	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.
<u>Hand protection:</u>	Wear gloves.
<u>Eye Protection:</u>	Wear goggles.
<u>Skin and Body Protection:</u>	Wear impervious clothing. Wear long sleeves and pants.
<u>Other Precautions:</u>	Wash with soap and water before eating, drinking or using toilet facilities. Launder contaminated clothing before reuse.
<u>Decontamination Facilities:</u>	Ensure that eyewash station and safety shower is proximal to the work-station location.

9. Physical and Chemical Properties

<u>Physical Form:</u>	Oily liquid
<u>Appearance & Odor:</u>	Clear - Slightly yellow
<u>Specific Gravity:</u>	Not available.
<u>Partition Coefficient:</u>	3.65
<u>Relative density:</u>	1.02
<u>Density:</u>	1.026 g/cm ³ (20 C)
<u>Softening Point, R&B:</u>	Not available.
<u>Solubility in Water:</u>	1.1 g/L (25 C)
<u>Flash Point, TAG CC F:</u>	224°C
<u>Percent Volatiles (by weight):</u>	<0.2
<u>Evaporation Rate (Water ~ I):</u>	Not available.
<u>Vapor Pressure (mm Hg):</u>	<0.1 mmHg at 150°C (302°F)
<u>Refractive Index:</u>	1.437 (20 C)
<u>Vapor Density (Air ~ me):</u>	13.8
<u>Boiling Point (°F) Initial:</u>	210-220 °C 410-428°F
<u>Auto ignition Temperature, °C:</u>	322°C (612°F)
<u>Flammable Limits, %(V):</u>	Not available.
<u>Freezing point:</u>	<-70°C (-94°F)

10. Stability and Reactivity

<u>Stability:</u>	This product is stable under normal conditions.
<u>Incompatibility (Materials to Avoid):</u>	Strong oxidizing agents.
<u>Conditions to Avoid:</u>	Avoid excessive heat and light.
<u>Hazardous Polymerization:</u>	Hazardous polymerization will not occur.

11. Toxicological Information

This material is not listed as a carcinogen or potential carcinogen by NTP, IARC, ACGIH or OSHA.

<u>Acute dermal toxicity:</u>	LD50-lethal does 50% of test species, > 2000mg/kg, Rabbit.
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<u>Acute inhalation toxicity:</u>	LC50-lethal concentration 50% of test species, >6.4mg/l/4hr, rat
<u>Acute oral toxicity:</u>	LD50-lethal does 50% of test species, >2000 mg/kg, Rat.

12. Ecological Information

LC50-lethal concentration 50% of test species, 24 mg/l/ 96hr, rainbow trout.

EC50-effective concentration 50% of test species, 75 mg/l/48 hr, Daphnia magna.

Persistence and degradability: 0 % (by BOD), 1 % (by TOC), 0 % (by GC)

Bioaccumulative potential (BCF): 0.6 - 4.1 (conc. 0.2 mg/L), <5.8 (conc. 0.02 mg/L)

13. Disposal Considerations

Disposal of product: Recycle to process if possible. It is the generator's responsibility to comply with Federal, State and Local rules and regulations. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. This section is intended to provide assistance but does not replace these laws, nor does compliance in accordance with this section ensure regulatory compliance according to the law. US EPA guidelines for Identification and Listing of Hazardous Waste are listed in 40 CFR Parts 261. The product should not be allowed to enter the environment, drains, water ways, or the soil.

Disposal of container: Dispose of as unused product. Do not re-use empty containers.

Other considerations: Observe all federal, state and local regulations when disposing of the substance.

14. Transport Information

D.O.T. Shipping Name: Not regulated.

Air - ICAO (international Civil Aviation Organization): Not regulated.

Sea - IMDG (International Maritime Dangerous Goods): Not regulated.

15. Regulatory Information

All components of this material are on the TSCA Inventory.

All components of this material are on the Canadian DSL.

New Jersey Right To Know Components

Tris(2-butoxyethyl) phosphate, CAS No. 78-51-3, 2-butoxyethanol CAS No. 111-76-2

Pennsylvania Right To Know Components

Tris(2-butoxyethyl) phosphate, CAS No. 78-51-3, 2-butoxyethanol CAS No. 111-76-2

SARA 313: Not Listed.

SARA 302: Not Listed.

16. Other Information

The above information has been compiled from what we believe to be credible sources. To our knowledge the information is accurate and reliable, however, it is not guaranteed. Any recommendations issued by HB Chemical personnel or literature is derived from experience and by no means should be taken as fact or construed as a recommendation to violate of any law, regulation or patent. It is the users responsibility to determine the suitability of any HB supplied material in their application. The individual conditions of each customer are well outside of our control and we cannot be held liable for its functionality and use. Please contact our office should you need specific information beyond what is supplied above. As with all Chemical usage safety precautions beyond the stated are highly recommended.