



## Material Safety Data Sheet

### AMGARD TBEP

Date Prepared: 2/06/07

Supersedes Date: 6/22/04

## 1. PRODUCT AND COMPANY DESCRIPTION

RHODIA INC.  
RHODIA NOVE CARE  
CN7500  
8 Cedar Brook Drive  
Cranbury NJ 08512-7500

**Emergency Phone Numbers:**

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CONTACT: CHEMTREC (800-424-9300 within the United States or 703-527-3887 for international collect calls) or Rhodia CAERS (Communication and Emergency Response System) at 800-916-3232.

**For Product Information:**

(888) 776-7337

**Chemical Name or Synonym:**

TRIBUTOXYETHYL PHOSPHATE

**Molecular Formula:**

$C_{18}H_{39}O_7P$

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Reg Number	OSHA Hazard	Percentage
ETHANOL, 2-BUTOXY-, PHOSPHATE (3:1)	78-51-3	N	> 98
ETHANOL, 2-BUTOXY-	111-76-2	Y	< 1

## 3. HAZARDS IDENTIFICATION

### A. EMERGENCY OVERVIEW:

**Physical Appearance and Odor:**

clear, colorless / liquid, characteristic odor.

**Warning Statements:**

Based on currently available data, this product does not meet the regulatory definition of a hazardous substance. However, good industrial hygiene practices should be used in handling it.

**B. POTENTIAL HEALTH EFFECTS:****Acute Eye:**

Slightly irritating. May cause redness, irritation, on prolonged contact.

**Acute Skin:**

Slightly irritating. May cause redness, irritation, on prolonged contact.

**Acute Inhalation:**

May cause upper respiratory tract irritation.

**Acute Ingestion:**

Low acute oral toxicity. May cause nausea, diarrhea, abdominal cramps.

**Chronic Effects:**

This product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens.

---

**4. FIRST AID MEASURES****FIRST AID MEASURES FOR ACCIDENTAL:****Eye Exposure:**

Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek medical attention.

**Skin Exposure:**

In case of contact, immediately wash with plenty of soap and water for at least 5 minutes. Seek medical attention. Remove contaminated clothing and shoes. Clean contaminated clothing and shoes before re-use.

**Inhalation:**

If respiratory irritation or distress occurs remove victim to fresh air. Seek medical attention if respiratory irritation or distress continues.

**Ingestion:**

If victim is conscious and alert, give 1-2 glasses of water to drink. Do not give anything by mouth to an unconscious person. Seek medical attention. Do not leave victim unattended.

**MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE:**

Skin contact may aggravate existing skin disease.

**NOTES TO PHYSICIAN:**

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Treat symptomatically. No specific antidote available.

**5. FIRE FIGHTING MEASURES****FIRE HAZARD DATA:**

**Flash Point:**

> 159 C (318 F). Flammability Class: WILL BURN.

**Method Used:**

Cleveland Open Cup

**Flammability Limits (vol/vol%):**

**Lower:**

No Data

**Upper:**

No Data

**Extinguishing Media:**

Recommended (small fires): dry chemical, carbon dioxide, Recommended (large fire): alcohol foam, universal foam, water spray, Not recommended: water jet (frothing possible).

**Special Fire Fighting Procedures:**

Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing.

**Unusual Fire and Explosion Hazards:**

Product will burn under fire conditions.

**Hazardous Decomposition Materials (Under Fire Conditions):**

oxides of phosphorus

oxides of carbon

**Autoignition Temperature:**

322 C (612 F)

## 6. ACCIDENTAL RELEASE MEASURES

**Evacuation Procedures and Safety:**

Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

**Containment of Spill:**

Follow procedure described below under Cleanup and Disposal of Spill.

**Cleanup and Disposal of Spill:**

Absorb with an inert absorbent. Sweep up and place in an appropriate closed container (see Section 7: Handling and Storage). Clean up residual material by washing area with water. Collect washings for disposal.

**Environmental and Regulatory Reporting:**

Do not flush to drain. Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

## 7. HANDLING AND STORAGE

**Minimum/Maximum Storage Temperatures:**

Not Available

**Handling:**

Avoid breathing vapors and mists. Avoid direct or prolonged contact with skin and eyes. Use nonsparking tools and grounded/bonded equipment and containers when transferring.

**Storage:**

Store in tightly closed containers. Store in an area that is dry, well-ventilated, away from ignition sources, away from incompatible materials (see Section 10. Stability and Reactivity).

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Introductory Remarks:**

These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. While developing safe handling procedures, do not overlook the need to clean equipment and piping systems for maintenance and repairs. Waste resulting from these procedures should be handled in accordance with Section 13: Disposal Considerations.

Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

**Exposure Guidelines:**

Exposure limits represent regulated or recommended worker breathing zone concentrations measured by validated sampling and analytical methods, meeting the regulatory requirements. The following limits apply to this material, where, if indicated, S=skin and C=ceiling limit:

**ETHANOL, 2-BUTOXY-**

	Notes	TWA	STEL
ACGIH		20 ppm	
OSHA	S	25 ppm	
OSHA	S	120 mg/cu m	

**Engineering Controls:**

Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures: general area dilution/exhaust ventilation.

**Respiratory Protection:**

When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

For reasonably foreseeable industrial end uses of this material, respiratory protection should not be necessary.

**Eye/Face Protection:**

Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.

Eye contact should be prevented through use of chemical safety glasses with side shields or splash proof goggles. An emergency eye wash must be readily accessible to the work area.

**Skin Protection:**

Skin contact should be minimized through use of gloves and suitable long-sleeved clothing (i.e., shirts and pants). Consideration must be given both to durability as well as permeation resistance.

**Work Practice Controls:**

Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material:

- (1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.

- (2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
- (3) Wash exposed skin promptly to remove accidental splashes or contact with this material.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product Information phone number in Section 1 for its exact specifications.

**Physical Appearance:**

clear, colorless / liquid.

**Odor:**

characteristic odor.

**pH:**

Not Applicable

**Specific Gravity:**

Not Available

**Density:**

1 to 1.05 g/ml at 25 C (77 F).

**Water Solubility:**

slightly soluble 0.11 wt/wt% at 20 C (68 F).

**Melting Point Range:**

Not Available

**Freezing Point Range:**

< -70 C (-94 F)

**Boiling Point Range:**

210 to 220 C (410 to 428 F) at 4 mmHg

**Vapor Pressure:**

< 0.1 mmHg at 150 C (302 F)

**Vapor Density:**

13.8

**Percent Volatiles by Volume:**

< 0.2

**Viscosity:**

viscosity (milliPascals seconds) : 11 mPa.s at 25 C (77 F).

**Molecular Weight:**

398

## 10. STABILITY AND REACTIVITY

**Chemical Stability:**

This material is stable under normal handling and storage conditions described in Section 7.

**Conditions To Be Avoided:**

heat

**Materials/Chemicals To Be Avoided:**

strong oxidizing agents

**The Following Hazardous Decomposition Products Might Be Expected:****Decomposition Type: thermal**

oxides of phosphorus

oxides of carbon

**Hazardous Polymerization Will Not Occur.****Avoid The Following To Inhibit Hazardous Polymerization:**

not applicable

## 11. TOXICOLOGICAL INFORMATION

**Acute Eye Irritation:****Toxicological Information and Interpretation:**

eye - eye irritation, rabbit. Non-irritating.

**Acute Skin Irritation:****Toxicological Information and Interpretation:**

skin - skin irritation, rabbit. Non-irritating.

skin - sensitization, human. Not sensitizing.

**Acute Dermal Toxicity:****Toxicological Information and Interpretation:**

LD50 - lethal dose 50% of test species, > 2000 mg/kg, rabbit.

**Acute Respiratory Irritation:**

No test data found for product.

**Acute Inhalation Toxicity:****Toxicological Information and Interpretation:**

LC50 - lethal concentration 50% of test species, > 6.4 mg/l/4 hr, rat.

**Acute Oral Toxicity:****Toxicological Information and Interpretation:**

LD50 - lethal dose 50% of test species, > 2000 mg/kg, rat.

**Chronic Toxicity:**

This product does not contain any substances that are considered by OSHA, NTP, IARC or ACGIH to be "probable" or "suspected" human carcinogens.

No additional test data found for product.

Toxicological Information and Interpretation males only Peripheral nervous system toxicity was observed at the highest dose level (180 mg/kg/day).

## 12. ECOLOGICAL INFORMATION

### Ecotoxicological Information:

#### Ecotoxicological Information and Interpretation:

LC50 - lethal concentration 50% of test species, 24 mg/l/96 hr, rainbow trout (*Oncorhynchus mykiss*).

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

### Chemical Fate Information:

No data found for product.

## 13. DISPOSAL CONSIDERATIONS

### Waste Disposal Method:

Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

### Container Handling and Disposal:

Any containers or equipment used should be decontaminated immediately after use.

EPA Hazardous Waste - NO

## 14. TRANSPORTATION INFORMATION

**Transportation Status: IMPORTANT! Statements below provide additional data on listed DOT classification.**

The listed Transportation Classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

### US Department of Transportation

Shipping Name:

NOT REGULATED

## 15. REGULATORY INFORMATION

### Inventory Status

Inventory	Status
UNITED STATES (TSCA)	Y
CANADA (DSL)	Y

EUROPE (EINECS/ELINCS)	Y
AUSTRALIA (AICS)	Y
JAPAN (MITI)	Y
SOUTH KOREA (KECL)	Y

Y = All ingredients are on the inventory.

E = All ingredients are on the inventory or exempt from listing.

P = One or more ingredients fall under the polymer exemption or are on the no longer polymer list. All other ingredients are on the inventory or exempt from listing.

N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing.

## FEDERAL REGULATIONS

### Inventory Issues:

All functional components of this product are listed on the TSCA Inventory.

### SARA Title III Hazard Classes:

Fire Hazard	- NO
Reactive Hazard	- NO
Release of Pressure	- NO
Acute Health Hazard	- NO
Chronic Health Hazard	- NO

## STATE REGULATIONS:

This product does not contain any components that are regulated under California Proposition 65.

## 16. OTHER INFORMATION

### National Fire Protection Association Hazard Ratings--NFPA(R):

- 1 Health Hazard Rating--Slight
- 1 Flammability Rating--Slight
- 1 Instability Rating--Slight

### National Paint & Coating Hazardous Materials Identification System--HMIS(R):

- 1 Health Hazard Rating--Slight
- 1 Flammability Rating--Slight
- 1 Reactivity Rating--Slight

### Reason for Revisions:

Change and/or addition made to Section 3, Section 11, SARA 313 Information in Section 15, Regulatory Review and Update.

### Key Legend Information:

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

TLV - Threshold Limit Value

PEL - Permissible Exposure Limit

TWA - Time Weighted Average

STEL - Short Term Exposure Limit

NTP - National Toxicology Program

IARC - International Agency for Research on Cancer

ND - Not determined

RHODIA - Rhodia Established Exposure Limits



**Disclaimer:**

The information herein is given in good faith but no warranty, expressed or implied, is made.

**\*\* End of MSDS Document \*\***