



Material Safety Data Sheet

BUTYL ACID PHOSPHATE

Date Prepared: 11/18/08

Supersedes Date: 7/23/08

1. PRODUCT AND COMPANY IDENTIFICATION

RHODIA INC.
RHODIA NOVECARE
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:

BUTYL ACID PHOSPHATE; ORGANIC ACID PHOSPHATE

Molecular Formula:

$C_4H_{11}O_4P$ / $C_8H_{19}O_4P$

2. HAZARDS IDENTIFICATION

A. EMERGENCY OVERVIEW:

Physical Appearance and Odor:

pale yellow / liquid, characteristic odor.

Warning Statements:

DANGER! CORROSIVE TO SKIN AND EYES. COMBUSTIBLE LIQUID.

B. POTENTIAL HEALTH EFFECTS:

Acute Eye:

Corrosive. Causes tissue destruction, permanent damage to the cornea, blindness.

Acute Skin:

Corrosive. Causes irritation, burns.

Acute Inhalation:

Mists may cause lung irritation, shortness of breath, fluid in lungs.

Acute Ingestion:

Can cause nausea, vomiting, abdominal pain, chest pain, shortness of breath, burns to mouth and esophagus.

Chronic Effects:

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Reg Number	OSHA Hazard	% WT/WT
DIBUTYL PHOSPHATE	107-66-4	Y	50 - 60
MONOBUTYL PHOSPHATE	1623-15-0	Y	40 - 50
BUTANOL	71-36-3	Y	< 4
PHOSPHORIC ACID	7664-38-2	Y	< 2

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 immediate medical attention, preferably with an ophthalmologist. If the physician is not immediately available, eye irrigation should be continued for an additional 15 minutes. If it is necessary to transport the patient to a physician and the eye needs to be bandaged, use a dry sterile cloth pad and cover both eyes.

Skin Exposure:

Immediately wipe excess material off skin with a dry cloth; then wash skin with plenty of soap and water for at least 15 minutes. Seek medical attention. Remove contaminated clothing and shoes while washing. Clean contaminated clothing and shoes before re-use or discard if they cannot be thoroughly cleaned.

Inhalation:

Remove victim from immediate source of exposure and assure that the victim is breathing. If breathing is difficult, administer oxygen, if available. If victim is not breathing, administer CPR (cardio-pulmonary resuscitation). Seek immediate medical attention.

Ingestion:

If victim is conscious and alert, give 2-3 glasses of water to drink and do not induce vomiting. Seek immediate medical attention. Do not leave victim unattended. To prevent aspiration of swallowed product, lay victim on side with head lower than waist. Vomiting may occur spontaneously. If vomiting occurs and the victim is conscious, give water to further dilute the chemical.

MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE:

Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis. 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.

This material is an acid. The primary toxicity of this product is due to its irritant effects on mucous membranes.

INHALATION: If cough or shortness of breath occurs, evaluate the possibility of bronchitis or pneumonitis. Chest x-ray and arterial blood gases can be used to determine the presence of pulmonary edema. In severe cases, use of humidified oxygen and assisted ventilation including positive end expiratory pressure (PEEP) may be needed. Parenteral steroids may be useful in limiting the extent of pulmonary damage.

SKIN: Wash exposed area thoroughly with soap and water. Chemical burns from strong acids are generally treated the same as thermal burns.

EYES: Irrigate eyes for 15 minutes with sterile saline. If irritation, pain, swelling, photophobia or lacrimation persist, examination by an ophthalmologist is recommended.

INGESTION: If not already performed by first aid personnel, irrigate mouth with large amounts of water and dilute the acid by having victim drink 4 to 8 ounces of water or milk. DO NOT induce vomiting. Use of gastric lavage is controversial. The advantage of removal of acid must be weighted against the risk of perforation or bleeding. If a large amount of acid (> 1 ml/kg body weight) has been recently ingested, cautious gastric lavage is generally advised if the patient is alert and there is little risk of convulsions. Consultation with a gastroenterologist and/or surgeon is advised. Serious complications such as perforation or stricture of the esophagus may occur requiring care by specialists. Laryngeal edema may develop requiring intubation or tracheostomy.

5. FIRE FIGHTING MEASURES

FIRE HAZARD DATA:

Flash Point:

90 C (194 F). Flammability Class: COMBUSTIBLE.

Method Used:

Closed cup

Flammability Limits (vol/vol%):	Lower:	Upper:
	1.4	11.2

Extinguishing Media:

Recommended: dry chemical, alcohol foam, water fog, carbon dioxide.

Special Fire Fighting Procedures:

Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Keep unnecessary people away, isolate hazard area and deny entry. Evacuate residents who are downwind of fire. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later. Persons who may have been exposed to contaminated smoke should be immediately examined by a physician and checked for symptoms of poisoning. The symptoms should not be mistaken for heat exhaustion or smoke inhalation.

Unusual Fire and Explosion Hazards:

Closed containers may explode (due to the build-up of pressure) when exposed to extreme heat. Product will burn under fire conditions. Hydrogen gas, which is flammable and can form explosive mixtures with air, may be released on contact with many metals.

Hazardous Decomposition Materials (Under Fire Conditions):

oxides of phosphorus
oxides of carbon

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:

Dike or retain dilution water or water from firefighting for later disposal. Follow procedure described below under Cleanup and Disposal of Spill.

Cleanup and Disposal of Spill:

Absorb with an inert absorbent. Shovel up into an appropriate closed container (see Section 7: Handling and Storage). Clean up residual material by washing area with water. Collect washings for disposal. Use non-sparking tools.

Environmental and Regulatory Reporting:

Do not flush to drain. Prevent material from entering public sewer system or any waterways. Runoff from fire control or dilution water may cause pollution. Large spills should be handled according to a predetermined plan. For assistance in developing a plan contact the Technical Service Department using the Product Information phone number in Section 1. 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:

Personnel handling this product should be thoroughly trained as to its hazards. Do not get on skin or in eyes. Avoid breathing vapors and mists. Do not ingest. Use nonsparking tools and grounded/bonded equipment and containers when transferring.

Storage:

Store in an area that is cool, dry, well-ventilated, away from combustible material, away from ignition sources, Store in original container. Container material to avoid: metal.

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.

DIBUTYL PHOSPHATE

	Notes	TWA	STEL
ACGIH		1 ppm	2 ppm
OSHA		1 ppm	10 mg/cu m
OSHA		5 mg/cu m	2 ppm

BUTANOL

	Notes	TWA	STEL
ACGIH		20 ppm	
OSHA	C,S	150 mg/cu m	
OSHA	C,S	50 ppm	

PHOSPHORIC ACID

	Notes	TWA	STEL
ACGIH		1 mg/cu m	3 mg/cu m
OSHA		1 mg/cu m	3 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: local exhaust ventilation at the point of generation.

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.

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. Face contact should be prevented through use of a face shield.

Skin Protection:

Skin contact should be prevented through use of suitable protective clothing, gloves and footwear, selected with regard for use conditions and exposure potential. 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:

pale yellow / liquid.

Odor:

characteristic odor.

pH:

< 2 at 0 wt/wt%.

Specific Gravity:

1.14 at 20 C (68 F).

Water Solubility:

partially soluble

Melting Point Range:

Not Available

Freezing Point Range:

< -15 C (5 F)

Boiling Point Range:

Not Available

Vapor Pressure:

Not Available

Vapor Density:

Not Available

Evaporation Rate:

< 1 (Butyl Acetate = 1)

Percent Non-Volatiles by Weight:

> 90

Viscosity:

viscosity (centistokes) : ~ 200 cs at 20 C (68 F).

Molecular Weight:

154.1 to 205

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

ignition sources

Materials/Chemicals To Be Avoided:

strong bases
strong oxidizing agents
metals

The Following Hazardous Decomposition Products Might Be Expected:

Decomposition Type: thermal

oxides of phosphorus
oxides of carbon
Acids of phosphorus

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, **. Corrosive.

Acute Skin Irritation:

Toxicological Information and Interpretation:

skin - skin irritation, **. Corrosive.

Acute Dermal Toxicity:

The following data is for similar or related products.

Toxicological Information and Interpretation:

LD50 - lethal dose 50% of test species, > 5000 mg/kg, rabbit.

Acute Respiratory Irritation:

No test data found for product.

Acute Inhalation Toxicity:

The following data is for similar or related products.

Toxicological Information and Interpretation:

LC50 - lethal concentration 50% of test species, 20 mg/l/1 hr, rat.

Acute Oral Toxicity:

The following data is for similar or related products.

Toxicological Information and Interpretation:

LD50 - lethal dose 50% of test species, 2140 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.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information:

The following data is for similar or related products.

Ecotoxicological Information and Interpretation:

LC50 - lethal concentration 50% of test species, > 100 mg//96 hr, bluegill sunfish (*Lepomis macrochirus*).

LC50 - lethal concentration 50% of test species, > 100 mg//96 hr, rainbow trout (*Oncorhynchus mykiss*).

Chemical Fate Information:

The following data is for similar or related product. Inherently biodegradable.

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. Please contact technical service support at the phone number in section one of this MSDS to obtain suggestions for proper disposal of this product.

EPA Hazardous Waste - YES

14. TRANSPORT 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 DOT:

Hazard Class..... 8

Shipping Name:

BUTYL ACID PHOSPHATE

ID Number..... UN1718

Packing Group.... III

Emergency Guide #.... 153

TDG:

Hazard Class..... 8

Shipping Name: BUTYL ACID PHOSPHATE

ID Number..... UN1718

Packing Group.... III

IMO:

Hazard Class..... 8

Shipping Name: BUTYL ACID PHOSPHATE

ID Number..... UN1718

Packing Group.... III

IATA:

Hazard Class..... 8

Shipping Name: BUTYL ACID PHOSPHATE
ID Number..... UN1718
Packing Group.... III

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

SARA 313 Chemicals

BUTANOL (<4%)

SARA Extremely Hazardous Substances (EHS)/CERCLA Hazardous Substances

Ingredient	CERCLA/SARA RQ	SARA EHS TPQ
BUTANOL	5000 lbs	
PHOSPHORIC ACID	5000 lbs	

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):

- 3 Health Hazard Rating--Serious
- 2 Flammability Rating--Moderate

1 Instability Rating--Slight

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

3 Health Hazard Rating--Serious

2 Flammability Rating--Moderate

1 Reactivity Rating--Slight

Reason for Revisions:

Change and/or addition made to Section 14.

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 ****