



TRIBUTYL PHOSPHATE

PRODUCT INFORMATION

CHEMICAL NAME: Tributyl phosphate
SYNONYM(S): TBP
CHEMICAL FAMILY: Phosphates
MOLECULAR FORMULA: (C₄H₉)₃PO₄
SHIPPING NAME: Tributyl phosphate
PIN - (UN/NA): Not controlled
WHMIS: D2B
PRODUCT USE:

Heat exchange medium; solvent extraction of metal ions from solution of reactor products; solvent for nitrocellulose, cellulose acetate; plasticizer; pigment grinding assistant; antifoam agent; dielectric.

MANUFACTURER: Enviro Chem Technologies Box 2299, Paso Robles, USA Phone: (805)239-0144

SUPPLIER: Panther Industries Inc. Box 628 Davidson, Sask. S0G 1A0

EMERGENCY TELEPHONE NUMBER: (306) 567-2814

HAZARDOUS INGREDIENTS

INGREDIENTS:	WEIGHT %	C.A.S. REGISTRY #
Tributyl phosphate	99	126-73-8

PHYSICAL DATA

PHYSICAL STATE: Liquid
ODOUR AND APPEARANCE: Clear, colourless liquid, characteristic odour.
ODOUR THRESHOLD: Not available
VAPOUR PRESSURE: @20oC <1mm
VAPOUR DENSITY: >1
EVAPORATION RATE: Slower than ether
pH: Not available
BOILING POINT: 552oF 290oC
FREEZING POINT: Not determined
SOLUBILITY IN WATER: < 1 gram/liter
SPECIFIC GRAVITY: 0.976
% VOLATILE BY VOLUME: Nil
BULK DENSITY: Not applicable
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

FIRE AND EXPLOSION DATA

CONDITIONS OF FLAMMABILITY: Not available
MEANS OF EXTINGUISHING: Water, dry chemical, carbon dioxide, foam.
FLASH POINT: 300o F (Setaflash)
UPPER FLAMMABLE LIMIT: Not established.
LOWER FLAMMABLE LIMIT: Not established.
AUTO IGNITION TEMPERATURE: Not available.
HAZARDOUS DECOMPOSITION PRODUCTS: Phosphorous oxides, carbon monoxide.
SPECIAL FIRE FIGHTING PROCEDURES:
As with most chemical fires, it is advised that firemen be supplied with self-contained breathing devices equipped with full face piece.



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EXPLOSION HAZARDS: Not available.
 REACTIVITY DATA
 STABILITY: Stable
 CONDITIONS TO AVOID IF UNSTABLE: Extreme Heat
 HAZARDOUS POLYMERIZATION: Will not occur.
 INCOMPATIBILITY: Strong oxidizers and water.
 HAZARDOUS REACTIONS/DECOMPOSITIONS:
 Phosphorous oxides, carbon monoxide.
 CONDITIONS TO AVOID: None currently known.

HEALTH HAZARD DATA

INHALATION: The acute inhalation LC50 is 1300 mg/m3 in mice. Use proper respiratory protection.
 SKIN ABSORPTION: Avoid all contact to skin. Prolonged contact may cause irritation and dryness and redness. Slightly toxic through skin absorption.
 EYE CONTACT: Mild to moderate irritation may result.
 SKIN CONTACT: Contact with skin could produce mild irritation.
 INGESTION: Moderately toxic. May cause nausea, abdominal discomfort and collapse.
 CHRONIC EXPOSURE EFFECTS: No chronic effects, either systemic or local are known.
 EXPOSURE LIMITS: 2.5 mg/m3 8 hour average contamination limit 5 mg/m3 15 minute average contamination limit Saskatchewan Occupational Health and Safety Regulations - January 1989 Check local regulations as they may differ from the above.
 IRRITANCY: Causes irritation to the skin, eyes, and respiratory tract.
 MUTAGENICITY: Not available. CARCINOGENICITY: Not available.
 SENSITIZATION TO PRODUCT: Not available.
 REPRODUCTIVE TOXICITY: Not available.
 TOXICOLOGICALLY SYNERGISTIC MATERIALS: Not available.
 TERATOGENICITY DATA: Not available.
 ANIMAL TOXICITY DATA: LC50 1300 mg/m3 (mice)

FIRST AID MEASURES

INHALATION: No emergency care anticipated.
 SKIN CONTACT: Remove contaminated clothing and flush skin with water. Wash with soap and water until material has been removed. Obtain medical attention if irritation persists.
 EYE CONTACT: Immediately flush eyes with large amounts of water for 15 minutes. Hold eye lids apart to ensure complete flushing. Do not attempt to neutralize with chemical agents. Obtain medical attention.
 INGESTION: Obtain medical attention.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

HEALTH	3	HAZARD INDEX
FLAMMABILITY	1	4 SEVERE HAZARD
REACTIVITY	0	3 SERIOUSE HAZARD
PERSONAL PRTECTION EQUIPMENT C		2 MODERATE HAZARD
Goggles, gloves, synthetic apron		1 SLIGHT HAZARD
		0 MINIMAL HAZARD

REACTIVITY DATA

STABILITY: stable
 CONDITIONS TO AVOID IF UNSTABLE: Extreme heat



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INCOMPATIBILITY WITH OTHER MATERIALS: Strong oxidizers and water

HAZARDOUS POLYMERIZATION: Will not occur.

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CONDITIONS TO AVOID: None currently known.

PREVENTATIVE MEASURES

RESPIRATORY PROTECTION:

Self contained breathing apparatus in high concentrations.

SKIN PROTECTION: Butyl or neoprene rubber gloves, synthetic apron.

EYE/FACE PROTECTION: Monogoggles.

SPECIAL HANDLING PROCEDURES:

Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling.

Soiled clothing should be removed and laundered before reuse.

STORAGE REQUIREMENTS:

Store below 120o F. Keep containers closed. Store in a well ventilated area away from any ignition sources.

ENGINEERING CONTROLS: General (Mechanical)room ventilation is expected to be satisfactory.

SPECIAL SHIPPING REQUIREMENTS: None.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Soiled clothing should be removed and laundered before reuse, Store below 120o F. Keep container closed. Store in well ventilated area away from any ignition sources.

ENVIRONMENTAL PROTECTION DATA

STEPS IN THE EVENT OF A LEAK OR SPILL:

Wear suitable protective equipment. Small spills: Absorb liquid with absorbent material. Large spills: Stop spills at sources. Dike area of the spill to prevent spreading. Pump liquids into waste containers. Remaining liquids can be absorbed. Avoid contact with liquid and vapors.

ENVIRONMENTAL EFFECTS: Not available.

WASTE DISPOSAL METHODS:

Incinerate or landfill where permitted under appropriate federal, provincial, and local regulations. Questions concerning disposal should be directed to ENVIROCHEM TECHNOLOGIES.

PREPARATION INFORMATION

MSDS PREPARED BY: Technical Department

Panther Industries Inc.

TELEPHONE NUMBER: (306) 567-2814

DATE PREPARED/REVISED: March 4 2007

DATE PRINTED: March 4 2007

REFERENCES:

1. Manufacturers MSDS
2. Hawley, Gessner G. "The Condensed Chemical Dictionary, Tenth Edition" (Van Nostrand Reinhold Co) 1981.