

## Material Safety Data Sheet

Date Printed: 31/MAY/2005

Date Updated: 16/MAY/2005

Version 1.2

According to 91/155/EEC

Classified as Hazardous according to the criteria of EU Annex 1 and NOHSC.

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1 - Product and Company Information

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Product Name TETRABUTYLPHOSPHONIUM BROMIDE, 98%  
Product Number 189138

Company Sigma-Aldrich Pty, Ltd  
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Australia

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2 - Composition/Information on Ingredients

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Product Name	CAS #	EC no	Annex I Index Number
TETRABUTYLPHOSPHONIUM BROMIDE	3115-68-2	221-487-8	None

Formula C16H36BrP

Molecular Weight 339.35 AMU

Synonyms PX 4B \* Tetra-N-butylphosphonium bromide

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3 - Hazards Identification

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## SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Harmful in contact with skin and if swallowed. Irritating to eyes, respiratory system and skin.

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4 - First Aid Measures

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## AFTER INHALATION

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

## AFTER SKIN CONTACT

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

## AFTER EYE CONTACT

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

## AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

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## 5 - Fire Fighting Measures

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### EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

### SPECIAL RISKS

Specific Hazard(s): Emits toxic fumes under fire conditions.

### SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

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## 6 - Accidental Release Measures

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### PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

### METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

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## 7 - Handling and Storage

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### HANDLING

Directions for Safe Handling: Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

### STORAGE

Conditions of Storage: Keep tightly closed.

SPECIAL REQUIREMENTS: Hygroscopic.

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## 8 - Exposure Controls / Personal Protection

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### ENGINEERING CONTROLS

Use only in a chemical fume hood. Safety shower and eye bath.

### GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Wash thoroughly after handling.

### PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.

Hand Protection: Compatible chemical-resistant gloves.

Eye Protection: Chemical safety goggles.

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## 9 - Physical and Chemical Properties

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Appearance	Color: White Form: Fine crystals	
Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	102 °C	

Flash Point	290 °C	Method: closed cup
Flammability	N/A	
Autoignition Temp	N/A	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	N/A	
Vapor Pressure	N/A	
SG/Density	N/A	
Partition Coefficient	N/A	
Viscosity	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	N/A	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

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## 10 - Stability and Reactivity

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### STABILITY

Stable: Stable.

Materials to Avoid: Strong oxidizing agents.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Hydrogen bromide gas, Thermal decomposition may produce toxic fumes of phosphorus oxides and/or phosphine.

### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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## 11 - Toxicological Information

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RTECS NUMBER: TA2417000

### ACUTE TOXICITY

LD50

Skin

Rabbit

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LD50

Oral

Rat

420 mg/kg

Remarks: Gastrointestinal:Hypermotility, diarrhea. Lungs, Thorax, or Respiration:Other changes. Liver:Other changes.

LC50

Inhalation

Rat

> 3 mg/m3

1H

LD50

Intravenous

Mouse

56 MG/KG

LD50

Skin

Rabbit

197 mg/kg

Remarks: Behavioral:Somnolence (general depressed activity).  
Behavioral:Convulsions or effect on seizure threshold. Lungs,  
Thorax, or Respiration:Dyspnea.

#### IRRITATION DATA

Skin

Rabbit

500 mg

Remarks: Severe irritation effect

Eyes

Rabbit

0.1 ml

24H

Remarks: Severe irritation effect

#### SIGNS AND SYMPTOMS OF EXPOSURE

To the best of our knowledge, the chemical, physical, and  
toxicological properties have not been thoroughly investigated.

#### ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: Harmful if absorbed through skin.

Eye Contact: Causes eye irritation.

Inhalation: May be harmful if inhaled. Material is irritating to  
mucous membranes and upper respiratory tract.

Ingestion: Harmful if swallowed.

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#### 12 - Ecological Information

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N/A

#### ELIMINATION

Elimination: 10 - 30 %

#### ECOTOXICOLOGICAL EFFECTS

Test Type: LC50 Fish

Species: Leuciscus idus

Time: 48 h

Value: 100 - 1,000 mg/l

Test Type: LC50 Bacteria

Time: 3 h

Value: > 1,000 mg/l

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#### 13 - Disposal Considerations

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#### SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose  
of this material. Dissolve or mix the material with a combustible  
solvent and burn in a chemical incinerator equipped with an  
afterburner and scrubber. Observe all federal, state, and local  
environmental regulations.

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#### 14 - Transport Information

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RID/ADR

UN#: 3464  
Class: 6.1  
PG: III  
Proper Shipping Name: Organophosphorus compound,  
toxic, solid, n.o.s.

IMDG

UN#: 3464  
Class: 6.1  
PG: III  
Proper Shipping Name: Organophosphorus compound,  
toxic, solid, n.o.s.  
Marine Pollutant: No  
Severe Marine Pollutant: No  
Technical Name: Required

IATA

UN#: 3464  
Class: 6.1  
PG: III  
Proper Shipping Name: Organophosphorus compound,  
toxic, solid, n.o.s.  
Inhalation Packing Group I: No  
Technical Name: Required

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15 - Regulatory Information

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CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

INDICATION OF DANGER: Xn

Harmful.

R-PHRASES: 36/37/38 21/22

Irritating to eyes, respiratory system and skin. Harmful in  
contact with skin and if swallowed.

S-PHRASES: 26 37/39

In case of contact with eyes, rinse immediately with plenty of  
water and seek medical advice. Wear suitable gloves and  
eye/face protection.

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16 - Other Information

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WARRANTY

The above information is believed to be correct but does not  
purport to be all inclusive and shall be used only as a guide. The  
information in this document is based on the present state of our  
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