

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 08/17/2009

Reviewed on 08/14/2009

1 Identification of substance:**Product details:****Product name:** Triphenylborane**Stock number:** 32589**Manufacturer/Supplier:**

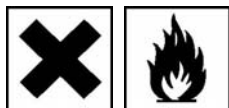
Alfa Aesar, A Johnson Matthey Company
 Johnson Matthey Catalog Company, Inc.
 30 Bond Street
 Ward Hill, MA 01835-8099
 Emergency Phone: (978) 521-6300
 CHEMTREC: (800) 424-9300
 Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department**Emergency information:**

During normal hours the Health, Safety and Environmental Department. After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:**Chemical characterization:****Description: (CAS#)**

Triphenylborane (CAS# 960-71-4)

Identification number(s):**EINECS Number:** 213-504-2**3 Hazards identification****Hazard description:**

Xi Irritant
 F Highly flammable

Information pertaining to particular dangers for man and environment

R 11 Highly flammable.

R 41 Risk of serious damage to eyes.

Classification system**HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

| | |
|------------|---|
| HEALTH | 2 |
| FIRE | 3 |
| REACTIVITY | 1 |

Health (acute effects) = 2

Flammability = 3

Reactivity = 1

GHS label elements**Danger**

3.3/1 - Causes serious eye damage.

**Warning**

2.7/2 - Flammable solid.

Prevention:

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting/equipment.

Wear protective gloves/protective clothing/eye protection/face protection.

Response:

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a POISON CENTER or doctor/physician.

In case of fire: Use for extinction: CO2, powder or water spray.

4 First aid measures**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

(Contd. on page 2)

USA

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 08/17/2009

Reviewed on 08/14/2009

Product name: Triphenylborane

(Contd. of page 1)

After skin contact

Immediately wash with water and soap and rinse thoroughly.
Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek immediate medical advice.

5 Fire fighting measures

Suitable extinguishing agents CO2, sand, extinguishing powder. Do not use water.

For safety reasons unsuitable extinguishing agents Water

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Boron oxide

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures**Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Ensure adequate ventilation.

Keep away from ignition sources.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage**Handling****Information for safe handling:**

Handle under dry protective gas.

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires:

Keep ignition sources away.

Protect against electrostatic charges.

Storage

Requirements to be met by storerooms and receptacles: Store in a cool location.

Information about storage in one common storage facility:

Store away from oxidizing agents.

Store away from air.

Further information about storage conditions:

Store under dry inert gas.

Avoid contact with air/oxygen.

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

This product is air sensitive.

8 Exposure controls and personal protection**Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace: Not required.

Additional information: No data

Personal protective equipment**General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

(Contd. on page 3)

USA

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 08/17/2009

Reviewed on 08/14/2009

Product name: Triphenylborane

(Contd. of page 2)

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Breathing equipment: Use suitable respirator when high concentrations are present.**Protection of hands:** Impervious gloves**Eye protection:** Safety glasses**Body protection:** Protective work clothing.**9 Physical and chemical properties:****General Information**

| | |
|---------------|-------------|
| Form: | Crystalline |
| Color: | Off-white |
| Odor: | Odorless |

Change in condition

| | |
|---|-------------------------|
| Melting point/Melting range: | 147°C (297°F) |
| Boiling point/Boiling range: | 208°C (406°F) (14mm Hg) |
| Sublimation temperature / start: | Not determined |

| | |
|---------------------|----------------|
| Flash point: | Not applicable |
|---------------------|----------------|

| | |
|--------------------------------------|-------------------|
| Flammability (solid, gaseous) | Highly flammable. |
|--------------------------------------|-------------------|

| | |
|------------------------------|----------------|
| Ignition temperature: | Not determined |
|------------------------------|----------------|

| | |
|-----------------------------------|----------------|
| Decomposition temperature: | Not determined |
|-----------------------------------|----------------|

Explosion limits:

| | |
|---------------|----------------|
| Lower: | Not determined |
| Upper: | Not determined |

| | |
|------------------------|----------------|
| Vapor pressure: | Not determined |
|------------------------|----------------|

| | |
|-----------------|----------------|
| Density: | Not determined |
|-----------------|----------------|

Solubility in / Miscibility with

| | |
|---------------|------------|
| Water: | Decomposes |
|---------------|------------|

10 Stability and reactivity**Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided:

Oxidizing agents

Water/moisture

Air

Dangerous reactions No dangerous reactions known**Dangerous products of decomposition:**

Carbon monoxide and carbon dioxide

Boron oxide

11 Toxicological information**Acute toxicity:****LD/LC50 values that are relevant for classification:**

| | | |
|--------------------|--------|---------------------|
| Irritation of eyes | severe | 100 µL/24H (rabbit) |
|--------------------|--------|---------------------|

Primary irritant effect:**on the skin:** May cause irritation**on the eye:** Strong irritant with the danger of severe eye injury.**Sensitization:** No sensitizing effects known.**Subacute to chronic toxicity:**

Boron affects the central nervous system. Boron poisoning causes depression of the circulation, persistent vomiting and diarrhea, followed by profound shock and coma. The temperature may become subnormal and a scarletina form rash may cover the entire body.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

EPA-I: Data are inadequate for an assessment of human carcinogenic potential.

USA

(Contd. on page 4)

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 08/17/2009

Reviewed on 08/14/2009

Product name: Triphenylborane

(Contd. of page 3)

12 Ecological information:**General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations**Product:**

Recommendation Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

14 Transport information**DOT regulations:**

Hazard class: 4.1
Identification number: UN1325
Packing group: III
Proper shipping name (technical name): FLAMMABLE SOLID, ORGANIC, N.O.S. (Triphenylborane)
Label 4.1

Land transport ADR/RID (cross-border)

ADR/RID class: 4.1 (F1) Flammable solids, self-reactive substances and solid desensitised explosives
Danger code (Kemler): 40
UN-Number: 1325
Packaging group: III
Description of goods: 1325 FLAMMABLE SOLID, ORGANIC, N.O.S. (Triphenylborane)

Maritime transport IMDG:

IMDG Class: 4.1
UN Number: 1325
Label 4.1
Packaging group: III
EMS Number: F-A, S-G
Marine pollutant: No
Proper shipping name: FLAMMABLE SOLID, ORGANIC, N.O.S. (Triphenylborane)

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 4.1
UN/ID Number: 1325
Label 4.1
Packaging group: III
Proper shipping name: FLAMMABLE SOLID, ORGANIC, N.O.S. (Triphenylborane)

UN "Model Regulation": UN1325, FLAMMABLE SOLID, ORGANIC, N.O.S., 4.1, III

USA

(Contd. on page 5)

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 08/17/2009

Reviewed on 08/14/2009

Product name: Triphenylborane

(Contd. of page 4)

15 Regulations**Product related hazard informations:****Hazard symbols:**

Xi Irritant

F Highly flammable

Risk phrases:

11 Highly flammable.

41 Risk of serious damage to eyes.

Safety phrases:

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

39 Wear eye/face protection.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Non-Domestic Substances List (NDSL).

Information about limitation of use: For use only by technically qualified individuals.**16 Other information:**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.**Contact:** Zachariah Holt**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

USA