

## SAFETY DATA SHEET

Version 5.6  
Revision Date 08/01/2014  
Print Date 11/09/2018

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1. PRODUCT AND COMPANY IDENTIFICATION

## 1.1 Product identifiers

Product name : (S)-1-(Diphenylphosphino)-3-methyl-2-butylamine

Product Number : 748277

Brand : Aldrich

CAS-No. : 146476-37-1

## 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

## 1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832

Fax : +1 800-325-5052

## 1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

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2. HAZARDS IDENTIFICATION

## 2.1 Classification of the substance or mixture

**GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Skin corrosion (Category 1B), H314

Serious eye damage (Category 1), H318

Chronic aquatic toxicity (Category 4), H413

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word : Danger

Hazard statement(s)

H314

Causes severe skin burns and eye damage.

H413

May cause long lasting harmful effects to aquatic life.

Precautionary statement(s)

P264

Wash skin thoroughly after handling.

P273

Avoid release to the environment.

P280

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

P301 + P330 + P331

IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353

IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.

P304 + P340

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

|                    |                                                                                                                                  |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------|
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P310               | Immediately call a POISON CENTER or doctor/ physician.                                                                           |
| P321               | Specific treatment (see supplemental first aid instructions on this label).                                                      |
| P363               | Wash contaminated clothing before reuse.                                                                                         |
| P405               | Store locked up.                                                                                                                 |
| P501               | Dispose of contents/ container to an approved waste disposal plant.                                                              |

## 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Synonyms : (S)-1-(Diphenylphosphino)-3-methylbutan-2-amine

Formula : C<sub>17</sub>H<sub>22</sub>NP

Molecular Weight : 271.34 g/mol

CAS-No. : 146476-37-1

#### Hazardous components

| Component                                              | Classification                                           | Concentration |
|--------------------------------------------------------|----------------------------------------------------------|---------------|
| <b>(S)-1-(Diphenylphosphino)-3-methyl-2-butylamine</b> |                                                          |               |
|                                                        | Skin Corr. 1B; Eye Dam. 1; Aquatic Chronic 4; H314, H413 | -             |

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

#### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

#### If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 4.3 Indication of any immediate medical attention and special treatment needed

no data available

## 5. FIREFIGHTING MEASURES

### 5.1 Extinguishing media

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### 5.2 Special hazards arising from the substance or mixture

no data available

### 5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

- 5.4 Further information**  
no data available

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## 6. ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions, protective equipment and emergency procedures**  
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.  
For personal protection see section 8.
- 6.2 Environmental precautions**  
Do not let product enter drains.
- 6.3 Methods and materials for containment and cleaning up**  
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.
- 6.4 Reference to other sections**  
For disposal see section 13.

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## 7. HANDLING AND STORAGE

- 7.1 Precautions for safe handling**  
Avoid inhalation of vapour or mist.  
For precautions see section 2.2.
- 7.2 Conditions for safe storage, including any incompatibilities**  
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
  
Handle and store under inert gas. Air sensitive.
- 7.3 Specific end use(s)**  
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

**Components with workplace control parameters**  
Contains no substances with occupational exposure limit values.

### 8.2 Exposure controls

#### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

#### Personal protective equipment

##### Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

##### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

##### Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

##### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure**  
Do not let product enter drains.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

|                                                 |                                          |
|-------------------------------------------------|------------------------------------------|
| a) Appearance                                   | Form: liquid                             |
| b) Odour                                        | no data available                        |
| c) Odour Threshold                              | no data available                        |
| d) pH                                           | no data available                        |
| e) Melting point/freezing point                 | no data available                        |
| f) Initial boiling point and boiling range      | no data available                        |
| g) Flash point                                  | > 110 °C (> 230 °F)                      |
| h) Evaporation rate                             | no data available                        |
| i) Flammability (solid, gas)                    | no data available                        |
| j) Upper/lower flammability or explosive limits | no data available                        |
| k) Vapour pressure                              | no data available                        |
| l) Vapour density                               | no data available                        |
| m) Relative density                             | 1.050 g/cm <sup>3</sup> at 25 °C (77 °F) |
| n) Water solubility                             | no data available                        |
| o) Partition coefficient: n-octanol/water       | log Pow: 5.068                           |
| p) Auto-ignition temperature                    | no data available                        |
| q) Decomposition temperature                    | no data available                        |
| r) Viscosity                                    | no data available                        |
| s) Explosive properties                         | no data available                        |
| t) Oxidizing properties                         | no data available                        |

### 9.2 Other safety information

no data available

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## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

no data available

### 10.4 Conditions to avoid

Air

### 10.5 Incompatible materials

Strong oxidizing agents

## 10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx), Oxides of phosphorus

Other decomposition products - no data available

In the event of fire: see section 5

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## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

no data available

Inhalation: no data available

Dermal: no data available

no data available

#### Skin corrosion/irritation

no data available

#### Serious eye damage/eye irritation

no data available

#### Respiratory or skin sensitisation

no data available

#### Germ cell mutagenicity

no data available

#### Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

#### Reproductive toxicity

no data available

no data available

#### Specific target organ toxicity - single exposure

no data available

#### Specific target organ toxicity - repeated exposure

no data available

#### Aspiration hazard

no data available

#### Additional Information

RTECS: Not available

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

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## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

no data available

**12.2 Persistence and degradability**

no data available

**12.3 Bioaccumulative potential**

no data available

**12.4 Mobility in soil**

no data available

**12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**12.6 Other adverse effects**

no data available

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**13. DISPOSAL CONSIDERATIONS****13.1 Waste treatment methods****Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. 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.

**Contaminated packaging**

Dispose of as unused product.

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**14. TRANSPORT INFORMATION****DOT (US)**

UN number: 2735      Class: 8      Packing group: III  
Proper shipping name: Amines, liquid, corrosive, n.o.s. ((S)-1-(Diphenylphosphino)-3-methyl-2-butylamine)  
Reportable Quantity (RQ):  
Marine pollutant: No  
Poison Inhalation Hazard: No

**IMDG**

UN number: 2735      Class: 8      Packing group: III      EMS-No: F-A, S-B  
Proper shipping name: AMINES, LIQUID, CORROSIVE, N.O.S. ((S)-1-(Diphenylphosphino)-3-methyl-2-butylamine)  
Marine pollutant: No

**IATA**

UN number: 2735      Class: 8      Packing group: III  
Proper shipping name: Amines, liquid, corrosive, n.o.s. ((S)-1-(Diphenylphosphino)-3-methyl-2-butylamine)

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**15. REGULATORY INFORMATION****SARA 302 Components**

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**

Acute Health Hazard

**Massachusetts Right To Know Components**

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**

|                                                 | CAS-No.     | Revision Date |
|-------------------------------------------------|-------------|---------------|
| (S)-1-(Diphenylphosphino)-3-methyl-2-butylamine | 146476-37-1 |               |

**New Jersey Right To Know Components**

|                                                 | CAS-No.     | Revision Date |
|-------------------------------------------------|-------------|---------------|
| (S)-1-(Diphenylphosphino)-3-methyl-2-butylamine | 146476-37-1 |               |

**California Prop. 65 Components**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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**16. OTHER INFORMATION****Full text of H-Statements referred to under sections 2 and 3.**

|                 |                                                         |
|-----------------|---------------------------------------------------------|
| Aquatic Chronic | Chronic aquatic toxicity                                |
| Eye Dam.        | Serious eye damage                                      |
| H314            | Causes severe skin burns and eye damage.                |
| H318            | Causes serious eye damage.                              |
| H413            | May cause long lasting harmful effects to aquatic life. |

**HMIS Rating**

|                        |   |
|------------------------|---|
| Health hazard:         | 3 |
| Chronic Health Hazard: |   |
| Flammability:          | 0 |
| Physical Hazard        | 0 |

**NFPA Rating**

|                    |   |
|--------------------|---|
| Health hazard:     | 3 |
| Fire Hazard:       | 0 |
| Reactivity Hazard: | 0 |

**Further information**

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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 knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

**Preparation Information**

Sigma-Aldrich Corporation  
Product Safety – Americas Region  
1-800-521-8956

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