

## SAFETY DATA SHEET

Version 4.7  
Revision Date 03/03/2015  
Print Date 08/03/2015

## 1. PRODUCT AND COMPANY IDENTIFICATION

## 1.1 Product identifiers

Product name : Diphenyl diselenide

Product Number : 180629  
Brand : Aldrich  
Index-No. : 034-002-00-8

CAS-No. : 1666-13-3

## 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 # : (314) 776-6555

## 2. HAZARDS IDENTIFICATION

## 2.1 Classification of the substance or mixture

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

Acute toxicity, Oral (Category 3), H301  
Acute toxicity, Inhalation (Category 3), H331  
Specific target organ toxicity - repeated exposure (Category 2), H373  
Acute aquatic toxicity (Category 1), H400  
Chronic aquatic toxicity (Category 1), H410

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)

H301 + H331 : Toxic if swallowed or if inhaled  
H373 : May cause damage to organs through prolonged or repeated exposure.  
H410 : Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P260 : Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.  
P264 : Wash skin thoroughly after handling.  
P270 : Do not eat, drink or smoke when using this product.  
P271 : Use only outdoors or in a well-ventilated area.  
P273 : Avoid release to the environment.

P301 + P310 + P330

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth.

P304 + P340 + P311

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician. Get medical advice/ attention if you feel unwell.

P314

Collect spillage.

P391

Store in a well-ventilated place. Keep container tightly closed.

P403 + P233

Store locked up.

P405

Dispose of contents/ container to an approved waste disposal plant.

P501

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

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

## 3.1 Substances

Synonyms : Phenyl diselenide

Formula : C<sub>12</sub>H<sub>10</sub>Se<sub>2</sub>

Molecular weight : 312.13 g/mol

CAS-No. : 1666-13-3

EC-No. : 216-780-2

Index-No. : 034-002-00-8

## Hazardous components

Component	Classification	Concentration
Diphenyl diselenide	Acute Tox. 3; STOT RE 2; Aquatic Acute 1; Aquatic Chronic 1; H301 + H331, H373, H410	<= 100 %

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

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

## In case of eye contact

Flush eyes with water as a precaution.

## If swallowed

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.

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## 5.2 Special hazards arising from the substance or mixture

Carbon oxides, Selenium/selenium oxides

## 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

## 5.4 Further information

No data available

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### 6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

### 6.4 Reference to other sections

For disposal see section 13.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed. 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.

Keep in a dry place.

Storage class (TRGS 510): Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Diphenyl diselenide	1666-13-3	TWA	0.200000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.2 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract Irritation Eye irritation		
		TWA	0.200000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract Irritation Eye irritation		

		TWA	0.200000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	0.2 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.2 mg/m3	USA. NIOSH Recommended Exposure Limits

### 8.2 Exposure controls

#### Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

#### Personal protective equipment

##### Eye/face protection

Face shield and safety glasses 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.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

##### 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 particle respirator type N99 (US) or type P2 (EN 143) 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

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

a) Appearance	Form: powder Colour: dark yellow
b) Odour	No data available
c) Odour Threshold	No data available

- d) pH No data available
- e) Melting point/freezing point Melting point/range: 59 - 61 °C (138 - 142 °F) - lit.
- f) Initial boiling point and boiling range No data available
- g) Flash point No data available
- 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 No data available
- n) Water solubility No data available
- o) Partition coefficient: n-octanol/water No data available
- 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

## 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**  
No data available
- 10.5 **Incompatible materials**  
Oxidizing agents, Halogens, Reducing agents
- 10.6 **Hazardous decomposition products**  
Other decomposition products - No data available  
In the event of fire: see section 5

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

Dermal: No data available

LD50 Intravenous - Mouse - 28 mg/kg

#### 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: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Diphenyl diselenide)
- 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

May cause damage to organs through prolonged or repeated exposure.

#### Aspiration hazard

No data available

#### Additional Information

RTECS: JM9152500

Liver injury may occur., Damage to the lungs.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

## 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**  
Very toxic to aquatic life with long lasting effects.  
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

### 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.

### 14. TRANSPORT INFORMATION

#### DOT (US)

UN number: 3283 Class: 6.1 Packing group: II  
Proper shipping name: Selenium compound, solid, n.o.s. (Diphenyl diselenide)  
Reportable Quantity (RQ):

Poison Inhalation Hazard: No

#### IMDG

UN number: 3283 Class: 6.1 Packing group: II EMS-No: F-A, S-A  
Proper shipping name: SELENIUM COMPOUND, SOLID, N.O.S. (Diphenyl diselenide)

#### IATA

UN number: 3283 Class: 6.1 Packing group: II  
Proper shipping name: Selenium compound, solid, n.o.s. (Diphenyl diselenide)

### 15. REGULATORY INFORMATION

#### SARA 302 Components

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

#### SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Diphenyl diselenide	1666-13-3	2007-07-01

#### SARA 311/312 Hazards

Acute Health Hazard, Chronic 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
Diphenyl diselenide	1666-13-3	2007-07-01

#### New Jersey Right To Know Components

	CAS-No.	Revision Date
Diphenyl diselenide	1666-13-3	2007-07-01

#### 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.

### 16. OTHER INFORMATION

#### Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity

#### Aquatic Chronic

H301

H301 + H331

H331

H373

H400

#### Chronic aquatic toxicity

Toxic if swallowed.

Toxic if swallowed or if inhaled

Toxic if inhaled.

May cause damage to organs through prolonged or repeated exposure.

Very toxic to aquatic life.

#### HMIS Rating

Health hazard: 2

Chronic Health Hazard: \*

Flammability: 0

Physical Hazard: 0

#### NFPA Rating

Health hazard: 2

Fire Hazard: 0

Reactivity Hazard: 0

#### Further information

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#### Preparation Information

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

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