



SIGMA-ALDRICH

Material Safety Data Sheet

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Version 1.20

Section 1 - Product and Company Information

Product Name: Ebselen
Product Number: E3520
Brand: Sigma Chemical

Company: Sigma-Aldrich
Street Address: 3050 Spruce Street
City, State, Zip, Country: SAINT LOUIS, MO 63103 US
Technical Phone: 314 771 5765
Fax: 800 325 5052
Emergency Phone: 414 273 3850 Ext. 5996

Section 2 - Composition/Information on Ingredient

Table with 5 columns: Substance Name, CAS #, SARA 313, EC no, Annex I Index Number. Row 1: EBSELEN, 60940-34-3, Yes, 034-002-00-8

Formula: C13H9NOSe
Synonyms: Ebselen, 2-Phenyl-1,2-benzisoxaselenazol-3(2H)-one, PZ 51

Section 3 - Hazards Identification

Emergency Overview: Toxic.
Toxic by inhalation and if swallowed. Danger of cumulative effects.
Target organ(s): Immune system, G.I. System.

HMIS Rating: Health: 2, Flammability: 0, Reactivity: 0

NFPA Rating: Flammability: 0, Reactivity: 0

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

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

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

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

Eye Exposure: 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.

Section 5 - Fire Fighting Measures

Autoignition Temp: N/A

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

Firefighting: Protective Equipment
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure 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.

Section 7 - Handling and Storage

Handling: User Exposure
Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

Storage: Suitable
Keep tightly closed. Store at 2-8°C

Section 8 - Exposure Controls / PPE

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

Personal Protective Equipment: Respiratory: Government approved respirator.
Hand: Compatible chemical-resistant gloves.
Eye: Chemical safety goggles.

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**General Hygiene Measures**

Wash contaminated clothing before reuse. Wash thoroughly after handling.

**Section 9 - Physical/Chemical Properties**

|                   |                |
|-------------------|----------------|
| <b>Appearance</b> |                |
| Physical State    | Color          |
| Solid             | Faintly yellow |

Molecular Weight: 274,2 AMU

|                       |              |
|-----------------------|--------------|
| pH                    | N/A          |
| BP/BP Range           | N/A          |
| MP/MP Range           | 180 - 181 °C |
| Freezing Point        | N/A          |
| Vapor Pressure        | N/A          |
| Vapor Density         | N/A          |
| Saturated Vapor Conc. | N/A          |
| SG/Density            | N/A          |
| Bulk Density          | N/A          |
| Odor Threshold        | N/A          |
| Volatile%             | N/A          |
| VOC Content           | N/A          |
| Water Content         | N/A          |
| Solvent Content       | N/A          |
| Evaporation Rate      | N/A          |
| Viscosity             | N/A          |
| Partition Coefficient | N/A          |
| Decomposition Temp.   | N/A          |
| Flash Point °F        | N/A          |
| Flash Point °C        | N/A          |
| Explosion Limits      | N/A          |

|                   |     |
|-------------------|-----|
| Flammability      | N/A |
| Autoignition Temp | N/A |
| Solubility        | N/A |

N/A = not available

**Section 10 - Stability and Reactivity**

**Stability**  
Stable  
Stable.  
**Materials to Avoid**  
Strong oxidizing agents.

**Hazardous Decomposition Products****Hazardous Decomposition Products**

Carbon monoxide, Carbon dioxide, Nitrogen oxides, Selenium/selenium oxides.

**Hazardous Polymerization**

Will not occur.

**Section 11 - Toxicological Information****Route of Exposure****Skin Contact**

May cause skin irritation.

**Skin Absorption**

May be harmful if absorbed through the skin.

**Eye Contact**

May cause eye irritation.

**Inhalation**

Material may be irritating to mucous membranes and upper respiratory tract.

**Multiple Routes**

Toxic if inhaled or swallowed.

**Sensitization****Sensitization**

Believed to stimulate the immune system.

**Target Organ(s) or System(s)**

Immune system. G.I. System. Eyes. Nerves.

**Signs and Symptoms of Exposure**

Acute selenium poisoning produces central nervous system effects, which include nervousness, convulsions, and drowsiness. Other signs of intoxication can include skin eruptions, lassitude, gastrointestinal distress, teeth that are discolored or decayed, odorous ("garlic") breath, and partial loss of hair and nails. Chronic exposure by inhalation can produce symptoms that include pallor, coating of the tongue, anemia, irritation of the mucosa, lumbar pain, liver and spleen damage, as well as any of the other previously mentioned symptoms. Chronic contact with selenium compounds may cause garlic odor of breath and sweat, dermatitis, and moderate emotional instability. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

RTECS Number: DE4140750

**Chronic Exposure - Teratogen**

| <u>Species</u> | <u>Dose</u> | <u>Route of Application</u> | <u>Exposure Time</u>        |
|----------------|-------------|-----------------------------|-----------------------------|
| Rat            | 90 GM/KG    | Oral                        | (70D MALE/14D PRE-20D PREG) |

Result: Effects on Embryo or Fetus: Extra embryonic structures (e.g., placenta, umbilical cord).

**Chronic Exposure - Reproductive Hazard**

| <u>Species</u> | <u>Dose</u> | <u>Route of Application</u> | <u>Exposure Time</u>   |
|----------------|-------------|-----------------------------|------------------------|
| Rat            | 14500 MG/KG | Oral                        | (15-22D PREG/21D POST) |

Result: Effects on Newborn: Viability index (e.g., # alive at day 4 per # born alive). Effects on Newborn: Growth statistics (e.g., reduced weight gain). Effects on Newborn: Delayed effects.

**Section 12 - Ecological Information**

No data available.

**Section 13 - Disposal Considerations****Appropriate Method of Disposal of Substance or Preparation**

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.

## Section 14 - Transport Information

### DOT

Proper Shipping Name: Selenium compound, n.o.s.  
UN#: 3283  
Class: 6.1  
Packing Group: Packing Group III  
Hazard Label: Keep away from food  
PIH: Not PIH

### IATA

Proper Shipping Name: Selenium compound, n.o.s.  
IATA UN Number: 3283  
Hazard Class: 6.1  
Packing Group: III

## Section 15 - Regulatory Information

### EU Directives Classification

Symbol of Danger: T N

Indication of Danger

Toxic. Dangerous for the environment.

Risk Statements R: 23/25 33 50/53

Toxic by inhalation and if swallowed, Danger of cumulative effects. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Statements S: 20/21 28 45 60 61

When using do not eat, drink, or smoke. After contact with skin, wash immediately with plenty of soap-suds. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets.

### US Classification and Label Text

Indication of Danger

Toxic.

Risk Statements

Toxic by inhalation and if swallowed, Danger of cumulative effects.

Safety Statements

When using do not eat, drink, or smoke. After contact with skin, wash immediately with plenty of soap-suds. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US Statements

Target organ(s): Immune system, G.I. System.

### United States Regulatory Information

SARA Listed: Yes

De minimis: 1.0 %

Notes: This product is subject to SARA section 313 reporting requirements - selenium compounds.

### Canada Regulatory Information

WHMIS Classification

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: No

NDSL: No

## Section 16 - Other Information

### Disclaimer

For R&D use only. Not for drug, household or other uses.

### 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 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 Inc., shall not be held liable for

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