

according to Regulation (EC) No. 1907/2006 as amended by (EC) No. 2015/830 and US OSHA HCS 2015

Section 1. Identification of the Substance/Mixture and of the Company/Undertaking

- 1.1 Product Code:** 70530
Product Name: Ebselen
Synonyms: 2-phenyl-1,2-benzisoselenazol-3(2H)-one;
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**
Relevant identified uses: For research use only, not for human or veterinary use.
- 1.3 Details of the Supplier of the Safety Data Sheet:**
Company Name: Cayman Chemical Company
 1180 E. Ellsworth Rd.
 Ann Arbor, MI 48108
Web site address: www.caymanchem.com
Information: Cayman Chemical Company +1 (734)971-3335
- 1.4 Emergency telephone number:**
Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300
 CHEMTREC Outside USA and Canada: +1 (703)527-3887

Section 2. Hazards Identification

- 2.1 Classification of the Substance or Mixture:**
Acute Toxicity: Inhalation, Category 3
Acute Toxicity: Oral, Category 3
Specific Target Organ Toxicity (repeated exposure), Category 2
Aquatic Toxicity (Acute), Category 1
Aquatic Toxicity (Chronic), Category 1

2.2 Label Elements:



GHS Signal Word: **Danger**

GHS Hazard Phrases:

H301: Toxic if swallowed.
 H331: Toxic if inhaled.
 H373: May cause damage to {organs} through prolonged or repeated exposure.
 H400: Very toxic to aquatic life.
 H410: Very toxic to aquatic life with long lasting effects.

GHS Precaution Phrases:

P260: Do not breathe {dust/fume/gas/mist/vapours/spray}.
 P264: Wash {hands} thoroughly after handling.
 P273: Avoid release to the environment.

GHS Response Phrases:

P301+310: IF SWALLOWED: Immediately P311: Call a POISON CENTER or doctor/physician.
 P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P314: Get medical attention/advice if you feel unwell.
 P321: Specific treatment {see ... on this label}.
 P330: Rinse mouth.
 P391: Collect spillage.

GHS Storage and Disposal Phrases:

Please refer to Section 7 for Storage and Section 13 for Disposal information.

- 2.3 Adverse Human Health** Material may be irritating to the mucous membranes and upper respiratory tract.
- Effects and Symptoms:** May be harmful by skin absorption.
 May cause damage to organs through prolonged or repeated exposure.
 May cause eye, skin, or respiratory system irritation.
 Toxic if inhaled or swallowed.
 Very toxic to aquatic life with long lasting effects.
 To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

Section 3. Composition/Information on Ingredients

CAS # / RTECS #	Hazardous Components (Chemical Name)/ REACH Registration No.	Concentration	EC No./ EC Index No.	GHS Classification
60940-34-3 DE4140750	Ebselen	100.0 %	612-054-8 NA	Acute Tox.(O) 3: H301 Acute Tox.(I) 3: H331 STOT (RE) 2: H373 Aquatic (A) 1: H400 Aquatic (C) 1: H410

Section 4. First Aid Measures

- 4.1 Description of First Aid Measures:**
- In Case of Inhalation:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
- In Case of Skin Contact:** Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
- In Case of Eye Contact:** Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.
- In Case of Ingestion:** Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

Section 5. Fire Fighting Measures

- 5.1 Suitable Extinguishing** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.
- Media:** Use water spray to cool fire-exposed containers.
- Unsuitable Extinguishing** A solid water stream may be inefficient.
- Media:**
- 5.2 Flammable Properties and Hazards:** No data available.
- Hazards:** No data available.
- Flash Pt:** No data.
- Explosive Limits:** LEL: No data. UEL: No data.
- Autoignition Pt:** No data.
- 5.3 Fire Fighting Instructions:** As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

Section 6. Accidental Release Measures

- 6.1 Protective Precautions, Protective Equipment and Emergency Procedures:** Avoid raising and breathing dust, and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).
- 6.2 Environmental Precautions:** Take steps to avoid release into the environment, if safe to do so.
- 6.3 Methods and Material For Containment and Cleaning Up:** Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations.

Section 7. Handling and Storage

- 7.1 Precautions To Be Taken in Handling:** Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure.
- 7.2 Precautions To Be Taken in Storing:** Keep container tightly closed. Store in accordance with information listed on the product insert.

Section 8. Exposure Controls/Personal Protection

8.1 Exposure Parameters:

CAS #	Chemical Name	Jurisdiction	Recommended Exposure Limits	Notations
60940-34-3	Ebselen	ACGIH TLV	TWA: 0.2 mg/m3	
		OSHA PELs	TWA: 0.2 mg/m3	
		Britain EH40	TWA: 0.1 mg/m3	

8.2 Exposure Controls:

- 8.2.1 Engineering Controls (Ventilation etc.):** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
- 8.2.2 Personal protection equipment:**
- Eye Protection:** Safety glasses
- Protective Gloves:** Compatible chemical-resistant gloves
- Other Protective Clothing:** Lab coat
- Respiratory Equipment (Specify Type):** NIOSH approved respirator, as conditions warrant.
- Work/Hygienic/Maintenance Practices:** Do not take internally. Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower. Wash thoroughly after handling. No data available.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Physical States: [] Gas [] Liquid [X] Solid

Appearance and Odor: A crystalline solid

pH: No data.

Melting Point: No data.

Boiling Point: No data.

Flash Pt: No data.

Evaporation Rate: No data.

Flammability (solid, gas): No data available.

Explosive Limits: LEL: No data. UEL: No data.

Vapor Pressure (vs. Air or mm Hg): No data.

Vapor Density (vs. Air = 1): No data.

Specific Gravity (Water = 1): No data.

Solubility in Water: No data.

Solubility Notes: ~5 mg/ml in EtOH, DMSO, & DMF;

Octanol/Water Partition Coefficient: No data.

Autoignition Pt: No data.

Decomposition Temperature: No data.

Viscosity: No data.

9.2 Other Information

Percent Volatile: No data.

Molecular Formula & Weight: C₁₃H₉NOSe 274.2

Section 10. Stability and Reactivity

10.1 Reactivity: No data available.

10.2 Stability: Unstable [] Stable [X]

10.3 Stability Note(s): Stable if stored in accordance with information listed on the product insert.

Polymerization: Will occur [] Will not occur [X]

10.4 Conditions To Avoid: No data available.

10.5 Incompatibility - Materials To Avoid: strong oxidizing agents

10.6 Hazardous Decomposition or Byproducts: carbon dioxide
carbon monoxide
nitrogen oxides
selenium/selenium oxides

Ebselen

Revision: 11/15/2018

Supersedes Revision: 06/10/2013

Section 11. Toxicological Information

11.1 Information on Toxicological Effects: The toxicological effects of this product have not been thoroughly studied.
Ebselen - Toxicity Data: Oral LD (rat): >4,600 mg/kg; Oral LD50 (mouse): 5 mg/kg; Intraperitoneal LD50 (rat): 110 mg/kg; Intraperitoneal LD50 (mouse): 93 mg/kg;

Chronic Toxicological Effects: Ebselen - Investigated as a drug, organometallic, reproductive effector, and tumorigen. Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information.
Ebselen RTECS Number: DE4140750

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
60940-34-3	Ebselen	n.a.	n.a.	n.a.	n.a.

Section 12. Ecological Information

12.1 Toxicity: Avoid release into the environment.
Runoff from fire control or dilution water may cause pollution.

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: No data available.

12.6 Other adverse effects: No data available.

Section 13. Disposal Considerations

13.1 Waste Disposal Method: Dispose in accordance with local, state, and federal regulations.

Section 14. Transport Information

14.1 LAND TRANSPORT (US DOT):

DOT Proper Shipping Name: SELENIUM COMPOUND, SOLID, N.O.S. (2-Phenyl-1,2-benzisoselenazol-3(2H)-one)
DOT Hazard Class: 6.1 POISON
UN/NA Number: UN3283 **Packing Group:** III



14.1 LAND TRANSPORT (European ADR/RID):

ADR/RID Shipping Name: SELENIUM COMPOUND, SOLID, N.O.S. (2-Phenyl-1,2-benzisoselenazol-3(2H)-one)
UN Number: 3283 **Packing Group:** III
Hazard Class: 6.1 - POISON

14.3 AIR TRANSPORT (ICAO/IATA):

ICAO/IATA Shipping Name: SELENIUM COMPOUND, SOLID, N.O.S. (2-Phenyl-1,2-benzisoselenazol-3(2H)-one)
UN Number: 3283 **Packing Group:** III
Hazard Class: 6.1 - POISON **IATA Classification:** 6.1

Additional Transport Information: Transport in accordance with local, state, and federal regulations.
When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of E1, E2, E4, or E5, this item meets the De Minimis Quantities exemption, per IATA 2.6.10. Therefore packaging does not have to be labeled as Dangerous Goods/Excepted Quantity.



SAFETY DATA SHEET

Ebselen

Revision: 11/15/2018
Supersedes Revision: 06/10/2013

Section 15. Regulatory Information

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
60940-34-3	Ebselen	No	No	Yes-Cat. N725

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
60940-34-3	Ebselen	CAA HAP,ODC: Yes - Cat.; CWA NPDES: No; TSCA: No; CA PROP.65: No

Regulatory Information Statement: This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) No.1272/2008.

Section 16. Other Information

Revision Date: 11/15/2018

Additional Information About This Product: No data available.

This Product:

Company Policy or Disclaimer: DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.