

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) & 2015/830

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**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**


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**1.1 Product identifier**

Product Name	Hafnium Diselenide Powder
Synonyms	Hafnium (IV) selenide, Hafnium selenide
Chemical Name	Hafnium diselenide
Chemical Formula	HfSe <sub>2</sub>
CAS No.	12162-21-9
EC No.	Not Applicable
REACH Registration No.	Not applicable.

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

Identified Use(s)	PC21 Laboratory chemicals
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**1.3 Details of the supplier of the safety data sheet**

Company Identification	Ossila Limited
Address of Supplier	Solpro Business Park Windsor Street Sheffield
Postal code	S4 7WB, UK
Telephone:	+441142999180
E-mail	info@ossila.com
Office hours	08:00 - 17:00

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**SECTION 2: HAZARDS IDENTIFICATION**


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**2.1 Classification of the substance or mixture**

Regulation (EC) No. 1272/2008 (CLP)	Acute Tox. 3: Toxic if swallowed. Acute Tox. 3: Toxic if inhaled STOT RE 2: May cause damage to organs through prolonged or repeated exposure Aquatic Chronic 1: Very toxic to aquatic life with long lasting effects
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**2.2 Label elements**

Product Name	According to Regulation (EC) No. 1272/2008 (CLP) Hafnium Diselenide Powder
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Hazard Pictogram(s)	
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GHS06

GHS08

GHS09

Signal Word(s)	Danger
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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
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Precautionary Statement(s)	P261: Avoid breathing dust/fume/gas/mist/vapours/spray. P273: Avoid release to the environment. P301 + P310 + P330: IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth. P304 + P340 + P311: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor. P314: Get medical advice/attention if you feel unwell.
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**2.3 Other hazards**

None known.

**2.4 Additional Information**

Not applicable.

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

**3.1 Substances**

Hazardous ingredient(s)	CAS No.	EC No.	%W/W	Hazard Statement(s)
Hafnium diselenide	12162-21-9	Not Applicable	≤100	Acute Tox. 3 H301 Acute Tox. 3 H331 STOT RE 2 H373 Aquatic Chronic 1 H410

**3.2 Mixtures**

Not applicable.

**SECTION 4: FIRST AID MEASURES**

**4.1 Description of first aid measures**

Inhalation	Remove person to fresh air and keep comfortable for breathing. If not breathing give artificial respiration. Call a POISON CENTER or doctor/physician.
Skin Contact	Wash with soap and flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a POISON CENTER or doctor/physician.
Eye Contact	Flush with copious amounts of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER or doctor/physician.
Ingestion	Immediately call a POISON CENTER or doctor/ physician. Rinse mouth.

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

SECTION 11: Most important symptoms and effects, both acute and delayed

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

Treat symptomatically.

**SECTION 5: FIREFIGHTING MEASURES**

**5.1 Extinguishing media**

Suitable Extinguishing media	As appropriate for surrounding fire.
Unsuitable extinguishing media	As appropriate for surrounding fire.

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

May decompose in a fire, giving off toxic and irritant vapours.

**5.3 Advice for firefighters**

Fire fighters should wear complete protective clothing including self-contained breathing apparatus.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

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

Provide adequate ventilation. Wear protective clothing as per section 8.

**6.2 Environmental precautions**

Avoid release to the environment.

**6.3 Methods and material for containment and cleaning up**

Sweep up spilled substance but avoid making dust. Use vacuum equipment for collecting spilt materials, where practicable. Dispose of contents in accordance with local, state or national legislation.

**6.4 Reference to other sections**

See Also Section 8, 13.

**SECTION 7: HANDLING AND STORAGE**

**7.1 Precautions for safe handling**

Avoid breathing dust/fume/gas/mist/vapours/spray. Use only in a well-ventilated area. Wear protective clothing as per section 8. Wash hands thoroughly after handling.

**7.2 Conditions for safe storage, including any incompatibilities**

Storage temperature	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Storage life	Ambient.
Incompatible materials	Stable under normal conditions.
	None known.

**7.3 Specific end use(s)**

Not known. See Section: 1.2.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

**8.1 Control parameters**

**8.1.1 Occupational Exposure Limits**

UK – EH40 Workplace Exposure Limits (WEL).

Occupational Exposure Limits						
SUBSTANCE.	CAS No.	LTCL (8 hr TWA ppm)	LTCL (8 hr TWA mg/m <sup>3</sup> )	STEL (ppm)	STEL (mg/m <sup>3</sup> )	Note
Selenium and compounds, except hydrogen selenide (as Se)	12162-21-9		0.1			

Region: EU, United Kingdom  
 Source: EU Occupational Exposure Limits, UK Workplace Exposure Limits EH40/2005 (Third edition, published 2018)

**8.2 Exposure controls**

8.2.1. Appropriate engineering controls: Ensure adequate ventilation. A washing facility/water for eye and skin cleaning purposes should be present.

8.2.2. Personal protection equipment

Eye Protection

Wear eye protection with side protection (EN166).



Skin protection

Wear protective clothing and gloves: Impervious gloves (EN 374).



Respiratory protection

A suitable mask with filter type A (EN14387 or EN405) may be appropriate.



Thermal hazards

None known.



8.2.3. Environmental Exposure Controls: Avoid release to the environment.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**
**9.1 Information on basic physical and chemical properties**

Appearance	Solid: Powder Colour: Dark brown
Odour	Not known.
Odour threshold	Not known.
pH	Not known.
Melting point/freezing point	Not known.
Initial boiling point and boiling range	Not known.
Flash Point	Not known.
Evaporation rate	Not known.
Flammability (solid, gas)	Not known.
Upper/lower flammability or explosive limits	Not known.
Vapour pressure	Not known.
Vapour density	Not known.
Density (g/ml)	Not known.
Relative density	Not known.
Solubility(ies)	Solubility (Water): Not known. Solubility (Other): Not known.
Partition coefficient: n-octanol/water	Not known.
Auto-ignition temperature	Not known.
Decomposition Temperature (°C)	Not known.
Viscosity	Not known.
Explosive properties	Not known.
Oxidising properties	Not known.

**9.2 Other information**

None.

**SECTION 10: STABILITY AND REACTIVITY**
**10.1 Reactivity**

None anticipated.

**10.2 Chemical Stability**

Stable under normal conditions.

**10.3 Possibility of hazardous reactions**

Not known.

**10.4 Conditions to avoid**

Not known.

**10.5 Incompatible materials**

Not known.

**10.6 Hazardous decomposition products**

No hazardous decomposition products known.

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**SECTION 11: TOXICOLOGICAL INFORMATION**


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**11.1 Information on toxicological effects**

Acute toxicity - Ingestion	No data available.
Acute toxicity - Skin Contact	No data available.
Acute toxicity - Inhalation	No data available.
Skin corrosion/irritation	No data available.
Serious eye damage/irritation	No data available.
Skin sensitization data	No data available.
Respiratory sensitization data	No data available.
Germ cell mutagenicity	No data available.
Carcinogenicity	No data available.
Reproductive toxicity	No data available.
Lactation	No data available.
STOT - single exposure	No data available.
STOT - repeated exposure	No data available.
Aspiration hazard	No data available.

**11.2 Other information**

Not known.

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**SECTION 12: ECOLOGICAL INFORMATION**


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**12.1 Toxicity**

Toxicity - Aquatic invertebrates	No data available.
Toxicity - Fish	Not known.
Toxicity - Algae	Not known.
Toxicity - Sediment Compartment	Not known.
Toxicity - Terrestrial Compartment	Not known.

**12.2 Persistence and Degradation**

Not known.

**12.3 Bioaccumulative potential**

Not known.

**12.4 Mobility in soil**

Not known.

**12.5 Results of PBT and vPvB assessment**

Not known.

**12.6 Other adverse effects**

Not known.

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**SECTION 13: DISPOSAL CONSIDERATIONS**


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**13.1 Waste treatment methods**

Dispose of contents in accordance with local, state or national legislation. Recycle only completely emptied packaging. Normal disposal is via incineration operated by an accredited disposal contractor. Send to a licensed recycler, reclaimer or incinerator.

**13.2 Additional Information**

Disposal should be in accordance with local, state or national legislation.

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**SECTION 14: TRANSPORT INFORMATION**


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**14.1 UN number**

UN No.	3283
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**14.2 UN proper shipping name**

UN proper shipping name	Selenium compound, solid, n.o.s. (Hafnium diselenide)
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**14.3 Transport hazard class(es)**

ADR/RID	6.1
IMDG	6.1
IATA	6.1

**14.4 Packing group**

Packing group	III
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**14.5 Environmental hazards**

Environmental hazards	Not classified as a Marine Pollutant.
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**14.6 Special precautions for user**

Special precautions for user Not known.

**14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**

Not known.

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**SECTION 15: REGULATORY INFORMATION**

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**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

European Regulations - Authorisations and/or Restrictions On Use

Candidate List of Substances of Very Not listed

High Concern for Authorisation

REACH: ANNEX XIV list of substances Not listed

subject to authorisation

REACH: Annex XVII Restrictions on the Not listed

manufacture, placing on the market and

use of certain dangerous substances,

mixtures and articles

Community Rolling Action Plan (CoRAP) Not listed

Regulation (EC) N° 850/2004 of the Not listed

European Parliament and of the Council

on persistent organic pollutants

Regulation (EC) N° 1005/2009 on Not listed

substances that deplete the ozone layer

Regulation (EU) N° 649/2012 of the Not listed

European Parliament and of the Council

concerning the export and import of

hazardous chemicals

**National regulations**

Other Not known.

**15.2 Chemical Safety Assessment**

A REACH chemical safety assessment has not been carried out.

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**SECTION 16: OTHER INFORMATION**

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The following sections contain revisions or new statements:

**LEGEND**

## Acronyms

ADN : European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways  
ADR : European Agreement concerning the International Carriage of Dangerous Goods by Road  
CAS : Chemical Abstracts Service  
CLP : Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures  
DNEL : Derived No Effect Level  
EC : European Community  
EINECS : European Inventory of Existing Commercial Chemical Substances  
IATA : International Air Transport Association  
IBC : Intermediate Bulk Container  
ICAO : International Civil Aviation Organization  
IMDG : International Maritime Dangerous Goods  
LTEL : Long term exposure limit  
PBT : Persistent, Bioaccumulative and Toxic  
PNEC : Predicted No Effect Concentration  
REACH : Registration, Evaluation, Authorisation and Restriction of Chemicals  
RID : Regulations concerning the International Carriage of Dangerous Goods by Rail  
STEL : Short term exposure limit  
STOT : Specific Target Organ Toxicity  
UN : United Nations  
vPvB : very Persistent and very Bioaccumulative

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