

Material Safety Data Sheet

- **1 Identification of substance:**

- **Trade name:** Cadmium selenide

- **Manufacturer/Supplier:**

Institute of Solid State Physics,
Russian Academy of Sciences.

Laboratory of Physical-Chemical Basis of Crystallization (LPCBC).

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- **2 Hazards identification**

- **Hazard description:** Xn Harmful

- **Information pertaining to particular dangers for man and environment**

R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

• **3 First aid measures**

• **After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

• **After skin contact**

Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice.

• **After eye contact**

Rinse opened eye for several minutes under running water. Then consult a doctor.

• **After swallowing** Seek immediate medical advice.

• **4 Fire fighting measures**

• **Suitable extinguishing agents**

Product is not flammable. Use fire fighting measures that suit the surrounding fire.

• **Protective equipment:**

Wear self-contained respirator.
Wear fully protective impervious suit.

- **5 Accidental release measures**

- **Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation

- **Measures for environmental protection:**

Do not allow material to be released to the environment without proper governmental permits.

- **Measures for cleaning/collecting:**

Dispose contaminated material as waste according to item 12. Ensure adequate ventilation.

- **6 Handling and storage**

- **Information for safe handling:**

Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.
Prevent formation of dust.

- **Information about protection against explosions and fires:**

The product is not flammable

- **Requirements to be met by storerooms and receptacles:**

No special requirements.

- **Information about storage in one common storage facility:**

Do not store together with acids.

- **Further information about storage conditions:**

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

- **7 Exposure controls and personal protection**

- **Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

- **General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.

- **Breathing equipment:**

Use suitable respirator when high concentrations are present.

- **Protection of hands:** Impervious gloves
- **Eye protection:** Safety glasses
- **Body protection:** Protective work clothing.

- **8 Physical and chemical properties:**

- **Form:** Powder, crystal chunks, single- and polycrystals, optic elements and other details manufactured from the crystals.

- **Color:**

Black

- **Odor:** Odorless

- | | <u>Value/Range</u> | <u>Unit</u> | <u>Method</u> |
|--|--------------------|-------------|---------------|
|--|--------------------|-------------|---------------|

- **Melting point/Melting range:** 1240 °C
- **Boiling point/Boiling range:** Not determined
- **Sublimation temperature / start:** approx. 1150 °C
- **Flash point:** Not applicable

- **Ignition temperature:** Not applicable
- **Decomposition temperature:** Not determined
- **Danger of explosion:**

Product does not present an explosion hazard.

- **Explosion limits:** Not applicable
- **Vapor pressure:** negligible (at 20 °C)
- **Density:** 5.81 g/cm³ (crystal at 20 °C)
- **Solubility in / Miscibility with**
- **Water:** Insoluble

• 9 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

- **Materials to be avoided:** Acids
- **Dangerous reactions** No dangerous reactions known

• 10 Toxicological information

- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.

- **Additional toxicological information:**

Danger through skin absorption.

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

EPA-B1: Probable human carcinogen, limited evidence of carcinogenicity from epidemiologic studies.

IARC-1: Carcinogenic to humans: sufficient evidence of carcinogenicity.

NTP-2: Reasonably anticipated to be a carcinogen: limited evidence from studies in humans or sufficient evidence from studies in experimental animals.

Carcinogen as defined by OSHA.

ACGIH A2: Suspected human carcinogen: Agent is carcinogenic in experimental animals at dose levels, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) considered relevant to worker exposure. Available epidemiologic studies are conflicting or insufficient to confirm an increased risk of cancer in exposed humans.

- **11 Ecological information:**

- **General notes:**

Do not allow material to be released to the environment without proper governmental permits.

- **12 Disposal considerations**

- **Recommendation**

Consult local or national regulations for proper disposal.

- **13 Transport information**

Not a hazardous material for transportation.

- **Hazard class:** None
- **Land transport ADR/RID (cross-border)**
- **ADR/RID class:** None
- **Maritime transport IMDG:**
- **IMDG Class:** None
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** None
- **Transport/Additional information:**

Not dangerous according to the above specifications.

- **14 Regulations**

- **Product related hazard informations:**
- **Hazard symbols:** Xn Harmful
- **Risk phrases:**

20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

- **Safety phrases:** 22 Do not breathe dust.

- **National regulations**

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory.

- **Information about limitation of use:**

For use only by technically qualified individuals.

- **15 Other information:**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.