

Material Safety Data Sheet

Cerium(IV)oxide

Revision Date: 01/12/2010

Date Issued: 01/03/2007

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY / UNDERTAKING

| | |
|----------------------------|---|
| Product name | Cerium (IV)oxide, Nanopowder |
| Product code | NO-0017-HP |
| Supplier | IoLiTec Ionic Liquids Technologies GmbH Salzstrasse 184 D-74076 Heilbronn Germany |
| Telephone | +49 (0)7131 – 898390 |
| Fax | +49 (0)7131 – 89839109 |
| Emergency telephone | +49 (0)179 – 5322578 |
| Email | msds@iolitec.de |

2 HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (67/548/EEC or 1999/45/EC)

Irritating to eyes, respiratory system and skin.

Classification (REGULATION (EC) No 1272/2008)

Skin corrosion/irritation, Category 2, H315

Serious eye damage/Eye irritation, Category 2, H319

Specific Target Organ Toxicity - Single exposure: Respiratory tract irritation, Category 3, H335

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2.2 Label elements

Labelling (67/548/EEC or 1999/45/EC)

Hazard description:

Label for supply



Xi Harmful

Information pertaining to particular dangers for man and environment

Risk phrases

R36/37/38: Irritating to eyes, respiratory system and skin.

Safety phrases

S22: Do not breathe dust.

S24: Avoid contact with skin.

S25: Avoid contact with eyes.

Labelling (REGULATION (EC) No 1272/2008, GHS)

Hazard statements



Warning

H-phrases

H315: Causes skin irritation.

H319: Causes serious eye irritation.

H335: May cause respiratory irritation.

Precautionary statements

P-phrases

P261: Avoid breathing dust/fume/gas/mist/vapours/spray .

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P280: Wear protectic gloves/protective clothing/eye protection/face protection.
P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.

3 COMPOSITION / INFORMATION ON INGREDIENTS

| | |
|--------------------------|--------------------------|
| Ingredient name | Cerium (IV)oxide, 99.9+% |
| CAS No. | 1306-38-3 |
| Empirical Formula | CeO ₂ |
| Molecular weight | 172.12 amu |

4 FIRST AID MEASURES

| | |
|-------------------|--|
| General | Contaminated clothing should be removed and washed before being reused. |
| Inhalation | Move the exposed person to fresh air at once. If respiratory problems, artificial respiration/oxygen. |
| Ingestion | Immediately rinse mouth and provide fresh air. Do not induce vomiting. Get medical attention immediately. |
| Skin | Wash the skin immediately with soap and water. |
| Eyes | Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention immediately. Continue to rinse. |

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5 FIRE FIGHTING MEASURES

| | |
|---|---|
| Extinguishing media | Suitable: Noncombustible. Use extinguishing media appropriate to surrounding fire conditions. |
| Special fire fighting procedures | No special procedures required. |
| Unusual fire & explosion hazards | Possible emission of toxic fumes |
| Protective measures in fire | Wear self-contained breathing apparatus as combustion may produce hazardous fumes. |

6 ACCIDENTAL RELEASE MEASURES

| | |
|---|---|
| Personal precautions during spill | Wear protective clothing and avoid inhalation of powder, fume and vapor as well as skin or eye contact. |
| Precautions to protect environment | Avoid washing into water courses. Avoid contaminating public drains or water supply. |
| Spill cleanup methods | Avoid contact with skin or inhalation of spillage, dust or vapor, Avoid dust formation. Collect and reclaim or dispose in sealed containers in license waste. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. |

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7 HANDLING AND STORAGE

| | |
|-----------------------------|---|
| Handling precautions | Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. |
| Storage precautions | Keep tightly closed. |

8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

| | |
|---------------------------------|---|
| Protective equipment | Safety goggles. Chemical resistant gloves. Protective clothing. Protective mask when high concentrations are present. |
| Process control measures | Provide eyewash station and safety shower. Use engineering controls to reduce air contamination to permissible exposure levels. |
| Ventilation | Provide adequate general and local exhaust ventilation. |
| Respirators | Use high efficiency particulate respirator with appropriate filter. |
| Other protection | - |

9 PHYSICAL AND CHEMICAL PROPERTIES

| | |
|----------------------|-------|
| Appearance | Solid |
| Odor/taste | N/A |
| PH | N/A |
| Boiling Point | N/A |

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| | |
|------------------------------|------------------------|
| Melting Point | 2,600 °C |
| Flash Point | N/A |
| Flammability | N/A |
| Autoignition Temp | N/A |
| Oxidizing Properties | N/A |
| Explosive Properties | N/A |
| Explosion Limits | N/A |
| Vapor Pressure | N/A |
| SG/Density | 7.67 g/cm ³ |
| Partition Coefficient | N/A |
| Viscosity | N/A |
| Vapor Density | N/A |
| Saturated Vapor Conc. | N/A |
| Evaporation Rate | N/A |
| Bulk Density | N/A |
| Decomposition Temp. | N/A |
| Solvent Content | N/A |
| Water Content | N/A |
| Surface Tension | N/A |
| Conductivity | N/A |
| Solubility in water | insoluble |

10 STABILITY AND REACTIVITY

| | |
|--------------------------------|--|
| Stability | Stable. Absorbs carbon dioxide from air. |
| Conditions to avoid | Strong oxidizing agents. |
| Hazardous Decomposition | N/A |
| Products | N/A |

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11 TOXICOLOGICAL INFORMATION

| | |
|-----------------------|--|
| Ingestion | May be harmful if swallowed. |
| Inhalation | May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract. |
| Skin | May cause irritation |
| Eyes | May cause irritation |
| Acute toxicity | LD50, oral, rat, 1000 mg/kg LD50, intraperitoneal, mouse, 465 mg/kg |

12 ECOLOGICAL INFORMATION

Do not release material to the environment without proper governmental permits.

13 DISPOSAL CONSIDERATIONS

Disposal method Contact specialist disposal companies. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Dispose of in accordance with Local Authority requirements. Recover and reclaim or recycle, if practical.

14 TRANSPORT INFORMATION

| | |
|----------------|---|
| General | Not classified as dangerous for transport purposes. |
| UN No. | 0 |

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| | |
|-----------------------------|---|
| Road transport notes | Not classified as dangerous for road transport. |
| Rail transport notes | Not classified as dangerous for rail transport. |
| Sea transport notes | Not classified as dangerous for sea transport. |
| Air transport notes | Not classified as dangerous for air transport. |

15 REGULATORY INFORMATION

In accordance with local and national regulations.

16 OTHER INFORMATION

DISCLAIMER

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