

## Material Safety Data Sheet

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|  |  |          | ,               | , ,            |                         |               |
|--|--|----------|-----------------|----------------|-------------------------|---------------|
| SECTION 1: Product Identification      |  |          |                 |                |                         |               |
| Product name                           | Cerium (IV) oxide (99.9%-Ce) (REO)   |          |                 |                |                         |               |
| CAS#                                   | 1306-38-3  |          |                 |                |                         |               |
| Catalog #                              | 0580100  |          |                 |                |                         |               |
| Chemical family                        | Metal oxides   |          |                 |                |                         |               |
|  |  |          |                 |                |                         |               |
| SE                                     | SECTION 2: Composition, Information on Ingredients                                 |          |                 |                |                         |               |
| Component                              |  | %        | CAS#            | EINECS #       | Hazard Symbol           | R-Phrase      |
| Cerium (IV) oxide                      |  |          | 1306-38-3       | 215-150-4      | Xi                      | 36/37/38      |
|  |  |          |                 |                |                         |               |
| SECTION 3: Hazard Identification       |  |          |                 |                |                         |               |
| Emergency overview                     |  |          |                 |                |                         |               |
| Eye contact                            | May cause eye irritation.  |          |                 |                |                         |               |
| Skin contact                           | May cause skin irritation. May be harmful if absorbed through the skin.            |          |                 |                |                         |               |
| Inhalation                             | Causes respiratory tract irritation. May be harmful if inhaled.                    |          |                 |                |                         |               |
| Ingestion                              | May cause irritation of the gastrointestinal tract. May be harmful if swallowed.   |          |                 |                |                         |               |
| Chronic health effects                 | Not available.   |          |                 |                |                         |               |
|  | L  |          |                 |                |                         |               |
|  | 9  | SECT     | ON 4: First     | Aid Measure:   | S                       |               |
| Eye exposure                           | Flush eyes with of water for at least 10-15 minutes, get medical aid immediately.  |          |                 |                |                         |               |
| Skin exposure                          | Wash the affected area with water. Remove contaminated clothes if necessary.       |          |                 |                |                         |               |
| <b>F</b>                               | Get medical aid.   |          |                 |                |                         |               |
| Inhalation                             | Remove the victim from exposure to fresh air. Closely monitor the victim for       |          |                 |                |                         |               |
|  | signs of respiratory problems, such as difficulty in breathing, pain, etc. In such |          |                 |                |                         |               |
|  | cases seek immediate medical assistance.   |          |                 |                |                         |               |
| Ingestion                              |  |          |                 |                | sultation. If victim is | conscious and |
|  | alert, wa  | sh mou   | th out with wat | er. Seek medic | al attention.           |               |
|  |  |          |                 |                |                         |               |
|  | SE   | ECTIO    | N 5: Fire Fig   | shting Measu   | res                     |               |
| General information                    |  |          |                 |                | ghters should be eq     |               |
|  |  |          |                 |                | ained breathing appa    |               |
|  | protective clothing. If involved in a fire this material may emit toxic organic    |          |                 |                |                         |               |
| 77 (1 1 7 1 7 1                        | fumes.   | 1        |                 |                | 1 1                     |               |
| Extinguishing media                    | Use foan   | n, dry c | hemical, water  | spray or carbo | n dioxide.              |               |
|  |  |          |                 |                |                         |               |
| SECTION 6: Accidental Release Measures |  |          |                 |                |                         |               |
| Spill and leak                         | Small spills can be mixed with vermiculite or sodium carbonate or other inert      |          |                 |                |                         |               |
| procedures                             | material   | and sw   | ept up. Ventila | te of area.    |                         |               |

|  | CECTION 7. Handling and Staroga   |  |  |  |
|--|---|--|--|--|
| Handling                               | SECTION 7: Handling and Storage   |  |  |  |
| Handling                               | Avoid breathing dust. Avoid contact with skin and eyes. Avoid prolonged or repeated exposure. |  |  |  |
| Storago                                | Store in a cool, dry place. Store in a tightly closed container.                              |  |  |  |
| Storage                                | Store in a cool, dry place. Store in a rightry closed container.                              |  |  |  |
| O.E.                                   |   |  |  |  |
|  | CTION 8: Exposure Controls and Personal Protection  |  |  |  |
| Eye protection                         | Always wear approved safety glasses when handling a chemical substance in the                 |  |  |  |
| CI                                     | laboratory.   |  |  |  |
| Skin protection                        | Wear protective gloves.   |  |  |  |
| Ventilation                            | Material may form a fine dust. If possible, handle the material in an efficient fume hood.    |  |  |  |
| Dognington                             | If ventilation is not available a respirator should be worn. The use of respirators           |  |  |  |
| Respirator                             | requires Respirator Protection Program to be in compliance with 29CFR                         |  |  |  |
|  | 1910.134.   |  |  |  |
|  | 1710110 11  |  |  |  |
|  | SECTION 9: Physical and Chemical Properties   |  |  |  |
| Annoquanas                             | Yellow pwdr.  |  |  |  |
| Appearance                             | No data   |  |  |  |
| Odor<br>Malting point                  |   |  |  |  |
| Melting point                          | No data   |  |  |  |
| Boiling point                          | No data   |  |  |  |
| Flash point                            | No data   |  |  |  |
| Solubility in water                    | No data   |  |  |  |
| Specific gravity Molecular formula     | No data   |  |  |  |
| Molecular weight                       | CeO2<br>172.11  |  |  |  |
| Wiolecular weight                      | 1/2.11  |  |  |  |
|  | CECTION 10. Collin and Deced '4   |  |  |  |
| C4 . L '11'4                           | SECTION 10: Stability and Reactivity  |  |  |  |
| Stability                              | Air and moisture sensitive solid.   |  |  |  |
| Hazardous                              | No hazardous polymerization.  |  |  |  |
| polymerization Conditions to avoid     | Vacan avvay fram maisture   |  |  |  |
|  | Keep away from moisture.  |  |  |  |
| Incompatibilities with other materials | Oxidizing agents, strong acids.   |  |  |  |
| Hazardous decompo-                     | Cerium oxides.  |  |  |  |
| sition products                        | Certuin oxides.   |  |  |  |
| Sition products                        |   |  |  |  |
|  | SECTION 11: Toxicalogical Information   |  |  |  |
| RTECS Data                             | SECTION 11: Toxicological Information  No data available.                                     |  |  |  |
| Carcinogenic effects                   | No data available.  |  |  |  |
| Mutagenic effects                      | No data available.  No data available.  |  |  |  |
| Tetratogenic effects                   | No data available.  |  |  |  |
| 1 cu atogeme enects                    | 110 data available.   |  |  |  |
|  | SECTION 12. Eagle size! Information   |  |  |  |
| TO 1                                   | SECTION 12: Ecological Information  |  |  |  |
| Ecological                             | No information available.   |  |  |  |
| information                            |   |  |  |  |
|  |   |  |  |  |

| SECTION 13: Disposal Considerations   |  |
|---|--|
| Dispose of in a manner consistent with federal, state, and local regulations. |  |

|                                    | SECTION 14: Transport Information               |  |  |  |  |
|------------------------------------|---|--|--|--|--|
| Chii(CED)                          | Non-hazardous                                   |  |  |  |  |
| Shipping name (CFR)                |   |  |  |  |  |
| Hazard class (CFR)                 | NA  |  |  |  |  |
| Additional hazard                  | NA  |  |  |  |  |
| class (CFR)                        |   |  |  |  |  |
| Packing group (CFR)                | NA  |  |  |  |  |
| UN ID number (CFR)                 | NA  |  |  |  |  |
| Shipping name                      | Non-hazardous                                   |  |  |  |  |
| (IATA)                             |   |  |  |  |  |
| Hazard class (IATA)                | NA  |  |  |  |  |
| Additional hazard                  | NA  |  |  |  |  |
| class (IATA)                       |   |  |  |  |  |
| Packing group                      | NA  |  |  |  |  |
| (IATA)                             |   |  |  |  |  |
| UN ID number                       | NA  |  |  |  |  |
| (IATA)                             |   |  |  |  |  |
|                                    |   |  |  |  |  |
| SECTION 15: Regulatory Information |   |  |  |  |  |
| TSCA                               | CAS# 7790-86-5 is listed on the TSCA Inventory. |  |  |  |  |
| SARA                               | Not reportable under SARA Title 313.            |  |  |  |  |
|                                    |   |  |  |  |  |
| SECTION 16: Other Information      |   |  |  |  |  |
| Preparation date                   | 10.08.11  |  |  |  |  |
| Revision date                      | 10.08.11  |  |  |  |  |

The information above 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.