MATERIAL SAFETY DATA SHEET OF CERIUM (III) CHLORIDE, ANHYDROUS

SECTION 1. PRODUCT IDENTIFICATION

MSDS Name: CERIUM (III) CHLORIDE, ANHYDROUS
Chemical Formula: CeCl₃
Synonym: Cerium trichloride
B-34, Unit-III, M.I.D.C. Badlapur (E),
Dist. Thane, 421 503.

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>7790-86-5</td>
<td>Cerium(III) chloride, anhydrous</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 3. HAZARD IDENTIFICATION

Warning! Hygroscopic (absorbs moisture from the air). Causes eye, skin, and respiratory tract irritation. Target Organs:
Blood, central nervous system, liver, respiratory system, eyes, skin.
Potential Health Effects
Eye: Causes eye irritation.
Skin: Causes skin irritation. May be harmful if absorbed through the skin.
Ingestion: May cause irritation of the digestive tract. May be harmful if swallowed.
Inhalation: Causes respiratory tract irritation. May be harmful if inhaled.
Chronic: Chronic exposure may cause liver damage. Chronic exposure may cause blood effects.
Exposure to high concentrations may cause central nervous system depression.

SECTION 4. FIRST AID

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and eyelids. Get medical aid.
Skin: Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Ingestion: Do not induce vomiting. Get medical aid.
Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: Treat symptomatically and supportively.
SECTION 5. FIRE AND EXPLOSION

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.
Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or chemical foam.
Autoignition
Temperature: Not available
Flash Point: Not available
Explosion Limits:
Lower: Not available
Upper: Not available
NFPA Rating: health: 2; flammability: 1; instability: 1;

SECTION 6. ACCIDENTAL RELEASE MEASURES

General
Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Avoid generating dusty conditions. Provide ventilation. Do not let this chemical enter the environment.
Section 7 - Handling and Storage
Handling: Use with adequate ventilation. Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale.
Storage: Store in a cool, dry place. Store in a tightly closed container. Store under an inert atmosphere.

SECTION 7. HANDLING AND STORAGE

Handling: Use with adequate ventilation. Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale.
Storage: Store in a cool, dry place. Store in a tightly closed container. Store under an inert atmosphere.
SECTION 8. PERSONAL PROTECTION/EXPOSURE CONTROLS

OSHA Vacated PELs: Cerium(III) chloride, anhydrous: None listed

Engineering Controls:
Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Personal Protective Equipment
Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA’s eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: A respiratory protection program that meets OSHA’s 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Powder
Color: white - light gray
Odor: odorless
pH: Not available
Vapor Pressure: Not available
Vapor Density: Not available
Evaporation Rate: Not available
Viscosity: Not available
Boiling Point: 1727 deg C @ 760 mmHg (3,140.60°F)
Freezing/Melting Point: 848 deg C (1,558.40°F)
Decomposition Temperature: Not available
Solubility in water: Soluble
Specific Gravity/Density: Not available
Molecular Formula: CeCl3
Molecular Weight: 246.48

SECTION 10. REACTIVITY/STABILITY

Chemical Stability: Hygroscopic: absorbs moisture or water from the air.
Conditions to Avoid: Incompatible materials, dust generation, excess heat, exposure to moist air or water. Incompatibilities with Other Materials Strong oxidizing agents, strong acids, bases.
Hazardous Decomposition Products Hydrogen chloride. Hazardous Polymerization Will not occur.
SECTION 11. TOXICOLOGICAL INFORMATION

RTECS#: CAS# 7790-86-5: FK5075000
LD50/LC50:
RTECS:
CAS# 7790-86-5: Oral, mouse: LD50 = 5277 mg/kg;
Oral, rat: LD50 = 2111 mg/kg;
Carcinogenicity: Cerium(III) chloride, anhydrous - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Other: The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

SECTION 12. ECOLOGICAL INFORMATION

Other: Do not empty into drains.

SECTION 13. DISPOSAL

Dispose of in a manner consistent with federal, state, and local regulations

SECTION 14. TRANSPORTATION

US DOT
Shipping Name: Not regulated
Hazard Class:
UN Number:
Packing Group:
Canada TDG
Shipping Name: Not available
SECTION 15. REGULATORY INFORMATION

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols: XI
Risk Phrases:
R 36/37/38 Irritating to eyes, respiratory system and skin.
Safety Phrases:
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 37/39 Wear suitable gloves and eye/face protection.
WGK (Water Danger/Protection)
CAS# 7790-86-5: Not available
Canada
CAS# 7790-86-5 is listed on Canada's DSL List
Canadian WHMIS Classifications: D2B
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations
and the MSDS contains all of the information required by those regulations.
CAS# 7790-86-5 is not listed on Canada's Ingredient Disclosure List.
US Federal
TSCA
CAS# 7790-86-5 is listed on the TSCA

SECTION 16 - ADDITIONAL INFORMATION

This document is intended only as a guide to the appropriate precautionary handling of material by a person trained in chemical handling. The user is responsible for determining the precautions & dangers of this chemical for his or her particular application depending on usage. Adequate protective clothing, including eye / face guards, approved respirators must be used to avoid contact with the material or breathing chemical vapors / fumes. Exposure to this product may cause adverse health effects.

This chemical may interact with other substances. Since the potential uses are so varied, M/s. Omkar Speciality Chemicals limited. Ltd. cannot warn of all of the potential dangers of use or interaction with chemicals of materials. M/s Omkar Speciality Chemicals limited. warrants that, the chemical meets the specifications set forth on the test report.

M/s. Omkar Speciality Chemicals limited. Ltd. Disclaims any other warranties expressed or implied with regard to the product supplied hereunder its merchantability or its fitness for a particular purpose. The user should recognize that, this product can cause severe injury, especially if improperly handled or the known dangers of use are not heeded.

READ ALL PRECAUTIONARY INFORMATIONS