SECTION 1: Identification

1.1. Identification

Product name: CERIUM(III) 2-ETHYLHEXANOATE, 50% in mineral spirits (38%) / 2-ethylhexanoic acid (12%)
Product code: CXCE041
Product form: Mixture
Physical state: Liquid
Formula: C24H45CeO6
Synonyms: CEROUS OCTOATE, CERIUM TRIS(2-ETHYLHEXANOATE)
Chemical family: RARE EARTH COMPOUND

1.2. Recommended use and restrictions on use

Recommended use: Chemical intermediate

1.3. Supplier

GELEST, INC.
11 East Steel Road
Morrisville, PA 19067
USA
T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST
info@gelest.com - www.gelest.com

1.4. Emergency telephone number

Emergency number: CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification
- Flammable liquids Category 4
- Skin corrosion/irritation Category 2
- Serious eye damage/eye irritation Category 2A
- Reproductive toxicity Category 2
- Specific target organ toxicity (single exposure) Category 3

Full text of H statements: see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Signal word (GHS US): Warning

Hazard pictograms (GHS US): 

Hazard statements (GHS US):
- H227 - Combustible liquid
- H315 - Causes skin irritation
- H319 - Causes serious eye irritation
- H335 - May cause respiratory irritation
- H361 - Suspected of damaging fertility or the unborn child

Precautionary statements (GHS US):
- P201 - Obtain special instructions before use.
- P202 - Do not handle until all safety precautions have been read and understood.
- P280 - Wear protective gloves/protective clothing/eye protection/face protection.
- P308+P313 - If exposed or concerned: Get medical advice/attention.
- P271 - Use only outdoors or in a well-ventilated area.
- P302+P352 - If on skin: Wash with plenty of soap and water
- P332+P313 - If skin irritation occurs: Get medical advice/attention.
- P337+P313 - If eye irritation persists: Get medical advice/attention.

Print date: 04/10/2019   EN (English US)   SDS ID: CXCE041
CERIUM(III) 2-ETHYLHEXANOATE, 50% in mineral spirits (38%) / 2-ethylhexanoic acid (12%)
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2.3. Hazards not otherwise classified (HNOC)
No additional information available

2.4. Unknown acute toxicity (GHS US)
Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cerium 2-ethylhexoate</td>
<td>(CAS-No.) 56797-01-4</td>
<td>46 - 54</td>
<td>Eye Irrit. 2A, H319</td>
</tr>
<tr>
<td>2-Ethylhexanoic acid</td>
<td>(CAS-No.) 149-57-5</td>
<td>10 - 15</td>
<td>Acute Tox. 4 (Oral), H302, Acute Tox. 4 (Dermal), H312, Eye Irrit. 5A, H519, Rep. 2, H361, Aquatic Acute 3, H402</td>
</tr>
</tbody>
</table>

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures
First-aid measures general : Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.

First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact : Wash with plenty of soap and water. Get medical advice/attention.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.

First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Get medical advice/attention.

4.2. Most important symptoms and effects (acute and delayed)
Symptoms/effects : Suspected of damaging fertility or the unborn child.
Symptoms/effects after inhalation : May cause respiratory irritation.
Symptoms/effects after skin contact : Causes skin irritation. May be harmful in contact with skin.
Symptoms/effects after eye contact : Causes serious eye irritation.
Symptoms/effects after ingestion : May be harmful if swallowed.

4.3. Immediate medical attention and special treatment, if necessary
No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media
Unsuitable extinguishing media : None known.

5.2. Specific hazards arising from the chemical
Fire hazard : Combustible liquid. Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

5.3. Special protective equipment and precautions for fire-fighters
Firefighting instructions : Exercise caution when fighting any chemical fire. Use water spray to cool exposed surfaces.
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapor and mist.
CERIUM(III) 2-ETHYLHEXANOATE, 50% in mineral spirits (38%) / 2-ethylhexanoic acid (12%)

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### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

**General measures**: Remove ignition sources. Use special care to avoid static electric charges.

**6.1.1. For non-emergency personnel**

**Protective equipment**: Wear protective equipment as described in Section 8.

**Emergency procedures**: Evacuate unnecessary personnel.

**6.1.2. For emergency responders**

**Protective equipment**: Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: “Exposure controls/personal protection”.

#### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

#### 6.3. Methods and material for containment and cleaning up

For containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for cleaning up: Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal. Use only non-sparking tools.

#### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Additional hazards when processed: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Precautions for safe handling: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid all eye and skin contact and do not breathe vapor and mist. Ground/bond container and receiving equipment. Once opened, inert products before resealing. Use only outdoors or in a well-ventilated area. Use only non-sparking tools.

Hygiene measures: Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

#### 7.2. Conditions for safe storage, including any incompatibilities

**Storage conditions**: Store in a cool place.

**Incompatible materials**: Oxidizing agent. Strong bases.

**Storage area**: Store in a well-ventilated place. Store away from heat.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

<table>
<thead>
<tr>
<th>2-Ethylhexanoic acid (149-57-5)</th>
<th>ACGIH TWA (mg/m³)</th>
<th>5 mg/m³ (inhaleable fraction and vapor)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>100 ppm</td>
<td></td>
</tr>
<tr>
<td>OSHA</td>
<td>2900 mg/m³</td>
<td></td>
</tr>
<tr>
<td>OSHA</td>
<td>500 ppm</td>
<td></td>
</tr>
<tr>
<td>IDLH</td>
<td>20000 mg/m³</td>
<td></td>
</tr>
<tr>
<td>NIOSH</td>
<td>350 mg/m³</td>
<td></td>
</tr>
<tr>
<td>NIOSH</td>
<td>1800 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

#### 8.2. Appropriate engineering controls

**Appropriate engineering controls**: Provide local exhaust or general room ventilation.

#### 8.3. Individual protection measures/Personal protective equipment

**Personal protective equipment**: Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

**Hand protection**:

Print date: 04/10/2019  EN (English US)  SDS ID: CXCE041  3/8
Neoprene or nitrile rubber gloves

Eye protection:
Chemical goggles. Contact lenses should not be worn

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified dust and mist (teal cartridge) respirator.

SECTION 9: Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>569.74 g/mol</td>
</tr>
<tr>
<td>Color</td>
<td>Yellow-amber</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild. Hydrocarbon</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Refractive index</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>&gt; 275 °C decomposes</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>&gt; 150 °C - mineral spirits</td>
</tr>
<tr>
<td>Flash point</td>
<td>62 °C</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Combustible liquid</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>0.5 mm Hg @ 20°C</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>0.98</td>
</tr>
<tr>
<td>% Volatiles</td>
<td>&gt; 10 %</td>
</tr>
<tr>
<td>Solubility</td>
<td>Insoluble in water</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Kow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosion limits</td>
<td>0.6 - 7 vol % (lower; upper)</td>
</tr>
</tbody>
</table>

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
No additional information available

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
No additional information available

10.4. Conditions to avoid
Heat. Open flame. Sparks.

10.5. Incompatible materials
Oxidizing agent. Strong bases.
CERIUM(III) 2-ETHYLHEXANOATE, 50% in mineral spirits (38%) / 2-ethylhexanoic acid (12%)  
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10.6. Hazardous decomposition products
Cerium oxide fumes. Organic acid vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

2-Ethylhexanoic acid (149-57-5)

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>1600 mg/kg</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>1140 mg/kg</td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>1600 mg/kg body weight</td>
</tr>
<tr>
<td>ATE US (dermal)</td>
<td>1140 mg/kg body weight</td>
</tr>
</tbody>
</table>

Cerium 2-ethylhexoate (56797-01-4)

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>&gt; 2000 mg/kg</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified

Reproductive toxicity : Suspected of damaging fertility or the unborn child.
Specific target organ toxicity – single exposure : May cause respiratory irritation.
Specific target organ toxicity – repeated exposure : Not classified
Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms
Compounds of cerium are generally of low toxicity. Workers exposed to cerium compounds have experienced sensitivity to heat, itching and skin lesions. Large doses to experimental animals have caused writhing, ataxia, labored respiration, sedation, hypotension and death by cardiovascular collapse.

Symptoms/effects after inhalation : May cause respiratory irritation.
Symptoms/effects after skin contact : Causes skin irritation. May be harmful in contact with skin.
Symptoms/effects after eye contact : Causes serious eye irritation.
Symptoms/effects after ingestion : May be harmful if swallowed.
Reason for classification : Expert judgment

SECTION 12: Ecological information

12.1. Toxicity

2-Ethylhexanoic acid (149-57-5)

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>70 mg/l (Exposure time: 96 h - Species: Pimephales promelas)</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>85.4 mg/l (Exposure time: 48 h - Species: Daphnia magna)</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential

2-Ethylhexanoic acid (149-57-5)

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Pow</td>
<td>2.7</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil
No additional information available

12.5. Other adverse effects
Other adverse effects : This substance may be hazardous to the environment.
Effect on the ozone layer : No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods
Sewage disposal recommendations : Do not dispose of waste into sewer.
CERIUM(III) 2-ETHYLHEXANOATE, 50% in mineral spirits (38%) / 2-ethylhexanoic acid (12%)
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Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number
DOT NA no. NA1993

14.2. UN proper shipping name
Transport document description : NA1993 Combustible liquid, n.o.s. (CERIUM(III) 2-ETHYLHEXANOATE, 50% in mineral spirits (38%) / 2-ethylhexanoic acid (12%), 3, III
Proper Shipping Name (DOT) : Combustible liquid, n.o.s. (CERIUM(III) 2-ETHYLHEXANOATE, 50% in mineral spirits (38%) / 2-ethylhexanoic acid (12%)
Class (DOT) : 3 - Class 3 · Flammable and combustible liquid 49 CFR 173.120
Packing group (DOT) : III - Minor Danger
DOT Packaging Non Bulk (49 CFR 173.xxx) : 203
DOT Packaging Bulk (49 CFR 173.xxx) : 241
DOT Packaging Exceptions (49 CFR 173.xxx) : 150
DOT Symbols : D - Proper shipping name for domestic use only, or to and from Canada,G - Identifies PSN requiring a technical name

14.3. Additional information
Other information : This product is Combustible as defined by the US Department of Transportation (DOT). It is regulated for transport in the US in container > 119 gallons (450 liters). The product is not regulated for transport by the IATA, ADR/RID, ADNR or the IMDG regulations.

Transport by sea
DOT Vessel Stowage Location : A - The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel.

Air transport
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 60 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 220 L

SECTION 15: Regulatory information

15.1. US Federal regulations
2-Ethylhexanoic acid (149-57-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
EPA TSCA Regulatory Flag T - T - indicates a substance that is the subject of a final TSCA section 4 test rule.

Mineral spirits (naptha, medium aliphatic) (8052-41-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Cerium 2-ethylhexoate (56797-01-4)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations
CANADA
2-Ethylhexanoic acid (149-57-5)
Listed on the Canadian DSL (Domestic Substances List)
WHMIS Classification Class E - Corrosive Material

Mineral spirits (naptha, medium aliphatic) (8052-41-3)
Listed on the Canadian DSL (Domestic Substances List)
WHMIS Classification Class B Division 3 - Combustible Liquid
Class D Division 2 Subdivision B - Toxic material causing other toxic effects

Cerium 2-ethylhexoate (56797-01-4)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations
CERIUM(III) 2-ETHYLHEXANOATE, 50% in mineral spirits (38%) / 2-ethylhexanoic acid (12%)
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### 2-Ethylhexanoic acid (149-57-5)
- Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

### Mineral spirits (naptha, medium aliphatic) (8052-41-3)
- Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

### Cerium 2-ethylhexoate (56797-01-4)
- Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

### National regulations

#### 2-Ethylhexanoic acid (149-57-5)
- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
- Listed on the Korean ECL (Existing Chemicals List)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
- Listed on the Canadian IDL (Ingredient Disclosure List)
- Listed on INSQ (Mexican National Inventory of Chemical Substances)
- Listed on CICR (Turkish Inventory and Control of Chemicals)

#### Mineral spirits (naptha, medium aliphatic) (8052-41-3)
- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the Korean ECL (Existing Chemicals List)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
- Listed on the Canadian IDL (Ingredient Disclosure List)
- Listed on INSQ (Mexican National Inventory of Chemical Substances)
- Listed on CICR (Turkish Inventory and Control of Chemicals)

#### Cerium 2-ethylhexoate (56797-01-4)
- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

15.3. US State regulations
California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

#### 2-Ethylhexanoic acid (149-57-5)
- U.S. - New Jersey - Right to Know Hazardous Substance List

#### Mineral spirits (naptha, medium aliphatic) (8052-41-3)
- U.S. - Massachusetts - Right To Know List
- U.S. - New Jersey - Right to Know Hazardous Substance List
- U.S. - Pennsylvania - RTK (Right to Know) List

### SECTION 16: Other information
Full text of H-phrases:

<table>
<thead>
<tr>
<th>H226</th>
<th>Flammable liquid and vapor</th>
</tr>
</thead>
<tbody>
<tr>
<td>H227</td>
<td>Combustible liquid</td>
</tr>
<tr>
<td>H302</td>
<td>Harmful if swallowed</td>
</tr>
<tr>
<td>H312</td>
<td>Harmful in contact with skin</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H325</td>
<td>May cause respiratory irritation</td>
</tr>
<tr>
<td>H361</td>
<td>Suspected of damaging fertility or the unborn child</td>
</tr>
<tr>
<td>H402</td>
<td>Harmful to aquatic life</td>
</tr>
</tbody>
</table>
CERIUM(III) 2-ETHYLHEXANOATE, 50% in mineral spirits (38%) / 2-ethylhexanoic acid (12%)
Safety Data Sheet

Abbreviations and acronyms:
- Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor.

Hazard Rating
Health: 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given.

Flammability: 2 Moderate Hazard - Materials which must be moderately heated or exposed to high ambient temperatures before ignition will occur. Includes liquids having a flash point at or above 100 F but below 200 F. (Classes II & IIIA)

Physical: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Prepared by safety and environmental affairs.
Date of issue: 08/16/2016
Revision date: 04/08/2019
Version: 1.2

SDS US (GHS HazCom 2012) - Custom

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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