SAFETY DATA SHEET

E-Series® Catalyst
Version 1.3
Revision Date 2019-10-17

according to GB/T 16483 and GB/T 17519

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product information

Product Name: E-Series® Catalyst
Material: 1108682, 1108006, 1106530, 1104405, 1076780, 1104142, 1092175, 1077170, 1078352, 1078646, 1093052, 1078358, 1061165, 1078353, 1078356, 1078359, 1070831, 1070922, 1092176, 1078361, 1036632, 1034361, 1036632, 1016707

Use: Chemical intermediate

Company: Chevron Phillips Chemical Company LP
Specialty Chemicals
10001 Six Pines Drive
The Woodlands, TX 77380

Local: Chevron Phillips Chemicals (Shanghai) Corporation
Room 1810-1812, Shanghai Mart,
2299 Yan An Road (W),
Shanghai, PRC 200336

Emergency telephone:

Health:
866.442.9628 (North America)
1.832.813.4984 (International)
Transport:
CHEMTREC 800.424.9300 or 703.527.3887(int'l)
Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Mexico CHEMTREC 01-800-681-9531 (24 hours)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600
Argentina: +(54)-1159839431

Responsible Department: Product Safety and Toxicology Group
E-mail address: SDS@CPChem.com
Website: www.CPChem.com

SDS Number:100000014208 1/10
SECTION 2: Hazards identification

Classification of the substance or mixture
GHS Classification and Labeling: Follow GB 13690, GB 15258 and GB 30000.2 to GB 30000.29 (GHS 2011)

Emergency Overview

Form: Pellets  Physical state: Solid  Color: White to off-white

Classification
Not a hazardous substance or mixture.

Labeling
Not a hazardous substance or mixture.

SECTION 3: Composition/information on ingredients

Synonyms: Selective Hydrogenation Catalyst
ARU Catalyst
Acetylene Removal Unit Catalyst
FE E-DC-3
FE E-DC-2
FE E-RG-1
BE-1
BE-2
CPChem E Series
CPChem FE E-DC-3
Hydrogenation Catalyst

Molecular formula: Mixture

<table>
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<tr>
<th>Chemical name</th>
<th>CAS-No. / EINECS-No.</th>
<th>Concentration [wt%]</th>
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<tr>
<td>Aluminum Oxide</td>
<td>1344-28-1</td>
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SECTION 4: First aid measures

General advice: No hazards which require special first aid measures.

If inhaled: If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.

In case of skin contact: If on skin, rinse well with water. Call a physician if irritation develops or persists.

In case of eye contact: Remove contact lenses. Protect unharmed eye. If eye irritation persists, consult a specialist.

If swallowed: Keep respiratory tract clear. Do not give milk or alcoholic
beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

SECTION 5: Firefighting measures

- Flash point: Not applicable
- Autoignition temperature: No data available
- Unsuitable extinguishing media: High volume water jet.
- Special protective equipment for fire-fighters: Wear self-contained breathing apparatus for firefighting if necessary.
- Further information: Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Fire and explosion protection: Provide appropriate exhaust ventilation at places where dust is formed.
- Hazardous decomposition products: Metal Oxides.

SECTION 6: Accidental release measures

- Personal precautions: Avoid dust formation.
- Environmental precautions: If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods for cleaning up: Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage

Handling

- Advice on safe handling: For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area.

Advice on protection against fire and explosion: Provide appropriate exhaust ventilation at places where dust is formed.

Storage

- Requirements for storage areas and containers: Electrical installations / working materials must comply with the technological safety standards.
- Advice on common storage: No materials to be especially mentioned.

German storage class: Combustible Solids
Use: Chemical intermediate

SECTION 8: Exposure controls/personal protection

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>CN</th>
<th>Components</th>
<th>Basis</th>
<th>Value</th>
<th>Control parameters</th>
<th>Note</th>
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<td>PC-TWA</td>
<td>4 mg/m³ Total</td>
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<tr>
<td>1</td>
<td>GBZ 2.1-2007</td>
<td>PC-TWA</td>
<td>4 mg/m³ Total dust</td>
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</tr>
</tbody>
</table>

Not applicable

**Engineering measures**

Adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the workplace when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

**Personal protective equipment**

**Respiratory protection**: Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

**Hand protection**: The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

**Eye protection**: Eye wash bottle with pure water. Safety glasses.

**Skin and body protection**: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific workplace.

**Hygiene measures**: General industrial hygiene practice.

SECTION 9: Physical and chemical properties

**Information on basic physical and chemical properties**

**Appearance**

- **Form**: Pellets
- **Physical state**: Solid
- **Color**: White to off-white
Safety data

- Flash point: Not applicable
- Lower explosion limit: Not applicable
- Upper explosion limit: Not applicable
- Oxidizing properties: No
- Autoignition temperature: No data available
- Molecular formula: Mixture
- Molecular weight: Not applicable
- pH: Not applicable
- Freezing point: Not applicable
- Pour point: Not applicable
- Boiling point/boiling range: Not applicable
- Vapor pressure: Not applicable
- Relative density: No data available
- Density: 70 - 80 LB/FT3
- Water solubility: Insoluble
- Partition coefficient: n-octanol/water: Not applicable
- Viscosity, kinematic: Not applicable
- Relative vapor density: Not applicable
- Evaporation rate: Not applicable

SECTION 10: Stability and reactivity

Reactivity: Stable under recommended storage conditions.

Chemical stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of hazardous reactions
### Hazardous reactions
- Hazardous polymerization does not occur.
- Dust may form explosive mixture in air.
- Reacts violently with water.
- Stable under recommended storage conditions. No hazards to be specially mentioned.

### Conditions to avoid
- Generation of Dusts.
- Metal Oxides

### Other data
- No decomposition if stored and applied as directed.

## SECTION 11: Toxicological information

### E-Series® Catalyst
**Acute oral toxicity**
- LD50: > 5,000 mg/kg
  - Species: Rat

**Acute inhalation toxicity**
- Aluminum Oxide
  - LC50: > 2.3 mg/l
  - Exposure time: 4 h
  - Species: Rat
  - Test atmosphere: dust/mist
  - Method: OECD Test Guideline 403
  - Information given is based on data obtained from similar substances.

**Acute dermal toxicity**
- LD50: not known
  - Species: Rabbit

**Skin irritation**
- No skin irritation

**Eye irritation**
- No eye irritation
  - Product dust may be irritating to eyes, skin and respiratory system.

**Genotoxicity in vitro**
- Aluminum Oxide
  - Test Type: Ames test
  - Metabolic activation: with and without metabolic activation
  - Result: negative

### Further information
- No data available.
SECTION 12: Ecological information

Ecotoxicity effects
Toxicity to fish

Aluminum Oxide: NOEC: > 100 mg/l
Exposure time: 96 h
Species: Salmo salar (Atlantic salmon)
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates

Aluminum Oxide: EC50: > 100 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 202

Toxicity to algae

Aluminum Oxide: NOEC: > 100 mg/l
Exposure time: 72 h
Species: Selenastrum capricornutum (algae)
Method: OECD Test Guideline 201

Biodegradability: No data available

Elimination information (persistence and degradability)

Bioaccumulation: Not applicable

Mobility: No data available

Additional ecological information

Ecotoxicology Assessment

SECTION 13: Disposal considerations

The information in this SDS pertains only to the product as shipped.
Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Product: Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging: Empty containers should be taken to an approved waste
SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

**US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)**
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

**IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)**
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

**IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)**
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

**ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))**
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

**RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))**
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

**ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)**
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information

**Notification status**
Europe REACH: A substance or substances in this product is not registered or notified to be registered. Importation or
manufacture of this product is still permitted provided that it does not exceed the REACH minimum threshold quantity of the non-regulated substances.

Switzerland CH INV : On the inventory, or in compliance with the inventory
United States of America (USA) TSCA : On or in compliance with the active portion of the TSCA inventory
Canada DSL : All components of this product are on the Canadian DSL
Australia AICS : On the inventory, or in compliance with the inventory
New Zealand NZIoC : On the inventory, or in compliance with the inventory
Japan ENCS : On the inventory, or in compliance with the inventory
Korea KECl : A substance(s) in this product was not registered, notified to be registered, or exempted from registration by CPChem according to K-REACH regulations. Importation or manufacture of this product is still permitted provided the Korean Importer of Record has themselves notified the substance.

Philippines PICCS : On the inventory, or in compliance with the inventory
China IECSC : On the inventory, or in compliance with the inventory
Taiwan TCSI : On the inventory, or in compliance with the inventory

Other regulations : Law on the Prevention and Control of Occupational Diseases

### SECTION 16: Other information

**Further information**

Legacy SDS Number : 659990

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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<th>Key or legend to abbreviations and acronyms used in the safety data sheet</th>
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