E-Series® Catalyst

Version 1.9 Revision Date 2025-11-06

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, 1078354, 1098646, 1093052, 1078358, 1061165, 1078353, 1078359, 1092176, 1078361, 1078340, 1036631, 1017842, 1035484, 1016708, 1017939, 1031451, 1033973, 1033974, 1034361, 1036632, 1016707
Use	:	Chemical intermediate
Company	:	Chevron Phillips Chemical Company LP Specialty Chemicals 9500 Lakeside Blvd. The Woodlands, TX 77381
Local	:	See Company Address

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
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
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Austria: VIZ +43 1 406 43 43 (24 hours/day, 7 days/week)
Belgium: 070 245 245 (24 hours/day, 7 days/week)
Bulgaria: +359 2 9154 233
Croatia: +3851 2348 342 (24 hours/day, 7 days/week)
Cyprus: 1401
Czech Republic: Toxicological Information Center +420 224 919 293, +420 224 915 402
Denmark: Danish Poison Center (Giftlinjen): +45 8212 1212
Estonia: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Finland: 0800 147 111 09 471 977 (24 hours/day)
France: ORFILA number (INRS): + 33 (0) 1 45 42 59 59 (24 hours/day, 7 days/week)
Germany: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Greece: (0030) 2107793777 (24 hours/day, 7 days/week)
Hungary: +36-80-201-199 (24 hours/day, 7 days/week)

Iceland: 543 2222 (24 hours/day, 7 days/week)
Ireland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Italy: POISON CENTER MILAN – Azienda Ospedaliera Niguarda Ca` Grande Tel. +39 02 66101029; POISON CENTER ROME – Policlinico “Agostino Gemelli”, Servizio di tossicologia clinica Tel. +39 06 3054343; POISON CENTER ROME – Ospedale Pediatrico Bambino Gesù Tel. +39 06 68593726;POISON CENTER ROME – Policlinico “Umberto I” Tel. +39 06 4997 8000; POISON CENTER FOGGIA – Azienda Ospedaliera Universitaria Riuniti Tel. +39 0881 732326; POISON CENTER NAPLES – Azienda Ospedaliera “Antonio Cardarelli” Tel. +39 081 7472870; POISON CENTER FLORENCE – Azienda Ospedaliera universitaria Careggi Tel. +39 055 7947819; POISON CENTER PAVIA – IRCCS Fondazione Salvatore Maugeri Tel. +39 0382 24444; POISON CENTER BERGAMO – Azienda Ospedaliera “Papa Giovanni XXIII” Tel. 800 883 300; POISON CENTER VERONA – Azienda Ospedaliera Universitaria integrata Tel. 800 011 858;
Latvia: State Fire and Rescue Service, phone number: 112; Toxicology and Sepsis Clinic Poisoning and Drug Information Center, Hipokrāta 2, Riga, Latvia, LV-1038, phone number +371 67042473. (24 hours.)
Liechtenstein: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Lithuania: +370 (85) 2362052
Luxembourg: (+352) 8002 5500 (24 hours/day, 7 days/week)
Malta: +356 2395 2000
The Netherlands: NVIC: +31 (0)88 755 8000
Norway: 22 59 13 00 (24 hours/day, 7 days/week)
Poland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Portugal: CIAV phone number: +351 800 250 250
Romania: +40213183606
Slovakia: +421 2 5477 4166
Slovenia: Phone number: 112
Spain: National Emergency Telephone Number of Spanish Poison Centre: +34 91 562 04 20 (24 hours/day, 7 days/week)
Sweden: 112 – ask for Poisons Information

Organization that prepared the SDS	:	Product Safety and Toxicology Group
E-mail address	:	SDS@CPChem.com
Website	:	www.CPChem.com

SECTION 2: Hazards identification

Classification of the substance or mixture
GHS Classification and labelling according to JIS Z 7252-2019 and JIS Z 7253-2019 (GHS 2015)

Classification

: Specific target organ toxicity - single exposure, Category 3, Respiratory tract irritation
Specific target organ toxicity - repeated exposure, Category 1, Inhalation, Lung
Short-term (acute) aquatic hazard, Category 2
Long-term (chronic) aquatic hazard, Category 2

Labeling

Symbol(s) :

Signal Word : Danger

Hazard Statements : H335: May cause respiratory irritation.
H372: Causes damage to organs (Lung) through prolonged or repeated exposure if inhaled.
H411: Toxic to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**
P260: Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P264: Wash skin thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P273: Avoid release to the environment.
Response:
P304 + P340 + P312: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P314: Get medical advice/ attention if you feel unwell.
P391: Collect spillage.
Storage:
P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
P405: Store locked up.
Disposal:
P501: Dispose of contents/ container to an approved waste disposal plant.

SECTION 3: Composition/information on ingredients

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

Molecular formula : Mixture

Chemical name	CAS-No.	Concentration	ENCS/ISHL number
Aluminum Oxide	1344-28-1	99%	1-23
Silver Oxide	20667-12-3	0.01 % - 0.11%	1-9

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. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

Notes to physician

Symptoms	:	No data available.
Risks	:	No data available.
Treatment	:	No data available.

SECTION 5: Firefighting measures

Flash point	:	Not applicable
Autoignition temperature	:	No data available
Unsuitable extinguishing media	:	High volume water jet.
Specific hazards during fire fighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
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	:	Prevent product from entering drains. 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 : Containers which are opened must be carefully resealed and kept upright to prevent leakage. Electrical installations / working materials must comply with the technological safety standards.

Advice on common storage : No materials to be especially mentioned.

Use : Chemical intermediate

SECTION 8: Exposure controls/personal protection

Ingredients with workplace control parameters

JP

Components	Basis	Value	Control parameters	Note
Aluminum Oxide	JP OEL JSOH	OEL-M	0.5 mg/m3	Respirable dust
	JP OEL JSOH	OEL-M	2 mg/m3	Total dust
Silver Oxide	JP OEL JSOH	OEL-M	0.01 mg/m3	

Engineering measures

Adequate ventilation to control airborned 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 work place 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 : If ventilation or other engineering controls are not adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure, a supplied-air NIOSH approved respirator may be appropriate. A positive pressure, air-supplying respirator may be appropriate if there is potential for uncontrolled release, aerosolization, 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 work-place.
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
Odor	:	No data available
Odor Threshold	:	No data available

Safety data

Flash point	:	Not applicable
Lower explosion limit	:	Not applicable
Upper explosion limit	:	Not applicable
Flammability (solid, gas)	:	
Oxidizing properties	:	No
Autoignition temperature	:	No data available
Thermal decomposition	:	No data available
Molecular formula	:	Mixture
Molecular weight	:	Not applicable
pH	:	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
Conductivity	:	No data available

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 reactions: Hazardous polymerization does not occur.

Hazardous reactions: Dust may form explosive mixture in air., Reacts violently with water.

Further information: Stable under recommended storage conditions., No hazards to be specially mentioned.

Conditions to avoid : No data available.

Materials to avoid : No data available.

Thermal decomposition : No data available

Hazardous decomposition products : Metal Oxides

Other data : No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

E-Series® Catalyst
Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

E-Series® Catalyst
Acute inhalation toxicity : Acute toxicity estimate: > 10 mg/l
Exposure time: 4 h

Test atmosphere: dust/mist
Method: Calculation method

E-Series® Catalyst
Acute dermal toxicity : No data available

E-Series® Catalyst
Skin irritation : No skin irritation

E-Series® Catalyst
Eye irritation : Product dust may be irritating to eyes, skin and respiratory system.

E-Series® Catalyst
Sensitization : Did not cause sensitization on laboratory animals.
Information refers to the main ingredient.

Genotoxicity in vitro

Aluminum Oxide : Test Type: Ames test
Metabolic activation: with and without metabolic activation
Result: negative

E-Series® Catalyst
Further information : No data available.

SECTION 12: Ecological information

Toxicity to fish

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

Silver Oxide LC50: 1.2 µg/l
Exposure time: 96 h
Species: Pimephales promelas (fathead minnow)
semi-static test

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

Silver Oxide LC50: 0.22 µg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
semi-static test

Toxicity to algae

Aluminum Oxide	:	NOEC: > 100 mg/l Exposure time: 72 h Species: Selenastrum capricornutum (algae) Method: OECD Test Guideline 201
Silver Oxide		EC10: 0.54 µg/l Exposure time: 24 h Species: Chlamydomonas reinhardtii (green algae) Growth inhibition

M-Factor

disilver oxide	:	M-Factor (Acute Aquat. Tox.)	100
		M-Factor (Chron. Aquat. Tox.)	100

Biodegradability

Aluminum Oxide	:	The methods for determining biodegradability are not applicable to inorganic substances.
Silver Oxide	:	The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulation

Aluminum Oxide	:	This material is not expected to bioaccumulate.
Silver Oxide	:	No data available

Mobility

Aluminum Oxide	:	No data available
Silver Oxide	:	No data available
Additional ecological information	:	Toxic to aquatic life with long lasting effects.

Ecotoxicology Assessment

Short-term (acute) aquatic hazard

Aluminum Oxide	:	This material is not expected to be harmful to aquatic organisms.
Silver Oxide	:	Very toxic to aquatic life.

Long-term (chronic) aquatic hazard

Aluminum Oxide	:	This material is not expected to be harmful to aquatic organisms.
Silver Oxide	:	Very toxic to aquatic life with long lasting effects.

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 : The product should not be allowed to enter drains, water courses or the soil.

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)
UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (SILVER OXIDE), 9, III, MARINE POLLUTANT, (SILVER OXIDE)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)
UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (SILVER OXIDE), 9, III

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))
UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (SILVER OXIDE), 9, III, (-)

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))
90,UN3077,ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (SILVER OXIDE), 9, III

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)
UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (SILVER OXIDE), 9, III

Maritime transport in bulk according to IMO instruments

SECTION 15: Regulatory information

National legislation

Poisonous and Deleterious Substances Control Law

: Not applicable

: Not relevant

Industrial Safety and Health Law

Substances Subject to be Notified Names	:	Alumina Oxide
Substances Subject to be Notified Names Law Article 57-2 (Ministerial Order Article 34-2 Appended Table 2)	:	Alumina Oxide
Enforcement Order of the Industrial Safety and Health Law - Attached table 1 (Dangerous Substances)	:	
Harmful Substances Required Permission for Manufacture	:	Not applicable
Hazardous Substances Subject to Labeling Requirements	:	Not relevant
Hazardous Substances Subject to Labeling Requirements Law Article 57 (Ministerial Order Article 30 Appended Table 2)	:	Alumina Oxide
Ordinance on Prevention of Organic Solvent Poisoning	:	Not applicable
Ordinance on Prevention of Organic Solvent Poisoning	:	Not relevant
Ordinance on Prevention of Lead Poisoning	:	Not applicable
Harmful Substances Prohibited from Manufacture	:	Not applicable
Ordinance on Prevention of Hazards Due to Specified Chemical Substances	:	Not applicable
Ordinance on Prevention of Tetraalkyl Lead Poisoning	:	Not applicable
	:	Not applicable
	:	Not applicable
Substances Prevented From Impairment of Health	:	Not applicable Listed

Chemical Substance Control Law

: Not applicable for Specified Chemical Substance, Monitoring Chemical Substance and Priority Assessment Chemical Substance.

: Not relevant

Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof

: Not applicable

: Not relevant

Other regulations

Fire Service Law	:	Not relevant
Fire Service Law	:	Not applicable to dangerous materials / designated flammables.
High Pressure Gas Safety Act	:	Not applicable
Explosive Control Law	:	Not applicable
Vessel Safety Law	:	Not regulated as a dangerous good
Aviation Law	:	Not regulated as a dangerous good

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 AIIC	:	On the inventory, or in compliance with the inventory
Japan ENCS	:	On the inventory, or in compliance with the inventory
Korea KECI	:	A substance(s) in this product was not registered, notified to be registered, or exempted from registration by CPChem according to K-REACH regulations.
Philippines PICCS	:	On the inventory, or in compliance with the inventory
Taiwan TCSI	:	On the inventory, or in compliance with the inventory
China IECSC	:	On the inventory, or in compliance with the inventory

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.

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AIIC	Australian Inventory of Industrial Chemicals	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%	ATE	Acute toxicity estimate