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Product Stewardship Summary E-Series® Catalyst

The product stewardship summary is intended to give general information about the chemical or categories of chemicals addressed. It is not intended to provide an in-depth discussion of all health and safety information. Additional information is available through the applicable Safety Data Sheet (SDS) which should be consulted before use of any chemical. This product stewardship summary does not supplant or replace required regulatory and/or legal communication documents.

Chemical Identity:

It is an aluminum oxide base selective acetylene hydrogenation catalyst which includes the following products:

- E-Series® Catalyst
- E-Series® Catalyst RG-1

Product Uses:

It is commercially available and used specifically as an acetylene hydrogenation catalyst in the ethylene manufacturing process.

Physical/Chemical Properties:

E-Series® Catalyst is a white to off-white solid pellet and is composed of metal oxides that are insoluble in water under normal conditions of use. Although not expected to form an explosive mixture in air, care should be taken to avoid dust generation. It is considered stable under normal ambient as well as the anticipated storage and handling conditions of temperature and pressure.

Health Information:

E-Series® Catalyst is expected to exhibit low acute and chronic toxicity effects via the oral, inhalation and dermal routes. This product is not expected to be a skin or eye irritant. However, direct contact with dust or powder in the eye may cause irritation by mechanical abrasion. It is not expected to be a skin sensitizer. If accidentally ingested, this product is not anticipated to cause an aspiration hazard. Currently there are no available data on this product regarding carcinogenicity, reproductive or developmental toxicity. Nevertheless, available data on a similar substance indicate that this product is not expected to cause developmental toxicity.

Environmental Information:

The environmental hazard potential of E-Series® Catalyst products is expected to range from very toxic to toxic for aquatic organisms based on available information. Biodegradation is also not applicable since this product is inorganic. Care should be taken to avoid releases to sewage, drainage systems and water bodies. Spillage should be quickly collected and properly disposed of, further reducing the potential for harm to the environment.

Exposure Potential:

The most likely routes of exposure to E-Series® Catalyst are skin and eye contact, and inhalation exposures. The best way to prevent exposure is to work in well-ventilated areas, use appropriate personal protective equipment (PPE), and follow good personal hygiene practices.

Workplace use:

Potentially exposed populations include: (1) workers who manufacture these products; (2) quality assurance workers who sample and analyze the products to ensure that they meet specifications; (3) workers involved in distribution and

September 12, 2022



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storage of these products; and (4) commercial consumers, in occupational settings, that use these products in intended applications. The probability of exposure to workers is expected to be low because these products are manufactured in enclosed, controlled environments, and are transported in tightly sealed containers. These products are sold to industrial customers who are familiar with their intended applications, safe handling, storage, and disposal requirements. Manufacturing, quality assurance and transportation workers should adhere to safe handling practices and wear appropriate personal protective equipment (PPE), and have access to exposure prevention measures (e.g., engineering controls). Customers should also use appropriate PPE during handling and have risk mitigation measures in place to address potential physical hazards or accidental releases. Contaminated surfaces will be extremely slippery. Avoid spillage on floor as the product can become very slippery when wet. Sweep up to prevent slipping hazard.

Consumer use:

Potential exposure or health impacts to the general public is not anticipated. This product is sold by Chevron Phillips Chemical to industry users knowledgeable in the safe handling and use of these products. In the event of a fire, inhalation of hazardous combustion byproducts could be a potential concern for nearby residents.

Potential Environmental Release:

There may be some potential for significant exposure to the environment from accidental releases during transportation of drums, truck trailers, or container ships; however, the frequency of distribution incidents involving accidental release of these products has been low, and reported volumes spilled have been minimal. Furthermore, pallet containers are stretch-wrapped or shrink-wrapped to minimize the potential for product loss. Small quantities are shipped for laboratory quality and performance testing, typically one (1) pound or less. Those performing the tests understand the hazards and adhere to the safe handling practices as explained above. Chevron Phillips Chemical is committed to operating in an environmentally responsible manner and participates in the American Chemistry Council's Responsible Care® program.

Risk Management

Chevron Phillips Chemical is committed to Product Stewardship and doing business responsibly. We endeavor to provide sufficient information for the safe use and handling of all our products. We make product information available to all of our customers, distributors, carriers, and users of these products which contain details about the properties of each product. To that end, a Safety Data Sheet and a certificate of analysis accompanies each shipment from our manufacturing plant or warehouse.

Before using these products, the user is cautioned to make its own determination and assessment of the safety and suitability of the product for the specific use in question. It is the ultimate responsibility of the user to ensure suitability for use and determine if this information is applicable to the user's specific application. Chevron Phillips Chemical does not make, and expressly disclaims, all warranties, including warranties of merchantability or fitness for a particular purpose, regardless of whether oral or written, express or implied, or allegedly arising from any usage of any trade or from any course of dealing in connection with the use of the information contained herein or any product itself. The user expressly assumes all risk and liability, whether based in contract, tort or otherwise, in connection with the use of the information contained herein or any product itself.

Regulatory Information:

Regulations exist that govern the manufacture, sale, transportation, use, and disposal of these products. These regulations may vary by city, state, country or geographic region. Additional relevant information may be found by consulting the applicable SDS.



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Sources of Additional Information:

Safety Data Sheets (SDS) at <https://www.cpchem.com> or available upon request at SDS@CPChem.com

European Chemical Agency (ECHA) Dissemination portal with information on chemical substances registered under REACH

- <https://echa.europa.eu/information-on-chemicals>

Organization for Economic Cooperation and Development (OECD): eChemPortal web-based search tool

- <https://www.echemportal.org/echemportal/>

Conclusion:

The E-Series® Catalyst is not expected to form an explosive mixture in air. However, care should be taken to avoid dust generation. Efforts should be taken to minimize eye, dermal and inhalation exposures to these products by adhering to safe handling procedures, designated applications and uses, appropriate personal protective equipment practices, labeling, storage, and transportation procedures. The relevant product Safety Data Sheets and applicable regulatory guidelines and requirements, including but not limited to Occupational Health and Safety Administration (OSHA) guidelines, should be consulted prior to the use or handling of these products.

Contact Information:

<https://www.cpchem.com/>