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Product Stewardship Summary
DIESEL PRODUCT GROUP

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:

Most diesel products are fuel oils that are manufactured from crude petroleum. They are generally blended and further formulated with additives to improve properties required to meet technical and use specifications. The Diesel Product Group is currently comprised of 15 individual products that are grouped and evaluated based on their viscosity and flashpoint. These products generally have viscosity and flashpoint ranges between 2.1 – 5.54 cSt (at 40 °C) and 111 - 425°F, respectively. They are also typically characterized as Diesel No. 2 Test Fuel (*SDS #100000013879*). For a detailed product list, refer to the *Sources of Additional Information* section.

Category Justification:

The diesel products are complex mixtures of aliphatic and aromatic (benzene and related compounds, and possibly polycyclic aromatic hydrocarbons; PAHs) petroleum hydrocarbons. The Biodiesel blends consist of vegetable oil formulated with petroleum hydrocarbons. These products contain substances with varying small amounts of nitrogen, sulfur, and other elements. Products within this group have similar physical and health hazards, and environmental fate. They are typically differentiated by their viscosities and flashpoints.

Product Uses:

The diesel products are generally used as emission certification test fuels, reference fuels for obtaining the cetane number of diesel fuels, oil classification test fuels, and high performance heavy duty cycle fuels. Products in this group are commercially available to industrial customers only, which primarily includes: Lubricant Manufacturers, Engine Component Manufacturers, Distributors, Engine Designers and Manufacturers, Testing or Research and Development Facilities.

Physical/Chemical Properties:

The diesel products are moderately volatile, flammable, and combustible liquids. These products have the potential to cause fires if they are exposed to an ignitable source. Electrostatic charge can accumulate and create a hazardous condition when handlings these materials. Containers can explode under pressurized conditions. Due to their inherent explosive characteristics, there are specific requirements for handling, storage, transportation, labeling, and disposal. However, it should be noted that these products are typically stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Health Information:

Overall, diesel products are expected to have low acute and short-term toxicity in humans. Prolonged exposure to high vapor concentrations may cause respiratory irritation and central nervous system (CNS) effects. These products are irritating to the skin and minimally irritating to the eyes. Repeated dermal contact with these products may cause defatting of the skin. No dermal sensitization has been reported. Repeated exposure of laboratory animals to petroleum streams similar to the diesel products has shown effects in the liver, thymus, and bone marrow at high dermal doses; however, no adverse effects were seen from repeated inhalation exposure to an aerosol of diesel fuel. The diesel

products are not selectively toxic to the developing fetus. Dermal carcinogenicity studies in mice indicate that diesel products are potential skin carcinogens, of which the mechanism involves repeated skin irritation or damage and regenerative hyperplasia, a situation that is unlikely to be tolerated by humans.

If accidently ingested, a small amount of liquid may be aspirated into the lungs which can occur from either swallowing or vomiting. Aspiration of liquid into the lungs may cause inflammation of the lungs and lung edema (accumulation of fluid in the lungs). This is a medical emergency and requires immediate and proper treatment.

The diesel products may contain naphthalene. Exposure to high concentrations of naphthalene may cause hemolytic anemia (from destruction of red blood cells) and cataracts. Naphthalene has been shown to be a carcinogen in laboratory animal studies. The relevance of these findings to humans is uncertain.

Some of the diesel products may contain ethylbenzene. Ethylbenzene has been shown to be a carcinogen in laboratory animal studies. The relevance of these findings to human is uncertain.

Environmental Information:

The environmental hazard potential for the diesel products is expected to be varied because their toxicity and fate will depend on the individual components in the mixture. Overall, diesel products can cause significant harm to aquatic life. Birds, particularly, waterfowls, may be affected by oil contamination. Available data also suggests that the potential for diesel products to bioaccumulate is dependent on the type of individual components. Although the individual constituents of the diesel products can be biodegraded to varying degrees and at different rates, they can be considered to be inherently biodegradable.

Exposure Potential:

The most likely routes of exposure to the diesel product are eye and skin contact. Because the diesel products have moderate volatility at room temperature, exposures to high vapor concentrations during normal handling is not expected to occur frequently; however, in confined spaces at high temperatures, significant vapor exposure levels are possible.

Workplace use:

The potentially exposed populations include: (1) workers who manufacture and/or blend these products, or further formulate them with additives to meet technical specifications; (2) quality assurance workers who sample and analyze the products to ensure that they meet specifications; (3) workers involved in distribution and storage of these products; and (4) commercial consumers, in occupational settings, that use these products in intended applications. The most likely routes of exposure to these products in an occupational setting are eye and dermal contact, and potentially inhalation exposure. However, the likelihood of exposure to workers is expected to be low because these products are sold to industrial customers that are properly trained to handle them and wear appropriate personal protective equipment (PPE). Additionally, they typically have access to exposure prevention measures (e.g., engineering controls). Manufacturing, quality assurance and transportation workers should adhere to safe handling practices and wear appropriate PPE. Furthermore, customers should use appropriate PPE during handling and to have risk mitigation measures in place to address potential physical hazards or accidental releases.

Consumer use:

Potential exposure or impact to the general public is not anticipated for these products as they are sold by Chevron Phillips Chemical to sophisticated industry users and not to the general population.

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Potential environmental release:
There may be some potential for significant exposure to the environment from accidental releases during transportation via drums, truck trailers, railcars, and container ships; however, the frequency of distribution incidents involving accidental releases of these products has been low, and reported volumes spilled have been minimal. 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 detail about the properties of each product. To that end, a Safety Data Sheet and a certificate of analysis accompany each shipment from our manufacturing plant.

Before using these products, the user is advised and 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 diesel products. These regulations may vary by city, state, country or geographic region. Additional relevant information may be found by consulting the applicable product Safety Data Sheet.

Sources of Additional Information:
Safety Data Sheets (SDS) at https://www.cpchem.com/

- Diesel PC-10 Test Fuel
- Diesel PC-9 HS Test Fuel
- Diesel .05 5Y5 Cert Fuel
- Diesel 2007 ULS
- Diesel 2007 (Dyed)
- Biodiesel Blends
- Diesel Euro III
- Diesel Euro IV
- Diesel Jaso Test Fuel
- Diesel Special Test Fuel
- Diesel Cetane CK Fuel – High
- Diesel Cetane CK Fuel – Low
- Diesel SEC Cetane RF T
- Diesel SEC Cetane RF U
- Diesel No Sulfur

Heavy Fuel Oils Category Analysis and Hazard Characterization (2012). Prepared by the American Petroleum Institute (API) for the U.S. EPA High Production Volume (HPV) Chemical Program.

- https://www.petroleumhpv.org/

CONCAWE (2020) Hazard Classification and Labelling of Petroleum Substances in the European Economic Area – 2020. Report No. 22/20. Brussels: CONCAWE

- https://www.concawe.eu/

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

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

Conclusion:

Diesel fuels contain components that are classified as hazardous chemicals. Efforts should be taken to minimize exposure to these products by adhering to safe-handling procedures, designated applications and uses, appropriate personal-protective equipment practices, and appropriate labeling, storage, and transportation procedures and requirements. The relevant product Safety Data Sheet 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/