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Product Stewardship Summary
LIGNOSULFONATES 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

The Lignosulfonates Group is comprised of Lignosulfonates obtained as a co-product in paper production, and currently includes four products.

- Diacel® LTR 100 Powder
- Diacel® HTR 100C Powder

Category Justification

The Lignosulfonates products have the same composition with different salts and exhibit similar chemical and physical properties. These products have analogous health and environmental hazards with the exception of one product.

Product Uses

Products in the Lignosulfonates Group are cementing additives used in down-hole drilling applications. These products are cement retarders used to extend the fluid life of the cement slurry, allowing sufficient time for placement.

Physical/Chemical Properties

These products are brown to reddish brown powders with a slight odor. Care should be taken to avoid dust generation as they may form combustible dust concentrations in air. The products are considered stable under normal ambient and anticipated storage and handling conditions of

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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 Company and its affiliates do 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.

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temperature and pressure. Avoid contact with oxidizing agents, such as chlorates, nitrates and peroxides.

Health Information

The components for the Lignosulfonates products exhibit low acute toxicity effects via the oral and inhalation routes. No data for acute exposure via the dermal route has been identified, but dermal absorption is expected to be minimal. These products are not expected to be skin or eye irritants. Direct contact with dust or powder in the eye may cause irritation by mechanical abrasion. Although prolonged exposure by ingestion is not expected to cause any long-term effects, repeated exposures to Lignosulfonates and L-tartaric acid have shown effects on blood counts and kidney, respectively. Adverse effects from repeated exposure by other routes are unknown. Currently available information suggests the components of these products are not expected to cause carcinogenic, reproductive, teratogenic, or developmental toxicity health effects.

Environmental Information

The environmental hazard potential of the Lignosulfonates Group is expected to be low (i.e., they are not expected to be harmful to aquatic life) If released into the environment, these products are expected to be ultimately biodegradable and not bioaccumulate. Although available testing data does not indicate the material is hazardous to the environment, care should remain to avoid releases to sewage, drainage systems, and water bodies. Spillage should be quickly collected and properly disposed of to minimize harm to the environment.

Exposure Potential

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

Workplace Use:

Potentially exposed populations include: (1) workers who manufacture and/or blend these products; (2) quality assurance workers who sample and analyze the products to ensure 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 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 that are familiar with their intended applications, safe handling, storage, and disposal requirements. Manufacturing, quality assurance

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and transportation workers will likely adhere to safe handling practices and wear appropriate personal protective equipment (PPE), and have access to exposure prevention measures (e.g., engineering controls). Customers are also likely to use appropriate PPE during handling and 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 Company to sophisticated industry users and not to the general population.

Potential Environmental Release:
There may be some potential for exposure to the environment from accidental releases during transportation of drums, pails, sacks or container ships; however, the frequency of distribution incidents involving accidental releases 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 should understand the hazards and adhere to the safe handling practices as explained above. The current and anticipated use of these products in designated off-shore/on-shore rig applications is not expected to result in significant loss to the environment because containers are handled one-at-a time. Chevron Phillips Chemical Company is committed to operating in an environmentally responsible manner and participates in the American Chemistry Council's Responsible Care® program.

Risk Management:

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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 Company

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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.

Sources of Additional Information:

Safety Data Sheets (SDS) at http://www.cpchem.com.

European Food Safety Authority (EFSA). Available online at:

- http://www.efsa.europa.eu/en/efsajournal/doc/1525.pdf

Federal Register:

- https://www.federalregister.gov/articles/2005/02/16/05-2986/Lignosulfonates-exemptions-from-the-requirement-of-a-tolerance

Hazardous Substances Data Bank

- http://toxnet.nlm.nih.gov/cgi-bin/sis/search

National Library of Medicine, Chem ID Plus Database

- https://pubchem.ncbi.nlm.nih.gov/

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

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

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Conclusion:

The Lignosulfonates Group is classified as non-hazardous with the exception of one product. Efforts should still 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 SDS 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:

www.cpchem.com/

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