



Product Stewardship Summary

LIGNOSULFONATES LIQUIDS GROUP

The Product Safety Summary (PSS) is intended to give general information about the chemical or categories of chemicals addressed in this summary. 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 which should be consulted before use of any chemical. This PSS 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 the following two products:

- Diacel[®] LTR 100 Powder
- Diacel[®] HTR 100 Powder.

Category Justification:

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

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:

Both products are a brown powder with a slight odor. They are combustible solids if heated. The products are considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. Avoid contact with oxidizing agents, such as chlorates, nitrates and peroxides.

Health Information:

The components of both 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. The products are not known to be irritating to the skin or eyes. Although prolonged exposure by ingestion is not expected to cause any long term effects, repeated exposures at very high doses have shown effects on blood counts. 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 products is expected to be low. If released into the environment, both products are expected to be ultimately biodegradable and not bioaccumulate. Care should be taken to avoid releases to sewage, drainage systems, and water bodies. Spillage should be quickly collected and properly disposed.

Exposure Potential:

The most likely routes of exposure to the Lignosulfonates Group are skin and eye contact, and inhalation exposures.

Workplace Use:

The potentially exposed populations include: (1) workers who manufacture 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) industrial consumers in occupational settings that use these products in intended applications. The probability of exposure to these workers is expected to be low because these products are manufactured and tested in controlled environments and are stored and 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 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.

Consumer Use:

Potential exposure to the general public is not anticipated for these products as they are not typically sought out for purchase by the general population, nor does Chevron Phillips Chemical Company LP market them to such. In the event of a fire, inhalation of hazardous combustion byproducts could be a potential concern for nearby residents.

Potential Environmental Release:

The potential for accidental releases of these products to the environment is possible during transportation over long distances via truck trailers, railcars or container ships; however, available data indicate that the frequency of distribution incidents involving significant releases of these products has been minimal. Small quantities are shipped for laboratory quality and performance testing, typically 1 pound or less. Those performing the tests 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 LP is committed to operating in an environmentally responsible manner and has adopted the American Chemical Council's Responsible Care[®] initiative.

Risk Management:

Chevron Phillips Chemical Company LP 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 contains 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 these 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 Sheets.

Sources of Additional Information:

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

European Food Safety Authority (EFSA): <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, April, 2014. <http://toxnet.nlm.nih.gov/cgi-bin/sis/search>

National Library of Medicine, Chem ID Plus Database: <http://chem.sis.nlm.nih.gov/chemidplus/rn/8061-51-6#toxicity>

OECD SIDSs for Gluconic Acid and Its Derivatives, April 2004. <http://www.chem.unep.ch/irptc/sids/OECDsids/gluconates.pdf>

Conclusion:

The Lignosulfonates Group is classified as non-hazardous. Efforts should still 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, and labeling, storage, and transportation procedures and requirements. 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:

[http://www.cpchem.com/](http://www.cpchem.com)

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