



Product Stewardship Summary

Cellulosics and Biopolymers Groups

This product stewardship summary 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 (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 cellulosics and biopolymers groups are comprised of solids and currently include the following eleven products:

- Drillpac[®] LV/HV polymer
- Flowzan[®] biopolymer
- Drillzan[®] D biopolymer
- Clarizan[®] biopolymer
- Drillzan[®] biopolymer
- DSCoPac fluid loss polymer
- Drispac[®] Plus Regular and Superlo[®] polymer
- Drispac[®] Regular and Superlo[®] polymer
- Diacel[®] LWL polymer
- Diacel[®] HTP 1500 Cement Fluid Loss Additive
- Flowzan[®] DS biopolymer

Category Justification:

Products in the cellulosics and biopolymers groups have similar physical and chemical characteristics. They are water soluble and are either natural or modified natural products. In general, these products exhibit similar health and environmental hazards, with small differences in the severity of their effects.

Product Uses:

These products are commercially available to oil or gas service industry customers, and are generally used as drilling mud additives, completion fluids, viscosifiers, rheology control, fluid loss additives, friction reducers, and cement retarders.

Physical/Chemical Properties:

All of the products in the cellulosics and biopolymers groups are solids that are combustible upon heating. Some products in this category are granular solids and care should be taken to avoid dust generation as they may form combustible dust concentrations in air. In the event of a fire, the formation of decomposition byproducts, such as sulfur and carbon oxides, is possible. These products should be kept in tightly closed containers, and stored in a cool and well-ventilated environment away from ignitable sources.

Health Information:

Overall, based on the information available, the products in the cellulose and biopolymers groups exhibit low acute and chronic toxicity effects via the oral, inhalation and dermal routes. Diacel[®] HTP 1500 Cement Fluid Loss Additive may cause eye irritation. Other products in this group are not expected to be skin or eye irritants. However, direct contact with dust or powder in the eye may cause irritation by mechanical abrasion. In addition, Flowzan[®] DS biopolymer contains ethanedial (glyoxal), but it is below concentrations that require classifying the product. If accidentally ingested, these products are not anticipated to cause an aspiration hazard. Currently available information suggests the components of the cellulose and biopolymers groups are not expected to cause carcinogenic, reproductive, teratogenic or developmental toxicity health effects.

Environmental Information:

The environmental hazard potential of the cellulose and biopolymers groups is expected to be low (i.e., they are not expected to cause significant harm to aquatic life). Some of these products have a low potential to biodegrade if released into the environment, but are not expected to bioaccumulate in aquatic life. Even though these products are not expected to cause significant harm to aquatic environments, 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 cellulose and biopolymers groups 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. Additionally, workers in the manufacturing and/or quality lab settings are properly trained to handle these products and wear appropriate personal protective equipment. 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. 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 to the general public is not anticipated for these products as they are sold by Chevron Phillips Chemical Company LP to sophisticated industry users and not to the general population. In the event of a fire, inhalation of hazardous combustion byproducts could be a potential concern for nearby individuals and/or residents.

Potential Environmental Release:

The potential for accidental releases of these products to the environment is possible during transportation 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.

Furthermore, pallet containers are stretched wrapped to minimize the potential for product loss. Small quantities are shipped for laboratory quality and performance testing, typically in quantities of one pound or less. Those performing the tests should understand the hazards and adhere to the safe handling practices as explained above and in the Safety Data Sheet. The current and anticipated use of these products in designated offshore/onshore rig applications is not expected to result in significant damage to the environment because containers are typically 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, and carriers of these products which contain detail about the properties of each product. To that end, a Safety Data Sheet accompanies each shipment from our manufacturing plants and distribution centers.

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 LP does not make, and expressly disclaims, all warranties, including warranties of merchantability or fitness for a particular purpose, regardless of whether oral or written, expressed 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>

EPA ECOTOX Database: http://cfpub.epa.gov/ecotox/quick_query.htm

European Chemical Agency (ECHA) Registered Substances Database. Available online at: <http://apps.echa.europa.eu/registered/registered-sub.aspx#search>

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, August, 2015. <http://toxnet.nlm.nih.gov/cgi-bin/sis/search>

National Library of Medicine (NLM). 2013. Chem ID Plus Database. Available online at:

Organization for Economic Co-operation and Development (OECD). 2001. SIDS Initial Assessment Report for Potassium Chloride, November 6-9, 2001.

OECD. 2004. SIDS Initial Assessment Report. Gluconic Acid and Derivatives. April 20-23, 2004.

OECD. 2012. SIDS Initial Assessment Report for Calcium Distearate, April 17-19, 2012.

Conclusion:

Products in the cellulose and biopolymers groups may form combustible dust concentrations in air. 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, and labeling, storage, and transportation procedures and requirements. Dust deposits should not be allowed to accumulate. 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/>