Product Stewardship Summary
CELLULOSICS AND BIOPOLYMERS GROUPS

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 Cellulosics and Biopolymers Groups are comprised of solids and currently include the following nine products.

- Diacel® ASA 100
- Diacel® LWL polymer
- Drillpac® LV/HV polymer
- Drillzan® D biopolymer
- Drispac® Regular and Superlo® polymer
- Drispac® Plus Regular and Superlo® polymer
- DirectDrill™ Extender
- Flowzan® biopolymer
- 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, products in the Cellulosics and Biopolymers Groups exhibit limited potential for acute and chronic effects by oral, inhalation and dermal exposures. Direct contact with dust or powder in the eye may cause irritation by mechanical abrasion. Flowzan® DS biopolymer contains ethanedial (glyoxal), which is classified as an acute inhalation toxin, skin irritant, eye irritant, skin sensitizer, and mutagen. However, it is present in trace amounts and below concentrations that require classifying the product. If accidentally ingested, these products are not anticipated to cause an aspiration hazard.

Currently there is limited available information on the carcinogenic, reproductive, teratogenic, or developmental toxicity health effects.

Environmental Information:

The environmental hazard potential based on available information of the products in the Cellulosics and Biopolymers Groups are not expected to be harmful to aquatic life. These products have a low potential to biodegrade if released into the environment but are not expected to bioaccumulate in aquatic life. Many of these products also consist of components that are identified to pose little or no risk to the environment (PLONOR). However, 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 the Cellulosics and Biopolymers Groups 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 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 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. These products are 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, totes, truck trailers, rail cars, 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. 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 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 accompanies each shipment from our manufacturing plant.

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.

Sources of Additional Information:

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

Federal Register:

- Electronic Code of Federal Regulations (eCFR), a. 2021. CFR 21 part 175. (https://www.ecfr.gov/current/title-21/chapter-I/subchapter-B/part-175?toc=1)
- Electronic Code of Federal Regulations (eCFR), b. 2021. CFR 21 part 177. (https://www.ecfr.gov/current/title-21/chapter-I/subchapter-B/part-177?toc=1)
- Electronic Code of Federal Regulations (eCFR), c. 2021. CFR 21 part 181. (https://www.ecfr.gov/current/title-21/chapter-I/subchapter-B/part-181)
- Electronic Code of Federal Regulations (eCFR), d. 2021. CFR 21 part 182. (https://www.ecfr.gov/current/title-21/chapter-I/subchapter-B/part-182#_top)
- Electronic Code of Federal Regulations (eCFR), e. 2021. CFR 21 part 184. (https://www.ecfr.gov/current/title-21/chapter-I/subchapter-B/part-184)
- Electronic Code of Federal Regulations (eCFR), f. 2021. CFR 21 part 186. (https://www.ecfr.gov/current/title-21/chapter-I/subchapter-B/part-186#sp21.3.186.b)

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

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

National Library of Medicine (NLM). 2021. Chem ID Plus Database.

- https://chem.nlm.nih.gov/chemidplus/rn/9004-32-4

National Library of Medicine (NLM). 2021. PubChem.
- https://pubchem.ncbi.nlm.nih.gov/compound/6328154

Organization for Economic Cooperation and Development (OECD): eChemPortal web-based search tool
- https://www.echemportal.org/echemportal/

US Food and Drug Administration Generally Recognized as Safe (GRAS) Notice Inventory
- https://www.cfsanappsexternal.fda.gov/scripts/fdcc/index.cfm?set=IndirectAdditives

US Food and Drug Administration Inventory of Food Contact Substances Listed in 21 CFR
- https://www.fda.gov/food/generally-recognized-safe-gras/gras-notice-inventory

US Environmental Protective Agency Safer Chemicals Ingredient List
- https://www.cfsanappsexternal.fda.gov/scripts/fdcc/index.cfm?set=IndirectAdditives

Conclusion:

The Cellulosics and Biopolymers products may form combustible dust concentrations in air. Care should be taken to prevent dust deposits and not be allowed to accumulate. However, 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/