



Product Stewardship Summary

COMBUSTIBLE LIQUIDS GROUP

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 Material Safety Data Sheet (MSDS) 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 Combustible Liquids Group is comprised of emulsions and suspensions, and currently includes the following 17 products:

- DSGA[®] Polymer Emulsion
- Liquid Drispac[®] Polymer
- Liquid Drispac[®] Polymer XPT
- HEC Liquid Polymer
- HEC Liquid Polymer XPT
- Formula F
- Formula A
- Liquid Flowzan[®] Bipolymer XPT
- Liquid Flowzan[®] Bipolymer 43.3%
- Liquid Flowzan[®] Bipolymer
- Liquid HE[®] 150 Polymer
- Liquid HE[®] 150 Polymer XPT
- Diacel[®] MS-1 Mutual Solvent
- Formula A Concentrate
- Formula F Concentrate
- EXP-D244
- EXP-D244 XPT

Category Justification:

The Combustible Liquid Products have similar physical and chemical characteristics. 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, cementing additives, acid gelling agents, friction reducers, fluid thickeners, oil well cement spacer fluids, and fluid additives in oil field operations.

Physical/Chemical Properties:

These products are combustible liquids. Combustible liquids have the potential to cause fires if they are exposed to an ignition source. In the event of a fire, the formation of decomposition byproducts, such as sulfur and carbon oxides, is possible. These products must be kept in tightly closed containers, and stored in a cool and well ventilated environment away from ignitable sources.

Health Information:

Overall, the products in the Combustible Liquids Group exhibit low acute and chronic toxicity effects via the oral, inhalation and dermal routes, except Diacel[®] MS-1 Mutual Solvent, which may be harmful via the oral, inhalation and dermal routes. Some of these products may cause mild to severe eye and skin irritation. None of these products cause caustic burns or skin sensitization (an allergic reaction). However, some may defat the skin following repeated dermal contact, resulting in drying and cracking of the skin. Prolonged exposure to high vapor concentrations for products containing

solvents may cause respiratory irritation and central nervous system (CNS) effects, including drowsiness, dizziness, headache, nausea and loss of coordination. If accidentally ingested, these products are not anticipated to cause an aspiration hazard. Currently available data indicate these products are not expected to cause carcinogenic, reproductive, teratogenic or developmental toxicity health effects.

Environmental Information:

The environmental hazard potential of the Combustible Liquid Products is expected to be low (i.e., they are not expected to cause significant harm to aquatic life). Based on individual components in these products, the environmental fate ranges from readily biodegradable to may persist in the environment. These products also demonstrate a low-to-medium potential 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 Combustible Liquid Products 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 sold to the general population. 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 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 begin by ensuring that all of our customers, distributors, carriers and users of these products are well informed about the properties of each product. To that end, a Material Safety Data Sheet accompanies each shipment from our manufacturing plants and distribution centers.

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 Material Safety Data Sheets.

Sources of Additional Information:

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

CPChem. 2010. Chemical Safety Report: Hydrocarbons C11-C14, n-Alkanes, Isoalkanes, Cyclics, <2% Aromatics. Dated 4/8. Internal Document.

CPChem. 2010. Chemical Safety Report: Hydrocarbons C13-C16, Isoalkanes, Cyclics, <2% Aromatics. Dated 6/24. Internal Document.

CPChem. 2010 OSPAR Commission Harmonised Offshore Chemical Notification Format (HOCNF): Recommendation 2008/2 amending Recommendation 2000/5 for Greenbase HE 150. Dated 6/28. Internal document.

CPChem. 2011. OSPAR Commission Harmonised Offshore Chemical Notification Format: Recommendation 2010/3 for Liquid Flowzan Biopolymer. Dated 3/10. Internal document.

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

Organization for Economic Co-operation and Development (OECD). 2006. SIDS Initial Assessment Profile for Ethylene Glycol Butyl Ether (EGBE), October 17-26, 2010.

United States Environmental Protection Agency (USEPA). 2012. Integrated Risk Information System (IRIS). Ethylene Glycol Butyl Ether (EGBE). Available online at: <http://www.epa.gov/iris/subst/0500.htm>

Conclusion:

The Combustible Liquid Products are classified as hazardous chemicals. 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. The relevant product Material 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/>

May 9, 2013