Product Stewardship Summary
Benzene, Toluene, Xylene Mixture (BTX) / Hydrotreated Pygas (HPG)

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 on this chemical is available through the applicable Material Safety Data Sheet which must be consulted before using this chemical. The product stewardship summary does not supplant or replace required regulatory and/or legal communication documents.

Chemical Identity:
Benzene/Toluene/Xylene Mixture (BTX), also known as Hydrogenated Pyrolysis Gasoline (HPG), is a clear liquid with an aromatic odor. BTX/HPG is a co-product of ethylene production and is produced in closed systems that are monitored and controlled. HPG (BTX) is made by the double hydrogenation of raw pyrolysis gasoline (RPG), also known as debutanized aromatic concentrate (DAC).

CAS Number: 68410-97-9
Synonyms：Pyrolysis Gasoline, High Benzene Naphtha, Aromatic Concentrate, Light Hydrotreated Distillate

Product Uses:
There are no consumer uses of BTX/HPG. BTX/HPG is used primarily as feedstock for benzene extraction. The remaining components are further separated into toluene and xylene. Benzene is primarily used for ethylbenzene to styrene and cumene to phenol production. The third largest use of benzene is in the production of cyclohexane, a nylon precursor. Toluene, the second largest aromatic in BTX/HPG, is used in refinery streams such as gasoline blending for its octane value. Xylenes may either be used in refinery streams for gasoline blending or further separated by isomers for chemical applications.

Physical/Chemical Properties:
BTX/HPG is classified by the U.S. Department of Transportation and by Occupational Health and Safety Administration (OSHA) as a Flammable Liquid based on its low flash point ($<20^{o}$ F). BTX/HPG is not considered a highly reactive material. Maintenance of special handling and storage procedures is required.

Health Information:
BTX/HPG is not expected to be acutely toxic by the inhalation, oral, or dermal route of exposure. However, ingestion or subsequent vomiting may present an aspiration hazard. Breathing of vapors at concentrations above the recommended exposure standards of the components can cause central nervous system effects (e.g. drowsiness, lightheadedness etc.); and, based on data on some of the components, inhalation of very high doses of BTX/HPG may weakly sensitize the heart to epinephrine (cardiac sensitization). BTX/HPG may cause skin and respiratory tract irritation. Prolonged and repeated

exposure to BTX/HPG at high concentrations may cause serious health effects, including adverse effects in several organ systems, developmental toxicity and cancer. However, occupational exposure to BTX/HPG is low due to manufacture and handling in closed systems and non-occupational exposure is not expected.

Environmental Information:
BTX/HPG is expected to be toxic to aquatic organisms but is not expected to bioconcentrate. Since BTX/HPG is manufactured and handled in closed systems, and is transported a short distance in closed systems, environmental exposure to BTX/HPG is expected to be low. If BTX/HPG is accidentally released into the environment, it is expected to primarily evaporate to air, where it will rapidly degrade (hours to days). The BTX/HPG components that do not evaporate quickly are expected to be highly mobile in soil and may reach ground water. Degradation of some components in soil and groundwater is expected to occur within a period of days, and other components are likely to degrade over extended periods of time. It is not expected to accumulate to present an environmental hazard.

Exposure Potential:
Exposure to BTX/HPG in occupational and non-occupational settings is expected to be very limited. BTX/HPG is handled in closed systems and protective equipment is used. Worker exposure is kept to a minimum.

- *Workplace use*: This refers to potential exposure to BTX/HPG to persons in a manufacturing facility or through various industrial applications. Manufacturing and transport involving BTX/HPG are usually conducted in closed systems, so human exposure is expected to be very limited. Limited exposure may occur during sampling, during the transfer from the storage tank to the barge or during barging operations.
- *Consumer use*: There is no direct consumer use of BTX/HPG.
- *Potential environmental release*: BTX/HPG is stored and transported in closed systems. Exposure to the environment is expected to be very low. Chevron Phillips Chemical is committed to operating in an environmentally responsible manner and has adopted the American Chemistry Council's Responsible Care® initiative.

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. To that end, Material Safety Data Sheet and certificate of analysis are provided to the customers. In addition, we have completed a product risk assessment to evaluate the potential risks associated with the distribution and use of BTX/HPG.

Regulatory Information:
Regulations exist that govern the manufacture, sale, transportation, use and/or disposal of BTX/HPG. These regulations may vary by city, state, country or geographic region.

Additional helpful information may be found by consulting the relevant product Material Safety Data Sheet and local and Federal regulations.

Sources of Additional Information:

- Organization for Economic Cooperation and Development (OECD) - eChemPortal web-based search tool (use applicable CAS No): http://webnet3.oecd.org/echemportal/
- U.S. Environmental Protection Agency (US EPA) - High Production Volume Information System (HPVIS): http://www.epa.gov/hpvis/index.html
- European Chemicals Agency (ECHA) – Information on Registered Substances: http://apps.echa.europa.eu/registered/registered-sub.aspx\
- Chevron Phillips Chemical's olefins product website: http://www.cpchem.com/bl/olefins/en-us/Pages/Products.aspx
- Chevron Phillips Chemical's Material Safety Data Sheets: http://www.cpchem.com/en-us/pages/msdssearch.aspx

Conclusion:

BTX/HPG is primarily used for benzene extraction. BTX/HPG is flammable. Exposure at high levels may cause central nervous system effects. BTX/HPG is classified as human carcinogen based on the presence of benzene, a major component of BTX/HPG. Benzene is classified as a known human carcinogen by various regulatory agencies worldwide. Appropriate personal protective equipment practices and labeling, storage, and transportation procedures must be followed. Further, 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 BTX/HPG.

Contact Information:

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