

Product Stewardship Summary Raw Pyrolysis Gas (RPG)

The product stewardship summary is intended to give general information about Raw Pyrolysis Gas (RPG). 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:

Raw Pyrolysis Gas (RPG), also known as Debutanized Aromatic Concentrate (DAC), is an amber liquid with an olefinic odor containing up to 80% benzene. RPG is a by-product of ethylene production. It is a complex combination of hydrocarbons produced by the distillation of products from the ethylene manufacturing process. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C5 through C11.

CAS Number: 68921-67-5 CAS name: HYDROCARBONS, ETHYLENE-MANUF.-BY-PRODUCT DISTN. RESIDUES

Synonyms: Aromatic Concentrate, Aromatic Distillate, DAC, Debutanized Aromatic Concentrate, Debutanizer Bottoms, Dripolene, Pygas, Pyrolysis Gasoline, Raw Aromatic Concentrate, Raw Pyrolysis Gasoline, RPG

Product Uses:

There are no consumer uses of RPG. There are no consumer uses of RPG. Most RPG is sold externally as a feedstock or consumed as an intermediate for the production of Isoprene Feedstock, Hydrogenated Pyrolysis Gasoline, and Heavy Aromatic Distillate.

Physical/Chemical Properties:

RPG is classified by the U.S. Department of Transportation and by Occupational Health and Safety Administration (OSHA) as a Flammable Liquid. Maintenance of special handling and storage procedures is required.

Health Information:

Based on data for the components, RPG may be harmful if swallowed; also, 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 RPG may weakly sensitize the heart to epinephrine (cardiac sensitization). RPG may cause eye, skin, and respiratory tract irritation. Based on data for components, prolonged and repeated exposure to RPG at high concentrations may cause adverse effects, including cancer, developmental toxicity, and damage to several organ systems. RPG may cause genetic toxicity. However, occupational exposure to RPG is low due to manufacture and handling in closed systems and non-occupational

exposure is expected to be negligible

Environmental Information:

Based on available data for the components, RPG is expected to be toxic to aquatic organisms but is not expected to bioaccumulate. Since RPG is manufactured and handled in closed systems and is transported short distances closed systems, environmental exposure to RPG is expected to be very low. If RPG is released to water or soil, it is expected to rapidly partition into the air where it will rapidly degrade (half-life of hours to days). The RPG 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. RPG is not expected to accumulate to present an environmental hazard.

Exposure Potential:

Exposure to RPG in occupational and non-occupational settings is expected to be very limited. RPG 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 RPG to persons in a manufacturing facility or through various industrial applications. Manufacturing and transport involving RPG are usually conducted in closed systems, so human exposure is expected to be very limited. Occupational exposure may occur during sampling or at the points of loading and off-loading of barges for transport.
- *Consumer use:* There is no direct consumer use of RPG. Non-occupational exposure to RPG is expected to be negligible since RPG is mainly exported to the customer and is transported via pipeline or barge/ships.
- *Potential environmental release:* RPG is stored and transported in closed systems. Exposure to the environment is expected to be very low. Ras Laffan Olefin, Ltd (RLOC) is committed to operating in an environmentally responsible manner and has adopted the Gulf Petrochemical & Chemical Association's (GPCA) Responsible Care[®] initiative.

Risk Management:

Ras Laffan Olefin, Ltd (RLOC), 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.

Before using this product, 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/or disposal of RPG. 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: [Raw Pyrolysis Gasoline \(cpchem.com\)](http://www.cpchem.com)
- Ras Laffan Olefin, Ltd (RLOC) website: <http://www.rloc.com.qa/>

Conclusion:

RPG is mainly used to produce other products. RPG is flammable. Exposure at high levels may cause central nervous system effects. RPG is classified as human carcinogen based on the presence of benzene, a major component of RPG. 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 Safety Data Sheets and applicable regulatory guidelines and requirements, including, but not limited to, OSHA guidelines, should be consulted prior to the use or handling of RPG.

Contact Information:

<http://www.rloc.com.qa/>

May 10, 2024