

Product Stewardship Summary Pyrolysis Gasoline Blend (Pygas Blend)

The product stewardship summary is intended to give general information about Pyrolysis Gasoline Blend (Pygas Blend). 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:

Pyrolysis Gasoline Blend (Pygas Blend) is a blend of Raw Pygas (75%) and C9+ (25%). It is a brown color liquid with a pungent odor. Raw Pygas 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. And whereas, C9+ is a heavy hydrocarbons stream generated within the facility.

CAS Number	CAS name
68921-67-5	Hydrocarbons, Ethylene-ManufBy-Product Distn. Residues
68477-53-2	Distillates (Petroleum), Steam-Cracked, C5-12 Fraction

Product Uses:

Pyrolysis Gasoline Blend (Pygas Blend) is used mainly for Manufacturing Formulation & (re)packing of substances and mixtures. It can also be used as an intermediate in the Industrial site.

Physical/Chemical Properties:

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

Health Information:

Based on data for the components, Pyrolysis Gasoline Blend (Pygas Blend) may be harmful if swallowed or if inhaled; 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 Pyrolysis Gasoline Blend (Pygas Blend) may weakly sensitize the heart to epinephrine (cardiac sensitization). Pyrolysis Gasoline Blend (Pygas Blend) may cause eye, skin, and respiratory tract irritation. Based on data for components, prolonged and repeated exposure to Pyrolysis Gasoline Blend (Pygas Blend) at high concentrations may cause adverse effects, including cancer, developmental toxicity, and damage to several organ systems. Pyrolysis Gasoline Blend (Pygas Blend) may cause genetic toxicity. However, occupational exposure to Pyrolysis Gasoline Blend (Pygas Blend) 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, Pyrolysis Gasoline Blend (Pygas Blend) is expected to be toxic to aquatic organisms, but this substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB). Since Pyrolysis Gasoline Blend (Pygas Blend) is manufactured and handled in closed systems and is transported short distances closed systems, environmental exposure to Pyrolysis Gasoline Blend (Pygas Blend) is released to water or soil, it is expected to be very low. If Pyrolysis Gasoline Blend (Pygas Blend) 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 Pyrolysis Gasoline Blend (Pygas Blend) 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. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Exposure Potential:

Exposure to Pyrolysis Gasoline Blend (Pygas Blend) in occupational and non-occupational settings is expected to be very limited. Pyrolysis Gasoline Blend (Pygas Blend) 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 Pyrolysis Gasoline Blend (Pygas Blend) to persons in a manufacturing facility or through various industrial applications. Manufacturing and transport involving Pyrolysis Gasoline Blend (Pygas Blend) 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.
- <u>Consumer use</u>: There is no direct consumer use of Pyrolysis Gasoline Blend (Pygas Blend). Non-occupational exposure to Pyrolysis Gasoline Blend (Pygas Blend) is expected to be negligible since it is mainly exported to the customer and is transported via pipeline or barge/ships.
- <u>Potential environmental release</u>: Pyrolysis Gasoline Blend (Pygas Blend) 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. Ras Laffan Olefin, Ltd (RLOC) 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 Pyrolysis Gasoline Blend (Pygas Blend). 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\
- Ras Laffan Olefin, Ltd (RLOC) website: http://www.rloc.com.ga/

Conclusion:

Pyrolysis Gasoline Blend (Pygas Blend) is mainly used to produce other products. Pyrolysis Gasoline Blend (Pygas Blend) is flammable. Exposure at high levels may cause central nervous system effects. Pyrolysis Gasoline Blend (Pygas Blend) is classified as human carcinogen based on the presence of benzene, a major component of Pyrolysis Gasoline Blend (Pygas Blend). 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 Pyrolysis Gasoline Blend (Pygas Blend).

Contact Information:

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

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