



TotalEnergies

Refining & Chemicals

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Safe Handling of Cray Valley Polybutadienes

Product Identification

This document covers liquid polybutadiene resins under the trade names Krasol®, Poly BD®, Ricobond® and Ricon® as well as solid dispersions under the trade names Ricobond® and Ricon®. Some of the products are copolymers, mixtures, or functionalized polymers.

General

As with any chemical, the potential health and safety hazards associated with Cray Valley products should be understood to ensure that they are used safely. Review each product's Safety Data Sheet (SDS), which includes specific hazard and precautionary information, prior to working with these materials.

Should you require assistance in an emergency involving a Cray Valley product, please do the following. For Chemical Emergency ONLY (spill, leak, fire, exposure, or accident), call CHEMTREC at 800-424-9300. For ALL other inquiries about this product, call Cray Valley at 877-US1-CRAY (877-871-2729).

Health Hazards

These products are polybutadiene and polybutadiene-based polymers. Due to their relatively high molecular weights, these resins are not expected to be ingestion, inhalation, or skin absorption hazards. Some may cause slight eye and skin irritation. In addition, respiratory tract irritation may occur upon exposure to vapors that may be generated during processing.

Some Krasol® and Poly BD® products contain an additive that is a suspected human reproductive toxin, based on animal tests. While there is no specific evidence that these chemicals cause harm at the levels at which they are present in Krasol® and Poly BD®, it is recommended practice to minimize exposure. The SDS includes a warning when appropriate under the regulations.

Some Cray Valley polybutadiene products are solutions in hydrocarbon solvents such as toluene. These solvents may have a variety of health hazards; those hazards are described on the SDS.

Other Hazards

Cray Valley liquid polybutadienes have low flammability. In the event of a fire, they may become inhalation hazards. Vapors and combustion products from burning materials may be smoky, extremely irritating, or toxic. Products containing solvents may be highly flammable.

Fire fighters should wear self-contained breathing apparatus in addition to eye, face, and body protection. Extinguish fires with dry chemical, foam, carbon dioxide, or water fog or spray from a safe distance or protected location. Cool exposed containers with water fog or spray from a safe distance.

Ricon® and Ricobond® solid dispersions can generate internal heat when stored in large volumes, with the potential to spontaneously catch fire. The packaging used for these products is designed to hold safe volumes under normal conditions. Multiple packages of these products must not be combined into a single larger container, and ambient temperature must be controlled below 90 °F (32 °C).



These solid products may also be combustible dusts, or they may become combustible dusts if sufficiently small particles are generated and suspended in air. Avoid raising dust clouds, which can create an explosion risk. Eliminate and control ignition sources and use good housekeeping practices during storage, transfer, and handling of these products.

Handling

As with all industrial chemicals, it is important to prevent exposure by using protective equipment, safe work practices and engineering controls.

The following precautions should be observed for general handling practices:

- ensure a clean, well-ventilated work environment;
- avoid skin contact by wearing impervious gloves;
- wear eye protection such as safety glasses with side shields;
- wear other protective equipment as appropriate;
- review the SDS prior to working with a material.

If skin contact does occur, wash affected areas immediately with soap and water. Rinse thoroughly. If eye contact occurs, immediately flush the eye(s) with clean water for at least 15-20 minutes. Seek medical attention if adverse symptoms are observed.

Storage

All products should be stored indoors, out of direct sunlight, under controlled temperature conditions unless noted on the SDS. Products should be stored away from reactive materials such as oxidizers and acids and away from heat, sparks, open flame, and other ignition sources. Contamination with incompatible materials listed in the SDS must be avoided. Contact with moisture should also be prevented.

All products should be used according to the manufacturer's instructions, including adherence to shelf-life recommendations.

Transportation

Most liquid polybutadiene resins are not controlled under transportation regulations. Products containing flammable solvents may be classified as flammable liquids. Ricon® and Ricobond® solid dispersions are classified as self-heating solids. See the SDS for more information about transportation.

Environmental Protection

Releases to the air are regulated by state and federal authorities. Spill and leak control measures are used in manufacturing including capture and treatment of any water which might be contaminated. Releases to the air could occur from leaks in processing equipment or during sampling, maintenance, cleaning, or transfer operations. Emissions to air and water can be minimized during manufacture and use. These products are not readily biodegradable in wastewater. Solvents contained in some products may be hazardous to aquatic organisms, but products not containing solvents are not expected to be toxic.

Consumer Use

Cray Valley does not directly sell any products for use by consumers, although they may be formulated into consumer products by customers of Cray Valley. The intended use conditions are in industrial workplaces where any potential exposure to workers and the environment are tightly controlled and confined through industrial hygiene protocols and



processes, engineering of the manufacturing equipment, and the use of personal protective equipment. Industrial users of these products should ensure that the resulting formulations are safe for their intended uses.

Disposal

Persons handling empty product containers should wear protective equipment and handle containers in an area away from ignition sources because they may contain residual product. Recommended cleaning procedures for empty steel drums include washing the containers with a strong soap and water solution, followed by a thorough water rinse. If necessary, a 15% caustic solution followed by a water rinse can be used to further clean containers. All wash and rinse solutions must be disposed of in accordance with federal, state, and local regulations.

Polybutadiene products are generally not RCRA hazardous wastes. However, it is the responsibility of the waste generator to determine if the product meets the criteria of a hazardous waste at the time of disposal (see 40 CFR 261). Disposal options for these products include landfilling solids at permitted sites, fuel blending or incinerating liquids. Disposal must comply with federal, state, and local regulations.

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