



## Product Stewardship Summary K-Resin<sup>®</sup> Styrene Butadiene Copolymer

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

### Chemical identity:

Chemical Abstracts Service (CAS) Name:

Benzene, ethenyl-, polymer with 1,3-butadiene

Chemical Abstracts Service (CAS) Number:

9003-55-8

Trade Name:

K-Resin<sup>®</sup> Styrene Butadiene Copolymer

### Category Justification:

K-Resin<sup>®</sup> Styrene Butadiene Copolymers (SBC) is the trademark for a series of styrene butadiene copolymers manufactured by Chevron Phillips Chemical Company LP in Pasadena, Texas as well as other locations.

### Product Overview:

K-Resin<sup>®</sup> SB Copolymers, by virtue of their sparkling clarity, high gloss and impact resistance, are ideally suited for a wide variety of applications.

K-Resin<sup>®</sup> SBC is chemically stable, have very low flammability and are expected to show very low toxicity. K-Resin<sup>®</sup> SBC contains very low residual monomer, typically less than 10 ppm styrene. Residual butadiene levels are not detectable using analytical methodology sensitive to 1 ppm.

All commercial grades meet the specifications of the United States FDA Food Packaging Regulation 21 CFR 177.1640 (polystyrene and rubber modified polystyrene) or an effective Food Contact Notification (FCN). This product is listed on the U.S. FDA type III DMF #2406. Most commercial grades also meet EU Directive 2002/72/EU and all its amendments.

K-Resin<sup>®</sup> SBC do not contain:

- Allergens, such as tree nuts, peanuts, eggs, milk wheat, soybeans, fish and crustaceans.

- Bisphenol A
- Phthalates
- Vinyl Chloride Monomer

**Product Uses:**

K-Resin<sup>®</sup> SB Copolymers, alone or in blends, can be used across the spectra of conventional processing techniques; including sheet, film and profile extrusion, thermoforming, and injection and blow molding.

Specific product applications include, medical components, toys, candy twist wrap, shrink films, single service food items, garment hangers, food and consumer packaging.

**Physical/chemical properties:**

K-Resin<sup>®</sup> Styrene Butadiene Copolymers contain differing ratios of styrene and 1,3-butadiene monomers (not less than 60 percent styrene monomer). As sold by Chevron Phillips Chemical Company, at ambient temperature, K-Resin<sup>®</sup> SBC is a clear solid (pellet).

**Health Information:**

Medical applications testing of K-Resin<sup>®</sup> SBC has been performed. Results of these tests indicate that K-Resin<sup>®</sup> SBC is not mutagenic, cytotoxic nor irritating to the skin and eyes. Any residual styrene and butadiene remaining in K-Resin<sup>®</sup> SBC is not expected to have any adverse effects on the reproductive system. The polymerization process used to manufacture K-Resin<sup>®</sup> SBC is very effective at monomer utilization, so that residual monomer levels in K-Resin<sup>®</sup> SBC are very low and hence the health hazards posed by the individual components are very low.

**Environmental Information:**

Wastes associated with the manufacture of K-Resin<sup>®</sup> SBC are handled and disposed of in accordance with federal, state and local regulations. Several methods can be used to dispose of the product. Post consumer recycling: K-Resin<sup>®</sup> SBC as shipped by Chevron Phillips Chemical Company LP, can use the resin designation code '6' (polystyrene). Landfills and the incineration process can also be used to dispose of K-Resin<sup>®</sup> SBC.

In the event of an accidental spill, K-Resin<sup>®</sup> SBC is not expected to degrade in the environment. Fish and birds may eat K-Resin<sup>®</sup> SBC pellets, which may obstruct their digestive tracts. Exposure of the environment to K-Resin<sup>®</sup> SBC is not expected to cause other adverse effects.

**Exposure Potential:**

Non-occupational exposure to K-Resin<sup>®</sup> SBC: As sold by Chevron Phillips Chemical Company, (in solid pellet form) and in the end use 'part' form, K-Resin<sup>®</sup> SBC is chemically stable. As a result, non-occupational exposure to KR is not expected.

Occupational exposure to K-Resin<sup>®</sup> SBC can occur during processing of the resin. Health hazards during this process are associated with over exposure to off-gasses

generated. To avoid these off-gasses, use process enclosures, proper ventilation, respiratory protection, or other engineering controls.

Wear eye protection such as safety glasses, chemical goggles, or face-shields if engineering controls or work practices are not adequate to prevent eye contact. If this material is heated, and if engineering controls or work practices are not adequate to prevent skin contact, wear insulated clothing and gloves.

Potential environmental release: There may be some potential for exposure to the environment from an accidental release during transportation of the product, however, exposure due to release is believed to be very low. K-Resin® SBC is not readily biodegradable and will persist in the environment. Chevron Phillips Chemical Company LP is committed to operating in an environmentally responsible manner.

**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.

With regard to K-Resin® SBC, avoid contact of heated polymer with eyes and skin as burns can result. If heated polymer contacts the eyes or skin, use water to flush eyes and to cool skin. Proper personal protective equipment (described in the section above) should be used.

Finally, when handling K-Resin® SBC products or blends of K-Resin® SBC, make sure to consult the relevant product Material Safety Data Sheet and review applicable regulatory guidelines and requirements, including, but not limited, to OSHA guidelines.

**Regulatory Information:**

Regulations exist that govern the manufacture, sale, transportation, use and/or disposal of K-Resin® SBC products. These regulations may vary by city, state, country or geographic region so consult the regulation that is appropriate for your location. Additional helpful information may be found by consulting the relevant product Material Safety Data Sheet.

**Sources of Additional Information:**

- Organization for Economic Cooperation and Development (OECD) - eChemPortal web-based search tool (use applicable CAS No): <http://webnet3.oecd.org/echempportal/>
- European Chemical Substances Information System (ESIS) <http://ecb.jrc.it/esis/>
- Our products website [http://www.cpchem.com/enu/k\\_resin.asp](http://www.cpchem.com/enu/k_resin.asp)
- Environmental Health & Safety Information [http://www.cpchem.com/enu/k\\_resin\\_15940.asp](http://www.cpchem.com/enu/k_resin_15940.asp)
- Material Safety Data Sheet [http://www.cpchem.com/enu/k\\_resin\\_13978.asp](http://www.cpchem.com/enu/k_resin_13978.asp)
- Processing Guides [http://www.cpchem.com/enu/k\\_resin\\_13935.asp](http://www.cpchem.com/enu/k_resin_13935.asp)

**Conclusion:**

K-Resin® Styrene Butadiene Copolymers are widely used in the production of consumer goods, including medical components, toys, candy wrap, single service food items, garment hangers and packaging. As sold by Chevron Phillips Chemical Company, (in solid pellet form) and in the end use 'part' form, K-Resin® SBC is chemically stable. However, be sure to consult the Material Safety Data Sheet and other appropriate guidelines (such as Processing Technical Information) prior to use of these polymers.

**Contact Information:**

<http://www.cpchem.com/>

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