



Safety Data Sheet

USA

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24 Hour Emergency Assistance: CHEMTREC - International: +1 703 527 3887
General Assistance Number: +1 800 4 Kraton

EUROPE

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For all other inquires, please contact your Sales Representative or the Technical Support Line: +32 10 470 697

Visit our Website at www.kraton.com

Section 1. Material/Company Identification

PRODUCT NAME

Kraton Polymers SBS OE D Products:
(This SDS covers all alphanumeric suffixes for the following products. Suffixes designate location of manufacture, dusting agent, product form and/or new commercial grade):

D2104, D2109, D2122

CHEMICAL FAMILY

Styrene-Butadiene-Styrene Polymer

PRODUCT FAMILY

Thermoplastic Elastomer - Oiled

CORPORATE OFFICE

Kraton Polymers LLC
15710 John F. Kennedy Blvd. Suite 300
Houston, Texas 77032, USA
General Assistance: +1 281-504-4700
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EUROPEAN CENTRAL OFFICE

Kraton Polymers Nederland B.V.
John M. Keynesplein 10
1066 EP Amsterdam, The Netherlands
General Assistance: +31 (0) 20 2017 697

Section 2. Hazards Identification

HMIS Hazard Class

Health: 0 Flammability: 1 Physical Hazards: 0

Human Health Hazards

None

Environmental Hazards

None

Safety Hazards

Electrostatic charges may be generated during handling. Risk of self-ignition of bulk product above certain temperatures (Refer to Section 10). Specifically for milled grades and accumulated polymer dust: dust explosion could occur.

Special Notes

These components are synthetic rubber compounds, which are essentially non-toxic. Material is non-irritating. If polymer dusts are generated, they could scratch the eyes and cause minor irritation to the respiratory tract.

Section 3. Composition

SUBSTANCES ARE NON-HAZARDOUS and NOT CLASSIFIED

Section 4. First Aid Measures

Symptoms and Effects

None

Inhalation

If dust is inhaled, obtain medical attention.

Skin

Flush skin with water.

Eye

Flush eyes with water.

Ingestion

None

Advice to physicians

Treat symptoms.

Section 5. Fire Fighting Measures

NFPA 704 Hazard Class

Health: 0 Flammability: 1 Instability: 0

Specific Hazards

Not flammable but will burn. Combustion products may include carbon monoxide and carbon dioxide.

Extinguishing Media

Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable Extinguishing Media

Water in a spray may disperse fire.

Protective Equipment

Full protective clothing and self contained breathing apparatus.

Section 6. Accidental Release Measures

Personal Precautions

Avoid generating dust.

Environmental Precautions

None

Clean-up Methods - Small Spillage

Shovel up and place in a labeled, sealable container for subsequent disposal as required by local, state, federal, international or country specific regulations.

Clean-Up Methods - Large Spillage

Transfer to a labeled, sealable container for product recovery or disposal as required by local, state, federal, international or country specific regulations.

Protective Measures

Wear appropriate personal protective equipment (refer to Section 8) when responding to spills.

Spill Management

Shovel and sweep up or use industrial vacuum cleaner. Proper disposal should be evaluated based on the regulations of this material (refer to Section 13). Prevent entry into waterways, sewer, or confined areas.

Section 7. Handling and Storage

Handling

Avoid generation of dust. Take precautionary measures against static discharges, earth/ground all equipment. Do not breathe dust. Use local exhaust over processing area.

When processing Kraton Polymers products, maintain a fire watch if the material reaches 225 deg. C (437 deg. F) for Kraton IR and Kraton D (polymers and compounds), and 280 deg. C (536 deg. F) for Kraton G (polymers and compounds). The temperatures listed are indicated only for safety reasons (risk of fire and product degradation) and are not recommended for processing.

Degradation of the polymer (polymer breakdown) will start at lower temperatures depending on the specific processing conditions. Therefore, operating below these temperatures does not guarantee the absence of product degradation.

For more information about processing precautions, consult the Kraton Polymers product data documents or other technical literature available from your sales representative.

Static charge buildup can be a potential fire hazard when used in the presence of volatile, flammable vapors or in high airborne dust concentrations. All solid forms of Kraton polymers can accumulate an electrostatic charge when rubbed, chafed or abraded and can charge unearthed components. Considering the risks of electrostatic discharges handling the products in potentially flammable atmospheres should be evaluated carefully. Suitable precautions should be taken at all times, in particular when emptying bags or other packaging. Earth/Ground equipment to dissipate charges that may develop. For more information, consult the Kraton Polymers Static Electricity Safety Bulletin (Document Number K0073) available from your sales representative.

Storage

Keep container dry. Keep in a cool, well-ventilated place. All Kraton polymers contain an antioxidant to aide in stabilizing the polymer over its recommended use and storage conditions. Exposure to direct sunlight or elevated temperatures over prolonged periods of time consumes the antioxidant at an increased rate and may lead to self heating and thermal degradation. Avoid storage under pressure or at elevated temperatures to minimize particulate clustering. Do not stack Flexible Intermediate Bulk Containers (FIBCs) or palletized bags.

Storage Temperatures

Ambient.

Product Transfer

Take precautionary measures against static discharge. Earth/Ground all equipment.

Other Information

Kraton polymers may accumulate static charge during transport, handling and processing. Reducing the velocity of material transfer will reduce the likeliness that a charge will be created.

Section 8. Exposure Controls/Personal Protection

Occupational Exposure

In the absence of occupational exposure standards for this product, it is recommended that the following be adopted:

Nuisance Dust TLV

TWA (8 h) 10 mg/m³

If dust is generated.

Engineering Control Measures

Use local exhaust ventilation.

Respiratory Protection

Where local exhaust ventilation is not practicable and odors are detected use a negative pressure half face respirator equipped with a cartridge designed to protect against organic vapors and if dust is also present a particulate pre-filter should also be used. For high airborne dust concentrations use a cartridge designed to be used against nuisance dust.

Hand Protection

Cloth gloves if desired.

Eye Protection

Dust-tight mono goggles.

Body Protection

Standard issue work clothes which may include: apron, safety shoes or boots as necessary.

Section 9. Physical and Chemical Properties

Physical State: Solid

Color: Translucent, White or Natural

Odor: Essentially odorless

Flash Point: None

Density: Typical between 880-950 kg/m³ at 20 Deg. C

Specific Gravity: <1

Bulk density (for solids): Typical 300-400 kg/m³ at 20 Deg. C

Solubility (In Water): Insoluble

N-octanol/water partition coefficient (log Pow): Not applicable

All other properties are not applicable.

Residual monomers

We do not routinely measure but analysis of representative products indicate isoprene, styrene, and 1,3-butadiene are not present at the detection limit of our instrumentation. Based on our manufacturing processes, we believe these results are typical for our polymers.

Section 10. Reactivity and Stability

Stability

Stable under ambient conditions. Oxidizes exothermically above ambient temperature.

Conditions to Avoid

Avoid contact with strong oxidizing agents. Accumulation of product in areas exposed to elevated temperatures for extended periods in air may result in self-heating and auto ignition. Avoid elevated temperatures in storage for prolonged periods of time.

Hazardous Decomposition Products

Hazardous vapors from heated product are not expected to be generated under normal processing temperatures and conditions.

None under ambient conditions. Although highly dependent on temperature and environmental conditions, a variety of thermal decomposition products may be present if the product is over heated, is smoldering or catches fire. Typical decomposition products are ultimately oxides of carbon.

Section 11. Toxicological Information

Basis for Assessment

Toxicological data has not been determined for this product. Information is based on similar products.

Acute Toxicity Oral

Expected to be of low toxicity, LD50 > 2000 mg/kg

Acute Toxicity Dermal

Expected to be of low toxicity, LD50 > 2000 mg/kg

Acute Toxicity Inhalation

No data available, but not expected.

Skin Irritation

Not expected to be irritating.

Eye Irritation

Not expected to be irritating.

Skin Sensitization

Not expected to be a skin sensitizer.

Repeated Dose Toxicity

Repeated exposure does not cause toxic effects.

Mutagenicity

No data available, but not expected.

This product is not classified by the following: The International Agency for Research on Cancer (IARC), The National Toxicology Program (NTP) or The American Conference of Governmental Industrial Hygienists (ACGIH).

Other Information

Kraton Polymers products are high molecular weight polymers which are non-toxic and biologically inactive.

We do not intentionally add organic tin compounds or phthalates to our products.

These products are manufactured with synthetic raw materials that do not contain animal products or by-products.

Kraton Polymers do not contain natural rubber or natural rubber latex.

We do not use naturally occurring food allergens.

Section 12. Ecological Information**Basis for assessment**

No ecotoxicological data has been generated for this product. The information below is based on components and on similar products.

Mobility

Floats on water. Remains on surface of soil.

Persistence/Degradability

Not expected to be inherently biodegradable. Persists under anaerobic conditions.

Bioaccumulation

Not expected to bioaccumulate.

Acute Toxicity - Fish

Expected to be practically non toxic, LC/EC/IC 50 > 1000 mg/L

Acute Toxicity - Invertebrates

Expected to be practically non toxic, LC/EC/IC 50 > 1000 mg/L

Acute Toxicity - Algae

Expected to be practically non toxic, LC/EC/IC 50 > 1000 mg/L

Acute Toxicity - Bacteria

Expected to be practically non toxic, LC/EC/IC 50 > 1000 mg/L

Sewage Treatment

Expected to be practically non toxic, LC/EC/IC 50 > 1000 mg/L

Section 13. Disposal Considerations**Product Disposal**

Recover or recycle if possible, otherwise; incinerate or use a licensed landfill.

Container Disposal

Remove all packaging for recovery or disposal.

Local Legislation

Consult local, state, federal, international or country specific regulations as appropriate.

FEDERAL LEGISLATION**Resource Conservation and Recovery Act - RCRA (40CFR 261)**

If this product becomes a waste and has not been chemically altered it is not considered a hazardous waste.

Emergency Planning and Community Right-to-Know Act (EPCRA)

Not regulated.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA/Superfund)

Not regulated.

Superfund Amendments and Reauthorization Act Title III:

Section 302 - Extremely Hazardous Substances

Section 304 - Hazardous Substances

Section 311 / 312 - Hazard Communication Standard

Section 313 - Toxic Chemical List

Not regulated.

Section 14. Transport Information**US Department of Transportation (DOT) 49CFR 171-180**

This product is not classified as hazardous.

International Air Transportation Association Classification (IATA)

This product is not classified.

International Maritime Organization (IMDG)

This product is not classified.

UN, IMO, ADR/RID, ICAO Code

This product is not dangerous.

Export Administration Regulations

Does not require a license: EAR 99

Section 15. Regulatory Information

INTERNATIONAL LEGISLATION

GLOBAL CHEMICAL INVENTORY STATUS – All of the substances are acceptable for use under:

AUSTRALIA – Inventory of Chemical Substances (AICS)
CANADA – (CEPA) Domestic Substances List (DSL)
CHINA – Inventory of Existing Chemical Substances (IECSC)
EU – European Inventory of Existing Chemical Substances (EINECS)
JAPAN – Inventory of Existing and New Chemical Substances (IENCS)
KOREA – Existing Chemicals Inventory (KECI)
NEW ZEALAND – New Zealand Inventory of Chemicals (NZIOC)
PHILIPPINES – Inventory of Chemicals and Chemical Substances (PICCS)
USA – Toxic Substances Control Act (TSCA)

This document is compliant with the Globally Harmonized System (GHS) for the classification, labeling, and packaging (CLP) of substances and mixtures.

EU REACH Article 31 (Requirements for Safety Data Sheets) and Japan Ministry of Economy, Trade, and Industry (METI), Ministry of Health, Labor, and Welfare (MHLW) and Ministry of the Environment (MOE).

EU Directive 67/548/EEC, 1999/45/EC, 91/155/EEC, as amended by GHS (CLP) of substances and mixtures
Not classified.

OSHA Hazard Communication Standard 29FR 1910.1200

Not classified.

AUSTRALIAN MSDS LEGISLATION: National Code of Practice for the Preparation of Material Safety Data Sheets, 2nd Edition [NOHSC: 2011 (2003)] under s.38(i) of the *National Occupational Health and Safety Commission Act 1985* (Cwlth).

Not regulated.

CANADA Workplace Hazardous Materials Information System (WHMIS)

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required. This is NOT a WHMIS controlled product.

EU Regulation (EC) 1907/2006 REACH

Polymers are exempted from registration and evaluation. Therefore, Kraton products are exempted by regulation. Annex V exempts from registration additives used in our polymers as antioxidants, defoaming agents, stabilisers, etc., and exempts substances that are naturally occurring that have not been chemically modified, Article 2(7)(b). Use of our products in medical devices regulated by Council Directive 90/385/EEC of 20 June 1990 and 93/42/EEC of 14 June 1993 and Directive 98/79/EC, or used in cosmetic products by Directive 76/768/EEC or used as a food contact material under Regulation (EC) No 1935/2004 are also exempted.

EU Directive 2002/95/EC Restrictions of Hazardous Substances (RoHS) in electrical and electronic equipment

Restricted substances: Lead, Mercury, Cadmium, Hexavalent Chromium, PBB and PBDE

Not regulated.

EU Directive 2002/96/EC Waste Electrical and Electronic Equipment (WEEE)

Not regulated.

EU Directive 91/689/EEC Hazardous Waste

Not regulated.

EU Directive 94/62/EC as amended by **2004/12/EC (Packaging and packaging waste)**

Not regulated. The product meets the requirement for the total amount of cadmium, chromium, lead and mercury to be less than 100 parts per million.

EU Directive 2000/53/EC as amended in 2002 (**End of life vehicle**)

Not regulated.

EU Directive 2037/2000 Ozone Depleters (Class I or II) as defined in Montreal Protocol

Not regulated.

Article 19g(5) Federal Water Management Act (WHG) of 17 May 1999 (amended in July 2005)

Our products are classified into the Water Hazard Class WGK 1.

International Conventions

Chemical Weapons, Rotterdam PIC (Prior Informed Consent), Persistent Organic Pollutants (POP), Drug Precursors

Not regulated.

UNITED STATES: FEDERAL REGULATIONS

Food and Drug Administration (FDA) 21 CFR 170-199

Products on this SDS may conform with uses under food contact regulations as an article or a component of an article intended for food contact. Most Kraton Polymers comply with worldwide regulations for food contact applications, including those of the Food and Drug Administration (FDA) and the European regulatory agencies. For specific clearances, consult your Sales Representative.

Toxic Substances Control Act (TSCA) Section 4, 5(a)(2), (e), (f), 6, 7 or 12(b)

Not regulated.

Clean Air Act Amendments Section 602 (Class I or II) Ozone Depleters

Not regulated.

Clean Air Act Section 111 Volatile Organic Compounds (VOC)

Not regulated

Clean Air Act Section 112 Hazardous Air Pollutants (HAP)

Not regulated.

Clean Water Act Section 307 Priority Pollutants

Not regulated.

UNITED STATES: STATE REGULATIONS

Right-to-Know Laws (Massachusetts, New Jersey, New York State, Pennsylvania)

Not regulated.

Coalition of Northeastern Governors (CONEG)

Not regulated. The product meets the requirement for the total amount of cadmium, chromium, lead and mercury to be less than 100 parts per million.

Revision #: **03**

Revision Date: **May 1, 2012**

Revisions since last change: **Changes in Sections 14 and 15.**

Medical Devices, Healthcare and Cosmetic Applications and Trademark Usage

Kraton Polymers' products should not be used in any devices or materials intended for implantation in the human body as defined by the U.S. Food and Drug Administration under 21 CFR 812.3(d) and 21 CFR 860.3(d). No customer of Kraton Polymers LLC and/or any of its direct or indirect subsidiaries ("Kraton Polymers"), or any other party, shall, without the express written consent of Kraton Polymers for each specific, individual application, be permitted to manufacture, use, sell, process, or otherwise supply, directly or indirectly, any Kraton Polymers Product, or any compound containing or made from any Kraton Polymers Product, in any of the following applications:

1. Cosmetics (exclusive of packaging or delivery applications);
2. Drugs and other Pharmaceuticals (exclusive of packaging or delivery applications);
and
3. Medical devices; provided, that any medical device that satisfies any one of the following definitions shall not be deemed to fall within the foregoing medical device restriction: (a) any medical device falling within the definition of either a Class I or Class II medical device, as defined in any federal law or regulation of the United States or Canada, or (b) any medical device falling within the definition of a Class I or Class II(a) medical device, as defined by any applicable regulation of the European Union or any member state thereof.

No customer of Kraton Polymers, or any other party, shall be permitted to use any of Kraton Polymers' trade names, trademarks, logos or other similar identifying marks or characteristics for the manufacture, sale, or promotion of its cosmetics, drugs, pharmaceutical products/materials, or medical devices.

Please contact your Kraton Polymers Sales Representative for more details before using our products in these specific applications.

Information on the food packaging clearances of individual products is available from Kraton Polymers at 800-457-2866.

Other information

© Kraton and the Kraton logo are trademarks owned by the Kraton Polymers Group of Companies.

Disclaimer

The information in this document is based on our current knowledge and is intended to describe the product for the purposes of Health, Safety and Environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. Advice in this document relates only to the product as originally supplied. Where other ingredients are added in the processing of this product, advice should be sought on their safe handling and use.

Regulatory Fact Sheet

There are regional lists of restricted substances requiring evaluation of their use in specific countries. We access their presence in our products under our Product Stewardship process.

Our raw material evaluation and supplier regulatory information review allows us to qualify that these substances are **not intentionally added to our products**. If there is a recognized amount present, we will identify it at its regulatory threshold level.

As an element of our Product Stewardship process, this fact sheet contains commonly requested information that supplements our Safety Data Sheets and reflects our information at the time of publication.

We make no warranty or guarantee. It is the user's responsibility to evaluate this information as it applies to their intended use(s).

These substances are not intentionally added to our products.

Acetaldehyde	Melamine
Acrolein	Formaldehyde
Acrylamide	Genetically Modified Organisms (GMOs)
Alkyl Phenols & Ethoxylates: <i>Directive 2003/53/EC</i>	Halogenated Phenyls: <i>Directive 2003/11/EC; 76/769/EEC</i>
Asbestos	Halogens
Azo Compounds	Natural Rubber Latex
<i>Bioterrorism Act of 2002</i> – Our facilities are not food facilities and are not required to register	Organo-tin Compounds
Bisphenol A	Ozone Depleting Substances (ODS) <i>EC 2037/200; EC 1907/2006; 40 CFR 82, E, ODS</i>
Brominated Flame Retardants	PBB's, PBDE's, PBDO's, PCB's
Carcinogens: <i>Directive 67/548/EEC; Directive 76/769/EEC</i>	PFOS, PFAS and PFOA's
Chlorinated paraffins	Phthalates: <i>Directive EC 2005/84/EC; 199/815/EC</i>
Cosmetic (CMRs): <i>Directive 76/768/EEC</i>	Polycyclic Aromatic Hydrocarbons: <i>Directive 208/2005/EC</i>
Creosote	Polyvinyl Chloride (PVC)
Diglycidyl Ethers: <i>Directive 2002/16/EC; 2004/13/EC</i>	Substances of Very High Concern (SVHC): Not present at > 0.1%
Dioxins and Furans	Trisnonylphenol phosphite
Endocrine disruptors	VOC's: <i>Directive 2004/42/EC</i>

REGULATORY WEBSITES:

http://ec.europa.eu/food/food/biosafety/animalbyproducts/index_en.htm
http://ec.europa.eu/food/food/labellingnutrition/foodlabelling/index_en.htm
http://ec.europa.eu/food/food/chemicalsafety/foodcontact/legisl_list_en.htm
<http://ec.europa.eu/environment/waste/packaging/legis.htm>
<http://www.legaltext.ee/text/en/T70504.htm>
<http://www.bfr.bund.de/>
<http://www.crc-mep.org.cn/index.aspx>

<http://ecb.jrc.ec.europa.eu/>
<http://www.epa.gov/air/caa/>
<http://www.nicnas.gov.au/>
<http://europa.eu>

Date: January 2012

Dear Customer:

Subject: **REACH Compliance for Kraton Products**

We are informing you of our continuing actions to comply with REACH.

REACH (EC 1907/2006) is a European regulation establishing the safe use of chemical substances. It requires the **R**egistration, **E**valuation, **A**uthorization and restriction of **C**hemical substances. The regulation entered into force on 1 June 2007 with first registration deadline by 30 November 2010.

Our Commercial, Development and Research grade polymers and additives are exempt from registration by regulation:

- According to Article 2 – Application 9, Titles II (Registration of substances) and VI (Evaluation) do not apply to polymers but monomers have to be registered.
- Additives (including stabilizers) are considered part of the substance as defined in Article 3(1). Additives are exempt from registration where these are part of the manufacturing process.

Pre-registration of all substances manufactured in the EU or Imported was initially required to continue to market substances prior to registration.

As a proactive measure, Kraton pre-registered our monomers and all other substances used in the manufacturing of our EU and Non-EU products. This allows registrants to benefit from extended deadlines prior to their final registration. Registration for 30 November 2010 was based on volumes of 1000 metric ton per year or if classified as a carcinogen, mutagen, reproductive hazard, or environmental hazard.

Kraton's required registrations were completed by October 2010. This was completed by an *Only Representative* for EU imports. Our agent is Harlan Laboratories Ltd., in the UK.

The following are the registration numbers for our monomers:

- Isoprene – 01-2119457891-29-0003 and 01-2119457891-29-0008
- Butadiene – 01-2119471988-16-0027 and 01-2119471988-16-0028

(Due to production volumes Styrene will be registered by 2013.)

- Styrene – 05-2114717122-63-0000 Pre-registration number
05-2114807098-47-0000 Pre-registration number
05-2114748038-45-0000 Pre-registration number
05-2114776021-56-0000 Pre-registration number

This assures the continued sale of our polymers (manufactured or imported to the EU) for our customers.

We also worked with all our global raw material suppliers to ensure that they pre-registered their manufactured substances. Their pre-registrations have been confirmed by both their written certification and submission of pre-registration numbers. We shared our intended uses for our products and confirmation of generic use descriptors (SU, PROC, PC, ERC) if they choose to catalogue uses in this way. We are now in the same process for the registration status.

Where a polymer is stable and it can be shown that it has not retained the hazardous properties of its monomers then exposure scenarios will not need to be developed for the polymer. If residual hazardous monomer is present in the polymer, then exposure scenarios and risk management measures may have to be identified.

ECHA is concerned with exposure to monomers. Kraton's polymers do not contain residual hazardous monomers, nor do our polymers retain the hazardous properties of our monomers. **No exposure scenarios will need to be developed for our polymers.** The uses of our downstream users (who receive only stable polymer products) will not have to be defined further than the generic terminology used above.

We can also confirm that our products and compounds do not contain Substances of Very High Concern (SVHC) as of the last listing, 19 December 2011. We continue to monitor new candidate lists and will inform you of changes.

Our Safety Data Sheet affirms our compliance with REACH and in the future will contain the registration numbers of our monomers.

If you import our products into the EU, you are considered as a downstream user (DU) and have no registration obligations for our product(s). However, you must inform us of the annual volumes that you are importing. This will be included in the total volumes that we must provide to our Only Representative (OR) to fulfill our registration record-keeping requirements.

These actions fulfill our Product Stewardship responsibilities and ensure our uninterrupted global distribution to you. Similar action should be implemented throughout the industry and this is our effort to deliver *regulatory value added* products and services.

Please discuss any questions you have with your Kraton Sales Representative. Our Belgium regulatory staff or I will be happy to discuss further.

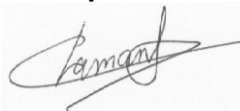
Sincerely,



John J. Kasper, MSc.
Global Product Safety Manager
Kraton Polymers LLC

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Sincerely,



Dr. Carole LAMANT
Senior Product Safety Steward
Kraton Polymers

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