

MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS Standards, European Directives, Australian WorkSafe and SPRING Singapore Standards

1. PRODUCT IDENTIFICATION

TRADE NAME[S] (AS LABELED): SOLTEX Electrical Grade POLYBUTENES; PB 6E, EF 0CS, PB 8E, EF 06CS, EF 015CS, EF 10CS, PB 015E, PB 24E, EF 10CS, PB 32E, EF 30CS

CHEMICAL NAME/CLASS: Polyisobutylene; Butylene Polymer

CHEMICAL FORMULA: $C_4nH_8(n)$ [n = number of moles of butene monomer]

SYNONYMS: Butene Homopolymer; Butene Polymer; Polybutene; Polyisobutylene

U.N. NUMBER: Not Applicable

U.N. DANGEROUS GOODS CLASS/SUBSIDIARY RISK: Not Applicable

HAZCHEM CODE (AUSTRALIA): Not Applicable

POISONS SCHEDULE NUMBER (AUSTRALIA): Not Applicable

PRODUCT USE: Electrical applications

U.S. SUPPLIER/MANUFACTURER'S NAME: SOLTEX, INC.

ADDRESS: 3707 FM 1960 West, Ste. 560
Houston, TX 77068 USA

BUSINESS PHONE: 1-281-587-0900

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:

BUSINESS PHONE:

EMERGENCY PHONE: United States/Canada: 1-800/424-9300 (Chemtrec) [24-hours]
International: +1-703-527-3887 (Chemtrec) [24-hours]

EMAIL ADDRESS/COMPETENT PERSON FOR MSDS: C. Edward Baxter Jr.:
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DATE OF PREPARATION: January 15, 2010

NOTE: ALL Canadian WHMIS, European Directive, Australian NOHSC and Singapore SPRING required information is included in appropriate sections based on the U.S. ANSI Z400.1-2004 format. This product has been classified in accordance with the hazard criteria of the countries listed above and the MSDS contains all the information required by the Canadian WHMIS [Controlled Products Regulations] and European Union [Regulation (EC) 1907/2006 Annex II], Australian (NOHSC:2011, 8.30-8.48) information, and Singapore SPRING required information is included.

2. HAZARD IDENTIFICATION

EU LABELING AND CLASSIFICATION: An official classification for these materials has not been published under EU Directives.

EU CLASSIFICATION: Not Applicable

EU RISK PHRASES: Not Applicable

EU SAFETY PHRASES: Not Applicable

EUROPEAN COMMUNITY ANNEX II HAZARD SYMBOL: Not Applicable

EMERGENCY OVERVIEW: These are clear colorless, or pale yellow, tacky semi-solid/liquid resin or rubber-like solids, which are odorless or may have a mild, hydrocarbon odor. The tackiness of these compounds increases with molecular weight. Impurities and/or additives will change the odor and/or color. **Health Hazards:** These products may irritate skin, eyes, and other contaminated tissues. Vapor of liquids may act as a simple asphyxiants in high concentration. **Flammability Hazards:** These products are Class IIIB combustible liquids which must be highly heated for ignition to become a potential hazard. If involved in a fire these materials will form the following decomposition products: carbon monoxide, saturated and unsaturated light hydrocarbons and other small organic molecules. Thermal decomposition in absence of air releases mainly saturated and unsaturated hydrocarbons. **Reactivity Hazards:** These products are not reactive, but can oxidize slowly by air at room temperature to form oxygenated molecules. Air oxidation increases rapidly at temperatures above 250°C (482°F). The rate of oxidation also increases as the polymer chain length increases. Light and/or heat increase the rate of decomposition. **Environmental Hazards:** Releases of these products may be harmful to the environment. **Emergency Recommendations:** Emergency responders must wear the personal protective equipment suitable for the situation to which they are responding.

3. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	EINECS #	AICS Inventory Listing	% w/v	EU/AUSTRALIAN CLASSIFICATION FOR COMPONENTS
Polybutenes	9003-29-6	NLP # 500-004-7	Listed	100%	Hazard Classification: Not Applicable Risk Phrases: Not Applicable

See Section 15 for full text of Ingredient Risk Phrases for components. See Section 15 for Inventory listing for other countries.

4. FIRST-AID MEASURES

Victims of chemical exposure must be taken for medical attention if any adverse effect occurs. Remove or cover gross contamination to avoid exposure to rescuers. Rescuers should be taken for medical attention, if necessary. Take a copy of label and MSDS to health professional with victim.

SKIN EXPOSURE: If this product contaminates the skin, immediately begin decontamination with running water. Minimum flushing is for 20 minutes. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Victim must seek medical attention if any adverse effect occurs/continues after flushing.

EYE EXPOSURE: If vapors or liquid from this product enter the eyes, open victim's eyes while under gently running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 20 minutes. Victim must seek medical attention if any adverse effect occurs.

INHALATION: If vapors, mists, or sprays of this product are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. If adverse effect continues after removal to fresh air, seek medical attention.

INGESTION: If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. DO NOT INDUCE VOMITING, unless directly by medical personnel. Have victim rinse mouth with water or give several cupfuls of water, if conscious. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Acute or chronic respiratory conditions, skin disorders, central nervous system conditions, or disorders involving the "Target Organs" (see Section 11, "Toxicological Information") may be aggravated by overexposure to this product.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and eliminate overexposure. Provide oxygen, if necessary.

5. FIRE-FIGHTING MEASURES

FLASH POINT:

MW \geq 1,000: 170-200°C (338-392°F)

MW < 1,000: 120-170°C (149-338°F)

FLAMMABILITY LIMITS:

MW \geq 1,000: Not applicable.

MW < 1,000: Not established.

AUTOIGNITION:

MW \geq 1,000: Not applicable; decomposes.

Liquids < 1,000: Not established.

FIRE EXTINGUISHING MATERIALS: The following extinguishing materials are recommended for fires involving this product.

Carbon Dioxide: YES Dry Chemical: YES Other: Any "B" Class

Halon: YES Foam: YES Water Spray: YES (for cooling only)

FIRE EXTINGUISHING MATERIALS NOT BE USED: None known.

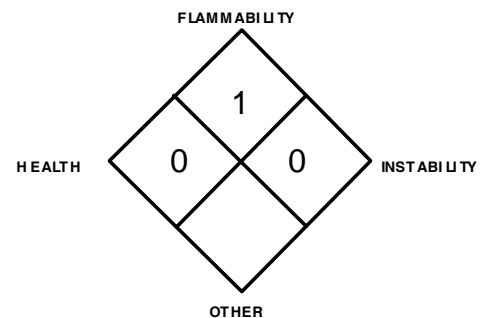
UNUSUAL FIRE AND EXPLOSION HAZARDS:

These products can burn if highly heated. Decomposition products may ignite in air at or above the flash point. Volatile flammable hydrocarbons are released when the polymer is stored hot for a prolonged period of time, which can accumulate in confined spaces, resulting in a fire or explosion hazard. Stored hot polymer auto-oxidizes, which can lead to spontaneous combustion. Hot, liquefied material may accumulate static charge. During a fire, very toxic gases and other compounds are formed. These include: For Solids: Carbon monoxide, formaldehyde, organic aldehydes, acids, hydrogen gas and hydrocarbons such as ethene, propene, butene, 2-pentene, and ethane. For Liquids: smaller polymers (lower oligomers), carbon monoxide, formic acid, acetone, and other oxygenated small organic molecules. Thermal decomposition in absence of air releases mainly saturated and unsaturated hydrocarbons, methane, propane, butene isomers, dimethylpropane isomers, and dimethylheptane isomers. Once ignited, non-stabilized polymer burns vigorously and the fire can spread rapidly. In the heat of a fire, the polymer melts and flows, producing flaming tar-like drippings, which are difficult to extinguish and can start secondary fires. Depending on the fire conditions, dense sooty smoke may be formed. Some additives can increase the amount of smoke produced. Fire gases and vapors have a pungent odor, smelling like wax or paraffin. The behavior of polymers in a fire is influenced by a number of factors, including the chemical composition and structure of the polymer, as well as the presence of additives. Heat from a fire can cause a build-up of pressure inside containers due to thermal decomposition of product, which may cause explosive rupture. The fire properties of polymers can be modified by the addition of fire retardants.

Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: If heated, vapors may be ignited by static electrical energy.

NFPA RATING



Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate
3 = Serious 4 = Severe

5. FIRE-FIGHTING MEASURES (Continued)

SPECIAL FIRE-FIGHTING PROCEDURES: Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Chemical resistant clothing may be necessary. Move containers from fire area if it can be done without risk to personnel. Water spray can be used to cool fire-exposed containers. Water fog or spray can also be used by trained firefighters to disperse this product's vapors and to protect personnel. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas. Rinse contaminated equipment thoroughly with soapy water before returning such equipment to service.

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Trained personnel using pre-planned procedures should respond to uncontrolled releases. Proper protective equipment should be used. In case of a spill, clear the affected area and protect people. Eliminate all sources of ignition before cleanup begins. The atmosphere must have levels of components lower than those listed in Section 8, (Exposure Controls and Personal Protective Equipment), if applicable, and have at least 19.5 percent oxygen before personnel can be allowed into the area without Self-Contained Breathing Apparatus (SCBA).

Small Spills: Absorb spilled liquid with clay, sand, activated carbon, polypads, or other suitable absorbent materials, wearing gloves, goggles and apron.

Large Spills: Minimum Personal Protective Equipment should be gloves, chemical resistant suit and boots, and hard hat. For large spills, dike or otherwise contain spill and remove with vacuum truck or pump to storage/salvage vessels. Decontaminate the area thoroughly. Prevent material from entering sewer or confined spaces, waterways, soil or public waters. Monitor area for combustible vapor levels and confirm levels are below exposure limits given in Section 8 (Exposure Controls-Personal Protection), if applicable, and that levels are below applicable LELs (see Section 5 – Fire Fighting Measures) before non-response personnel are allowed into the spill area.

Place all spill residue in a double plastic bag or other containment and seal. Do not mix with wastes from other materials. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations). For spills on water, contain, minimize dispersion and collect. Dispose of recovered material and report spill per regulatory requirements.

7. HANDLING and STORAGE

SAFE WORK AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Eye wash stations or safety showers should be near areas where this product is stored or handled. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing vapors or mists generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately and launder before reuse.

STORAGE AND HANDLING PRACTICES: All employees who handle this material should be trained to handle it safely. Keep away from heat, sparks, and other sources of ignition. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Do not store containers above 100°C (212°F). Material stored at cold temperatures may become very viscous and be difficult to pump. Material should be stored in secondary containers or in a diked area, as appropriate. Store containers away from incompatible chemicals (see Section 10, Stability and Reactivity). Containers should be separated from oxidizing materials by a minimum distance of 20 ft. or by a barrier of non-combustible material at least 5 ft. high having a fire-resistance rating of at least 0.5 hours. Storage areas should be made of fire resistant materials. Post warning and "NO SMOKING" signs in storage and use areas, as appropriate. Have appropriate extinguishing equipment in the storage area (i.e., sprinkler system, portable fire extinguishers). Inspect all incoming containers before storage to ensure containers are properly labeled and not damaged. Refer to NFPA 30, *Flammable and Combustible Liquids Code*, for additional information on storage. Empty containers may contain residual liquid or vapors therefore, empty containers should be handled with care. Never perform any welding, cutting, soldering, drilling, or other hot work on an empty container or piping until all liquid, vapors, and residue have been cleared.

SPECIFIC USE(S): This product is used in a variety of industrial applications. Follow all industry standards for use of this product.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely, if necessary. Collect all rinsates and dispose of according to applicable Federal, State, and local procedures standards.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION, ENGINEERING AND OCCUPATIONAL EXPOSURE CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided below. Exhaust directly to the outside, taking necessary precautions for environmental protection. If necessary, refer to Australian National Code of Practice for the Control of Workplace Hazardous Substances [NOHSC: 2007 (1994)] for further information.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

OCCUPATIONAL EXPOSURE STANDARDS:

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELs		NIOSH	OTHER
		TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	IDLH mg/m ³	mg/m ³
Polybutenes	9003-29-6	NE	NE	NE	NE	NE	NE	NE	NE

NE = Not Established. SEN = Sensitizer See Section 16 for Definitions of Terms Used.

INTERNATIONAL EXPOSURE LIMITS: Currently, there are no international exposure limits established for these compounds. Individual countries should be contacted to determine if more current limits are in force.

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with regulations found in U.S. OSHA 29 CFR Subpart I (beginning at 1910.132), equivalent standards of Canada (including CSA Standard Z94.4-02 and CSA Standard Z94.3-02), standards of EU member states (including EN 529:2005 for respiratory PPE, CEN/TR 15419:2006 for hand protection, and CR 13464:1999 for face/eye protection), or standards of Australia (including AS/NZS 1715:1994 for respiratory PPE, AS/NZS 4501.2:2006 for protective clothing, AS/NZS 2161.1:2000 for glove selection, and AS/NZS 1336:1997 for eye protection). Please reference applicable regulations and standards for relevant details.

RESPIRATORY PROTECTION: If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-02, the European Standard EN 529:2005, and EU member state standards, the Australian Standard 1716-Respiratory Protective Devices and Australian Standard 1715-Selection, Use, and Maintenance of Respiratory Protective Devices, or Singapore standards. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998).

EYE PROTECTION: Wear safety glasses with side shields (or goggles) and a face shield. If necessary, refer to U.S. OSHA 29 CFR 1910.133, Canadian CSA Standard Z94.3-02, European Standard CR 13464:1999, the Australian Standard 1337-Eye Protection for Industrial Applications and Australian Standard 1336-Recommended Practices for Eye Protection in the Industrial Environment, or Singapore standards.

HAND PROTECTION: Wear appropriate gloves to prevent protection against solvents. If material is heated, wear insulated gloves. Check gloves for leaks. Wash hands before putting on gloves and after removing gloves. If necessary, refer to U.S. OSHA 29 CFR 1910.138, appropriate Standards of Canada, the Australian Standard 2161-Industrial Safety Gloves and Mittens, the European Standard CEN/TR 15419:2006, or Singapore standards.

BODY/SKIN PROTECTION: Use body protection appropriate for task (e.g., coveralls or apron). For prolonged or repeated exposures, use impervious synthetic rubber clothing (boots, gloves, aprons, etc.) over parts of the body subject to exposure. If handling hot fluid, use insulated protective clothing (boots, gloves, aprons, etc.). If necessary, refer to appropriate Standards of Canada, the European Standard CEN/TR 15419:2006, Australian Standard 3765-Clothing for Protection Against Hazardous Chemicals, or Singapore standards. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA 29 CFR 1910.136 and the Canadian CSA Standard Z195-02, *Protective Footwear*.

9. PHYSICAL and CHEMICAL PROPERTIES

The following values are for Polybutenes of molecular weight (Mn) 300 – 600:

SURFACE TENSION: Not established.

POUR POINT: -40 to -20°C

VAPOR PRESSURE @ 20°C: < 0.001 kPa (0.01 mm Hg)

OXIDIZING PROPERTIES: Not applicable.

VISCOSITY KINAMATIC @ 40°C: 20 - 90 cSt

VOLATILITY: Not established.

FLAMMABILITY LIMITS: Not established.

AUTOIGNITION: Decomposes.

pH: Not determined.

SOLUBILITY IN SOLVENTS: Soluble in non-polar solvents such as hydrocarbons and chlorinated hydrocarbons; slightly soluble or insoluble in most other solvents (e.g. methanol, acetone, dioxane).

SATURATION VAPOR CONCENTRATION @20°C (estimated): Not established

COEFFICIENT OF OIL/WATER DISTRIBUTION (PARTITION COEFFICIENT): Not established.

EVAPORATION RATE (n-BuAc = 1): < 1

BOILING POINT: Not applicable (decomposes)

VAPOR DENSITY: Not applicable

SHOCK SENSITIVITY: Not applicable.

ODOR THRESHOLD: Not established.

SPECIFIC GRAVITY @ 16°C: 0.82 - 0.84

FLASH POINT (CC): 100 -150

PHYSICAL STATE: Liquid

SOLUBILITY IN WATER: Insoluble (< 10 mg/L)

The following information is for all Polybutenes:

APPEARANCE, ODOR and COLOR: These are clear colorless, or pale yellow, tacky semi-solid/liquid resin or rubber-like solids, which are odorless or may have a mild, hydrocarbon odor. The tackiness of these compounds increases with molecular weight. Impurities and/or additives will change the odor and/or color.

HOW TO DETECT THIS SUBSTANCE (warning properties): The appearance of these products may be an identifying property in event of an accidental release.

10. STABILITY and REACTIVITY

DECOMPOSITION CONDITIONS/STABILITY: Stable under conditions of standard temperature and pressure. Air oxidation increases rapidly at temperatures above 250°C (482°F). The rate of oxidation also increases as the polymer chain length increases. Light and/or heat increase the rate of decomposition.

DECOMPOSITION PRODUCTS: *Combustion:* Carbon monoxide, carbon dioxide and light organic oxidation products. Thermal decomposition in absence of air releases mainly saturated and unsaturated hydrocarbons.

Hydrolysis: None known.

HAZARDOUS POLYMERIZATION: Will not occur.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: These compounds would be incompatible with strong oxidizers.

CONDITIONS TO AVOID: Avoid exposure to or contact with ignition sources, extreme temperatures, direct sunlight and incompatible chemicals.

11. TOXICOLOGICAL INFORMATION

IRRITANCY OF PRODUCT: This product may irritate contaminated eyes, skin, mouth, throat, and other contaminated tissues.

SENSITIZATION TO THE PRODUCT: These compounds are not known to be human skin or respiratory sensitizers.

SYMPTOMS OF OVEREXPOSURE BY ROUTE OF EXPOSURE: The most significant routes of occupational overexposure are contact with the skin and eyes. The symptoms of overexposure to this product are as follows:

INHALATION: If mists or sprays of this product are inhaled, irritation of the mouth, throat, and other tissues of the respiratory system may occur. Symptoms may include coughing, sneezing, and difficulty breathing. Symptoms of acute exposure are expected to cease after exposure ends.

11. TOXICOLOGICAL INFORMATION (Continued)

CONTACT WITH SKIN or EYES: Depending on the duration and concentration of overexposure, eye contact with vapors may result in mild irritation. Direct eye contact with liquid or mist may cause conjunctival irritation. Contact with the skin is not expected to cause significant cause irritation unless contact is prolonged. Repeated or prolonged contact may produce defatting of the skin leading to irritation and dermatitis, with symptoms of dryness, redness and cracking.

SKIN ABSORPTION: There is no specific information available on potential skin absorption of components of this product.

INGESTION: Ingestion is not anticipated to be a significant route of occupational exposure. If this product is swallowed, it may cause gastrointestinal irritation and vomiting. Ingestion of large quantities may be harmful or fatal. Ingestion may lead to aspiration into the lungs. Aspiration may lead to chemical pneumonitis which is characterized by pulmonary edema and hemorrhage, and may be fatal.

INJECTION: Accidental injection of this product (via cut or puncture with a contaminated object) may cause irritation in addition to the wound.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. In the event of overexposure, the following symptoms may be observed.

ACUTE: This product may mild irritate contaminated eyes. Skin inhalation can cause irritation of contaminated tissues. Ingestion of large volumes of this product can be harmful. Aspiration of the liquid can cause potentially fatal conditions of pulmonary edema or chemical pneumonitis.

CHRONIC: Prolonged skin contact may cause dermatitis. Bases on animal tests, chronic inhalation exposure may result in adverse effects to the lungs, heart, liver and kidneys.

TARGET ORGANS: ACUTE: Skin, eyes, respiratory system. **CHRONIC:** Skin, respiratory system, heart, liver, kidneys.

TOXICITY DATA: The following toxicology data are available for these compounds (no specific molecular weight noted).

POLYBUTENES:

TCLo (Inhalation-Rat) 700 mg/m³/7 hours/2 weeks-intermittent: Liver: changes in liver weight; Nutritional and Gross Metabolic: weight loss or decreased weight gain

CARCINOGENIC POTENTIAL OF COMPONENTS: Polybutenes are not found on the following lists: U.S. EPA, U.S. NTP, U.S. OSHA, U.S. NIOSH, GERMAN MAK, IARC, and ACGIH and therefore are neither considered to be nor suspected to be cancer-causing agents by these agencies.

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of these materials on the human reproductive system

Mutagenicity: Polybutenes are not reported to produce mutagenic effects in humans.

Embryotoxicity: Polybutenes are not reported to produce embryotoxic effects in humans.

Teratogenicity: Polybutenes are not reported to cause teratogenic effects in humans.

Reproductive Toxicity: Polybutenes are not reported to cause reproductive effects in humans.

A **mutagen** is a chemical that causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An **embryotoxin** is a chemical that causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A **teratogen** is a chemical that causes damage to a developing fetus, but the damage does not propagate across generational lines. A **reproductive toxin** is any substance that interferes in any way with the reproductive process.

ACGIH BIOLOGICAL EXPOSURE INDICES: Currently, there are no ACGIH Biological Exposure Indices (BEIs) determined for Polybutenes.

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM			
HEALTH HAZARD	(BLUE)	0	
FLAMMABILITY HAZARD	(RED)	1	
PHYSICAL HAZARD	(YELLOW)	0	
PROTECTIVE EQUIPMENT			
EYES	RESPIRATORY	HANDS	BODY
See Section 8			
For Routine Industrial Use and Handling Applications			

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate
3 = Serious 4 = Severe * = Chronic hazard

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: Polybutenes have not been tested for mobility in soil. They are expected to be highly mobile in soil.

PERSISTENCE AND BIODEGRADABILITY: No information is available on persistence or biodegradability of Polybutenes. It is expected that some biodegradation will occur to this product; however, no specific information is known.

BIO-ACCUMULATION POTENTIAL: No information is available on bio-accumulation potential of Polybutenes.

ECOTOXICITY: No information is available on aquatic or animal toxicity for Polybutenes. All release to terrestrial, atmospheric and aquatic environments should be avoided.

OTHER ADVERSE EFFECTS: Polybutenes do not have ozone depletion potential.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS: It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste per regulations of the area in which the waste is generated and/or disposed of. Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Shipment of wastes must be done with appropriately permitted and registered transporters.

DISPOSAL CONTAINERS: Waste materials must be placed in and shipped in appropriate 5-gallon or 55 gallon poly or metal waste pails or drums. Permeable cardboard containers are not appropriate and should not be used. Ensure that any required marking or labeling of the containers be done to all applicable regulations.

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials. Dispose of in accordance with applicable Federal, State, and local procedures and standards.

U.S. EPA WASTE NUMBER: Wastes of this product should be tested to see if they meet the criteria for waste characteristic ignitability (D001). Testing should be done, per EPA criteria to test wastes to make this determination.

EUROPEAN WASTE CODES: 7: Wastes from the MFSU of Fine Chemicals and Chemical Products Not Otherwise Specified 07 07 99: wastes not otherwise specified

14. TRANSPORTATION INFORMATION

IN DRUM QUANTITIES OR LESS, OR IN NON-HEATED BULK QUANTITIES, POLYBUTENES ARE NOT REGULATED FOR TRANSPORT UNDER ANY JURISDICTION. THE FOLLOWING REGULATIONS ONLY APPLY TO HEATED BULK SHIPMENTS

U.S. DEPARTMENT OF TRANSPORTATION REGULATIONS: If heated above 100°C, Polybutenes are classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

PROPER SHIPPING NAME:	Elevated temperature liquid, n.o.s at or above 100°C and below the flash point (polybutenes)
HAZARD CLASS NUMBER and DESCRIPTION:	9 (Miscellaneous Hazard)
UN IDENTIFICATION NUMBER:	UN 3257
PACKING GROUP:	III
DOT LABEL(S) REQUIRED:	9 (Miscellaneous Hazard)
EMERGENCY RESPONSE GUIDEBOOK NUMBER, 2004:	154
MARINE POLLUTANT:	This material is not designated by the Department of Transportation to be a Marine Pollutant (49 CFR 172.101, Appendix B).

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: If heated above 100°C, Polybutenes are classified as dangerous goods, per regulations of Transport Canada. If this product is so heated during transport, the use of the above U.S. DOT information from the U.S. 49 CFR regulations is allowed for shipments that originate in the U.S. For shipments via ground vehicle or rail that originate in Canada, the following information is applicable.

PROPER SHIPPING NAME:	Elevated temperature liquid, n.o.s. at or above 100°C and below the flash point (polybutenes)
HAZARD CLASS NUMBER and DESCRIPTION:	9 (Miscellaneous Hazard)
UN IDENTIFICATION NUMBER:	UN 3257
PACKING GROUP:	III
HAZARD LABEL(S) REQUIRED:	Class 9 (Miscellaneous Hazard)
SPECIAL PROVISIONS:	None
EXPLOSIVE LIMIT & LIMITED QUANTITY INDEX:	5
ERAP INDEX:	None
PASSENGER CARRYING SHIP INDEX:	None
PASSENGER CARRYING ROAD OR RAIL VEHICLE INDEX:	Forbidden
MARINE POLLUTANT:	This material is not classified as a Marine Pollutant under Transport Canada regulations.

INTERNATIONAL AIR TRANSPORT ASSOCIATION SHIPPING INFORMATION (IATA): If heated above 100°C, Polybutenes are classified as dangerous goods, per the International Air Transport Association. Heated product is forbidden to be shipped via aircraft.

14. TRANSPORTATION INFORMATION (Continued)

INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO): If heated above 100°C, Polybutenes are classified as dangerous goods, under rules of the IMO.

PROPER SHIPPING NAME: Elevated temperature liquid, n.o.s. at or above 100°C and below the flash point (polybutenes)
HAZARD CLASS NUMBER AND DESCRIPTION: 9 (Miscellaneous Hazard)
UN IDENTIFICATION NUMBER: UN 3257
PACKING GROUP: III
LABEL(S) REQUIRED: Class 9 (Miscellaneous Hazard)
SPECIAL PROVISIONS: 232
LIMITED QUANTITIES: None
PACKING INSTRUCTIONS: P099
EmS: F-A, S-P
STOWAGE AND SEGREGATION: Category A. If under deck, in a mechanically ventilated area.

MARINE POLLUTANT: No component of this product meets the criteria for marine pollutant.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR): If heated above 100°C, Polybutenes are classified as dangerous goods by the United Nations Economic Commission for Europe.

UN NO.: 3257
NAME and DESCRIPTION: Elevated temperature liquid, n.o.s. at or above 100°C and below the flash point (polybutenes)
CLASS: 9
CLASSIFICATION CODE: M9
PACKING GROUP: III
LABELS: 9
SPECIAL PROVISIONS: 274, 580, 643
LIMITED QUANTITIES: LQ0
PACKING INSTRUCTIONS: P099, IBC99
MIXED PACKING PROVISIONS: T3
HAZARD IDENTIFICATION No.: 99

AUSTRALIAN FEDERAL OFFICE OF ROAD SAFETY CODE FOR THE TRANSPORTATION OF DANGEROUS GOODS BY ROAD OR RAIL: If heated above 100°C, Polybutenes are classified as dangerous goods, per regulations of the Federal Office of Road Safety.

U.N. NUMBER: 3257
NAME OF SUBSTANCE: Elevated temperature liquid, n.o.s. at or above 100°C and below the flash point (polybutenes)
HAZARD CLASS: 9
PACKING GROUP: III
HAZCHEM CODE: 2W
SPECIAL PROVISIONS: SP232
PACKAGING CODE: 3.8.9

PROPERTIES AND OBSERVATIONS: When the goods are being transported in quantities exceeding package limits the Elevated Temperature Label shall be displayed as a subsidiary risk label on the E.I.P. Refer to Table 7.1

SINGAPORE STANDARD 286: PART A: If heated above 100°C, Polybutenes have requirements and are classified as hazardous under the Specification for Caution Labeling for Hazardous Substances, Part 4: Marking of Packages, Containers and Vehicles, as follows.

U.N. NUMBER: 3257
NAME OF SUBSTANCE: Elevated temperature liquid, n.o.s. at or above 100°C and below the flash point (polybutenes)
HAZARD CLASS NUMBER AND DESCRIPTION: 9 (Miscellaneous Hazard)
PACKING GROUP: III
HAZCHEM CODE: 2W
SPECIAL PROVISIONS: None

15. REGULATORY INFORMATION

ADDITIONAL U.S. REGULATIONS:

U.S. SARA REPORTING REQUIREMENTS: Polybutenes are NOT subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA THRESHOLD PLANNING QUANTITY: Polybutenes are NOT subject to specific Threshold Planning Quantities requirements. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. SARA HAZARD CATEGORIES (SECTION 311/312, 40 CFR 370-21): ACUTE: Yes; CHRONIC: No; FIRE: Yes; REACTIVE: No; SUDDEN RELEASE: No

U.S. CERCLA REPORTABLE QUANTITY (RQ): Polybutenes do not have a CERCLA RQ.

15. REGULATORY INFORMATION (Continued)

ADDITIONAL U.S. REGULATIONS (continued):

U.S. TSCA INVENTORY STATUS: Polybutenes are listed on the TSCA Inventory.

CLEAN WATER AND OIL POLLUTION ACTS: Not applicable.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): Polybutenes are NOT listed on the California Proposition 65 lists.

ANSI LABELING (Z129.1): MAY CAUSE EYE AND RESPIRATORY TRACT IRRITATION. Keep away from heat, sparks, and flame. Avoid contact with oxidizers. Avoid breathing vapor or mists. Avoid contact with skin or clothing. Use only with adequate ventilation. Keep container tightly closed. Wash thoroughly after handling. Wear gloves and goggles. Use only with adequate ventilation. **FIRST-AID:** In case of contact, immediately flush skin or eyes for at least 15 minutes with large amounts of water. If inhaled, move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If ingested, do not induce vomiting. Get medical attention immediately. **IN CASE OF FIRE:** Use fog, foam, dry chemical or carbon dioxide. **IN CASE OF SPILL:** Absorb spill with inert material and place in suitable container. Do not allow contamination of waterways or soil. Refer to Material Safety Data Sheet for additional information on this product.

ADDITIONAL CANADIAN REGULATIONS:

CANADIAN DSL/NDL INVENTORY STATUS: Polybutenes are listed ON the DSL Inventory

OTHER CANADIAN REGULATIONS: Not applicable.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: Polybutenes are NOT on the CEPA Priority Substances Lists.

CANADIAN WHMIS CLASSIFICATION and SYMBOLS: Polybutenes are NOT WHMIS controlled.

EUROPEAN UNION INFORMATION FOR PRODUCT:

EU LABELING AND CLASSIFICATION: An official classification has not been published under European Union Council Directive 67/548/EEC or subsequent Directives.

EU CLASSIFICATION: Not Applicable

EU RISK PHRASES: Not Applicable

EU SAFETY PHRASES: Not Applicable

EU HAZARD SYMBOLS: Not Applicable

ADDITIONAL AUSTRALIAN REGULATIONS:

LABELING AND CLASSIFICATION: This product is NOT classified as Harmful as defined by Australian NOHSC: 1008 (2004).

CLASSIFICATION: Not Applicable

RISK PHRASES: Not Applicable

SAFETY PHRASES: Not Applicable

HAZARD SYMBOLS: Not Applicable

AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) STATUS: Polybutenes are listed on the AICS as given in the table at the end of this Section.

STANDARD FOR THE UNIFORM SCHEDULING OF DRUGS AND POISONS: Not applicable.

ADDITIONAL LABELING INFORMATION: For advice, contact a Poisons Information Centre (Phone eg Australia 131 126; New Zealand 03 4747 000) or a doctor (at once). If swallowed, do NOT induce vomiting.

ADDITIONAL SINGAPORE REGULATIONS:

CODE OF PRACTICE ON POLLUTION CONTROL REQUIREMENTS: Polybutenes are NOT subject to the requirements under the Singapore Code of Practice on Pollution Control.

INTERNATIONAL CHEMICAL INVENTORY SUMMARY: Polybutenes are found on the following National Chemical Inventories:

INVENTORY NAME					
COMPONENT NAME	CAS#	U.S. TSCA	AUSTRALIAN AICS	CANADIAN DSL/NDL	EUROPEAN EINECS/ELINCS
Polybutenes	9003-29-6	Yes	No	DSL	NLP # 500-004-7

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