



Reoflex™ Series

Material Safety Data Sheet

Date Of Preparation: November 7, 2007

MSDS No. 714

Revision: 0003

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: Reoflex™ Series Part A

General Use: Polyurethane Elastomer

Manufacturer: Smooth-On Inc., 2000 Saint John St., Easton, PA 18042

PHONE (610) 252-5800, FAX (610) 252-6100

Emergency Contact: Chem-Tel

Domestic 800-255-3924

International 813-248-0585

Section 2 - Composition / Information on Ingredients

Component	CAS Number	ACGIH TWA	Exposure Limits OSHA PEL	Weight Percent (%)
Polyurethane Prepolymer	-	None Established	None Established	95-99
Diethylhexyl Phthalate	117-81-7	5 mg/m ³	5 mg/m ³	1-5
Toluene Diisocyanate (mixed isomers)	26471-62-5	0.005 ppm	0.005 ppm	<1.0

Section 3 - Hazards Identification

Potential Health Effects

HMIS	
H	2
F	1
R	1

Primary Entry Routes: Inhalation and Dermal

Target Organs: Lungs

Acute Effects Inhalation: Vapors cause irritation to respiratory tract and pulmonary edema can occur after a serious vapor exposure; pulmonary sensitization can occur in some individuals leading to asthma-like spasms of the bronchial tubes and difficulty in breathing; recent studies indicate overexposure may be associated with chronic lung impairment.

Eye: May cause irritation and blurred vision. Prolonged vapor contact may cause conjunctivitis.

Skin: Contact will cause irritation, reddening, swelling, rash, scaling or blistering. Prolonged or repeated contact can cause moderate dermatitis.

Ingestion: May have corrosive effects on the linings of the mouth and stomach: symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.

Carcinogenicity: IARC and NTP list Toluene Diisocyanate and Bis (2-ethylhexyl) phthalate as a suspected carcinogens.

Medical Conditions Aggravated by long-term Exposure: Asthma, bronchitis, emphysema, skin allergies, eczema.

Section 4 - First Aid Measures

Inhalation: Remove source(s) of contamination and move victim to fresh air. If breathing has stopped, give artificial respiration, then oxygen if needed. Contact physician immediately. Asthma-like symptoms may develop immediately or be delayed several hours.

Eye Contact: Flush eyes with plenty of water. If irritation persists, seek medical attention.

Skin Contact: In case of skin contact, wash thoroughly with soap and water; remove contaminated clothing and launder before reuse; seek medical attention if rash develops.

Ingestion: Do not induce vomiting unless instructed by a physician. Contact physician immediately

Section 5 - Fire-Fighting Measures

Flash Point: >270 °F

Flash Point Method: TOC

LEL: Not Established

UEL: Not Established

Flammability Classification: Non-Flammable

Extinguishing Media: Water Fog, Dry Chemical, Carbon Dioxide Foam

Unusual Fire or Explosion Hazards: Hazardous decomposition products may be formed. Avoid water contamination in closed containers or confined areas as exothermic heat and carbon dioxide can evolve.

Fire-Fighting Instructions: Fire fighters should wear self contained breathing apparatus. Do not release runoff from fire control methods to sewers or waterways.

Fire-Fighting Equipment: Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full facepiece operated in pressure-demand or positive-pressure mode.



Section 6 - Accidental Release Measures

Spill /Leak Procedures: Only properly protected personnel should remain in the spill area; dike and contain spill; absorb or scrape up excess into suitable container for disposal; wash area with dilute ammonia solution. Stop or reduce discharge if it can be done safely.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120).

Section 7 - Handling and Storage

Handling Precautions: Minimize breathing of vapors and avoid prolonged or repeated contact with skin. Wear proper protective equipment. If ventilation is not sufficient, wear proper respiratory equipment. Avoid moisture contamination. Reseal partial containers. Use good general housekeeping procedures.

Storage Requirements: Store in cool dry, well ventilated area.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls:

Ventilation: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs (Sec. 2). Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

Administrative Controls:

Respiratory Protection: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator. *Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.* If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit-testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

Protective Clothing/Equipment: Wear chemically protective gloves, boots, and aprons to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133).

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics

Section 9 - Physical and Chemical Properties

Physical State: Liquid	Water Solubility: Negligible:
Appearance : Clear yellow viscous liquid	Boiling Point: None (Polymeric Resin)
Odor : Sharp pungent odor	% Volatile: Nil
Vapor Pressure: None (Polymeric Resin)	Freezing/Melting Point: None (Polymeric Resin)
Vapor Density (Air=1): >1	Viscosity: 50 poise
Specific Gravity (H₂O=1, at 4 °C): 1.04	Evaporation Rate: Not Applicable

Section 10 - Stability and Reactivity

Stability: These products are stable at room temperature in closed containers under normal storage and handling conditions.

Polymerization: Hazardous polymerization can occur.

Chemical Incompatibilities: Strong bases, water, amines, alcohols.

Conditions to Avoid: Avoid contamination with water and other materials that react with Isocyanates.

Hazardous Decomposition Products: Toluene diisocyanate vapors, hydrogen cyanide gas, oxides of nitrogen, carbon monoxide and carbon dioxide

Section 11- Toxicological Information

Eye Effects: Irritation
Skin Effects: Irritation

Carcinogenicity: IARC and NTP list Toluene Diisocyanate and Bis (2-ethylhexyl) phthalate as a suspected carcinogens.
Mutagenicity: None Determined
Teratogenicity: None Determined

Section 12 - Ecological Information

None Established

Section 13 - Disposal Considerations

Disposal: These materials contain a hazardous constituent as identified in RCRA, Title 40 CFR 261, Appendix VIII and must be disposed of in accordance with applicable Federal, state, and local regulations.

Section 14 - Transport Information

DOT	IATA	IMDG
<u>2000 lb. Quantities or Greater</u>	<u>2000 lb. Quantities or Greater</u>	<u>2000 lb. Quantities or Greater</u>
Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (bis(2-ethylhexyl) phthalate) Mixture	Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (bis(2-ethylhexyl) phthalate) Mixture	Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (bis(2-ethylhexyl) phthalate) Mixture
UN #: 3082	UN #: 3082	UN #: 3082
Hazard Class: 9	Hazard Class: 9	Hazard Class: 9
Label: Miscellaneous	Label: Miscellaneous	Label: Miscellaneous

Section 15 - Regulatory Information

CERCLA Hazardous Substance (40 CFR 302.4) listed specific per RCRA, Sec. 3001; CWA, Sec. 311 (b)(4); CWA, Sec. 307(a), CAA, Sec. 112

<u>Chemical Name</u>	<u>RQ</u>	<u>% Reportable Component</u>
Diethylhexyl Phthalate	100lbs.	5.0 Max
Toluene diisocyanate (mixed isomers)	100 lbs.	<1.0

SARA Toxic Chemical (40 CFR 372.65):

<u>Chemical Name</u>	<u>CAS #</u>	<u>% by Weight</u>
Diethylhexyl Phthalate	117-81-7	5.0 Max
Toluene diisocyanate (mixed isomers)	26471-62-5	<1.0

SARA EHS (Extremely Hazardous Substance) (40 CFR 355):

<u>Chemical Name</u>	<u>CAS #</u>	<u>% by Weight</u>
Toluene Diisocyanate (mixed isomers)	26471-62-5	<1.0

These products contain the following chemicals that are subject to release reporting requirements under **section 313 of SARA Title III.**

<u>Chemical Name</u>	<u>CAS #</u>	<u>% by Weight</u>
Diethylhexyl Phthalate	117-81-7	5.0 Max
Toluene Diisocyanate (mixed isomers)	26471-62-5	<1.0

TSCA Inventory Status (40 CFR710): All components of this formulation are listed in the TSCA Inventory.

States Right To Know, Substance List:

California Proposition 65: These products contain toluene diisocyanate and Diethylhexyl Phthalate, chemicals which have been identified by the state of California to cause cancer, birth defects or other reproductive harm.

Delaware, Massachusetts, Minnesota, New Jersey, New York And Pennsylvania :

<u>Chemical Name</u>	<u>CAS #</u>	<u>% by Weight</u>
Toluene Diisocyanate (mixed isomers)	26471-62-5	<1.0

Delaware, Idaho, Massachusetts, Minnesota, New Jersey, New York And Pennsylvania, Washington and Wisconsin:

<u>Chemical Name</u>	<u>CAS #</u>	<u>% by Weight</u>
Diethylhexyl Phthalate	117-81-7	5.0 Max

Section 16 - Other Information

Prepared By: Dominick J. Finocchio

Title: Technical Director

Disclaimer: The information contained in this MSDS is considered accurate as of the version date. However, no warranty is expressed or implied regarding the accuracy of the data. Since the use of this product is not within the control of Smooth-On Inc., it is the users obligation to determine the suitability of the product for its intended application and assumes all risk and liability for its safe use.



Reoflex™ Series
Material Safety Data Sheet

MSDS No. 714

Date Of Preparation: September 21, 2007

Revision: 0002

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: Reoflex™ Series Part B

General Use: Polyurethane Elastomer

Manufacturer: Smooth-On Inc., 2000 Saint John St., Easton, PA 18042

PHONE (610) 252-5800, FAX (610) 252-6100

Emergency Contact: Chem-Tel

Domestic 800-255-3924

International 813-248-0585

Section 2 - Composition / Information on Ingredients

Component	CAS Number	ACGIH TWA	Exposure Limits OSHA PEL	Weight Percent (%)
Polyol (Non-Hazardous)	-	None Established	None Established	90-95
N.J. Trade Secret #221290880-5020P		None Established	None Established	5-7
Diethyltoluenediamine	68479-98-1	None Established	None Established	1-5
Di(methylthio)toluene diamine Rheoflex 50 & 60 Only	106264-74-3	None Established	None Established	5-10

Section 3 - Hazards Identification

Potential Health Effects

Primary Entry Routes: Dermal

Target Organs: pancreas, liver, thyroid and eyes.

Acute Effects

Inhalation: Vapors, which are not significant unless heated or sprayed can cause irritation to respiratory tract.

Eye: May cause irritation, redness, tearing, and blur vision. Prolonged vapor contact may cause conjunctivitis.

Skin: Contact will cause irritation, reddening, and swelling.

Ingestion: May have corrosive effects on the linings of the mouth and stomach: symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.

Carcinogenicity: IARC, NTP, and OSHA do not list any components of this product as a carcinogen.

Medical Conditions Aggravated by Long-Term Exposure: Pre-existing skin disorders.

Chronic Effects of Overexposure: A two-year feeding study in rats showed diethyltoluenediamine caused effects in the pancreas, liver, thyroid and eyes. Also, an increase in the number of tumors in the liver and thyroid of male rats and in the liver and possibly mammary gland of female rats was found.

HMIS	
H	2
F	1
R	1

Section 4 - First Aid Measures

Inhalation: Remove source(s) of contamination and move victim to fresh air.

Eye Contact: Flush eyes with plenty of water. If irritation persists, seek medical attention.

Section 4 - First Aid Measures (continued)

Skin Contact: In case of skin contact, wash thoroughly with soap and water; remove contaminated clothing and launder before reuse; seek medical attention if rash develops

Ingestion: Do not induce vomiting unless instructed by a physician. Contact physician immediately

After first aid, get appropriate in-plant, paramedic, or community medical support.

Section 5 - Fire-Fighting Measures

Flash Point: >270 °F (132°C)

Flash Point Method: COC

Flammability Classification: Non-Flammable

Extinguishing Media: Water Fog, Dry Chemical, and Carbon Dioxide Foam

Unusual Fire or Explosion Hazards: None

Fire-Fighting Instructions: Fire fighters should wear self-contained breathing apparatus. Do not release runoff from fire control methods to sewers or waterways.

Fire-Fighting Equipment: Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full facepiece operated in pressure-demand or positive-pressure mode.



Section 6 - Accidental Release Measures

Spill /Leak Procedures: Dike and contain spill; absorb or scrape up excess into suitable container for disposal. Stop or reduce discharge if it can be done safely.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120).

Section 7 - Handling and Storage

Handling Precautions: Minimize breathing of vapors and avoid prolonged or repeated contact with skin. Wear proper protective equipment. If ventilation is not sufficient, wear proper respiratory equipment. Use good general housekeeping procedures.

Storage Requirements: Store in cool dry, well-ventilated area.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls:

Ventilation: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs (Sec. 2). Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

Administrative Controls:

Respiratory Protection: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear an MSHA/NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. For emergency or nonroutine operations (cleaning spills, reactor vessels, or storage tanks), wear an SCBA.

Section 8 - Exposure Controls / Personal Protection (continued)

Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

Protective Clothing/Equipment: Wear chemically protective gloves, boots, and aprons to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance :

Off White-Light Yellow

Odor : Sharp pungent odor

Vapor Pressure: None (Polymeric Resin)

Vapor Density (Air=1): >1

Specific Gravity (H₂O=1, at 4 °C): 0.95

Water Solubility: Negligible:

Boiling Point: None (Polymeric Resin)

% Volatile: Nil

Freezing/Melting Point: None Determined

Viscosity: 3 poise

Evaporation Rate: None (Polymeric Resin)

Section 10 - Stability and Reactivity

Stability: These products are stable at room temperature in closed containers under normal storage and handling conditions.

Polymerization: Hazardous polymerization can not occur.

Chemical Incompatibilities: Strong acids and oxidizers.

Conditions to Avoid: Avoid contamination with water and other materials that react with amines.

Thermal Decomposition Products: Oxides of nitrogen, carbon monoxide and carbon dioxide

Section 11- Toxicological Information

Acute Inhalation Effects:

Human, inhalation, T_{CL}: Not Determined

Acute Oral Effects: A two year feeding study in rats showed diethyltoluenediamine caused effects in the pancreas, liver, thyroid and eyes. Also, an increase in the number of tumors in the liver and thyroid of male rats and in the liver and possibly mammary gland of female rats was found.

Reproductive Toxicity: None established

Mutagenicity: None Established

Teratogenicity: None Established

Sensitization: None Established

Section 12 - Ecological Information

None Established

Section 13 - Disposal Considerations

Disposal: These materials contain a hazardous constituent as identified in RCRA, Title 40 CFR 261, Appendix VIII and must be disposed of in accordance with applicable Federal, state, and local regulations.

Section 14 - Transport Information

DOT
Not Regulated

IATA
Not Regulated

IMDG
Not Regulated

Section 15 - Regulatory Information**EPA Regulations:**

RCRA Hazardous Waste Number: Not listed (40 CFR 261.33)

SARA Toxic Chemical (40 CFR 372.65): None

These products contain the following chemicals that are subject to release reporting requirements under section 313 of SARA Title III: None

TSCA Inventory Status (40 CFR 710): All components of this product are listed on the TSCA inventory.

SARA EHS (Extremely Hazardous Substance) (40 CFR 355): Not listed, Threshold Planning Quantity (TPQ)

States Right To Know, Substance List:

California Proposition 65: These products do not intentionally contain any chemicals, which have been identified by the state of California to cause cancer, birth defects or other reproductive harm.

16 - Other Information

Prepared By: Dominick J. Finocchio
Title: Technical Director

Disclaimer: The information contained in this MSDS is considered accurate as of the version date. However, no warranty is expressed or implied regarding the accuracy of the data. Since the use of this product is not within the control of Smooth-On Inc., it is the user's obligation to determine the suitability of the product for its intended application and assumes all risk and liability for its safe use.