



# Material Safety Data Sheet

## Clear Flex Series

MSDS No. 647

Date Of Preparation: September 18, 2007

Revision: 0002

### Section 1 - Chemical Product and Company Identification

**Product/Chemical Name:** Clear Flex Series Part A

**General Use:** Polyurethane Elastomer

**Manufacturer:** Smooth-On Inc., 2000 St. John St., Easton PA 18042,  
Phone (610) 252-5800, FAX (610) 252-6200

**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 (%)
Dicyclohexylmethane-4, 4'-diisocyanate	5124-30-1	0.005 ppm	0.01 ppm	75-85
Polyurethane Polymer	-	None Established	None Established	15-25

### Section 3 - Hazards Identification

#### Potential Health Effects

**Primary Entry Routes:** Eye, Inhalation and Dermal

**Target Organs:** Lungs skin

#### Acute Effects

**Inhalation:** Inhalation of vapors and mist of dicyclohexylmethane-4, 4'-diisocyanate at concentrations above the TLV can irritate the mucous membranes in the respiratory tract causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function. Exposure well above the intended TLV may lead to bronchitis, bronchial spasm edema (fluid in the lungs). These effects are usually reversible. Chemical hypersensitive pneumonitis, with flu symptoms has been reported.

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

**Skin:** Contact will cause irritation, reddening, swelling, rash, scaling or blistering. Dicyclohexylmethane-4, 4'-diisocyanate is also a potent skin sensitizer. Experience indicates that direct skin contact is the route of exposure most likely to cause sensitization. Once sensitized, an individual may react even to airborne levels below the TLV with the following symptoms: itching and tingling of the earlobes and neck, rash, hives, swelling of the arms and legs or other symptoms common to allergic dermatitis. These symptoms may be immediate or delayed several hours.

**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 these products as a carcinogen.

**Medical Conditions Aggravated by Long-Term Exposure:** skin allergies and respiratory disorders

#### Chronic Effects

**Inhalation:** As a result of previous repeated overexposures or a single large dose, certain individuals will develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanates at levels well below the TLV. These symptoms, which include: chest tightness, wheezing, cough, shortness of breath or asthmatic attack, could be immediate or delayed up to several hours after exposure. Similar to many non-specific asthmatic responses, there are reports that once sensitized

HMI	
H	3
F	1
R	1

### Section 3 - Hazards Identification (Continued)

an individual can experience these symptoms upon exposure to other irritants. Sensitization may be either temporary or permanent.

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

**Skin:** Contact will cause irritation, reddening, swelling, rash, scaling or blistering. These symptoms can result from contact with very small amounts of liquids or vapor exposure to individuals that have developed a skin sensitization.

**Ingestion:** None reported for this product.

### 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.

**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

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

### Section 5 - Fire-Fighting Measures

**Flash Point:** 369°F (187.2°C)    **LEL:** Not Established    **UEL:** Not Established

**Flash Point Method:** PMCC

**Flammability Classification:** Non-Flammable

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

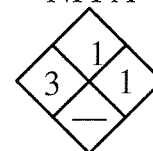
**Unusual Fire or Explosion Hazards:** Hazardous decomposition products may be formed.

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.

NFPA



### 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.

### Section 8 - Exposure Controls / Personal Protection (continued)

#### 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. *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 :** Colorless liquid

**Odor :** Musty odor

**Vapor Pressure:** <0.001 mmHg @ 25°C

**Vapor Density (Air=1):** None Established

**Specific Gravity (H<sub>2</sub>O=1, at 4 °C):** 1.08

**Water Solubility:** Negligible, Reacts with water

**Boiling Point:** None Established

**% Volatile:** Nil

**Freezing/Melting Point:** None Established

**Viscosity:** 2.5 poise

**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:** Dicyclohexylmethane-4, 4'-diisocyanate vapors, hydrogen cyanide gas, and oxides of nitrogen, carbon monoxide and carbon dioxide

### Section 11- Toxicological Information

**Eye Effects:** Irritation

**Skin Effects:** Irritation

**Acute Toxicity**

Oral LD 50: Greater than 11,000 mg/kg (Rat)

Dermal LD50: 10,000 mg/kg (Rabbit)

Not corrosive according to D.O.T corrosivity test  
(49CFR173.136)

**Mutagenicity:** Negative Ames test.

**Teratogenicity:** None Determined

### Section 12 - Ecological Information

None Established

### Section 13 - Disposal Considerations

**Disposal:** These materials must be disposed of in accordance with applicable Federal, state and local regulations. Incineration is the best possible method for disposal.

### Section 14 - Transport Information

DOT	IATA	IMDG
Not Regulated	Not Regulated	Not Regulated

### Section 15 - Regulatory Information

#### EPA Regulations:

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

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: None

SARA Toxic Chemical (40 CFR 372.65): This product contains the following chemicals that are subject to release reporting requirements under section 313 of SARA Title III.

Chemical Name	CAS #	% by Weight
Dicyclohexylmethane-4, 4'-diisocyanate	5124-30-1	85.0 Max

SARA EHS (Extremely Hazardous Substance) (40 CFR 355): None

**TSCA Inventory Status (40 CFR 710):** All components of these products are listed in the TSCA Inventory.

#### 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.

Delaware, Idaho, Florida, Massachusetts, Minnesota, Pennsylvania Washington and Wisconsin:

Chemical Name	CAS #	% by Weight
Dicyclohexylmethane-4, 4'-diisocyanate	5124-30-1	85.0 Max

### 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.



# Material Safety Data Sheet

Clear Flex Series

MSDS No. 647

Date Of Preparation: September 18, 2007

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## Section 1 - Chemical Product and Company Identification

**Product/Chemical Name:** Clear Flex Series Part B  
**General Use:** Polyurethane Elastomer  
**Manufacturer:** Smooth-On Inc., 2000 St. John St., Easton PA 18042  
Phone (610) 252-5800, FAX (610) 252-6200  
**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 Mixture (non-hazardous)	-	None Established	None Established	99.8
Phenylmercuric neodecanoate	26545-49-3	0.01 mg/m <sup>3</sup>	0.01 mg/m <sup>3</sup>	0.2

## Section 3 - Hazards Identification

### Potential Health Effects

**Primary Entry Routes:** Dermal

**Target Organs:** Skin 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.

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

**Ingestion:** Effects are unknown.

**Carcinogenicity:** IARC, NTP, and OSHA do not list any components of these products as a carcinogen.

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

**Chronic Effects Of Overexposure:** This product contains an organo-mercury catalyst below the reportable level required by OSHA 1910.1200; however, due to the chronic toxicity of organo-mercury compounds careful handling of this product is required.

HMI	
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.

**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:** >365°F (185°C)

**Flash Point Method:** TCC

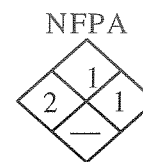
**Flammability Classification:** Non-Flammable

**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. *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

<b>Physical State:</b> Liquid	<b>Water Solubility:</b> Negligible:
<b>Appearance:</b> Clear colorless liquid	<b>Boiling Point:</b> None (Polymeric Resin)
<b>Odor:</b> Mild odor	<b>% Volatile:</b> Nil
<b>Vapor Pressure:</b> None (Polymeric Resin)	<b>Freezing/Melting Point:</b> None Determined
<b>Vapor Density (Air=1):</b> >1	<b>Viscosity:</b> 8 poise
<b>Specific Gravity (H<sub>2</sub>O=1, at 4 °C):</b> 1.00	<b>Evaporation Rate:</b> 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

	<b>Toxicity Data:</b>
<b>Acute Inhalation Effects:</b> None established	<b>Reproductive Toxicity:</b> None Established
<b>Acute Oral Effects:</b> None Established	<b>Mutagenicity:</b> None Established
	<b>Teratogenicity:</b> None Established
	<b>Sensitization:</b> None Established

### Section 12 - Ecological Information

None Established

### Section 13 - Disposal Considerations

**Disposal:** These materials must be disposed of in accordance with applicable Federal, state and local regulations.

### Section 14 - Transport Information

<b>DOT</b>	<b>IATA</b>	<b>IMDG</b>
<b>Not Regulated</b>	<b>Not Regulated</b>	<b>Not Regulated</b>

### Section 15 - Regulatory Information

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

CERCLA Hazardous Substance (40 CFR 302.4) listed per RCRA, Sec. 3001; CWA, Sec. 311 (b)(4); CWA, Sec. 307(a), CAA, Sec. 112: None

SARA Toxic Chemical (40 CFR 372.65): This product contains the following chemicals that are subject to release reporting requirements under section 313 of SARA Title III.

<u>Components That Require Reporting</u>	<u>RQ</u>	<u>% of Reportable Component</u>
Mercury (as part of catalyst)	1 lb.	0.074

TSCA Inventory Status (40 CFR 710): All components of these products 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 contain a mercury compound, which has been identified by the state of California to cause 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.