



# Material Safety Data Sheet

Smooth-Cast 45D

MSDS No. 441

Date Of Preparation: January 27, 2010

Revision: 0004

## Section 1 - Chemical Product and Company Identification

**Product/Chemical Name:** Smooth-Cast 45D 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- Hazards Identification

### Hazard Designation

Europe



Xn: Harmful

Canada



HMIS	
H	2
F	1
R	1

### Risk Phrases pertaining to particular dangers

**R20:** Harmful by inhalation.

**R36/37/38:** Irritating to eyes, respiratory system and skin.

**R40:** Limited evidence of a carcinogenic effect.

**R48/20:** Harmful; danger of serious damage to health by prolonged exposure through inhalation.

Classified according to Articles 6 & 7 of Directive 1999/45/EC

## Section 3 - Composition / Information on Ingredients

Component	ACGIH TWA	OSHA PEL	Hazard Designation	Weight Percent (%)
4,4' Methylene bis(phenylisocyanate) (MDI) CAS Number: 101-68-8 EINECS Number: 202-966-0	0.005 ppm	0.02 ppm	Xn	20-30
Polymethylene polyphenyl isocyanates CAS Number: 9016-87-9 EINECS Number: Not Classified	None Established	None Established	None Established	5-10

## 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:** 390 °F (200 °)

**LEL:** Not Established

**UEL:** Not Established

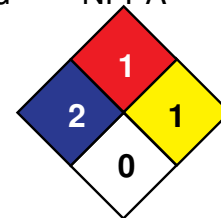
**NFPA**

**Flash Point Method:** COC

**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 face piece 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

**Respiratory Protection:** Follow OSHA respirator regulations 29 CFR 1910.134 and European Standard EN 149; wear an MSHA/NIOSH or European Standard EN149 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 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 and European Standard EN166. 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>Appearance :</b> Amber <b>Odor :</b> Musty odor <b>Vapor Pressure:</b> <0.00001 @ 25 °C <b>Vapor Density (Air=1):</b> 8.6 <b>Specific Gravity (H<sub>2</sub>O=1, at 4 °C):</b> 1.15	<b>Water Solubility:</b> Reacts with water <b>Boiling Point:</b> 392 °F(200 °C) <b>% Volatile:</b> Nil <b>Freezing/Melting Point:</b> None Determined <b>Viscosity:</b> 5.6 poise <b>Evaporation Rate:</b> Not Applicable
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## Section 10 - Stability and Reactivity

**Stability:** 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:** MDI vapors, hydrogen cyanide gas, oxides of nitrogen, carbon monoxide and carbon dioxide.

## Section 11- Toxicological Information

Hazardous Component	LD50 Oral	LC50 Inhalation
4,4' Methylene bis(phenylisocyanate) <b>(MDI)</b>	Mouse: 2200 mg/kg Rat: 9200 mg/kg	Rat: 178 mg/m <sup>3</sup>

## Section 12 - Ecological Information

For MDI:

Aquatic: Rapidly hydrolyzes to form an insoluble crust. Terrestrial: Will bind with moist soil no leaching will occur. Atmospheric: Remains in the vapor phase and half life is 32 hours. Will not biodegrade.

## Section 13 - Disposal Considerations

**Disposal:** Must be disposed of in accordance with 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

**United States EPA Regulations:**

**Clean Air Act**

SOCMI Chemical: 4, 4' Methylene bis(phenylisocyanate)

Hap Code: XOV

This product contains 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>
4, 4' Methylene bis(phenylisocyanate)	101-68-8	30.0 Max.
Polymethylene polyphenyl isocyanate	9016-87-9	10.0 Max.

## Section 15 - Regulatory Information (continued)

**TSCA Inventory Status (40 CFR710):** All components are listed in the TSCA Inventory.

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


### Canadian Regulations;

WHMIS Identification: **D2A, D2B**

CDSL/NDL (Canadian Domestic Substance List/Non Domestic Substance List): **Listed on CDSL**



### Labeling according to EEC Directive

Risk Phrases	Symbol(s) Required for EU Label	Safety Phrases
<b>R20:</b> Harmful by inhalation <b>R36/37/38:</b> Irritating to eyes, respiratory system and skin <b>R40:</b> Limited evidence of a carcinogenic effect <b>R48/20:</b> Harmful; danger of serious damage to health by prolonged exposure through inhalation	 <b>Xn: Harmful)</b>	<b>S1/2:</b> Keep locked up and out of reach of children <b>S23:</b> Do not breath vapors <b>S36/37:</b> Wear suitable protective equipment. <b>S45:</b> In case of an accident or if you feel sick , seek medical attention

## 16 - Other Information

**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.

This Material Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200), the Canadian Workplace Hazardous Materials Information System (WHMIS), and European Union Directive 1907/2006/EEC (REACH). Hazard symbols and risk phrases are based on maximum listed concentration of each hazardous ingredient. Unlisted ingredients are not "hazardous" per the OSHA Hazard Communication Standard (29 CFR 1910.1200), the Canadian Workplace Hazardous Materials Information System (WHMIS) or the European Union (EU/EEC) directive 1907/2006/EEC and are considered trade secrets under US Federal Law (29CFR and 40CFR), Canadian Law (Health Canada Legislation), and European Union Directives.



# Material Safety Data Sheet

## Smooth-Cast 45D

## MSDS No. 441

Date Of Preparation: January 27, 2010

Revision: 0004

### Section 1 - Chemical Product and Company Identification

**Product/Chemical Name:** Smooth-Cast 45D 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- Hazards Identification

#### Hazard Designation

Europe



Xn: Harmful

Canada



HMIS	
H	2
F	1
R	0

#### Risk Phrases pertaining to particular dangers

**R20/R21/22:** Harmful by inhalation. Harmful if in contact with skin and if swallowed

**R36:** Irritating to eyes.

**R33:** Danger of cumulative effects.

Classified according to Articles 6 & 7 of Directive 1999/45/EC

### Section 3 - Composition / Information on Ingredients

Component	ACGIH TWA	OSHA PEL	Hazard Designation	Weight Percent (%)
Polyol /Plasticizer Blend (Non-Hazardous)	None Established	None Established	None	99.75-99.80
Phenylmercuric neodecanoate CAS Number: 26545-49-3 EINECS Number: 247-783-7	None Established	None Established	Xn	0.20 - 0.25

### 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, paramedic, or community medical support.**

## Section 5 - Fire-Fighting Measures

**Flash Point:** >390 °F (199 °C)

**Flash Point Method:** COC

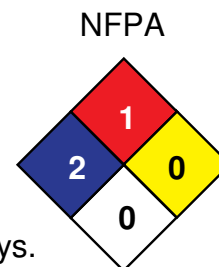
**Flammability Classification:** Non-Flammable

**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 face piece 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

**Respiratory Protection:** Follow OSHA respirator regulations 29 CFR 1910.134 and European Standard EN 149; wear an MSHA/NIOSH or European Standard EN149 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 and European Standard EN166. 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> 1.2 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:** 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

None Established

### Section 12 - Ecological Information

None Established

### Section 13 - Disposal Considerations

**Disposal:** Must be disposed of in accordance with applicable 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

**United States EPA Regulations:**

**SARA Toxic Chemical (40 CFR 372.65):** These products contain 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

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

**California Proposition 65:** This product contains a mercury compound, which has been identified by the state of California to cause birth defects or other reproductive harm.

## Section 15 - Regulatory Information (continued)


### Canadian Regulations;

WHMIS Identification: **D2A, D2B**

CDSL/NDL (Canadian Domestic Substance List/Non Domestic Substance List): **Listed on CDSL**



### Labeling according to EEC Directive

Risk Phrases	Symbol(s) Required for EU Label	Safety Phrases
<p><b>R20/R21/22:</b> Harmful by inhalation. Harmful if in contact with skin and if swallowed</p> <p><b>R36:</b> Irritating to eyes.</p> <p><b>R33:</b> Danger of cumulative effects.</p>	<div style="text-align: center;">   <b>Xn: Harmful</b> </div>	<p><b>S1/S2:</b> Keep locked up and out of reach of children.</p> <p><b>S13:</b> Keep away from food, drink and animal foodstuffs.</p> <p><b>S28:</b> After contact with skin, wash immediately with plenty of soap-suds.</p> <p><b>S36/37/39:</b> Wear suitable protective clothing, gloves and eye and face protection.</p> <p><b>S45:</b> In case of accident or if you feel ill, seek medical advice immediately.</p> <p><b>S60:</b> This material and container must be disposed as hazardous waste.</p> <p><b>S61:</b> Avoid release to the environment. (See MSDS).</p>

## 16 - Other Information

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