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<b>SAFETY DATA SHEET</b>		Revision Date: 01/07/2017
		Print Date: 3/21/2017
		SDS Number: 000000093503
Pliogrip™ 7779 B/220 ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 154723		Version: 1.5

29 CFR 1910.1200 (OSHA HazCom 2012)

## SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

### Product identifier

Trade name : Pliogrip™ 7779 B/220  
ADHESIVE  
™ Trademark, Ashland or its subsidiaries, registered in  
various countries

### Relevant identified uses of the substance or mixture and uses advised against

Recommended use : Adhesives  
Industrial chemical

<b>Details of the supplier of the safety data sheet</b> Ashland P.O. Box 2219 Columbus, OH 43216 United States of America (USA) 614-790-3333  EHSProductSafety@ashland.com	<b>Emergency telephone number</b> 1-800-ASHLAND (1-800-274-5263)  <b>Regulatory Information Number</b> 1-800-325-3751  <b>Product Information</b> 614-790-3333
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## SECTION 2. HAZARDS IDENTIFICATION

### GHS Classification

Skin irritation : Category 2

Eye irritation : Category 2A

Respiratory sensitization : Category 1

Skin sensitization : Category 1

Reproductive toxicity : Category 2

Specific target organ systemic toxicity - single exposure : Category 3 (Respiratory system)

Specific target organ systemic toxicity - repeated : Category 2 (Respiratory system, Respiratory Tract)

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exposure (Inhalation)

**GHS label elements**

Hazard pictograms



Signal Word

: Danger

Hazard Statements

: Causes skin irritation.  
 May cause an allergic skin reaction.  
 Causes serious eye irritation.  
 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
 May cause respiratory irritation.  
 Suspected of damaging fertility or the unborn child.  
 May cause damage to organs (Respiratory system, Respiratory Tract) through prolonged or repeated exposure if inhaled.

Precautionary Statements

: **Prevention:**  
 Obtain special instructions before use.  
 Do not handle until all safety precautions have been read and understood.  
 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.  
 Wash skin thoroughly after handling.  
 Use only outdoors or in a well-ventilated area.  
 Contaminated work clothing must not be allowed out of the workplace.  
 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
 In case of inadequate ventilation wear respiratory protection.  
**Response:**  
 IF ON SKIN: Wash with plenty of soap and water.  
 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 IF exposed or concerned: Get medical advice/ attention.  
 If skin irritation or rash occurs: Get medical advice/ attention.  
 If eye irritation persists: Get medical advice/ attention.  
 Take off contaminated clothing and wash before reuse.  
**Storage:**  
 Store in a well-ventilated place. Keep container tightly closed.  
 Store locked up.  
**Disposal:**

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Dispose of contents/ container to an approved waste disposal  
 plant.

**Other hazards**

None known.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS****PART A**

Substance / Mixture : Mixture

**Hazardous components**

Chemical name	CAS-No.	Classification	Concentration (%)
POLYMER	254504001-5759	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2A; H319 Resp. Sens. 1A; H334 Skin Sens. 1A; H317 STOT SE 3; H335 STOT RE 2; H373	>= 10.00 - < 15.00
SCAVENGER	254504001-5709	This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).	>= 10.00 - < 15.00
URETHANE PREPOLYMER	800986-5572P	Resp. Sens. 1; H334 Skin Sens. 1; H317	>= 5.00 - < 10.00

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The identity and concentration of one or more component(s) is being withheld under business confidentiality.

4,4'-DIPHENYLMETHANE DIISOCYANATE	101-68-8	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2A; H319 Resp. Sens. 1; H334 Skin Sens. 1; H317 STOT SE 3; H335 STOT RE 2; H373	35.5153
TALC	14807-96-6	This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).	10.224
PROPYLENE CARBONATE	108-32-7	Eye Irrit. 2A; H319	1.4964

**PART B**

Substance / Mixture : Mixture

Chemical nature : Defatter

**Hazardous components**

Chemical name	CAS-No.	Classification	Concentration (%)
TALC	14807-96-6	This material is not considered hazardous	25.002

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		under the OSHA Hazard Communication Standard (HazCom 2012).	
PIPERAZINE	110-85-0	Flam. Sol. 1; H228 Skin Corr. 1B; H314 Eye Dam. 1; H318 Resp. Sens. 1B; H334 Skin Sens. 1B; H317 Repr. 2; H361	0.767

**SECTION 4. FIRST AID MEASURES**

- General advice : Move out of dangerous area.  
Call a POISON CENTRE or doctor/physician if exposed or you feel unwell.  
Show this safety data sheet to the doctor in attendance.  
Do not leave the victim unattended.
- If inhaled : Move to fresh air.  
Call a physician or poison control centre immediately.  
Keep patient warm and at rest.  
If unconscious, place in recovery position and seek medical advice.
- In case of skin contact : Remove contaminated clothing. If irritation develops, get medical attention.  
If on skin, rinse well with water.  
Wash contaminated clothing before re-use.
- In case of eye contact : Immediately flush eye(s) with plenty of water.  
Remove contact lenses.  
Protect unharmed eye.
- If swallowed : Obtain medical attention.

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Do not give milk or alcoholic beverages.  
 Never give anything by mouth to an unconscious person.  
 If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed : Pulmonary edema may be delayed.  
 Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:  
 stomach or intestinal upset (nausea, vomiting, diarrhea)  
 irritation (nose, throat, airways)  
 Cough  
 Headache  
 chest pain  
 lung edema (fluid buildup in the lung tissue)  
 Difficulty in breathing  
 Causes skin irritation.  
 May cause an allergic skin reaction.  
 Causes serious eye irritation.  
 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
 May cause respiratory irritation.  
 Suspected of damaging fertility or the unborn child.

Notes to physician : No hazards which require special first aid measures.

**SECTION 5. FIREFIGHTING MEASURES**

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
 Water spray  
 Foam  
 Carbon dioxide (CO<sub>2</sub>)  
 Dry chemical

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : carbon dioxide and carbon monoxide  
 Hydrogen cyanide (hydrocyanic acid)  
 Isocyanates  
 Nitrogen oxides (NO<sub>x</sub>)  
 toxic fumes  
 Aldehydes

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Ketones  
 halogenated hydrocarbons  
 nitrogen oxides (NOx)  
 Bromine  
 Hydrocarbons

Specific extinguishing  
 methods :

Product is compatible with standard fire-fighting agents.

Further information : Fire residues and contaminated fire extinguishing water must  
 be disposed of in accordance with local regulations.

Special protective equipment  
 for firefighters : In the event of fire, wear self-contained breathing apparatus.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions,  
 protective equipment and  
 emergency procedures : Use personal protective equipment.  
 Ensure adequate ventilation.  
 Persons not wearing protective equipment should be excluded  
 from area of spill until clean-up has been completed.

Environmental precautions : Prevent product from entering drains.  
 Prevent further leakage or spillage if safe to do so.  
 If the product contaminates rivers and lakes or drains inform  
 respective authorities.

Methods and materials for  
 containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel,  
 acid binder, universal binder, sawdust).  
 Keep in suitable, closed containers for disposal.

Other information : Comply with all applicable federal, state, and local regulations.

**SECTION 7. HANDLING AND STORAGE**

Advice on safe handling : Avoid formation of aerosol.  
 Provide sufficient air exchange and/or exhaust in work rooms.  
 Do not breathe vapours/dust.  
 Do not smoke.  
 Persons susceptible to skin sensitisation problems or asthma,  
 allergies, chronic or recurrent respiratory disease should not  
 be employed in any process in which this mixture is being

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used.  
 Container hazardous when empty.  
 Avoid exposure - obtain special instructions before use.  
 Avoid contact with skin and eyes.  
 Smoking, eating and drinking should be prohibited in the  
 application area.  
 For personal protection see section 8.  
 Dispose of rinse water in accordance with local and national  
 regulations.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated  
 place.  
 Observe label precautions.

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Components with workplace control parameters****PART A**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
SCAVENGER	254504001- 5709	TWA	1 mg/m3 Respirable fraction (Aluminium)	ACGIH

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4,4'-DIPHENYLMETHANE DIISOCYANATE	101-68-8	TWA	0.005 ppm	ACGIH
		TWA	0.005 ppm 0.05 mg/m3	NIOSH REL
		C	0.02 ppm 0.2 mg/m3	NIOSH REL
		C	0.02 ppm 0.2 mg/m3	OSHA Z-1
		C	0.02 ppm 0.2 mg/m3	OSHA P0
		PEL	0.005 ppm 0.051 mg/m3	CAL PEL
TALC	14807-96-6	TWA	20 Million particles per cubic foot	OSHA Z-3



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			Dust	
		TWA	2 mg/m3 respirable dust fraction	OSHA P0
		TWA	2 mg/m3 Respirable	NIOSH REL
		PEL	2 mg/m3 Respirable dust	CAL PEL
		TWA	0.1 fibre/cm3	ACGIH
		TWA	2 mg/m3 Respirable fraction	ACGIH

**Hazardous components without workplace control parameters****PART A**

Components	CAS-No.

**PART B**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
TALC	14807-96-6	TWA	20 Million particles per cubic foot Dust	OSHA Z-3
		TWA	2 mg/m3 respirable dust fraction	OSHA P0
		TWA	2 mg/m3 Respirable	NIOSH REL
		PEL	2 mg/m3 Respirable dust	CAL PEL
		TWA	0.1 fibre/cm3	ACGIH
		TWA	2 mg/m3 Respirable fraction	ACGIH
CARBON BLACK	1333-86-4	TWA	3 mg/m3 Inhalable fraction	ACGIH
		TWA	3.5 mg/m3	NIOSH REL
		TWA	3.5 mg/m3	OSHA Z-1
		TWA	3.5 mg/m3	OSHA P0
		PEL	3.5 mg/m3	CAL PEL
		TWA	0.1 mg/m3 (PAHs)	NIOSH REL
PIPERAZINE	110-85-0	TWA	0.03 ppm	ACGIH

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Inhalable fraction and vapor (piperazine)
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**Hazardous components without workplace control parameters****PART B**

Components	CAS-No.
PIPERAZINE	110-85-0

**Engineering measures** : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

**Personal protective equipment**

**Respiratory protection** : In the case of vapour formation use a respirator with an approved filter.  
 Diisocyanates have poor warning properties. An air-purifying respirator with an organic vapor cartridge and an N95 prefilter can be used safely and effectively to reduce exposure, provided that appropriate cartridge change schedules are developed to ensure that cartridges are changed before breakthrough occurs. The employer is required to select the appropriate respirator for each situation and must consider potential exposure to chemicals in addition to diisocyanates.

A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.

**Hand protection**  
 Remarks

: The suitability for a specific workplace should be discussed with the producers of the protective gloves.

**Eye protection**

: Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist.

**Skin and body protection**

: Wear as appropriate:  
 Impervious clothing  
 Safety shoes

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Choose body protection according to the amount and concentration of the dangerous substance at the work place.  
 Discard gloves that show tears, pinholes, or signs of wear.  
 Wear resistant gloves (consult your safety equipment supplier).

Hygiene measures : Wash hands before breaks and at the end of workday.  
 When using do not eat or drink.  
 When using do not smoke.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES****PART A**

Appearance : viscous

Physical state : liquid

Colour : beige

Odour : No data available

Odour Threshold : No data available

pH : No data available

Melting point/freezing point : No data available

Boiling point/boiling range : > 392 °F / > 200 °C

Flash point : > 100 °C

Evaporation rate : < 1  
n-Butyl Acetate

Flammability (solid, gas) : No data available

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapour pressure : < 0.01333 hPa (25 °C)

Relative vapour density : > 1AIR=1

Relative density : No data available

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Density : 1.288 g/cm<sup>3</sup> (20 °C)

## Solubility(ies)

Water solubility : practically insoluble

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Thermal decomposition : No data available

## Viscosity

Viscosity, dynamic : ca. 20,000 mPa.s

Viscosity, kinematic : No data available

Oxidizing properties : No data available

**PART B**

Physical state : liquid

Colour : black

Odour : No data available

Odour Threshold : No data available

pH : No data available

Melting point/range : No data available

Boiling point/boiling range : No data available

Flash point : > 93.4 °C

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Upper explosion limit : No data available

Lower explosion limit : No data available

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Vapour pressure	: 3 hPa (25 °C) Calculated Vapor Pressure
Relative vapour density	: No data available
Relative density	: 1.26 (25 °C)
Density	: ca. 1.26 g/cm <sup>3</sup> (20 °C)
Solubility(ies)	
Water solubility	: No data available
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Thermal decomposition	: No data available
Viscosity	
Viscosity, dynamic	: 23,000 mPa.s
Viscosity, kinematic	: No data available
Oxidizing properties	: No data available

**SECTION 10. STABILITY AND REACTIVITY**

Reactivity	: No decomposition if stored and applied as directed.
Chemical stability	: Stable under recommended storage conditions.
Possibility of hazardous reactions	: Product will not undergo hazardous polymerization.
Conditions to avoid	: heat Freezing temperatures. Exposure to moisture
Incompatible materials	: Acids Alcohols aluminum Amines Ammonia Bases

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Copper alloys  
 fluorides  
 Iron  
 isocyanates  
 Oxidizing agents  
 oxidizers  
 Phosphorus compounds  
 strong alkalis  
 strong reducing agents  
 water  
 Zinc  
 Humid air

Hazardous decomposition  
 products

carbon dioxide and carbon monoxide  
 Hydrocarbons  
 Hydrogen cyanide (hydrocyanic acid)  
 Isocyanates  
 Nitrogen oxides (NOx)

**SECTION 11. TOXICOLOGICAL INFORMATION**

Information on likely routes of exposure : Inhalation  
 Skin contact  
 Eye Contact  
 Ingestion

**Acute toxicity**

Not classified based on available information.

**Components:****POLYMER:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
 Method: OECD Test Guideline 425  
 GLP: yes

Acute inhalation toxicity : Assessment: The component/mixture is classified as acute inhalation toxicity, category 4.

Acute dermal toxicity : (Rabbit): > 9,400 mg/kg  
 Remarks: Information given is based on data obtained from similar substances.

**Components:****4,4'-DIPHENYLMETHANE DIISOCYANATE:**

Acute oral toxicity : LD50 (Rat): 9,200 mg/kg

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Acute inhalation toxicity : LC50 (Rat): 0.369 mg/l  
 Exposure time: 4 h

LC50 (Rat): > 2.24 mg/l  
 Exposure time: 1 h  
 Test atmosphere: dust/mist  
 Method: OECD Test Guideline 403  
 Assessment: The component/mixture is classified as acute  
 inhalation toxicity, category 4.

Acute dermal toxicity : LD50 (Rabbit): > 7,900 mg/kg

**PROPYLENE CARBONATE:**

Acute oral toxicity : LD50 (Rat): 29.1 g/kg

Acute dermal toxicity : LD50 (Rabbit): > 24 g/kg

**PIPERAZINE:**

Acute oral toxicity : LD50 (Rat): ca. 2,600 mg/kg  
 Method: OECD Test Guideline 401

Acute inhalation toxicity : LC0 (Rat, male and female): 1.61 mg/l  
 Exposure time: 8 h  
 Test atmosphere: vapour

**Skin corrosion/irritation**

Causes skin irritation.

**Product:**

Remarks: May cause skin irritation and/or dermatitis.

**Components:****POLYMER:**

Result: Irritating to skin.

Remarks: Information given is based on data obtained from similar substances.

**SCAVENGER:**

Result: Slight, transient irritation

**URETHANE PREPOLYMER:**

Result: No skin irritation

**Components:****4,4'-DIPHENYLMETHANE DIISOCYANATE:**

Result: Irritating to skin.

**TALC:**



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Result: Slight, transient irritation

**PROPYLENE CARBONATE:**

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

**PIPERAZINE:**

Result: Corrosive after 3 minutes to 1 hour of exposure

**Serious eye damage/eye irritation**

Causes serious eye irritation.

**Product:**

Remarks: Vapours may cause irritation to the eyes, respiratory system and the skin., Causes serious eye irritation.

**Components:**

**POLYMER:**

Result: No eye irritation

Remarks: Information given is based on data obtained from similar substances.

Result: Irritating to eyes.

**SCAVENGER:**

Result: Slight, transient irritation

**URETHANE PREPOLYMER:**

Result: No eye irritation

**Components:**

**4,4'-DIPHENYLMETHANE DIISOCYANATE:**

Result: Irritating to eyes.

**TALC:**

Result: Slight, transient irritation

**PROPYLENE CARBONATE:**

Species: Rabbit

Result: Irritating to eyes.

Method: OECD Test Guideline 405

**PIPERAZINE:**

Result: Corrosive

**Respiratory or skin sensitisation**

Skin sensitisation: May cause an allergic skin reaction.

Respiratory sensitisation: May cause allergy or asthma symptoms or breathing difficulties if inhaled.



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**Components:****POLYMER:**

Test Type: Maximisation Test

Species: Guinea pig

Assessment: May cause sensitisation by skin contact.

Result: The product is a skin sensitiser, sub-category 1A.

Assessment: May cause sensitization by inhalation.

Result: The product is a respiratory sensitiser, sub-category 1A.

**URETHANE PREPOLYMER:**

Assessment: May cause sensitisation by skin contact.

Assessment: May cause sensitization by inhalation.

**Components:****4,4'-DIPHENYLMETHANE DIISOCYANATE:**

Assessment: May cause sensitization by inhalation.

Assessment: May cause sensitisation by skin contact.

**PIPERAZINE:**

Assessment: The product is a respiratory sensitiser, sub-category 1B.

Assessment: The product is a skin sensitiser, sub-category 1B.

Germ cell mutagenicity

Not classified based on available information.

**Components:****POLYMER:**

Genotoxicity in vitro

: Test Type: Ames test

Result: negative

Remarks: Information given is based on data obtained from similar substances.

Genotoxicity in vivo

: Test Type: In vivo micronucleus test

Test species: Rat

Method: OECD Test Guideline 474

Remarks: Information given is based on data obtained from similar substances.

**Components:****PROPYLENE CARBONATE:**

Genotoxicity in vitro

: Test Type: Ames test

Test species: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

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Method: OECD Test Guideline 471

Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test  
 Test species: Mouse  
 Cell type: Bone marrow  
 Method: OECD Test Guideline 474  
 Result: negative

**Carcinogenicity**

Not classified based on available information.

**Product:**

Carcinogenicity - Assessment : Methylene bisphenylisocyanate (MDI) aerosol has been reported to be irritating to lungs at a concentration of 1 mg/m<sup>3</sup> with no effect observed at 0.2 mg/m<sup>3</sup>. Although MDI has been reported to cause an increase in non-carcinogenic lung tumors and a single carcinogenic lung tumor at very high concentrations (6 mg/m<sup>3</sup>), it is not classified as a carcinogen by IARC, NTP or OSHA.

**Reproductive toxicity**

Suspected of damaging fertility or the unborn child.

**Components:**

PIPERAZINE:

Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

**STOT - single exposure**

May cause respiratory irritation.

**Components:**

POLYMER:

Exposure routes: Inhalation

Target Organs: Respiratory Tract

Assessment: May cause respiratory irritation.

**Components:**

4,4'-DIPHENYLMETHANE DIISOCYANATE:

Exposure routes: Inhalation

Target Organs: Respiratory system

Assessment: May cause respiratory irritation.

**STOT - repeated exposure**

Not classified based on available information.

**Components:**

POLYMER:

Exposure routes: Inhalation

Target Organs: Respiratory Tract

Assessment: May cause damage to organs through prolonged or repeated exposure.

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**Components:**

4,4'-DIPHENYLMETHANE DIISOCYANATE:

Exposure routes: Inhalation

Target Organs: Respiratory system

Assessment: May cause damage to organs through prolonged or repeated exposure.

**Aspiration toxicity**

Not classified based on available information.

**Further information****Product:**

Remarks: No data available

**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Product:**

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

**Components:****POLYMER:**

Toxicity to fish : LC50 (Oryzias latipes (Japanese medaka)): > 3,000 mg/l  
 Exposure time: 96 h  
 Test Type: semi-static test  
 Remarks: Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates : (Daphnia magna (Water flea)): > 1,000 mg/l  
 Exposure time: 24 h  
 Test Type: static test  
 Method: OECD Test Guideline 202  
 Remarks: Information given is based on data obtained from similar substances.

Toxicity to algae : NOEC (Desmodesmus subspicatus (green algae)): 1,640 mg/l  
 End point: Growth inhibition  
 Exposure time: 72 h  
 Test Type: static test  
 Method: OECD Test Guideline 201  
 Remarks: Information given is based on data obtained from similar substances.

4,4'-DIPHENYLMETHANE DIISOCYANATE:

Toxicity to fish : LC50 (Oryzias latipes (Orange-red killifish)): &gt; 3,000 mg/l

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Exposure time: 96 h  
 Test Type: semi-static test  
 Remarks: Information given is based on data obtained from  
 similar substances.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l  
 Exposure time: 24 h  
 Test Type: static test  
 Method: OECD Test Guideline 202  
 Remarks: Information given is based on data obtained from  
 similar substances.

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): > 10 mg/l  
 Exposure time: 21 d  
 End point: Reproduction Test  
 Test Type: semi-static test  
 Method: OECD Test Guideline 211  
 Remarks: Information given is based on data obtained from  
 similar substances.

PROPYLENE CARBONATE:  
 Toxicity to fish : LC50 (Cyprinus carpio (Carp)): > 1,000 mg/l  
 Exposure time: 96 h  
 Test Type: semi-static test  
 Method: Directive 67/548/EEC, Annex V, C.1.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,000 mg/l  
 Exposure time: 48 h  
 Test Type: static test  
 Method: OECD Test Guideline 202

Toxicity to algae : EC50 (Desmodesmus subspicatus (green algae)): > 900 mg/l  
 End point: Growth inhibition  
 Exposure time: 72 h  
 Test Type: static test  
 Method: OECD Test Guideline 201

NOEC (Desmodesmus subspicatus (green algae)): 900 mg/l  
 End point: Growth inhibition  
 Exposure time: 72 h  
 Test Type: static test  
 Method: OECD Test Guideline 201

PIPERAZINE:  
 Toxicity to fish : LC50 (Poecilia reticulata (guppy)): > 1,800 mg/l  
 Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 21 mg/l



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Partition coefficient: n- : log Pow: -1.17  
 octanol/water

No data available

**Mobility in soil****Components:**

No data available

**Other adverse effects**

No data available

**Product:**

Additional ecological : No data available  
 information

**Components:****SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

General advice : Do not dispose of waste into sewer.  
 Do not contaminate ponds, waterways or ditches with  
 chemical or used container.  
 Send to a licensed waste management company.

Dispose of in accordance with all applicable local, state and  
 federal regulations.

Contaminated packaging : Empty remaining contents.  
 Dispose of as unused product.  
 Empty containers should be taken to an approved waste  
 handling site for recycling or disposal.  
 Do not re-use empty containers.

**SECTION 14. TRANSPORT INFORMATION****International transport regulations****REGULATION**

ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT / LTD. QTY.

**MX\_DG**

Not dangerous goods

**INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER**

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Not dangerous goods

**INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO**

Not dangerous goods

**INTERNATIONAL MARITIME DANGEROUS GOODS**

Not dangerous goods

**TDG\_INWT\_C**

Not dangerous goods

**TDG\_RAIL\_C**

Not dangerous goods

**TDG\_ROAD\_C**

Not dangerous goods

**U.S. DOT - INLAND WATERWAYS**

Not dangerous goods

**CFR\_RAIL\_C**

Not dangerous goods

**U.S. DOT - ROAD**

Not dangerous goods

**\*ORM = ORM-D, CBL = COMBUSTIBLE LIQUID**

Marine pollutant

no

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

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**SECTION 15. REGULATORY INFORMATION**

**PART A**  
**EPCRA - Emergency Planning and Community Right-to-Know Act**  
**CERCLA Reportable Quantity**

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
4,4'-DIPHENYLMETHANE DIISOCYANATE	101-68-8	5000	14206.159791

**SARA 311/312 Hazards** : Acute Health Hazard  
 Chronic Health Hazard

**SARA 313**

4,4'-DIPHENYLMETHANE DIISOCYANATE	101-68-8	35.51 %
--------------------------------------	----------	---------

**California Prop 65** WARNING! This product contains a chemical known to the State of California to cause cancer.  
 QUARTZ / SAND 14808-60-7

**PART B**

**SARA 311/312 Hazards** : Chronic Health Hazard

**SARA 313** This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**California Prop 65** WARNING! This product contains a chemical known to the State of California to cause cancer.

CARBON BLACK	1333-86-4
QUARTZ / SAND	14808-60-7
FURAN	110-00-9
PROPYLENE OXIDE	75-56-9
ACETALDEHYDE	75-07-0

The components of this product are reported in the following inventories:



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DSL	:	All components
AICS	:	On the inventor
ENCS	:	Exempt
KECI	:	On the inventor
PICCS	:	Not in complian
IECSC	:	On the inventor
TSCA	:	On TSCA Inver

**Inventories**

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

**Registration: Trade Secret**

Chemical name	Identification number
POLYMER	254504001-5759
SCAVENGER	254504001-5709
URETHANE PREPOLYMER	800986-5572P

**SECTION 16. OTHER INFORMATION****Further information**

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**PART A**

NFPA:	HMIS III:						
<p>Flammability</p> <p>Health</p> <p>Instability</p> <p>Special hazard.</p>	<table border="1"> <tr> <td><b>HEALTH</b></td> <td></td> </tr> <tr> <td><b>FLAMMABILITY</b></td> <td></td> </tr> <tr> <td><b>PHYSICAL HAZARD</b></td> <td></td> </tr> </table> <p>0 = not significant, 1 =Slight,            2 = Moderate, 3 = High            4 = Extreme, * = Chronic</p>	<b>HEALTH</b>		<b>FLAMMABILITY</b>		<b>PHYSICAL HAZARD</b>	
<b>HEALTH</b>							
<b>FLAMMABILITY</b>							
<b>PHYSICAL HAZARD</b>							

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**NFPA Flammable and Combustible Liquids Classification**

Combustible Liquid Class IIIB

**PART B**

NFPA:	HMIS III:						
<p style="text-align: center;">Flammability</p> <p style="text-align: center;">Special hazard.</p>	<table border="1" style="width: 100%;"> <tr> <td style="background-color: blue; color: white; text-align: center;"><b>HEALTH</b></td> <td style="width: 50px;"></td> </tr> <tr> <td style="background-color: red; color: white; text-align: center;"><b>FLAMMABILITY</b></td> <td></td> </tr> <tr> <td style="background-color: yellow; text-align: center;"><b>PHYSICAL HAZARD</b></td> <td></td> </tr> </table> <p>0 = not significant, 1 =Slight,            2 = Moderate, 3 = High            4 = Extreme, * = Chronic</p>	<b>HEALTH</b>		<b>FLAMMABILITY</b>		<b>PHYSICAL HAZARD</b>	
<b>HEALTH</b>							
<b>FLAMMABILITY</b>							
<b>PHYSICAL HAZARD</b>							

**NFPA Flammable and Combustible Liquids Classification**

Combustible Liquid Class IIIB

**Full text of H-Statements****PART A**

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure if inhaled.

**PART B**

H228	Flammable solid.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H361	Suspected of damaging fertility or the unborn child.

Sources of key data used to compile the Safety Data Sheet



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Ashland internal data including own and sponsored test reports  
The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This SDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751).

List of abbreviations and acronyms that could be, but not necessarily are, used in this safety data sheet :

ACGIH : American Conference of Industrial Hygienists  
BEI : Biological Exposure Index  
CAS : Chemical Abstracts Service (Division of the American Chemical Society).  
CMR : Carcinogenic, Mutagenic or Toxic for Reproduction  
FG : Food grade  
GHS : Globally Harmonized System of Classification and Labeling of Chemicals.  
H-statement : Hazard Statement  
IATA : International Air Transport Association.  
IATA-DGR : Dangerous Goods Regulation by the "International Air Transport Association" (IATA).

ICAO : International Civil Aviation Organization  
ICAO-TI (ICAO) : Technical Instructions by the "International Civil Aviation Organization"  
IMDG : International Maritime Code for Dangerous Goods  
ISO : International Organization for Standardization  
logPow : octanol-water partition coefficient  
LCxx : Lethal Concentration, for xx percent of test population  
LDxx : Lethal Dose, for xx percent of test population.  
ICxx : Inhibitory Concentration for xx of a substance  
Ecxx : Effective Concentration of xx  
N.O.S.: Not Otherwise Specified  
OECD : Organization for Economic Co-operation and Development  
OEL : Occupational Exposure Limit  
P-Statement : Precautionary Statement  
PBT : Persistent , Bioaccumulative and Toxic  
PPE : Personal Protective Equipment  
STEL : Short-term exposure limit  
STOT : Specific Target Organ Toxicity  
TLV : Threshold Limit Value  
TWA : Time-weighted average  
vPvB : Very Persistent and Very Bioaccumulative  
WEL : Workplace Exposure Level

CERCLA : Comprehensive Environmental Response, Compensation, and Liability Act  
DOT : Department of Transportation  
FIFRA : Federal Insecticide, Fungicide, and Rodenticide Act

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HMIRC : Hazardous Materials Information Review Commission

HMIS : Hazardous Materials Identification System

NFPA : National Fire Protection Association

NIOSH : National Institute for Occupational Safety and Health

OSHA : Occupational Safety and Health Administration

PMRA : Health Canada Pest Management Regulatory Agency

RTK : Right to Know

WHMIS : Workplace Hazardous Materials Information System