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<b>SAFETY DATA SHEET</b>		Revision Date: 05/26/2015
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		SDS Number: 000000137699
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29 CFR 1910.1200 (OSHA HazCom 2012)

## SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

### Product identifier

Trade name : Pliogrip™ DTM 5  
ADHESIVE  
™ Trademark, Ashland or its subsidiaries, registered in various countries

### Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : 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  EHS Customer Requests@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

Acute toxicity (Inhalation) : Category 4

Skin irritation : Category 2

Eye irritation : Category 2A

Respiratory sensitization : Category 1

Skin sensitization : Category 1

Carcinogenicity (Inhalation) : Category 2

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 element**

Hazard pictograms



Signal Word

: Danger

Hazard Statements

: Causes skin irritation.  
May cause an allergic skin reaction.  
Causes serious eye irritation.  
Harmful if inhaled.  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
May cause respiratory irritation.  
Suspected of causing cancer if inhaled.  
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 or doctor/ physician 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:**  
Dispose of contents/ container to an approved waste disposal plant.

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**Other hazards**

None known.

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

**PART A**

Substance / Mixture : Mixture

Chemical nature : Defatter

**Hazardous components**

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

The identity 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	19.83
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		STOT SE 3; H335 STOT RE 2; H373	
TALC	14807-96-6	This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).	16.57
POLYMETHYLENE POLYPHENYL ISOCYANATE	9016-87-9	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	3.55
METHYLENE DIPHENYLISOCYANATE	26447-40-5	Acute Tox. 4; H332 Skin Irrit. 2; H315 Resp. Sens. 1A; H334 Skin Sens. 1A; H317 STOT SE 3; H335 STOT RE 2; H373	0.35

**PART B**

Substance / Mixture : Mixture

Chemical nature : Defatter

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#### Hazardous components

Chemical Name	CAS-No.	Classification	Concentration (%)
TALC	14807-96-6	This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).	22.95
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	0.76
CARBON BLACK	1333-86-4	Carc. 2; H351	0.15

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#### 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.

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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.  
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.  
Harmful if inhaled.  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
May cause respiratory irritation.  
Suspected of causing cancer if inhaled.  
Suspected of damaging fertility or the unborn child.  
May cause damage to organs through prolonged or repeated exposure if inhaled.
- Notes to physician : No hazards which require special first aid measures.

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## 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 (CO2)  
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.

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Hazardous combustion products : toxic fumes  
Aldehydes  
Ketones  
carbon dioxide and carbon monoxide  
Hydrogen cyanide (hydrocyanic acid)  
Isocyanates  
Nitrogen oxides (NOx)  
Hydrocarbons  
halogenated hydrocarbons  
nitrogen oxides (NOx)

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.

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## 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.

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## 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

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be employed in any process in which this mixture is being 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.  
Electrical installations / working materials must comply with the technological safety standards.

## 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.	ACGIH
4,4'-DIPHENYLMETHANE DIISOCYANATE	101-68-8	TWA	0.005 ppm	ACGIH
		REL	0.005 ppm 0.05 mg/m3	NIOSH/GUID E
		Ceil_Time	0.020 ppm 0.2 mg/m3	NIOSH/GUID E
		Ceiling	0.02 ppm 0.2 mg/m3	OSHA_TRANS
TALC	14807-96-6	TWA	2 mg/m3 Respirable fraction.	ACGIH
		REL	2 mg/m3 Respirable.	NIOSH/GUID E
		TWA	0.1 mg/m3 Respirable.	Z3
		TWA	0.3 mg/m3 Total dust.	Z3
POLYMETHYLENE POLYPHENYL ISOCYANATE	9016-87-9	TWA	0.005 ppm	ACGIH
		REL	0.005 ppm 0.05 mg/m3	NIOSH/GUID E



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		Ceil_Time	0.020 ppm 0.2 mg/m3	NIOSH/GUID E
		Ceiling	0.02 ppm 0.2 mg/m3	OSHA_TRA NS

### PART B

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
TALC	14807-96-6	TWA	2 mg/m3 Respirable fraction.	ACGIH
		REL	2 mg/m3 Respirable.	NIOSH/GUID E
		TWA	0.1 mg/m3 Respirable.	Z3
		TWA	0.3 mg/m3 Total dust.	Z3
CARBON BLACK	1333-86-4	REL	0.1 mg/m3	NIOSH/GUID E
		REL	3.5 mg/m3	NIOSH/GUID E
		PEL	3.5 mg/m3	OSHA_TRA NS
		TWA	3 mg/m3 Inhalable fraction.	ACGIH
PIPERAZINE	110-85-0	TWA	0.03 ppm Inhalable fraction and vapor (as piperazine)	ACGIH
		TWA	0.03 ppm Inhalable fraction and vapor (as piperazine)	ACGIHLIS_P

**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

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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.

- 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  
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.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### PART A

- Physical state : liquid
- 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  
(6.666667 hPa)  
Calculated Phase Transition Liquid/Gas
- Flash point : > 200.1 °F / > 93.4 °C
- Evaporation rate : < 1  
Ethyl Ether
- Flammability (solid, gas) : No data available
- Upper explosion limit : No data available

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Lower explosion limit : No data available

Vapour pressure : 0.0133333 hPa (20 °C)  
Calculated Vapor Pressure

Relative vapour density : > 1

Relative density : No data available

Density : 1.220 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 : No data available

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

: No data available

: No data available

Flash point : > 200.1 °F / > 93.4 °C  
Method: Seta closed cup

Evaporation rate : No data available

Flammability (solid, gas) : No data available

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Upper explosion limit : No data available

Lower explosion limit : No data available

Vapour pressure : 3 hPa (25 °C)  
Calculated Vapor Pressure

Relative vapour density : No data available

Relative density : 1.26 (77.00 °F)

Density : 1.26 g/cm<sup>3</sup> (77.00 °F)

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 : 21,000 mPa.s

Viscosity, kinematic : No data available

Oxidizing properties : No data available

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**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  
temperatures above 350 degrees F (177 degrees C)  
Freezing temperatures.  
Exposure to moisture

Incompatible materials : Acids  
Alcohols  
alkenes  
aluminum  
Amines

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Ammonia  
Bases  
Copper alloys  
Iron  
isocyanates  
oxidizers  
Phosphorus compounds  
strong alkalis  
strong oxidizing agents  
water  
Zinc

Hazardous decomposition  
products

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

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## SECTION 11. TOXICOLOGICAL INFORMATION

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

### Acute toxicity

Harmful if inhaled.

### Components:

#### POLYMER:

Acute oral toxicity : LD 50 (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 : LD 50 (Rat): 9,200 mg/kg

Acute inhalation toxicity : LC 50 (Rat): 0.369 mg/l  
Exposure time: 4 h

LC 50 (Rat): > 2.24 mg/l  
Exposure time: 1 h  
Test atmosphere: dust/mist

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Method: OECD Test Guideline 403

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

Acute dermal toxicity : LD 50 (Rabbit): > 7,900 mg/kg

**POLYMETHYLENE POLYPHENYL ISOCYANATE:**

Acute oral toxicity : LD 50 (Rat): > 10,000 mg/kg

Acute inhalation toxicity : LC 50 (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 : LD 50 (Rabbit): > 10,000 mg/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

**METHYLENE DIPHENYLISOCYANATE:**

Acute oral toxicity : LD 50 (Rat): > 5,000 mg/kg

Method: OECD Test Guideline 425

GLP: yes

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

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

Acute dermal toxicity : LD50 (Rabbit): > 9,400 mg/kg

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

**CARBON BLACK:**

Acute oral toxicity : LD 50 (Rat): > 10,000 mg/kg

Acute dermal toxicity : LD 50 (Rabbit): > 3 g/kg

**Skin corrosion/irritation**

Causes skin irritation.

**Product:**

Remarks: May cause skin irritation and/or dermatitis.

**Components:**

SCAVENGER:

Result: Possibly irritating to skin

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**POLYMER:**

Result: Irritating to skin

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

**Components:**

**TALC:**

Result: Possibly irritating to skin

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

Result: Irritating to skin

**POLYMETHYLENE POLYPHENYL ISOCYANATE:**

Result: Irritating to skin

**PIPERAZINE:**

Result: Corrosive after 3 minutes to 1 hour of exposure

**METHYLENE DIPHENYLISOCYANATE:**

Result: Irritating to skin

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

**CARBON BLACK:**

Result: Not irritating to skin

**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:**

**SCAVENGER:**

Result: Mildly irritating to eyes

**POLYMER:**

Result: Not irritating to eyes

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

**Components:**

**TALC:**

Result: Possibly irritating to eyes

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

Result: Irritating to eyes

**POLYMETHYLENE POLYPHENYL ISOCYANATE:**

Result: Irritating to eyes

**PIPERAZINE:**

Result: Corrosive to eyes

**METHYLENE DIPHENYLISOCYANATE:**

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Result: Not irritating to eyes

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

**CARBON BLACK:**

Result: Slightly irritating to eyes

**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.

**Components:**

**POLYMER:**

Test Type: Maximisation Test (GPMT)

Species: Guinea pig

Assessment: May cause sensitization 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.

**Components:**

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

Assessment: May cause sensitization by inhalation.

Assessment: May cause sensitization by skin contact.

**POLYMETHYLENE POLYPHENYL ISOCYANATE:**

Assessment: May cause sensitisation by skin contact.

Assessment: May cause sensitization by inhalation.

**PIPERAZINE:**

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

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

**METHYLENE DIPHENYLISOCYANATE:**

Test Type: Maximisation Test (GPMT)

Species: Guinea pig

Assessment: May cause sensitization 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.

**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.



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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:**

**METHYLENE DIPHENYLISOCYANATE:**

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.

**Carcinogenicity**

Suspected of causing cancer if inhaled.

**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.

**Components:**

**CARBON BLACK:**

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in inhalation studies with animals.

**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:**

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Exposure routes: Inhalation  
Target Organs: Respiratory system  
Assessment: May cause respiratory irritation.

**POLYMETHYLENE POLYPHENYL ISOCYANATE:**  
Exposure routes: Inhalation  
Target Organs: Respiratory system  
Assessment: May cause respiratory irritation.

**METHYLENE DIPHENYLISOCYANATE:**  
Exposure routes: Inhalation  
Target Organs: Respiratory Tract  
Assessment: May cause respiratory irritation.

**STOT - repeated exposure**

May cause damage to organs (Respiratory system, Respiratory Tract) through prolonged or repeated exposure if inhaled.

**Components:**

**POLYMER:**

Exposure routes: Inhalation  
Target Organs: Respiratory Tract  
Assessment: May cause damage to organs through prolonged or repeated exposure.

**Components:**

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

Exposure routes: Inhalation  
Target Organs: Respiratory system  
Assessment: May cause damage to organs through prolonged or repeated exposure.

**POLYMETHYLENE POLYPHENYL ISOCYANATE:**

Exposure routes: Inhalation  
Target Organs: Respiratory system  
Assessment: May cause damage to organs through prolonged or repeated exposure.

**METHYLENE DIPHENYLISOCYANATE:**

Exposure routes: Inhalation  
Target Organs: Respiratory Tract  
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

**Components:**

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

Remarks: Lung

**Carcinogenicity:**

**IARC**

Group 2B: Possibly carcinogenic to humans

TALC

14807-96-6

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CARBON BLACK 1333-86-4

- OSHA** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
- NTP** No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### POLYMER:

- Toxicity to fish : LC 50 (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)): > 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 : EC50 (Water flea (Daphnia magna)): > 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.

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Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Water flea (*Daphnia magna*)): > 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.

**POLYMETHYLENE POLYPHENYL ISOCYANATE:**

Toxicity to fish : LC50 (*Oryzias latipes* (Orange-red killifish)): > 3,000 mg/l  
 Exposure time: 96 h  
 Test Type: semi-static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Water flea (*Daphnia magna*)): > 100 mg/l  
 Exposure time: 24 h  
 Test Type: static test  
 Method: OECD Test Guideline 202

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Water flea (*Daphnia magna*)): > 10 mg/l  
 Exposure time: 21 d  
 End point: Reproduction Test  
 Test Type: semi-static test  
 Method: OECD Test Guideline 211

**PIPERAZINE:**

Toxicity to fish : LC 50 (*Poecilia reticulata* (guppy)): > 1,800 mg/l  
 Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC 50 (Water flea (*Daphnia magna*)): 21 mg/l  
 Exposure time: 48 h  
 Method: OECD Test Guideline 202

Toxicity to algae : EC 50 (*Pseudokirchneriella subcapitata* (green algae)): > 1,000 mg/l  
 Exposure time: 72 h  
 Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Water flea (*Daphnia magna*)): 12.5 mg/l  
 Exposure time: 21 d  
 Method: OECD Test Guideline 211

**METHYLENE DIPHENYLISOCYANATE:**

Toxicity to fish : LC 50 (*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

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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.

#### **Persistence and degradability**

##### **POLYMER:**

Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 0 %  
Exposure time: 28 d  
Method: OECD Test Guideline 302C

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

Biodegradability : Result: Not biodegradable  
Biodegradation: 0 %  
Exposure time: 28 d  
Method: OECD Test Guideline 302C  
Remarks: Information given is based on data obtained from similar substances.

##### **POLYMETHYLENE POLYPHENYL ISOCYANATE:**

Biodegradability : Result: Not biodegradable  
Biodegradation: 0 %  
Exposure time: 28 d  
Method: OECD Test Guideline 302C  
Remarks: Information given is based on data obtained from similar substances.

##### **PIPERAZINE:**

Biodegradability : Result: Readily biodegradable  
Biodegradation: 70 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F

##### **METHYLENE DIPHENYLISOCYANATE:**

Biodegradability : Result: Not readily biodegradable.  
Remarks: Information given is based on data obtained from similar substances.

#### **Bioaccumulative potential**

##### **PIPERAZINE:**

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

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**Mobility in soil**

No data available

**Other adverse effects**

No data available

**Product:**

Additional ecological information : No data available

**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.

**U.S. DOT - ROAD**

Not dangerous goods

**U.S. DOT - RAIL**

Not dangerous goods

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

Not dangerous goods

**TRANSPORT CANADA - ROAD**

Not dangerous goods
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**TRANSPORT CANADA - RAIL**

Not dangerous goods

**TRANSPORT CANADA - INLAND WATERWAYS**

Not dangerous goods

**INTERNATIONAL MARITIME DANGEROUS GOODS**

Not dangerous goods

**INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO**

Not dangerous goods

**INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER**

Not dangerous goods

**MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES**

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.

**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	25395.535465

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

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**SARA 313 Component(s)**

101-68-8	101-68-8	19.83 %
9016-87-9	9016-87-9	3.55 %

**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 Component(s)** : 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:**

- TSCA : On TSCA Inventory
- DSL : All components of this product are on the Canadian DSL.
- AUSTR : On the inventory, or in compliance with the inventory
- ENCS : Exempt
- KECL : On the inventory, or in compliance with the inventory
- PICCS : Not in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory

**Inventories**

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

**Registration: Trade Secret**



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Chemical Name	Identification number
SCAVENGER	254504001-5709
POLYMER	254504001-5759

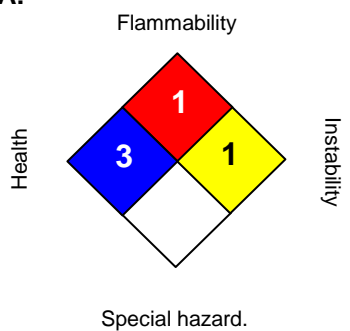
**SECTION 16. OTHER INFORMATION**

**Further information**

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**PART A**

**NFPA:**



**HMIS III:**

<b>HEALTH</b>	<b>2*</b>
<b>FLAMMABILITY</b>	<b>1</b>
<b>PHYSICAL HAZARD</b>	<b>1</b>

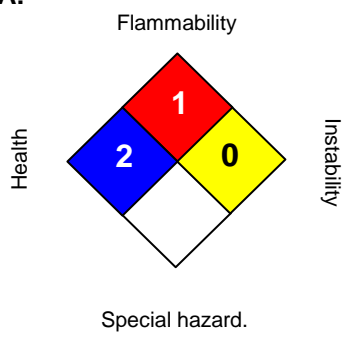
0 = not significant, 1 =Slight,  
2 = Moderate, 3 = High  
4 = Extreme, \* = Chronic

**NFPA Flammable and Combustible Liquids Classification**

Combustible Liquid Class IIIB

**PART B**

**NFPA:**



**HMIS III:**

<b>HEALTH</b>	<b>2*</b>
<b>FLAMMABILITY</b>	<b>1</b>
<b>PHYSICAL HAZARD</b>	<b>0</b>

0 = not significant, 1 =Slight,  
2 = Moderate, 3 = High  
4 = Extreme, \* = Chronic

**NFPA Flammable and Combustible Liquids Classification**

Combustible Liquid Class IIIB

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**Full text of H-Statements referred to under sections 2 and 3.**

**PART A**

H228	Flammable solid.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
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.
H351	Suspected of causing cancer if inhaled.
H361	Suspected of damaging fertility or the unborn child.
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.
H351	Suspected of causing cancer if inhaled.
H361	Suspected of damaging fertility or the unborn child.

Sources of key data used to compile the Safety Data Sheet

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).

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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  
 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**