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Pliogrip™ 7770/220 KIT ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 155156	Version: 1.7

29 CFR 1910.1200 (OSHA HazCom 2012)

**SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

**Product identifier**

Trade name : Pliogrip™ 7770/220 KIT 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

<p><b>Details of the supplier of the safety data sheet</b>          Ashland          P.O. Box 2219          Columbus, OH 43216          United States of America (USA)          1-614-790-3333</p> <p>EHSProductSafety@ashland.com</p>	<p><b>Emergency telephone number</b>          1-800-ASHLAND (1-800-274-5263)</p> <p><b>Regulatory information</b>          1-614-790-3333 (customer service)</p> <p><b>Product Information</b>          1-614-790-3333</p>
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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
- Reproductive toxicity : Category 2
- Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

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Specific target organ toxicity : Category 2 (Respiratory system, Respiratory Tract)  
 - repeated 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.  
 Harmful if inhaled.  
 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.



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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.

**Other hazards**

The following percentage of the mixture consists of ingredient(s) with unknown acute inhalation  
toxicity: 7.3084 %

**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
ALUMINUM SILICATES	254504001-5709	This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).	>= 10.00 - < 15.00



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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	Comb Dust 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	Not a hazardous substance or mixture.	10.224
PROPYLENE CARBONATE	108-32-7	Eye Irrit. 2A; H319	1.4964

**PART B**

Substance / Mixture : Mixture

**Hazardous components**

Chemical name	CAS-No.	Classification	Concentration (%)
TALC	14807-96-6	Not a hazardous substance or mixture.	22.22



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PIPERAZINE	110-85-0	Flam. Sol. 1; H228 Comb Dust Skin Corr. 1B; H314 Eye Dam. 1; H318 Resp. Sens. 1B; H334 Skin Sens. 1B; H317 Repr. 2; H361	0.77
------------	----------	--	------

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



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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 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.

## 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 : If product is heated above its flash point it will produce vapors sufficient to support combustion. Vapors are heavier than air and may travel along the ground and be ignited by heat, pilot lights, other flames and ignition sources at locations near the point of release.  
Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion : Carbon dioxide (CO<sub>2</sub>)



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products

Carbon monoxide  
Nitrogen oxides (NOx)  
Hydrogen cyanide (hydrocyanic acid)  
Isocyanates  
Aldehydes  
Ketones  
Chlorine compounds  
Halogenated hydrocarbons  
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 protection against  
fire and explosion

:

Normal measures for preventive fire protection.



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- 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 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.
- Further information on storage stability : No decomposition if stored and applied as directed.

## 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
ALUMINUM SILICATES	254504001-5709	TWA	1 mg/m <sup>3</sup> Respirable particulate matter (Aluminium)	ACGIH
The identity and concentration of one or more component(s) is being withheld under business confidentiality.				
4,4'-DIPHENYLMETHANE DIISOCYANATE	101-68-8	TWA	0.005 ppm	ACGIH
TALC	14807-96-6	TWA	20 Million particles per cubic	OSHA Z-3



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			foot 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	2 mg/m3 Respirable particulate matter	ACGIH

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

Components	CAS-No.
POLYMER	254504001-5759
URETHANE PREPOLYMER	800986-5572P

**PART A**

PROPYLENE CARBONATE	108-32-7
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**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	2 mg/m3 Respirable particulate matter	ACGIH
PIPERAZINE	110-85-0	TWA	0.03 ppm Inhalable fraction	ACGIH



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			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 : Wear a positive-pressure supplied-air respirator with full facepiece.

#### Hand protection

Material : butyl-rubber  
Break through time : 480 min  
Glove thickness : > 0.5 mm

Remarks : The exact break through time can be obtained from the protective glove producer and this has to be observed. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. 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

Appearance	: viscous
Physical state	: liquid
Colour	: beige
Odour	: mild, musty
Odour Threshold	: No data available
pH	: substance/mixture reacts with water
Melting point/freezing point	: not determined
Boiling point/boiling range	: > 392 °F / > 200 °C
Flash point	: > 100 °C
Evaporation rate	: < 1 n-Butyl Acetate = 1
Flammability (liquids)	: not determined
Upper explosion limit	: Upper explosion limit not determined
Lower explosion limit	: Lower explosion limit not determined
Vapour pressure	: < 0.01333 hPa (25 °C)
Relative vapour density	: > 1(Air = 1.0)
Relative density	: No data available
Density	: 1.288 g/cm <sup>3</sup> (20 °C)
Solubility(ies)	
Water solubility	: practically insoluble
Solubility in other solvents	: No data available



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Partition coefficient: n-octanol/water : not determined

Auto-ignition temperature : No data available

Thermal decomposition : No data available

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

Viscosity, kinematic : not determined

Oxidizing properties : Not applicable

#### **PART B**

Appearance : viscous

Physical state : liquid

Colour : green

Odour : No information available.

Odour Threshold : No data available

pH : No data available

Melting point/freezing point : not determined

Boiling point/boiling range : not determined

Flash point : > 93.4 °C  
Method: Seta closed cup

Evaporation rate : No data available

Flammability (liquids) : not determined

Upper explosion limit : Upper explosion limit  
not determined

Lower explosion limit : Lower explosion limit  
not determined

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



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Relative vapour density	: > 1(Air = 1.0)
Relative density	: 1.225 (77.00 °F)
Density	: ca. 1.225 g/cm <sup>3</sup> (20 °C)
Solubility(ies)	
Water solubility	: insoluble
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: not determined
Thermal decomposition	: No data available
Viscosity	
Viscosity, dynamic	: ca. 18,000 mPa.s (25 °C)
Viscosity, kinematic	: not determined
Oxidizing properties	: Not applicable

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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	: Freezing temperatures. Heat Exposure to moisture
Incompatible materials	: Acids Alcohols aluminum Amines Ammonia Bases Copper alloys



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

Hazardous decomposition  
products

Carbon monoxide  
Carbon dioxide (CO<sub>2</sub>)  
Nitrogen oxides (NO<sub>x</sub>)  
Hydrocarbons  
Acetone

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

Acute inhalation toxicity : Symptoms: Increased heart rate, Rapid respiration,  
Drowsiness, Headache, Nausea, Vomiting  
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:



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

Acute inhalation toxicity : 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  
Symptoms: Redness, Swelling of tissue, Itching, Blistering, Pain

**TALC:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 423

**POLYPROPYLENE GLYCOL TRIMETHYLOLPROPANE TRIETHER, 4-4'-DIPHENYLMETHANE DIISOCYANATE POLYMER:**

Acute inhalation toxicity : Assessment: Toxic effects cannot be excluded

**PROPYLENE CARBONATE:**

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

Acute inhalation toxicity : Assessment: Toxic effects cannot be excluded

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:



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Result: Irritating to skin.

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

**Components:**

4,4'-DIPHENYLMETHANE DIISOCYANATE:

Result: Irritating to skin.

TALC:

Species: reconstructed human epidermis (RhE)

Result: No skin irritation

ZEOLITES:

Result: Slight, transient irritation

POLYPROPYLENE GLYCOL TRIMETHYLOLPROPANE TRIETHER, 4-4'-DIPHENYLMETHANE  
DIISOCYANATE POLYMER:

Result: No skin 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: Irritating to eyes.

**Components:**

4,4'-DIPHENYLMETHANE DIISOCYANATE:

Result: Irritating to eyes.

TALC:

Species: Rabbit

Result: Slight, transient irritation

Method: OECD Test Guideline 405

ZEOLITES:

Result: Slight, transient irritation





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POLYPROPYLENE GLYCOL TRIMETHYLOLPROPANE TRIETHER, 4-4'-DIPHENYLMETHANE  
DIISOCYANATE POLYMER:  
Result: No eye 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.

**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 sensitisation by inhalation.  
Result: The product is a respiratory sensitiser, sub-category 1A.

**Components:**

4,4'-DIPHENYLMETHANE DIISOCYANATE:  
Assessment: May cause sensitisation by inhalation.

Assessment: May cause sensitisation by skin contact.

TALC:

Test Type: Maximisation Test  
Species: Guinea pig  
Assessment: Did not cause sensitisation on laboratory animals.  
Method: OECD Test Guideline 406

POLYPROPYLENE GLYCOL TRIMETHYLOLPROPANE TRIETHER, 4-4'-DIPHENYLMETHANE  
DIISOCYANATE POLYMER:  
Assessment: May cause sensitisation by skin contact.

Assessment: May cause sensitisation by inhalation.

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**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:****TALC:**

Genotoxicity in vitro : Test Type: In vitro gene mutation study in bacteria  
Test species: Salmonella typhimurium  
Metabolic activation: with and without metabolic activation  
Result: negative

: Test Type: In vitro gene mutation study in bacteria  
Test species: Saccharomyces cerevisiae  
Metabolic activation: with and without metabolic activation  
Result: negative

Genotoxicity in vivo : Test Type: dominant lethal test  
Test species: Rat (male)  
Cell type: Bone marrow  
Result: negative

**PROPYLENE CARBONATE:**

Genotoxicity in vitro : Test Type: Ames test  
Test species: Salmonella typhimurium  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test  
Test species: Mouse



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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**

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:**

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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

**Carcinogenicity:****IARC**

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA**

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**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.

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

Ecotoxicology Assessment

Short-term (acute) aquatic hazard : Not classified based on available information.

Long-term (chronic) aquatic hazard : 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



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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 (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



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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  
aquatic invertebrates : Exposure time: 48 h  
Method: OECD Test Guideline 202

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): >  
1,000 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

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

**Persistence and degradability**

**Components:**

**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.

**TALC:**

Biodegradability : Result: The methods for determining biodegradability are not  
applicable to inorganic substances.

**PROPYLENE CARBONATE:**



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Biodegradability : Result: Readily biodegradable.  
Biodegradation: 87.1 %  
Exposure time: 29 d  
Method: OECD Test Guideline 301B

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

No data available

**Bioaccumulative potential**

**Components:**

PROPYLENE CARBONATE:

Partition coefficient: n- : log Pow: -0.41  
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.

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

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

Not dangerous goods

**INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER**

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





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**U.S. DOT - ROAD**

Not dangerous goods
---------------------

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

Marine pollutant	no
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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	14078


**SARA 304 Extremely Hazardous Substances Reportable Quantity**  
This material does not contain any components with a section 304 EHS RQ.

**SARA 311/312 Hazards** : Acute toxicity (any route of exposure)  
Skin corrosion or irritation  
Serious eye damage or eye irritation  
Respiratory or skin sensitisation  
Specific target organ toxicity (single or repeated exposure)

**SARA 302** : This material does not contain any components with a section 302 EHS TPQ.

**SARA 313** The following components are subject to reporting levels established by SARA Title III, Section 313:  
4,4'-DIPHENYLMETHANE 101-68-8 35.51 %  
DIISOCYANATE

**California Prop 65** which is/are known to the State of California to cause cancer.  
For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).  
QUARTZ / SAND 14808-60-7

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**PART B**

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

This material does not contain any components with a CERCLA RQ.

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 311/312 Hazards** : Reproductive toxicity

**SARA 302** : This material does not contain any components with a section 302 EHS TPQ.

**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** which is/are known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

TALC	14807-96-6
QUARTZ / SAND	14808-60-7
CARBON BLACK	1333-86-4

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

DSL	:	All components
AICS	:	On the inventor
ENCS	:	Exempt
KECI	:	On the inventor
PICCS	:	Not in complian
IECSC	:	On the inventor
TCSI	:	On the inventor
TSCA	:	On or in compli inventory

**Inventories**

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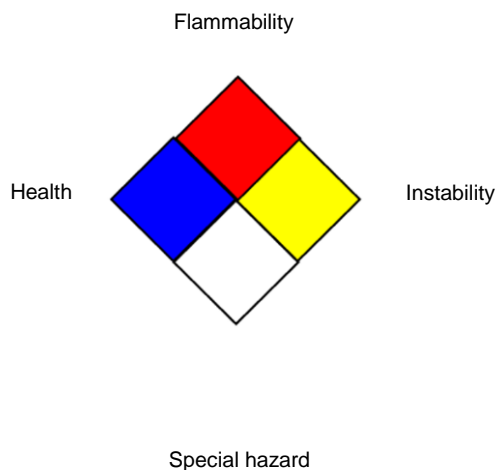
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AIC (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TECI (Thailand), TSCA (USA)

**Registration: Trade secret**

Chemical name	Identification number
POLYMER	254504001-5759

**SECTION 16. OTHER INFORMATION****Further information****NFPA 704:****HMIS® IV:**

<b>HEALTH</b>	<input type="text"/>	<input type="text"/>
<b>FLAMMABILITY</b>	<input type="text"/>	<input type="text"/>
<b>PHYSICAL HAZARD</b>	<input type="text"/>	<input type="text"/>

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

**Full text of H-Statements**

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



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	inhaled.
H335	May cause respiratory irritation.
H361	Suspected of damaging fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure if inhaled.

#### Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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