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SAFETY DATA SHEET		Revision Date: 05/25/2015
		Print Date: 6/1/2015
		SDS Number: 000000093472
Pliogrip™ RAPID REPAIR ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 722119		Version: 1.1

29 CFR 1910.1200 (OSHA HazCom 2012)

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Trade name : Pliogrip™ RAPID REPAIR
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

Details of the supplier of the safety data sheet Ashland P.O. Box 2219 Columbus, OH 43216 United States of America EHS Customer Requests@ashland.com	Emergency telephone number 1-800-ASHLAND (1-800-274-5263) Regulatory Information Number 1-800-325-3751 Product Information 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 1B

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

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

GHS Label element

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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.
May damage 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.

Other hazards

None known.

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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 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

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 STOT SE 3; H335	35.51
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		STOT RE 2; H373	
TALC	14807-96-6	This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).	10.22
PROPYLENE CARBONATE	108-32-7	Eye Irrit. 2A; H319	1.49

PART B

Substance / Mixture : Mixture

Chemical nature : Defatter

Hazardous components

Chemical Name	CAS-No.	Classification	Concentration (%)
SCAVENGER	254504001-5709	This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).	>= 1.00 - < 1.50

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

TALC	14807-96-6	This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).	24.67
PIPERAZINE	110-85-0	Flam. Sol. 1; H228	0.90

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		Skin Corr. 1B; H314 Eye Dam. 1; H318 Resp. Sens. 1B; H334 Skin Sens. 1B; H317 Repr. 2; H361	
DIBUTYLTIN BIS(LAURYL MERCAPTIDE)	1185-81-5	Acute Tox. 4; H312 Skin Irrit. 2; H315 Skin Sens. 1; H317 Muta. 2; H341 Repr. 1B; H360 STOT RE 1; H372	0.66

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.

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- 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.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause respiratory irritation.
May damage 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 (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.
- Hazardous combustion products : carbon dioxide and carbon monoxide
Hydrogen cyanide (hydrocyanic acid)
Isocyanates
Nitrogen oxides (NOx)
toxic fumes
Aldehydes
Ketones

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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 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.

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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.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
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/GUIDE
		Ceil_Time	0.020 ppm 0.2 mg/m3	NIOSH/GUIDE
		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/GUIDE
		TWA	0.1 mg/m3 Respirable.	Z3
		TWA	0.3 mg/m3 Total dust.	Z3

PART B

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

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	5709		Respirable fraction.	
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

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.

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

Appearance	: viscous
Physical state	: liquid
Colour	: beige
Odour	: No data available
Odour Threshold	: No data available
pH	: No data available
	: No data available
Boiling point/boiling range	: > 392 °F / > 200 °C
Flash point	: > 212 °F / > 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
Density	: 1.288 g/cm ³ (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	

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Viscosity, dynamic : ca. 20,000 mPa.s
 Viscosity, kinematic : No data available
 Oxidizing properties : No data available

PART B

Physical state : liquid
 Colour : tan
 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 : 1
 Ethyl Ether
 Flammability (solid, gas) : No data available
 Upper explosion limit : No data available
 Lower explosion limit : No data available
 Vapour pressure : 3 hPa (25 °C)
 Calculated Vapor Pressure
 Relative vapour density : > 1AIR=1
 Relative density : 1.24 (77.00 °F)
 Density : 1.24 g/cm3 (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

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Thermal decomposition : No data available

Viscosity
Viscosity, dynamic : No data available

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
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)

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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 : 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

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

PROPYLENE CARBONATE:

Acute oral toxicity : LD 50 (Rat): 29.1 g/kg

Acute dermal toxicity : LD 50 (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

DIBUTYLTIN BIS(LAURYL MERCAPTIDE):

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Acute oral toxicity : LD 50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 423
Assessment: No adverse effect has been observed in acute oral toxicity tests.

Acute dermal toxicity : LD 50 (Rabbit): > 1,000 - < 2,000 mg/kg
Method: OECD Test Guideline 402
GLP: yes

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: Possibly irritating to skin

URETHANE PREPOLYMER:

Result: Not irritating to skin

Components:

4,4'-DIPHENYLMETHANE DIISOCYANATE:

Result: Irritating to skin

TALC:

Result: Possibly irritating to skin

PROPYLENE CARBONATE:

Species: Rabbit

Method: OECD Test Guideline 404

Result: Not irritating to skin

PIPERAZINE:

Result: Corrosive after 3 minutes to 1 hour of exposure

DIBUTYLTIN BIS(LAURYL MERCAPTIDE):

Result: Severely 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:

POLYMER:

Result: Not irritating to eyes

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

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SCAVENGER:

Result: Mildly irritating to eyes

URETHANE PREPOLYMER:

Result: Not irritating to eyes

Components:

4,4'-DIPHENYLMETHANE DIISOCYANATE:

Result: Irritating to eyes

TALC:

Result: Possibly irritating to eyes

PROPYLENE CARBONATE:

Species: Rabbit

Result: Irritating to eyes

Method: OECD Test Guideline 405

PIPERAZINE:

Result: Corrosive to eyes

DIBUTYLTIN BIS(LAURYL MERCAPTIDE):

Result: Mildly 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 sensitizer, sub-category 1A.

Assessment: May cause sensitization by inhalation.

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

URETHANE PREPOLYMER:

Assessment: May cause sensitization by skin contact.

Assessment: May cause sensitization by inhalation.

Components:

4,4'-DIPHENYLMETHANE DIISOCYANATE:

Assessment: May cause sensitization by inhalation.

Assessment: May cause sensitization by skin contact.

PIPERAZINE:

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

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

DIBUTYLTIN BIS(LAURYL MERCAPTIDE):

Assessment: May cause sensitisation by skin contact.

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
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

DIBUTYLTIN BIS(LAURYL MERCAPTIDE):

Germ cell mutagenicity- : In vitro tests showed mutagenic effects
Assessment

Carcinogenicity

Not classified based on available information.

Product:

Carcinogenicity - : Methylene bisphenylisocyanate (MDI) aerosol has been
Assessment reported to be irritating to lungs at a concentration of 1 mg/m³ with no effect observed at 0.2 mg/m³. 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/m³), it is not classified as a carcinogen by IARC, NTP or OSHA.

Reproductive toxicity

May damage fertility or the unborn child.

Components:

PIPERAZINE:

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

DIBUTYLTIN BIS(LAURYL MERCAPTIDE):

Reproductive toxicity - Assessment : Presumed human reproductive toxicant

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:

Exposure routes: Inhalation

Target Organs: Respiratory system

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

DIBUTYLTIN BIS(LAURYL MERCAPTIDE):

Exposure routes: Ingestion

Target Organs: thymus gland

Assessment: Causes 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

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TALC 14807-96-6

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

Components:

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

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

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.

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 (Water flea (*Daphnia magna*)): > 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 : 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

DIBUTYLTIN BIS(LAURYL MERCAPTIDE):

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Toxicity to daphnia and other aquatic invertebrates : EC 50 (Water flea (Daphnia magna)): 0.11 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

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.

PROPYLENE CARBONATE:

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

DIBUTYLTIN BIS(LAURYL MERCAPTIDE):

Biodegradability : Inoculum: activated sludge
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
Remarks: Not readily biodegradable.
Information given is based on data obtained from similar substances.

Bioaccumulative potential

Components:

PROPYLENE CARBONATE:

Partition coefficient: n-octanol/water : log Pow: -0.41

PIPERAZINE:

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

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octanol/water

DIBUTYLTIN BIS(LAURYL MERCAPTIDE):

Partition coefficient: n- : log Pow: 3.11 (22 °C)
octanol/water

Mobility in soil

Components:

No data available

Other adverse effects

No data available

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Harmful to aquatic life with long lasting effects.

Components:

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

General advice : The product should not be allowed to enter drains, water courses or the soil.
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

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U.S. DOT - RAIL

Not dangerous goods

U.S. DOT - INLAND WATERWAYS

Not dangerous goods

TRANSPORT CANADA - ROAD

Not dangerous goods

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
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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

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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 Component(s)

101-68-8	101-68-8	35.51 %
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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 : Acute Health Hazard
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.
QUARTZ / SAND 14808-60-7

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), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)

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Registration: Trade Secret

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

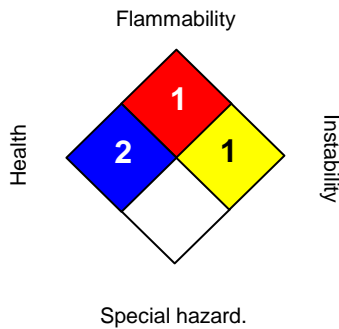
SECTION 16. OTHER INFORMATION

Further information

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PART A

NFPA:



HMIS III:

HEALTH	2*
FLAMMABILITY	1
PHYSICAL HAZARD	1

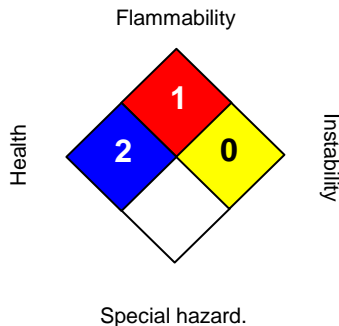
0 = not significant, 1 =Slight,
 2 = Moderate, 3 = High
 4 = Extreme, * = Chronic

NFPA Flammable and Combustible Liquids Classification

Combustible Liquid Class IIIB

PART B

NFPA:



HMIS III:

HEALTH	2
FLAMMABILITY	1
PHYSICAL HAZARD	0

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

NFPA Flammable and Combustible Liquids Classification

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Combustible Liquid Class IIIB

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

PART A

H228	Flammable solid.
H312	Harmful in contact with skin.
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.
H341	Suspected of causing genetic defects.
H360	May damage fertility or the unborn child.
H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure if swallowed.
H373	May cause damage to organs through prolonged or repeated exposure if inhaled.

PART B

H228	Flammable solid.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341	Suspected of causing genetic defects.
H360	May damage fertility or the unborn child.
H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure if swallowed.

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).

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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

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