



SAFETY DATA SHEET

Page: 1

Revision Date: 11/04/2013

Print Date: 7/11/2014

MSDS Number: R0340217

Version: 2.1

Pliogrip™ 9100 ADHESIVE

™ Trademark, Ashland or its subsidiaries, registered
in various countries 120034

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Ashland	Regulatory Information Number	1-800-325-3751
P.O. Box 2219	Telephone	614-790-3333
Columbus, OH 43216	Emergency telephone number	1-800-ASHLAND (1-800-274-5263)
Product name	Pliogrip™ 9100 ADHESIVE	
	™ Trademark, Ashland or its subsidiaries, registered in various countries	
Product code	120034	
Product Use Description	Adhesives	

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance: liquid, tan

WARNING! MAY CAUSE ALLERGIC SKIN OR RESPIRATORY REACTION. MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION. HARMFUL IF INHALED.

Potential Health Effects

Exposure routes

Inhalation, Skin absorption, Skin contact, Eye Contact, Ingestion

Eye contact

Can cause eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes.

Skin contact

Can cause skin irritation. Symptoms may include redness and burning of skin, and other skin damage. May cause allergic skin reaction.

Ingestion

Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful.

Inhalation

Breathing of dust, vapor, and/or mist is possible. Breathing this material may be harmful. This product contains 4,4'-diphenylmethane diisocyanate (MDI). Breathing MDI may cause an allergic respiratory reaction with difficult breathing and chest pain. The onset of respiratory symptoms may be delayed for several hours after exposure. Previously sensitized individuals should avoid exposure to all diisocyanates because exposure to even very small amounts can cause asthma-like attacks in these individuals. Repeated and prolonged exposure to large amounts of talc dust may cause mild lung inflammation. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable (see Section 8.).

Aggravated Medical Condition

ASHLAND®

SAFETY DATA SHEET

Page: 2

Revision Date: 11/04/2013

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Pliogrip™ 9100 ADHESIVE

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Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: Skin, Upper respiratory tract, lung (for example, asthma-like conditions)

Symptoms

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), runny nose, Cough, Headache, chest pain, pneumonia, lung edema (fluid buildup in the lung tissue), Exposure to this product (or a component) may cause an allergic reaction (narrowing of the air passages of the lungs resulting in difficult breathing, tightness in the chest, coughing and wheezing) in some sensitive individuals. Other symptoms of an allergic reaction may include itchy and watery eyes, runny and stuffy nose, sweating, flushing, hives, rapid heart rate, and lowered blood pressure., Difficulty in breathing

Target Organs

Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals: nasal damage, lung damage, Overexposure to this material (or its components) has been suggested as a cause of the following effects in humans: effects on lung function

Carcinogenicity

In a two-year inhalation study in rats, exposure to polymeric methylene bisphenylisocyanate (MDI) aerosol caused a significant increase in benign (noncarcinogenic) lung tumors, along with a single carcinogenic lung tumor, at the highest dose only (6 mg/m³). The tumors occurred along with irritation of the respiratory tract and the accumulation of a yellow material in the lungs. There was irritation only at 1.0 mg/m³ and no effect at 0.2 mg/m³. MDI is not listed as carcinogenic by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the Occupational Safety and Health Administration (OSHA).

Reproductive hazard

This material (or a component) has been shown to cause harm to the fetus in laboratory animal studies. Harm to the fetus occurs only at exposure levels that harm the pregnant animal. The relevance of these findings to humans is uncertain.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Components	CAS-No. / Trade Secret No.	Concentration
POLYMETHYLENE POLYPHENYL ISOCYANATE	9016-87-9	>=15-<20%
4,4'-DIPHENYLMETHANE DIISOCYANATE	101-68-8	>=15-<20%
TALC	14807-96-6	>=10-<15%
SCAVENGER	254504001-5709	>=5-<10%
METHYLENE DIPHENYLISOCYANATE	26447-40-5	>=1.5-<5%

Pliogrip™ 9100 ADHESIVE

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4. FIRST AID MEASURES

Eyes

If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention.

Skin

Remove contaminated clothing. Flush exposed area with large amounts of water. If skin is damaged, seek immediate medical attention. If skin is not damaged and symptoms persist, seek medical attention. Launder clothing before reuse.

Ingestion

Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

Inhalation

If symptoms develop, immediately move individual away from exposure and into fresh air. Seek immediate medical attention; keep person warm and quiet. If person is not breathing, begin artificial respiration. If breathing is difficult, administer oxygen.

Notes to physician

Hazards: Pulmonary edema may be delayed.

Treatment: No hazards which require special first aid measures.

5. FIREFIGHTING MEASURES

Suitable extinguishing media

Dry chemical, Carbon dioxide (CO₂), Water spray

Hazardous combustion products

carbon dioxide and carbon monoxide, Hydrocarbons, Hydrogen cyanide (hydrocyanic acid), Isocyanates, nitrogen oxides (NO_x)

Precautions for fire-fighting

During a fire, irritating or toxic decomposition products may be generated. Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning material with water used for cooling purposes.

NFPA Flammable and Combustible Liquids Classification

Combustible Liquid Class IIIB

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

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For personal protection see section 8. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

Environmental precautions

Prevent spreading over a wide area (e.g. by containment or oil barriers). Do not let product enter drains. Do not flush into surface water or sanitary sewer system.

Methods for cleaning up

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

Other information

Comply with all applicable federal, state, and local regulations.

7. HANDLING AND STORAGE

Handling

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed.

Storage

Store in a cool, dry, ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

POLYMETHYLENE POLYPHENYL ISOCYANATE		9016-87-9
ACGIH	time weighted average	0.005 ppm
NIOSH	Recommended exposure limit (REL):	0.005 ppm
NIOSH	Recommended exposure limit (REL):	0.05 mg/m3
NIOSH	Ceiling Limit Value and Time Period (if specified):	0.020 ppm
NIOSH	Ceiling Limit Value and Time Period (if specified):	0.2 mg/m3
OSHA Z1	Ceiling Limit Value:	0.02 ppm
OSHA Z1	Ceiling Limit Value:	0.2 mg/m3
4,4'-DIPHENYLMETHANE DIISOCYANATE		101-68-8
ACGIH	time weighted average	0.005 ppm
NIOSH	Recommended exposure limit (REL):	0.005 ppm
NIOSH	Recommended exposure limit (REL):	0.05 mg/m3
NIOSH	Ceiling Limit Value and	0.020 ppm

Pliogrip™ 9100 ADHESIVE

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NIOSH	Time Period (if specified):		
	Ceiling Limit Value and	0.2 mg/m3	
	Time Period (if specified):		
OSHA Z1	Ceiling Limit Value:	0.02 ppm	
OSHA Z1	Ceiling Limit Value:	0.2 mg/m3	
TALC		14807-96-6	
ACGIH	time weighted average	2 mg/m3	Respirable fraction.
NIOSH	Recommended exposure	2 mg/m3	Respirable.
	limit (REL):		
Z3	time weighted average	0.1 mg/m3	Respirable.
Z3	time weighted average	0.3 mg/m3	Total dust.
SCAVENGER		254504001-5709	
ACGIH	time weighted average	1 mg/m3	Respirable fraction.

General advice

These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

Exposure controls

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.

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 normal work clothing including long pants, long-sleeved shirts and foot covering to prevent direct contact of the product with the skin. Launder clothing before reuse. If skin irritation develops, contact your facility health and safety professional or your local safety equipment supplier to determine the proper personal protective equipment for your use.

Wear resistant gloves (consult your safety equipment supplier).

Discard gloves that show tears, pinholes, or signs of wear.

Respiratory protection

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	liquid
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Pliogrip™ 9100 ADHESIVE

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Colour	tan
Flash point	> 200.1 °F / > 93.4 °C Seta closed cup
Evaporation rate	1 Ethyl Ether
Vapour pressure	0.000 hPa Calculated Vapor Pressure
Density	1.267 g/cm3 @ 77.00 °F / 25.00 °C
	10.54 lb/gal @ 77.00 °F / 25.00 °C
Viscosity, dynamic	25,000 mPa.s

10. STABILITY AND REACTIVITY

Stability

Stable.

Conditions to avoid

Freezing temperatures., Heat, flames and sparks., Exposure to moisture.

Incompatible products

Acids, Alcohols, alkenes, aluminum, Amines, Ammonia, Bases, Copper alloys, Iron, strong alkalis, water,
Zinc

Hazardous decomposition products

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

Hazardous reactions

Product will not undergo hazardous polymerization.

11. TOXICOLOGICAL INFORMATION

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

Product

Acute oral toxicity : no data available

Acute inhalation toxicity : no data available

Acute dermal toxicity : no data available

ASHLAND®

SAFETY DATA SHEET

Page: 7

Revision Date: 11/04/2013

Print Date: 7/11/2014

MSDS Number: R0340217

Version: 2.1

Pliogrip™ 9100 ADHESIVE

™ Trademark, Ashland or its subsidiaries, registered
in various countries120034

Skin corrosion/irritation	:	no data available
Serious eye damage/eye irritation	:	no data available
Respiratory or skin sensitisation	:	no data available
Target Organ Systemic Toxicant - Repeated Exposure	:	Target Organs: Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals: nasal damage, lung damage, Overexposure to this material (or its components) has been suggested as a cause of the following effects in humans: effects on lung function

Components:

POLYMETHYLENE POLYPHENYL ISOCYANATE:

Acute oral toxicity	:	LD 50 Rat: > 10,000 mg/kg
Acute inhalation toxicity	:	LC 50 Rat: 369 - 490 mg/m3 Exposure time: 4 h
Acute dermal toxicity	:	LD 50 Rabbit: > 10,000 mg/kg
Respiratory or skin sensitisation	:	Classification: May cause sensitization by skin contact. Classification: May cause sensitization by inhalation.
STOT - single exposure	:	Assessment: May cause respiratory irritation.

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
Acute dermal toxicity	:	LD 50 Rabbit: > 7,900 mg/kg
Respiratory or skin sensitisation	:	Classification: May cause sensitization by inhalation. Classification: May cause sensitization by skin contact.

ASHLAND®

SAFETY DATA SHEET

Page: 8

Revision Date: 11/04/2013

Print Date: 7/11/2014

MSDS Number: R0340217

Version: 2.1

Pliogrip™ 9100 ADHESIVE

™ Trademark, Ashland or its subsidiaries, registered
in various countries120034

METHYLENE DIPHENYLISOCYANATE:

Acute oral toxicity : LD 50 Rat: > 15,800 mg/kg

Acute inhalation toxicity : LC 50 Rat: 490 mg/m3
Exposure time: 4 h

Acute dermal toxicity : LD 50 Rabbit: > 5,010 mg/kg

Respiratory or skin sensitisation : Classification: May cause sensitization by inhalation.

Classification: May cause sensitization by skin contact.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

no data available

Components:

no data available

Persistence and degradability

Product:

no data available

Components:

no data available

Bioaccumulative potential

Product:

no data available

Components:

no data available

Mobility in soil

ASHLAND®

SAFETY DATA SHEET

Page: 9

Revision Date: 11/04/2013

Print Date: 7/11/2014

MSDS Number: R0340217

Version: 2.1

Pliogrip™ 9100 ADHESIVE

™ Trademark, Ashland or its subsidiaries, registered
in various countries120034

Product:

no data available

Components:

no data available

13. DISPOSAL CONSIDERATIONS

Waste disposal methods

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

14. TRANSPORT INFORMATION

REGULATION

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

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

ASHLAND®

SAFETY DATA SHEET

Page: 10

Revision Date: 11/04/2013

Print Date: 7/11/2014

MSDS Number: R0340217

Version: 2.1

Pliogrip™ 9100 ADHESIVE

™ Trademark, Ashland or its subsidiaries, registered
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MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES

Not dangerous goods

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

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.

15. REGULATORY INFORMATION

California Prop. 65

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

QUARTZ (SiO₂)

SARA Hazard Classification

SARA 311/312 Classification

Acute Health Hazard

SARA 313 Component(s)

POLYMETHYLENE POLYPHENYL ISOCYANATE	19.79 %
4,4'-DIPHENYLMETHANE DIISOCYANATE	17.81 %

Notification status

US. Toxic Substances Control Act	y (positive listing)
Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL). (Can. Gaz. Part II, Vol. 133)	y (positive listing)
Australia. Industrial Chemical (Notification and Assessment) Act	n (Negative listing)
Japan. ENCS - Existing and New Chemical Substances Inventory	y (positive listing)
Korea. Toxic Chemical Control Law (TCCL) List	y (positive listing)
Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act	y (positive listing)
China. Inventory of Existing Chemical Substances	y (positive listing)

Reportable quantity - Product

US. EPA CERCLA Hazardous Substances (40 CFR 302)	25262 lbs
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Reportable quantity-Components

POLYMETHYLENE POLYPHENYL ISOCYANATE	9016-87-9	5000 lbs
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	HMIS	NFPA
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ASHLAND®

SAFETY DATA SHEET

Page: 11

Revision Date: 11/04/2013

Print Date: 7/11/2014

MSDS Number: R0340217

Version: 2.1

Pliogrip™ 9100 ADHESIVE

™ Trademark, Ashland or its subsidiaries, registered
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Health	2*	3
Flammability	1	1
Physical hazards	1	
Instability		1
Specific Hazard	--	--

16. OTHER INFORMATION

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 MSDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751).

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

ACGIH : American Conference of Industrial Hygienists

BEI : Biological Exposure Index

CAS : Chemical Abstracts Service (Division of the American Chemical Society).

CMR : Carcinogenic, Mutagenic or Toxic for Reproduction

FG : Food grade

GHS : Globally Harmonized System of Classification and Labeling of Chemicals.

H-statement : Hazard Statement

IATA : International Air Transport Association.

IATA-DGR : Dangerous Goods Regulation by the "International Air Transport Association" (IATA).

ICAO : International Civil Aviation Organization

ICAO-TI (ICAO) : Technical Instructions by the "International Civil Aviation Organization"

IMDG : International Maritime Code for Dangerous Goods

ISO : International Organization for Standardization

logPow : octanol-water partition coefficient

LCxx : Lethal Concentration, for xx percent of test population

LDxx : Lethal Dose, for xx percent of test population.

ICxx : Inhibitory Concentration for xx of a substance

Ecxx : Effective Concentration of xx

N.O.S.: Not Otherwise Specified

OECD : Organization for Economic Co-operation and Development

OEL : Occupational Exposure Limit

P-Statement : Precautionary Statement

PBT : Persistent , Bioaccumulative and Toxic

PPE : Personal Protective Equipment

STEL : Short-term exposure limit

STOT : Specific Target Organ Toxicity

TLV : Threshold Limit Value

TWA : Time-weighted average

vPvB : Very Persistent and Very Bioaccumulative

WEL : Workplace Exposure Level

CERCLA : Comprehensive Environmental Response, Compensation, and Liability Act

DOT : Department of Transportation

ASHLAND®

SAFETY DATA SHEET

Page: 12

Revision Date: 11/04/2013

Print Date: 7/11/2014

MSDS Number: R0340217

Version: 2.1

Pliogrip™ 9100 ADHESIVE

™ Trademark, Ashland or its subsidiaries, registered
in various countries120034

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