

# Material Safety Data Sheet

Material Name: PC® 88 Adhesive Component II

ID: PC-014

## \*\*\* Section 1 - Chemical Product and Company Identification \*\*\*

**Chemical Name:** Aromatic isocyanate mixture

**Product Use:** Part II of a two part adhesive used to bond FOAMGLAS® insulation to itself or to other porous or nonporous substrates.

### Manufacturer Information

Pittsburgh Corning Corporation  
800 Presque Isle Drive  
Pittsburgh, PA 15239

Information Number: (724) 327-6100

CHEMTREC: (800) 424-9300

### General Comments

NOTE: General information and emergency available 8:00 AM - 5:00 PM Monday through Friday.  
CHEMTREC telephone number is to be used only in the event of chemical transportation emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to customer service.

## \*\*\* Section 2 - Composition / Information on Ingredients \*\*\*

CAS #	Component	Percent
101-68-8	4,4'-Diphenylmethane diisocyanate	35-45
9016-87-9	Polymeric diphenylmethane diisocyanate	20-30
Proprietary	Polyisocyanate based on MDI	20-30
26447-40-5	Methylene diphenyl diisocyanate (MDI)	5-15
103-71-9	Phenyl isocyanate	<5

### Component Information/Information on Non-Hazardous Components

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

## \*\*\* Section 3 - Hazards Identification \*\*\*

### Emergency Overview

WARNING Product is supplied in the form of a dark brown liquid with a slight musty odor. This product may be harmful by inhalation. This product may be harmful if it is swallowed. This product is irritating to the eyes, respiratory system and skin. Contact of the skin with the liquid or vapor from this material may result in an allergic sensitization reaction. Inhalation of vapors from this product may result in allergic respiratory sensitization reactions. Firefighters should wear full protective clothing and self contained breathing apparatus.

### Potential Health Effects: Eyes

This product is irritating to the eyes. Symptoms include itching, burning, redness and tearing.

### Potential Health Effects: Skin

This product is irritating to the skin. Symptoms may include redness, edema, drying, defatting and cracking of the skin. Contact of the skin with the liquid or vapor from this material may result in an allergic sensitization reaction.

### Potential Health Effects: Ingestion

May be harmful upon ingestion. Ingestion can cause gastrointestinal irritation, nausea, vomiting and diarrhea.

### Potential Health Effects: Inhalation

Minimal vapor inhalation should occur at room temperature due to the low vapor pressure of the components in this product. However, at elevated temperatures, or if mists or aerosols are generated, then this product may be harmful or fatal if inhaled. This product is irritating to the respiratory system. Inhalation of mists or vapors may produce pulmonary edema, and chemical pneumonitis. Inhalation of vapors from this product may result in allergic respiratory sensitization reactions producing an asthma-like condition.

### HMIS Ratings: Health: 3\* Fire: 1 Reactivity: 1

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe \* = Chronic hazard

## \*\*\* Section 4 - First Aid Measures \*\*\*

### First Aid: Eyes

Immediately flush eyes with water for at least 15 minutes. Seek medical attention at once.

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## First Aid: Skin

For skin contact, wash immediately with soap and water. If irritation persists get medical attention. Wash contaminated clothing before reuse.

## First Aid: Ingestion

If the material is swallowed, get immediate medical attention or advice -- Do not induce vomiting. Never give anything by mouth to a victim who is unconscious or is having convulsions.

## First Aid: Inhalation

If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek immediate medical attention. If the affected person is not breathing, apply artificial respiration. Symptoms may be delayed up to several hours.

## First Aid: Notes to Physician

Provide general supportive measures and treat symptomatically.

## \*\*\* Section 5 - Fire Fighting Measures \*\*\*

**Flash Point:** 350 °F (177 °C)

**Upper Flammable Limit (UFL):** Not available

**Auto Ignition:** Not available

**Rate of Burning:** Not available

### General Fire Hazards

Closed container may explode when exposed to extreme heat or when burst when contaminated with water (CO<sub>2</sub> and heat are evolved). At temperatures >400 °F (>204 °C) isocyanates can polymerize and decompose potentially rupturing closed containers.

### Hazardous Combustion Products

Thermal oxidative decomposition may produce irritating and toxic fumes.

Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. Hydrogen cyanide, nitrogen oxides and isocyanates may be released.

### Extinguishing Media

Dry chemical, foam, carbon dioxide, water fog. Avoid direct contact of this product with water since this can cause a violent exothermic reaction. Use water to cool fire-exposed containers and to protect personnel.

### Fire Fighting Equipment/Instructions

Firefighters should wear full protective equipment including self-contained positive pressure breathing apparatus with full facepiece.

**NFPA Ratings: Health: 3 Fire: 1 Reactivity: 1**

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

## \*\*\* Section 6 - Accidental Release Measures \*\*\*

### Containment Procedures

Prevent runoff into sewers, storm drains, surface waters and soil. Isolate the spill and ventilate the area. Confine and contain small spills using inert materials (e.g. paper towels, spill control pillows, absorbent materials)

### Clean-Up Procedures

Wear appropriate protective equipment and clothing during clean-up. Absorb spill with inert material such as vermiculite, sawdust, dirt, clay, cob grit, sand, or Millisorb®. Shovel material into approved waste container and dispose of all material in accordance with applicable regulations on waste disposal. Decontaminate the spill area. In addition, comply with all applicable regulations on spill reporting.

### Evacuation Procedures

Isolate area. Keep unnecessary personnel away.

### Special Procedures

Regulations vary. Clean up and dispose of waste in accordance with all federal, state, and local environmental regulations.

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## \*\*\* Section 7 - Handling and Storage \*\*\*

### Handling Procedures

Do not breath vapors or mists of this product. Do not get this material in your eyes, on your skin, or on your clothing. Wash thoroughly after handling. Use only with adequate ventilation. If container is exposed to high heat or contaminated with moisture, it can be pressurized and possibly rupture. The isocyanate found in this product reacts slowly with water to form CO<sub>2</sub> gas, which can cause sealed containers to expand and possibly rupture.

### Storage Procedures

Store in a cool, dry, well-ventilated area. Manufacturer recommends storing between 75 - 105 °F (24 - 41 °C). Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected.

## \*\*\* Section 8 - Exposure Controls / Personal Protection \*\*\*

### Exposure Guidelines

#### A: General Product Information

Follow all applicable exposure limits.

#### B: Component Exposure Limits

##### 4,4'-Diphenylmethane diisocyanate (101-68-8)

ACGIH: 0.005 ppm TWA  
OSHA: C 0.02 ppm; C 0.2 mg/m<sup>3</sup>  
NIOSH: 0.05 mg/m<sup>3</sup> TWA; 0.005 ppm TWA  
C 0.2 mg/m<sup>3</sup>; C 0.020 ppm (10 min)

### Note(s):

TWA = Time Weighted Average

C = Ceiling

### Engineering Controls

Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product if the concentration exceeds the occupational exposure limit(s) listed above.

### PERSONAL PROTECTIVE EQUIPMENT

#### Personal Protective Equipment: Eyes/Face

Wear safety glasses; chemical goggles (if splashing is possible or if vapors or mists are generated).

#### Personal Protective Equipment: Skin

Wear impervious work gloves when handling. Use of protective coveralls and long sleeves is recommended.

#### Personal Protective Equipment: Respiratory

If ventilation is not sufficient to effectively prevent buildup of vapors or mists, NIOSH approved respiratory protection must be provided. A respiratory protection program that meets OSHA's 29 CFR 1910.134 requirements must be followed whenever workplace conditions warrant a respirator's use.

#### Personal Protective Equipment: General

Use good hygiene practices when handling this material, including changing and laundering work clothes after use. Discard contaminated shoes and leather goods. Eye wash fountain and emergency showers are recommended.

## \*\*\* Section 9 - Physical & Chemical Properties \*\*\*

<b>Appearance:</b> Dark brown	<b>Odor:</b> Slight musty
<b>Physical State:</b> Liquid	<b>pH:</b> Not available
<b>Vapor Pressure:</b> <5 - 10 mm Hg	<b>Vapor Density:</b> 8.5 (air=1)
<b>Boiling Point:</b> >406 °F (>208 °C)	<b>Melting Point:</b> Not available
<b>Solubility (H<sub>2</sub>O):</b> Insoluble (reacts)	<b>Specific Gravity:</b> 1.23
<b>Percent Volatile:</b> Negligible	

## \*\*\* Section 10 - Chemical Stability & Reactivity Information \*\*\*

### Chemical Stability

This is a stable material when stored and used in the temperature range: 75 - 105 °F (24 - 41 °C). Product can be self-reactive above 320 °F (160 °C).

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## Chemical Stability: Conditions to Avoid

Avoid heat, contact with water and other incompatible materials.

## Incompatibility

Incompatible with amines, ammonia, strong acids and bases, alcohols, oxidizing agents. Reacts with water to generate carbon dioxide and heat. Avoid contact with metals such as: zinc, copper, brass, aluminum, and galvanized metals. Avoid unintended contact with polyols.

## Hazardous Decomposition

Hazardous decomposition products may include carbon dioxide, carbon monoxide, oxides of nitrogen, hydrogen cyanide gas, and isocyanate vapors.

## Hazardous Polymerization

Hazardous polymerization may occur; contact with moisture or other materials which react with isocyanates may cause polymerization. At temperatures >400 °F (>204 °C) isocyanates can polymerize and decompose potentially rupturing closed containers. Polymerization may be catalyzed by strong bases and water.

## \* \* \* Section 11 - Toxicological Information \* \* \*

### Acute and Chronic Toxicity

#### A: General Product Information

Exposure to isocyanate vapors or mists at concentrations above the TLV can irritate the mucous membranes in the respiratory tract causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function. Skin contact may cause an allergic skin sensitization reaction characterized by redness, swelling, rash, scaling and blistering. Once sensitized, an individual may react even to airborne levels below the exposure limit with itching and tingling of the earlobes and neck, rash, hives, swelling of the arms and legs or other symptoms common to allergic dermatitis. Persons with a pre-existing, nonspecific bronchial hyperreactivity can respond to concentrations below the TLV with similar symptoms as well as asthma attack. Chemical or hypersensitive pneumonitis with flu-like symptoms has also been reported. These symptoms can be delayed up to several hours after exposure.

As a result of previous repeated overexposures or a single large dose, certain individuals develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the TLV. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthma attack could be immediate or delayed (up to several hours after exposure). Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air, or other irritants. Overexposure to isocyanates has been reported to cause lung damage, which may be permanent. The sensitization can either be temporary or permanent.

#### B: Component Analysis - LD50/LC50

##### 4,4'-Diphenylmethane diisocyanate (101-68-8)

Inhalation LC50 Rat : 178 mg/m<sup>3</sup>

Oral LD50 Rat : 9200 mg/kg

Oral LD50 Mouse : 2200 mg/kg

##### Polymeric diphenylmethane diisocyanate (9016-87-9)

Inhalation LC50 Rat : 490 mg/m<sup>3</sup>/4H

Oral LD50 Rat : 49 gm/kg

Dermal LD50 Rabbit : >9400 mg/kg

##### Phenyl isocyanate (103-71-9)

Inhalation LC50 Rat : 22 mg/m<sup>3</sup>/4H

Oral LD50 Rat : 800 mg/kg

Oral LD50 Mouse : 196 mg/kg

Dermal LD50 Rabbit : 7130 mg/kg

### Carcinogenicity

#### A: General Product Information

No information available for the product.

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## B: Component Carcinogenicity

### 4,4'-Diphenylmethane diisocyanate (101-68-8)

IARC: Monograph 71, 1999; Supplement 7, 1987; Monograph 19, 1979 (Group 3 (not classifiable))

### Polymeric diphenylmethane diisocyanate (9016-87-9)

IARC: Supplement 7, 1987; Monograph 19, 1979 (Group 3 (not classifiable))

## Epidemiology

No information available for the product.

## Neurotoxicity

No information available for the product.

## Mutagenicity

No information available for the product.

## Teratogenicity

No information available for the product.

## Other Toxicological Information

No information available for the product.

### \*\*\* Section 12 - Ecological Information \*\*\*

## Ecotoxicity

### A: General Product Information

No information available for the product.

### B: Component Analysis - Ecotoxicity - Aquatic Toxicity

No ecotoxicity data are available for this product's components.

## Environmental Fate

No information available for the product.

### \*\*\* Section 13 - Disposal Considerations \*\*\*

## US EPA Waste Number & Descriptions

### A: General Product Information

Material, if discarded, is not expected to be a characteristic hazardous waste under RCRA. You must test your waste using methods described in 40 CFR Part 261 to determine if it meets these or other applicable definitions of hazardous wastes.

### B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

## Disposal Instructions

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

### \*\*\* Section 14 - Transportation Information \*\*\*

## US DOT Information

**Shipping Name:** Isocyanates, toxic, n.o.s. (Contains: 4,4'-Diphenylmethane diisocyanate , Polymeric diphenylmethane diisocyanate , Phenyl isocyanate )

**Hazard Class:** 6.1

**UN/NA #:** UN2206

**Packing Group:** II

**Required Label(s):** POISON

### \*\*\* Section 15 - Regulatory Information \*\*\*

## US Federal Regulations

### A: General Product Information

No information available for the product.

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## B: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

### 4,4'-Diphenylmethane diisocyanate (101-68-8)

SARA 313: form R reporting required for 1.0% de minimis concentration; (Listed under "Diisocyanates")

CERCLA: final RQ = 5000 pounds (2270 kg)

### Polymeric diphenylmethane diisocyanate (9016-87-9)

SARA 313: form R reporting required for 1.0% de minimis concentration; (Listed under "Diisocyanates")

## State Regulations

### A: General Product Information

Other state regulations may apply. Check individual state requirements.

### B: Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS #	CA	FL	MA	MN	NJ	PA
4,4'-Diphenylmethane diisocyanate	101-68-8	Yes	Yes	Yes	Yes	Yes	Yes
Phenyl isocyanate	103-71-9	No	No	No	No	Yes	No

### Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	
4,4'-Diphenylmethane diisocyanate	101-68-8	0.1% item 663 (717)
Phenyl isocyanate	103-71-9	0.1% item 1277 (1045)

## Additional Regulatory Information

### A: General Product Information

Components of this product have been checked against the non-confidential TSCA inventory by CAS Registry Number. Components not identified on this non-confidential inventory are either exempt from listing (i.e. polymers, hydrates) or are listed on the confidential inventory as declared by the supplier.

### B: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	EINECS
4,4'-Diphenylmethane diisocyanate	101-68-8	Yes	Yes	Yes
Polymeric diphenylmethane diisocyanate	9016-87-9	Yes	Yes	No
Methylene diphenyl diisocyanate (MDI)	26447-40-5	Yes	Yes	Yes
Phenyl isocyanate	103-71-9	Yes	Yes	Yes

## \* \* \* Section 16 - Other Information \* \* \*

### Other Information

THE DATA INCLUDED HEREIN ARE PRESENTED IN ACCORDANCE WITH VARIOUS ENVIRONMENTAL, HEALTH, AND SAFETY REGULATIONS. IT IS THE RESPONSIBILITY OF A RECIPIENT OF THIS DATA TO REMAIN CURRENTLY INFORMED ON CHEMICAL HAZARD INFORMATION, TO DESIGN AND UPDATE ITS OWN PROGRAM, AND TO COMPLY WITH ALL NATIONAL, FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS APPLICABLE TO SAFETY, OCCUPATIONAL HEALTH, RIGHT-TO-KNOW, AND ENVIRONMENTAL PROTECTION.

While the information and recommendations set forth herein are believed to be accurate, Pittsburgh Corning Corporation makes no warranty with respect thereto, and disclaims all liability from reliance thereon.

### Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists.

CERCLA = Comprehensive Environmental Response and Compensation Liability Act.

CFR = Code of Federal Regulations.

DSL = Domestic Substances List.

EINECS = European Inventory of Existing Commercial Chemical Substances

EPA = Environmental Protection Agency.

HEPA = High Efficiency Particulate Air.

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HMIS = Hazardous Material Information System.  
IARC = International Agency for Research on Cancer.  
NFPA = National Fire Protection Association.  
NIOSH = National Institute of Occupational Safety and Health.  
NJTSR = New Jersey Trade Secret Registry.  
NTP = National Toxicology Program.  
OSHA = Occupational Safety and Health Administration.  
PEL = Permissible Exposure Limit  
RCRA = Resource Conservation and Recovery Act.  
SARA = Superfund Amendments and Reauthorization Act.  
TLV = Threshold Limit Value.  
TSCA = Toxic Substance Control Act.

PC® 88 is a registered trademark of Pittsburgh Corning Corporation.

This is the end of MSDS # PC-014