



**Section 1: Identification**

**GHS Product Identifier:** AV-290 Fast-Set  
**Classification:** Hydrophobic Grout  
**Product Use:** Industrial Use Only

**Supplier**  
 Avanti International  
 1100 Hercules Ave., Suite 320  
 Houston, TX 77058  
 Phone: 800.877.2570  
 Fax: 281.486.7300

**24 HR. EMERGENCY TELEPHONE NUMBER**  
 Chemtrec: 800.424.9300

**Section 2: Hazards Identification**

**GHS Classification**

Classification	Category	
Acute tox	4	Acute toxicity
Skin sens.	1	Skin sensitization
Eye irrit.	2A	Eye irritation
STOT SE	3	Specific target organ toxicity - single exposure
STOT RE	2	Specific target organ toxicity - repeated exposure

**GHS Label Elements**

Hazard pictograms:



<b>Signal Word:</b>	Danger
<b>Hazards Statements:</b>	
H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure.
<b>Precautionary Statements:</b>	<b>General:</b>
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this products.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P285	In case of inadequate ventilation wear respiratory protection.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.

P362	Take off contaminated clothing and wash before reuse.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of Contents/container to an approved waste disposal plant.

**Other hazards not contributing to the classification:**

Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions.

**Unknown Acute Toxicity (GHS-US):**

No data available.

Contains isocyanates. Inhalation of isocyanate mists/vapors may cause respiratory irritation, breathlessness, chest discomfort and reduced pulmonary functions. Overexposure well above the PEL may result in bronchitis, bronchial spasms and pulmonary edema. Long-term exposure to isocyanates has been reported to cause lung damage, including reduced lung function which may be permanent. Acute or chronic overexposure to isocyanates may cause sensitization in some individuals, resulting in allergic respiratory reactions including wheezing, shortness of breath and difficulty breathing. Animal tests indicate that skin contact may play a role in causing respiratory sensitization.

**Section 3: Composition/Information on Ingredients**

**Hazardous Components**

Weight %	Components	CAS-No./EINCS	Classification
45-55%	4,4'-methylenediphenyl diisocyanate (4,4' MDI)	(CAS #) 101-68-8 (EINCS) 202-966-0	Acute Tox 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2A; H319 Resp. Sens. 1; H334 Skin Sense. 1; H317 Carc. 2; H351 STOT SE 3; H335 STOT RE 2; H373
45-55%	Isocyanic acid, polymethylenepolyphenylene ester	(CAS #) 9016-87-9 (EINCS) 618-498-9	Acute Tox 4; H302 Acute Tox. 1; H330 Skin Irrit. 2; H315 Eye Irrit. 2A; H319 Resp. Sens. 1; H334 Skin Sense. 1; H317 STOT SE 3; H335

Full text of H-phrases: See Section 16

**Section 4: First-Aid Measures**

**Description of First-Aid Measures**

**First-aid Measures General:**

Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).

**First-aid Measures After Inhalation:**

Although MDI is low volatility, an inhalation hazard can exist from MDI aerosols or vapors formed during heating, foaming or spraying. Individuals that are sensitized, exposure may result in allergic respiratory reactions.

**First-aid Measures After Skin Contact:**

Rinse immediately with plenty of water. Obtain medical attention if irritation develops or persists.

**First-aid Measures After Eye Contact:**

Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

**First-aid Measures After Ingestion:**

Do not induce vomiting. Give 1-2 cups of milk or water to drink. Do not give anything by mouth to an unconscious

person. Consult a physician.

Most Important Symptoms and Effects, Both Acute and Delayed

Symptoms/Injuries: May cause an allergic skin reaction. Inhalation may cause allergic respiratory reaction with asthma-like symptoms and difficulty breathing.

Symptoms/Injuries After Inhalation: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Symptoms/Injuries After Skin Contact: isocyanates react with skin protein and moisture and can cause irritation, which may include the following symptoms: reddening, swelling, rash, scaling, or blistering. Cured material is difficult to remove.

Symptoms/Injuries After Eye Contact: liquid, aerosols or vapors are irritating and can cause tearing, reddening and swelling. If left untreated, corneal damage can occur and injury is slow heal. However, damage is usually reversible (see First Aid Measures for treatment).

Symptoms/Injuries After ingestion: Ingestion is likely to be harmful or have adverse effects.

**Chronic Symptoms:**

As a result of previous repeated overexposures, or single large dose, certain individuals develop symptoms to isocyanates at levels way below 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. This increased lung sensitivity can persist for weeks and in severe cases for several years. Overexposure to isocyanates has also been reported to cause lung damage, including decrease in lung function), which may be permanent. Sensitization can either be temporary or permanent.

If exposed or concerned, get medical advice and attention.

## Section 5: Fire-Fighting Measures

<b>Suitable Extinguishing Media:</b>	Use dry chemical, carbon dioxide, foam and water spray for large fires.
<b>Unsuitable Extinguishing Media:</b>	Do not use heavy water stream. Use of heavy stream of water may spread fire.
<b>Special Hazards Arising from Substance or Mixture</b>	<b>Fire Hazard:</b> Not considered flammable but may burn at high temperatures. <b>Reactivity:</b> Hazardous reactions will not occur under normal conditions. <b>Explosion Hazard:</b> Product is not explosive. DO NOT weld, burn or cut empty containers.
<b>Fire-fighting Procedure</b>	Exercise caution when fighting any chemical fire. Fire fighters should wear self-contained breathing apparatus to protect against inhalation of cyanates vapors and other decomposition/combustion products. Do not release runoff from fire control methods to sewers or waterways. Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full face piece operated in pressure-demand or positive-pressure mode.
<b>Other information</b>	Refer to Section 9 for flammability properties.

## Section 6: Accidental Release Measures

### Personal Precautions, Protective Equipment and Emergency Procedures

#### General Measures

Do not get in eyes, on skin, or on clothing. Do not breathe vapor or mist.

#### For Non-emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

#### For Emergency Responders

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Stop leak if safe to do so. Eliminate ignition sources. Ventilate area.

#### Environmental Precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

### Methods and Material for Containment and Cleaning-Up

For Containment: Clear up spills immediately and dispose of waste safely. Spills should be contained with mechanical barriers. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

### Reference to Other Sections

See Heading 8. Exposure controls and personal protection

## Section 7: Handling and Storage

### Precautions for Safe Handling

Keep away from sources of ignition - No smoking. Keep away from heat & open flame. Avoid all eye & skin contact & do not breathe vapor or mist. Always wash hands after handling. Do not eat, drink or smoke when using this product. Ensure there is adequate ventilation. Wear recommended personal protective equipment. Take precautionary measures against static discharge. Use grounded electrical/mechanical equipment.

### Hygiene Measures

Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

### Conditions for Safe Storage (Including Any Incompatibilities)

Technical Measures: Comply with applicable regulations.

Storage Conditions: Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected. Avoid contact with skin and eyes. Do not breathe aerosols or vapors. Warning properties (irritation of eyes, nose, and throat or odor) are not adequate to prevent chronic overexposure from inhalation. This material can produce asthmatic sensitization upon either single inhalation exposure to a relatively high concentration or upon repeated inhalation exposure to lower concentrations. Exposure to vapors of heated MDI can be extremely dangerous. Employee education and training in the safe use and handling of this compound are required under the OSHA Hazard Communication Standard.

Incompatible Products: Isocyanates react slowly with water, alcohols, amines, acids and bases.

Storage Temperature (min/max): 45°F - 95°F (7°C - 35°C)

Shelf life: 6 months

## Section 8: Exposure Controls/Personal Protection

### Control Parameters

For substances listed in Section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), or OSHA (PEL).

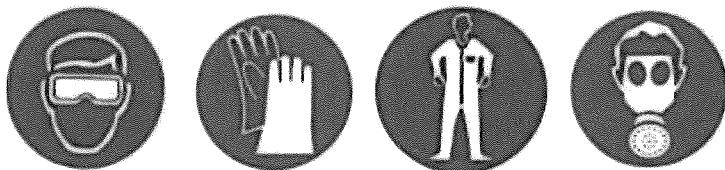
### 4,4'-methylenediphenyl diisocyanate (4,4' MDI) (101-68-8)

ACGIH	TLV (ppm)	0.0050 ppm
OSHA	PEL (ppm)	0.02 ppm
NIOSH	TWA (ppm)	0.0050 ppm

### Exposure Controls

Appropriate Engineering Controls: Ensure adequate ventilation, especially in confined areas. Emergency eye wash fountains and safety showers should be available in immediate vicinity of any potential exposure. Ensure all national/local regulations are observed.

Personal Protective Equipment: Protective goggles, gloves, protective clothing. If insufficient ventilation: wear respiratory protection.



## Personal Protective Equipment

### Respiratory Protection:

Follow OSHA respirator regulation 29 CFR 1910.134 and European Standards EN 141, 143 and 371; wear a MSHA/NIOSH or European Standards EN 141, 143 and 371 approved respirators when needed.

### Skin and Body Protection:

Chemically resistant materials and fabrics. Wear suitable protective clothing. Wear chemically resistant protective gloves.

### Eye Protection:

Chemical goggles or safety glasses.

### Environmental Exposure Controls:

Do not allow the product to be released into the environment.

### Consumer Exposure Controls:

Do not eat, drink or smoke during use.

## Section 9: Physical and Chemical Properties

**Appearance:** Transparent yellow liquid

**Odor:** Slightly musty odor

**Odor Threshold:** No data available

**pH:** No data available

**Freezing Point:** 32°F (0°C) for MDI

**Boiling Point:** 208°C (406°F) for MDI

**Flashpoint:** 390° F (198.8° C) Pensky-Martens closed

**Evaporation Rate:** No data available (butylacetate=1)

**Flammability:** No data available

**Lower Explosion Limits:** Not determined

**Upper explosion limits:** Not determined

**Vapor Pressure:** Less than 10 - 5 mm Hg @ 77°F (25°C) for MDI

**Relative Vapor Density at 20°C:** No data available

**Relative Density:** No data available.

**Solubility in Water:** Not soluble, reacts slowly with to liberate CO<sub>2</sub> gases

**Partition Coefficient n-octanol/water:** No data available

**Auto-ignition Temperature:** No data available

**Decomposition Temperature:** No data available

**Viscosity:** 200 CPS @ 72°F (22°C)

**Oxidizing Properties:** No data available

**Specific Gravity:** 1.15 @ 72°F (22°C)

**Explosive Properties:** Product is not explosive; however, formation of explosive air vapor mixture is possible.

## Section 10: Stability and Reactivity

### Reactivity

Hazardous reactions will not occur under normal conditions.

### Chemical stability

Stable under recommended handling and storage conditions (see Section 7).

### Possibility of hazardous reactions

May occur, contact with moisture and other materials, which react with isocyanates, or temperatures about 400° F (204° C), may cause some polymerization.

### Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Ignition sources. Incompatible materials.

**Incompatible materials**

Water, amines, strong bases, and alcohols.

**Hazardous decomposition products**

By high heat and fire: carbon monoxide, oxides of nitrogen, traces of HCN, MDI vapors or aerosols.

<b>Section 11: Toxicological Information</b>
--

**Acute Toxicity/Effects**

Not Classified

<b>4,4'-methylenediphenyl diisocyanate (4,4' MDI) (101-68-8)</b>	
LD50 Oral Rat (mg/kg)	9,200 mg/kg
LD50 Dermal Rabbit	2.24 mg/l (1 hr)
<b>Isocyanic acid, polymethylenepolyphenylene ester (9016-87-9)</b>	
LD50 Oral Rat	0.49 mg/l (4 hr)
Skin Corrosion/Irritation	May cause minor skin irritation
Serious Eye Damage/Irritation	May cause mild eye irritation
Respiratory or Skin Sensitization	May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.
Germ Cell Mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive Toxicity	Not classified
STOT (Single Exposure)	Not classified
STOT (Repeated Exposure)	Not classified
Aspiration Hazard	Not classified

<b>Section 12: Ecological Information</b>
---

**Toxicity**

<b>4,4'-Methylenebis(phenyl isocyanate) (101-68-8)</b>	
EC50 Daphnia 1	0.35 mg/l (Exposure time: 24 h - Species: Daphnia magna [Static])

**Persistence and Degradability:**

No additional information available.

**Bioaccumulative Potential:**

No additional information available.

**Mobility in Soil:**

No additional information available.

**Other Adverse Effects:**

Avoid release to the environment.

<b>Section 13: Disposal Considerations</b>
--

**Waste Disposal Recommendations:**

Dispose of waste material in accordance with all local, regional, national, & international regulations.

**Sewage Waste Recommendations:**

Do not dispose of waste into sewer.

## Section 14: Transport Information

### DOT (Department of Transportation)

**Proper Shipping Name:** Liquid Resin (Non-Regulated)

**Hazard Class:** Non-regulated

**UN Number:** Not applicable

**Packing Group:** None

**Label:** Not applicable

**Placard:** Not applicable

### NMFC (National Motor Freight Carriers)

**Freight Class:** 55

**IMO / IMDG CODE (OCEAN) HAZARD CLASS DIVISION NUMBER:** Non-regulated/Not dangerous goods

**ICAO / IATA (AIR) HAZARD CLASS DIVISION NUMBER:** Non-regulated/Not dangerous goods

## Section 15: Regulatory Information

### US Federal Regulations

**SARA Section 311/312 Hazard Classes:** Acute Health Hazard

### SARA Section 313 Components

Isocyanic acid, polymethylenepolyphenylene ester (9016-87-9)

4,4'-Methylenebis(phenyl isocyanate) (101-68-8)

Oxirane, methyl-, polymer with oxirane, ether with 1,2,3-propanetriol (3:1), polymer with 1,1'-methylenebis[4-isocyanatobenzene] (59675-67-1) - Listed on the United States TSCA (Toxic Substances Control Act) inventory

### US State Regulations

4,4'-Methylenebis(phenyl isocyanate) (101-68-8)

U.S. – Massachusetts –RTK (Right to Know) List

U.S. - Pennsylvania - RTK (Right to Know) List

U.S. – New Jersey - RTK (Right to Know) List

Isocyanic acid, polymethylenepolyphenylene ester (9016-87-9)

U.S. - Pennsylvania - RTK (Right to Know) List

U.S. – New Jersey - RTK (Right to Know) List

## Section 16: Other Information

Acute Tox 4	H302	Harmful if swallowed.
Skin Sens. 1	H317	May cause an allergic skin reaction.
Eye Irrit. 2A	H319	Causes serious eye irritation.
Acute Tox 4	H332	Harmful if inhaled.
STOT SE 3	H335	May cause respiratory irritation.
STOT RE 2	H373	May cause damage to organs through prolonged or repeated exposure.

NFPA 704M ratings:	Health 2	Flammability 1	Reactivity 1	Other
HMIS ratings: 0-Insignificant 1-Slight 2-Moderate 3-High 4-Extreme	Health 2	Flammability 1	Physical Hazard 1	Personal Protection H

The information provided in this Safety Data Sheet is correct to the best of Avanti International's knowledge, information and belief at the date of this publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process, unless specified in the text. AVANTI INTERNATIONAL MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. Given the variety of factors that can affect the use and application of this product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the product to determine whether it is fit for a particular purpose and suitable for user's method of use or application. Each user is also responsible for evaluating the conditions of use and designing the appropriate protective mechanisms to prevent employee exposures, property damage, or release to the environment. Avanti International assumes no responsibility for injury to the recipient or third persons or for any damage to any property resulting from misuse of the product.