AV-290 FAST-SET
SAFETY DATA SHEET
Date Issued: 06/17/2016

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:

Signal Word:	Danger
Hazards Statements:	
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.
Precautionary Statements:	**General:**
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

Suitable Extinguishing Media:	Use dry chemical, carbon dioxide, foam and water spray for large fires.
Unsuitable Extinguishing Media:	Do not use heavy water stream. Use of heavy stream of water may spread fire.
Special Hazards Arising from Substance or Mixture	**Fire Hazard**: Not considered flammable but may burn at high temperatures. **Reactivity:** Hazardous reactions will not occur under normal conditions. **Explosion Hazard:** Product is not explosive. DO NOT weld, burn or cut empty containers.
Fire-fighting Procedure	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.
Other information	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 form 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 CO2 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.

Section 11: Toxicological Information

Acute Toxicity/Effects
Not Classified

4,4'-methylenediphenyl diisocyanate (4,4' MDI) (101-68-8)	
LD50 Oral Rat (mg/kg)	9,200 mg/kg
LD50 Dermal Rabbit	2.24 mg/l (1 hr)
Isocyanic acid, polymethylenepolyphenylene ester (9016-87-9)	
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

Section 12: Ecological Information

Toxicity

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

Section 13: Disposal Considerations

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-Insignificate** **1-Slight** **2-Moderate** **3-High** **4-Extreme**	**Health** 2	**Flammability** 1	**Physical Hazard** 1	**Personal Protection** H

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