



AV-290 FAST-SET MATERIAL SAFETY DATA SHEET

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1. PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: AV-290 Fast-Set
CLASSIFICATION: Hydrophobic Grout

MANUFACTURER
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2. COMPOSITION/INGREDIENT INFORMATION

Part A

Ingredient / CAS Number	Exposure Limits	Concentration
4,4' - Diphenylmethane Diisocyanate (MDI) CAS # 101-68-8	OSHA: .02 ppm - .20 mg/m ³ ceiling ACGIH : 005 ppm - .951 mg/m ³ TWA	Trade Secret

Part B

Ingredient / CAS Number	Exposure Limits	Concentration
Polyether Triol CAS # 9092-002	OSHA Not established ACGIH Not established	Trade Secret

3. HAZARDS IDENTIFICATION

Part A

HEALTH HAZARDS: Persons with known respiratory or allergy problems must not be exposed to this product. May cause headaches, nausea, coughing, shortness of breath, chest pains.

EYE CONTACT: As a liquid exposure may cause irritation or inflammation.

INHALATION: Prolonged or repeated exposure can cause upper respiratory tract irritation. Severe overexposure may lead to pulmonary edema.

INGESTION: Can result in irritation and corrosive action in the mouth, stomach tissue, and digestive tract.

Part B

EYE CONTACT: May cause eye irritation.

SKIN CONTACT: May cause skin irritation.

INHALATION: This product is not an inhalation hazard at room temperature. Vapors or aerosol can be generated from heating or spraying and may cause respiratory irritation.

4. FIRST AID MEASURES

Part A

EYES: Flush with plenty of water for at least 15 minutes. Get medical attention.

SKIN: Remove all contaminated clothing and shower thoroughly with soap and water, flushing for at least 15 minutes then wash or clean clothing prior to reuse. If irritation develops, consult a physician.

INHALATION: Move to fresh air in case of accidental inhalation of vapors. If breathing is difficult, administer oxygen and call a physician.

INGESTION: Do NOT induce vomiting. Drink 1 or 2 glasses of milk or water. If gastrointestinal symptoms develop, get medical attention. (Never give anything by mouth to an unconscious or convulsing person.) **NOTE TO PHYSICIAN:** Treat symptomatically; no specific antidote is available.

Part B

EYES: Flush with plenty of water for at least 15 minutes. Get medical attention.

SKIN: Shower thoroughly with soap and water, flushing for at least 15 minutes. If irritation develops, consult a physician.

INHALATION: This product is not an inhalation hazard at room temperature.

INGESTION: Immediately drink water to dilute. Induce vomiting. Consult a physician. (Never give anything by mouth to an unconscious or convulsing person.)

5. FIRE AND EXPLOSION HAZARDS

Part A

FLASH POINT: 390°F (198°C) Pensky-Martens closed.

FLAMMABLE LIMITS: Not determined

EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, foam or water spray for large fires to cool containers.

PROTECTIVE EQUIPMENT: Wear self-contained breathing apparatus and full protective clothing.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Toxic fumes (isocyanate vapor or mist, carbon dioxide, carbon monoxide, nitrogen oxides, traces of hydrogen cyanide) are released in fire situations. At temperature greater than 400°F (204°C), Polymeric MDI can polymerize and decompose which will cause pressure to build-up in closed containers. Explosive rupture is possible. Water contamination will produce carbon dioxide. Downwind personnel must be evacuated.

Part B

FLASH POINT: 300°F-500°F (150° - 260°C) Cleveland Open Cup.

EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, foam or water spray for large fires to cool containers.

6. ACCIDENTAL RELEASE MEASURES

Part A

GENERAL PROCEDURES: Evacuate spill area. Wear protective equipment for protection of eyes and skin during cleanup. With adequate ventilation, cover with an inert absorbent material such as clay or vermiculite, transfer to a proper waste container. Wash the area with water containing 5% ammonia and detergent.

LARGE SPILLS: Liquid may be transferred directly to drums for disposal. Wash the area with water containing 5% ammonia and detergent.

Part B

GENERAL PROCEDURES: Stop source of spill as soon as possible and notify appropriate personnel. Dike spill area and remove as a liquid. If unable to do so, then absorb with an inert absorbent material such as clay or vermiculite, transfer to a proper waste container.

7. HANDLING AND STORAGE

Part A

HANDLING: Opened containers must be handled properly to prevent moisture contamination.

STORAGE: Store in a dry area between 64°F and 86°F (18°-30°C).

Part B

HANDLING: Product is hygroscopic; protect with padding of dry air-40° C (-40° F) dew point or dry nitrogen. Calcium chloride drying system with silica gel on the vents can also be used.

STORAGE: Do not store above 102°F and (49°C).

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Part A & Part B

ENGINEERING CONTROLS: Mechanical general and/or local exhaust ventilation to control vapor or mist below maximum exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Use safety goggles and face shield to avoid splashing on face.

SKIN: Wear long-sleeve shirt and trousers; and impervious rubber gloves and boots.

RESPIRATORY: If exposure exceeds occupational exposure limits, use an appropriate NIOSH approved full-face piece respirator, half-face piece respirator with splash goggles, or powered, filtered air-supplied hood.

HYGIENE PRACTICES: Wash with soap and water after handling. Remove contaminated clothing and wash before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Part A

APPEARANCE AND ODOR: Amber to brownish thin liquid.

BOILING POINT: 406°F (208°C)

VAPOR PRESSURE (mm Hg): Less than 10-15 mm Hg @ 77°F (25°C) for MDI

VAPOR DENSITY: 8.5 (MDI) (air-1)

SPECIFIC GRAVITY (water=1): 1.23 @ 77°F (25°C)

MELTING POINT: Not Determined

FREEZING POINT: Below 32°F (0° C) for MDI

VISCOSITY: 1100 cps @ 77° F (25° C)

BULK DENSITY: 10.25 lbs/gal

EVAPORATION RATE (butyl acetate): N/A

SOLUBILITY IN WATER: Not soluble, reacts slowly with to liberate CO2 gases.

Part B

APPEARANCE AND ODOR: Thin, clear liquid with a slight musty odor.

BOILING POINT: No data

VAPOR PRESSURE (mm Hg): @ 25°C:0.01-3.5 mm Hg

VAPOR DENSITY: No data

SPECIFIC GRAVITY (water=1): 0.9-1.1

FREEZING POINT: No data

BULK DENSITY: N/A

EVAPORATION RATE (butyl acetate): N/A

pH: @25°C: 4-8 in. 10/6 isopropano/water

SOLUBILITY IN WATER: Soluble, to slightly soluble

10. STABILITY AND REACTIVITY

Part A

STABILITY: Stable in sealed containers under normal conditions.

MATERIALS TO AVOID: Water (moisture), metal compounds, acids, bases, and surface-active materials

DECOMPOSITION : Toxic fumes are released in fire situations, including isocyanate vapor and mist, carbon dioxide, carbon monoxide, nitrogen oxides, and traces of hydrogen cyanide.

HAZARDOUS POLYMERIZATION: May occur.

Part B

STABILITY: Stable in sealed containers under normal conditions.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

Part A

TOXICITY DATA FOR: Diphenylmethane Diisocyanate (Monomeric and Polymeric)

ACUTE ORAL LD₅₀ (rat): Greater than 15,800 mg/kg

ACUTE DERMAL LD₅₀ (rabbit): Greater than 5,010 but less than 7,940 mg/kg

INHALATION: The 4-hour LD₅₀ for polymeric MDI in rats ranges from 370 to 490 mg/m³. The LD₅₀ for monomeric MDI was estimated to be between 172 and 187 mg/m³.

EYE EFFECTS: Slight to moderate irritation.

SKIN EFFECTS: Slight to moderate irritation.

SENSITIZATION: MDI has been shown to produce dermal sensitization in laboratory animals. Evidence of respiratory sensitization has also been observed in guinea pigs. In addition, there is some evidence suggestive of cross-sensitization between different types of diisocyanates.

CHRONIC TOXICITY: In a combined chronic inhalation toxicity/oncogenicity study, rats were exposed to an aerosol of polymeric MDI for 6 hours per day, 5 days per week for one or two years. The exposure concentrations were 0, 0.2, 1.0 and 6.0 mg/m³. Microscopic examination of tissues revealed the effects of irritation to the nasal cavity and lungs in animals exposed to 1.0 and 6.0 mg/m³. The No Observable Effect Level (NOEL) was 0.2 mg/m³.

CARCINOGENICITY: In the study described above (CHRONIC TOXICITY), the occurrence of pulmonary adenomas and a single pulmonary adenocarcinoma was considered to be related to MDI. These tumors were observed only in rats exposed to the high concentration of 6.0 mg/m³.

MUTAGENICITY: Positive (Salmonella microsome test with metabolic activation; cell transformation assay) as well as negative (mouse lymphoma specific locus mutation test with or without metabolic activation) results have been observed "in vitro". However, MDI was negative in an "in vivo" (mouse micronucleus) assay.

DEVELOPMENTAL TOXICITY: Rats were exposed to polymeric MDI at air concentrations of 0, 1, 4 and 12 mg/m³ during days 6-15 of gestation. Maternal Toxicity (including mortality) was observed at the highest concentration of 12 mg/m³ accompanied by embryo and fetal toxicity. However, no teratogenic effects were observed even at this lethal concentration.

Part B

TOXICITY DATA: No data

12. ECOLOGICAL INFORMATION**Part A**

ECOTOXICITY DATA FOR: Diphenylmethane Diisocyanate (Monomeric and Polymeric)

AQUATIC TOXICITY: LD₅₀ – 24 hours (static): Greater than 500 mg/liter for Daphnia magna, Limnea stagnalis, and Zebra fish (Brachydanio rerio) for both polymeric and monomeric MDI.

Part B

ECOTOXICITY DATA: No data

13. DISPOSAL CONSIDERATIONS**Part A & Part B**

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

14. TRANSPORT INFORMATION**Part A & Part B****DOT (DEPARTMENT OF TRANSPORTATION)**

PROPER SHIPPING NAME: Liquid resin non-regulated

HAZARD CLASS: None

UN NUMBER: None

PACKING GROUP: None

LABEL: None

PLACARD: None

NMFC (NATIONAL MOTOR FREIGHT CARRIERS)

FREIGHT CLASS: 55

15. REGULATORY INFORMATION**Part A**

OSHA STATUS: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA STATUS: All components of this product are either on the TSCA Inventory or exempt.

CERCLA REPORTABLE QUANTITY: 5000 lbs. for 4,4'-Diphenylmethane Diisocyanate, CAS # 101-68-8.

SARA TITLE III

SECTION 302: Extremely Hazardous Substances: None

SECTION 311/312: Hazard Categories: Immediate Health Hazard; Delayed Health Hazard; Reactive Hazard

SECTION 313: Polymeric Diphenylmethane Diisocyanate, CAS #9016-87-9, 100%; Contained in this polymeric MDI product is 4,4'-Diphenylmethane Diisocyanate, CAS #101-68-8, RCRA STATUS:

RCRA STATUS: MDI is not listed as a hazardous waste. To the best of our knowledge, MDI does not meet the criteria of a hazardous waste if discarded in its purchased form. However, under RCRA, it is the responsibility of the user of products to determine, at the time of disposal, whether a product meets any of the criteria for a hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting material hazardous, under the criteria of ignitability, corrosivity, reactivity and toxicity characteristics under the new Toxicity Characteristics Leaching Procedure (TCLP) 40 Code of Federal Regulations 261.20-24.

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

Component Name / CAS Number	Concentration	State Code
4,4' – Diphenylmethane Diisocyanate (MDI) CAS #101-68-8	Upper Bound 15%	PA1,FL, IL, MA, NJ1, NJ4, CN2
Higher Oligomers of MDI CAS #9016-87-9	45-55%	PA3, NJ4
Diphenylmethane Diisocyanate (MDI) CAS #26447-40-5	1-10%	PA3, NJ4
Phenyl isocyanate CAS #103-71-9	Trace – ppm	MA

FL Florida Substance List

IL Illinois Toxic Substance List

MA Massachusetts Hazardous Substance List

NJ1 New Jersey Hazardous Substance List

NJ4 New Jersey Other – included in 5 predominant ingredients > 1%

PA1 Pennsylvania Hazardous Substance List

PA3 Pennsylvania Non-hazardous present at 3% or greater

RI Rhode Island List of Designated Substances

CN2 Canada WHMIS Ingredient Disclosure List over 0.1%

Part B

Toxic Substances Control Act: this substance is listed on the Toxic Substance Control Act inventory.
Superfund amendments and reauthorization Act Title III: hazard categories per 40 CFR 370.2.

16. OTHER INFORMATION

Part A & Part B

The information on this MSDS is accurate to the best of Avanti International's knowledge. Avanti International makes no expressed or implied warranty, and in no case shall be liable for consequential, special, or indirect damages resulting from the use or handling of this product.