Safety Data Sheet

AV-258-MV PermaFlex™

SECTION 1. IDENTIFICATION

Product Identifier	AV-258-MV PermaFlex™
Other Means of Identification	Hydrophobic grout
Recommended Use	Industrial Use Only.
Restrictions on Use	Not applicable.
Manufacturer/Supplier	Avanti International, 822 Bay Star Blvd, Webster, TX, 77598, USA, 281.486.5600,
Emergency Phone No.	ChemTrec 800.424.9300
Date of Preparation	April 25, 2023

SECTION 2. HAZARD IDENTIFICATION

Classified according to the US Hazard Communication Standard (HCS 2012) and Canada's Hazardous Products Regulations (WHMIS 2015).

Classification: Skin irritation - Category 2; Eye irritation - Category 2B; Respiratory sensitization - Category 1; Skin sensitization - Category 1; Specific target organ toxicity (single exposure) - Category 3; Specific target organ toxicity (repeated exposure) - Category 2; Aquatic hazard (Acute) - Category 1

Label Elements

Hazard pictogram:

Signal word: Danger

Hazard statements:

H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H320 Causes eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.

Precautionary Statements

General:

Prevention:

P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 Wash hands and skin thoroughly after handling.
P272 Contaminated work clothing must not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P284 In case of inadequate ventilation wear respiratory protection.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of water/ Soap
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 and easy to do. Continue rinsing.

	P332 + P313	If skin irritation occurs: Get medical advice/attention.
	P337 + P313	If eye irritation persists: Get medical advice/attention.
	P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTRE/doctor/
	P362 + P364	Take off contaminated clothing and wash it before reuse.
Storage:	P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
Disposal:	P501	Dispose of contents and container in accordance with local, regional, national and international regulations.

Other Hazards

Other hazards: Not applicable.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	%	Other Identifiers
Dibutyl maleate	105-76-0	23.0-38.0	DBM
Methylenediphenyl diisocyanate (mixed isomers)	26447-40-5	20.0-27.0	MDI
4-Methyl, 1-3 Dioxolan-2-one	108-32-7	6.0-11.0	PC

Occupational exposure limits, if available, are listed in section 8.

SECTION 4. FIRST AID MEASURES

First Aid Measures

General advice: Get medical advice or attention if you feel unwell or are concerned.

Eye contact: Avoid direct contact. Wear chemical protective gloves if necessary. Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. Remove contact lenses, if present and easy to do. Take care not to rinse contaminated water into the unaffected eye or onto the face. If eye irritation persists, get medical advice or attention.

Skin contact: Avoid direct contact. Wear chemical protective clothing if necessary. Immediately wash gently and thoroughly with lukewarm, gently flowing water and mild soap for 15-20 minutes. If skin irritation or a rash occurs, get medical advice or attention. Thoroughly clean clothing, shoes and leather goods before reuse or dispose of safely.

Inhalation: Move to fresh air. If experiencing respiratory symptoms (e.g. coughing, shortness of breath, wheezing), call a Poison Centre or doctor. Get medical advice or attention if you feel unwell.

Ingestion: Rinse mouth with water. Get medical advice or attention if you feel unwell or are concerned.

Most Important Symptoms and Effects, Acute and Delayed

If inhaled: can cause effects as described for inhalation.

Immediate Medical Attention and Special Treatment Target Organs

Target organs: Kidneys, lungs, respiratory system.

Special instructions: Monitor cardiovascular function. Monitor lung function.

Medical Conditions Aggravated by Exposure

Asthma, dermatitis, respiratory conditions, skin allergies.

SECTION 5. FIRE FIGHTING MEASURES

Extinguishing Media

Suitable: Use water to keep non-leaking, fire-exposed containers cool.

Unsuitable: None known.

Specific Hazards Arising from the Product

This product presents no unusual hazards in a fire situation.
Very toxic carbon monoxide, carbon dioxide; extremely hazardous hydrogen cyanide; corrosive, oxidizing nitrogen oxides; very toxic polycyclic aromatic hydrocarbons.

Special Protective Equipment and Precautions for Firefighters

Protective equipment: Chemical protective clothing (e.g. chemical splash suit) and positive pressure SCBA may be necessary.

Special firefighting procedures: Approach fire from upwind to avoid hazardous vapors or gases. Knock down vapors or gases with water fog or fine water spray.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Do not touch damaged containers or spilled product unless wearing appropriate protective equipment.

Environmental precautions: Do not allow into any sewer, on the ground or into any waterway. If the spill is inside a building, prevent product from entering drains, ventilation systems and confined areas.

Methods and Materials for Containment and Cleaning Up

Small Spills: Stop or reduce leak if safe to do so. Cover the spill surface with the appropriate type of foam to reduce the release of vapor. Contain and soak up spill with absorbent that does not react with spilled product.

Large Spill: Dike spilled product to prevent runoff. Knock down vapor with fog or fine water spray. Flush spill area. Get expert advice before treating the spilled product with other chemicals to make it less hazardous. Contact emergency services and manufacturer/supplier for advice.

Other Information

Contact supplier, local fire, and emergency services for help. Report spills to local health, safety, and environmental authorities, as required.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling: Prevent all skin contact. Avoid breathing in this product. Do not get in eyes, on skin or on clothing. Avoid generating vapors or mists. Prevent uncontrolled release of product. Avoid release to the environment. Immediately report leaks, spills or failures of the safety equipment (e.g. ventilation system). General hygiene considerations: it is good practice to avoid breathing product; avoid skin and eye contact and wash hands after handling. Do NOT smoke in work areas. Do NOT eat, drink, or store food in work areas. Remove contaminated clothing and protective equipment before entering eating areas or leaving work area. Consider using a double locker-shower facility. Wash hands thoroughly after handling this product and before eating, using the washroom, or leaving work area. Thoroughly clean clothing, shoes and leather goods before reuse or dispose of safely.

Conditions for safe storage: Store in an area that is: cool, ventilated, separate from incompatible materials (see Section 10: Stability and Reactivity).

Incompatible materials: N/A

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters	**ACGIH TLV®**		**OSHA PEL**		**AIHA WEEL**	
Chemical Name	**TWA**	**STEL**	**TWA**	**Ceiling**	**8-hr TWA**	**TWA**
Methylenediphenyl diisocyanate (mixed isomers)	0.005 ppm			0.2 mg/m3		

Appropriate engineering controls: Use local exhaust ventilation if general ventilation is not adequate to control the amount in the air. Provide eyewash and safety shower if contact or splash hazard exists.

Individual Protection Measures

Eyes/face protection:	Wear chemical safety goggles. Wear chemical safety goggles and face shield when contact is possible.
Skin/hand protection:	Wear chemical protective clothing e.g. gloves, aprons, boots. Suitable materials are: Chemical Resistant Gloves: butyl rubber, neoprene rubber, nitrile rubber, polyvinyl chloride, Viton®/butyl rubber. Chemical Resistant Suit: Barrier® (PE/PA/PE), Saranex®.
Body protection:	Wear chemical protective clothing e.g. gloves, aprons, boots. Suitable materials are: Chemical Resistant Gloves: butyl rubber, neoprene rubber, nitrile rubber, polyvinyl chloride, Viton®/butyl rubber. Chemical Resistant Suit: Barrier® (PE/PA/PE), Saranex®.
Respiratory protection:	Wear a NIOSH approved air-purifying respirator with N100, R100, or P100 filter(s). And wear a NIOSH approved air-purifying respirator with an organic vapor cartridge. Either full-face piece or half-face piece with splash goggles.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Light yellow liquid
Odor:	Pungent
Odor threshold:	Not available
pH:	Not available
Melting/freezing point:	Not available (melting); < 0 ºF (-18 ºC) (freezing)
Initial boiling point and boiling range:	Not available
Flash point:	> 200 ºF
Flash point method:	Not available
Evaporation rate:	Not available
Flammability (solid, gas):	Not available
Upper/lower flammability or explosive limits:	Not available (upper); Not available (lower)
Vapor pressure:	Not available
Vapor density (air=1):	Not available
Relative density (water=1):	1.073
Solubility:	Not available in water; Moderately soluble in ketones (e.g. acetone).
Partition coefficient n-octanol/water:	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity:	Not available (kinematic); 450 - 650 centipoises at 72 ºF (22 ºC) (dynamic)

SECTION 10. STABILITY AND REACTIVITY

Reactivity:	Not applicable.
Chemical stability:	Normally stable.

Possibility of hazardous reactions:	None known.
Conditions to avoid:	Water, moisture, or humidity. Alkaline conditions (high pH).
Incompatible materials:	Polymerizes on contact wit alcohols (e.g. ethanol), alkanolamines (e.g. triethanolamine), amines (e.g. triethylamine), glycols (e.g. ethylene glycol), phenols (e.g. carbolic acid), reducing agents (e.g. hydroquinone), strong reducing agents (e.g. hydrides), water. Not corrosive to metals.
Hazardous decomposition products:	None known.

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation; skin contact; eye contact.

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Methylenediphenyl diisocyanate (mixed isomers)	2 mg/L (rat) (aerosol)	> 2000 mg/kg (rat)	> 9400 mg/kg (rabbit)
Dibutyl maleate		9300 mg/kg (mouse)	10010 mg/kg (rabbit)
4-Methyl, 1-3 Dioxolan-2-one		□	5000 mg/kg (rat)

Inhalation ATEmix = 16.3 mg/L
Oral ATEmix = 9,718 mg/kg
Dermal ATEmix = 19,400 mg/kg

Skin corrosion or irritation:	May cause mild irritation based on information for closely related chemicals.
Serious eye damage or irritation:	May cause serious eye irritation based on information for closely related materials.
Respiratory sensitization:	May cause severe asthma-like symptoms (respiratory sensitization) based on information for closely related chemicals. May cause an allergic reaction (skin sensitization) based on information for closely related chemicals. (Methylenediphenyl diisocyanate (mixed isomers))
Skin sensitization:	
Germ cell mutation:	No information was located.

Carcinogenicity:

Chemical Name	IARC	ACGIH®	NTP	OSHA
Methylenediphenyl diisocyanate (mixed isomers)	Group 3	Not designated	Not Listed	Not Listed
Dibutyl maleate	Not Listed	Not Listed	Not Listed	Not Listed
4-Methyl, 1-3 Dioxolan-2-one	Not Listed	Not Listed	Not Listed	Not Listed

Reproductive toxicity:	Development of Offspring No information was located. Sexual Function and Fertility No information was located. Effects on or via Lactation No information was located.
Aspiration hazard:	No information was located.

Specific Target Organ Toxicity

Repeated exposure:	May cause harmful effects on the kidneys. (Dibutyl maleate) irritation of the respiratory system. May cause respiratory tract injury. (Methylenediphenyl diisocyanate (mixed isomers)).

SECTION 12. ECOLOGICAL INFORMATION

Toxic to aquatic life, based on acute toxicity tests. (Dibutyl maleate)

Ecotoxicity Data

Chemical Name	LC50 Fish	EC50 Crustacea	ErC50 Aquatic Plants	ErC50 Algae
Methylenediphenyl diisocyanate (mixed isomers)		> 1000 mg/L (Daphnia magna (water flea))		
Dibutyl maleate	0.6 mg/L (Oncorhynchus mykiss (rainbow trout); 96-hour)	21 mg/L (Daphnia magna (water flea); 48-hour)	6.2 mg/L (Desmodesmus subspicatus (algae); 72-hour)	
4-Methyl, 1-3 Dioxolan-2-one	Low acute toxicity to fish	Low acute toxicity to aquatic invertebrates	Low acute toxicity	Low toxicity to algae

Persistence and degradability:	No ingredient of this product or its degradation products is known to be highly persistent.
Bioaccumulative potential:	Fish Bioconcentration Factor: 81.34 l/kg. (Dibutyl maleate) 200. (Methylenediphenyl diisocyanate (mixed isomers))
Mobility in soil:	If released into the environment, this product does not move through the soil.
Other adverse effects:	There is no information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Dispose of contents and container in accordance with local, regional, national, and international regulations.

Consult your local or regional authorities.
Refer to section 7 for handling precautions and to section 8 for information on personal protective equipment.

SECTION 14. TRANSPORT INFORMATION

Not regulated under US DOT Regulations. Not regulated under Canadian TDG regulations.

Regulatory Information

Regulation	UN No.	Proper Shipping Name	Transport Class	Packing Group
IMDG	3082	Environmentally Hazardous Substance, Liquid, N.O.S. (Dibutyl maleate)	9	III
IATA	3082	Environmentally Hazardous Substance, Liquid, N.O.S. (Dibutyl maleate)	9	III

Environmental Hazards Environmentally Hazardous Substance (Dibutyl maleate)

Special Precautions Not applicable

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

Other Information Not applicable

SECTION 15. REGULATORY INFORMATION

United States - Toxic Substances Control Act (TSCA) Section 8(b)
TSCA 8(B) inventory: All ingredients are listed on the TSCA Inventory.

California Proposition 65
Warning!
This product contains chemicals known to the state of California to cause cancer, at concentration lower 0.1%. This product contains up to 0.5% of a chemical known to the state of California to cause birth defect or other reproductive harm.

Canada - Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)
All ingredients are listed on the DSL/NDSL.

SECTION 16. OTHER INFORMATION

NFPA Rating:	Health - 1	Flammability - 1	Instability - 1
SDS Prepared By:	Avanti International		
Date of Preparation:	April 25, 2023		
Date of Last Revision:	May 18, 2023		
Revision Indicators:			

Key to Abbreviations:

ACGIH®	American Conference of Governmental Industrial Hygienists
IARC	International Agency for Research on Cancer
NFPA	National Fire Protection Association
NTP	National Toxicology Program
NIOSH	National Institute for Occupational Safety and Health
OSHA	US Occupational Safety and Health Administration
RTECS®	Registry of Toxic Effects of Chemical Substances

References: CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS). HSDB® database. US National Library of Medicine. NIOSH Pocket Guide database. National Institute for Occupational Safety and Health. Registry of Toxic Effects of Chemical Substances (RTECS®) database. Dassault Systèmes/BIOVIA (“BIOVIA”).