SAFETY DATA SHEET – MME FLEXIBLE RESIN

SECTION 1. IDENTIFICATION

Product Identifier	MME Flexible Resin
Other Means of Identification	Hydrophobic polyurethane grout
Recommended Use	Professional use only
Restrictions on Use	None known
Supplier Identifier	Multiurethanes Ltd. 5245 Creekbank Rd Mississauga, ON L4W 1N3 Canada
Emergency Telephone Number	1-800-663-6633

SECTION 2. HAZARD IDENTIFICATION

Classification	
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2A
Respiratory Sensitization	Category 1
Skin Sensitization	Category 1
Carcinogenicity	Category 2
Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation)	Category 3
Specific Target Organ Toxicity - Repeated Exposure (Kidneys, Respiratory System)	Category 2

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Label Elements

Hazard Pictograms

Signal Word: DANGER

Hazard Statements:
Causes serious eye irritation.
Causes skin irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
Suspected of causing cancer.
May cause respiratory irritation.
May cause damage to organs through prolonged or repeated exposure (kidneys, respiratory system).

Precautionary Statements

Prevention
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear appropriate protective equipment.
Avoid breathing fume/mist/vapours.
Use only outdoors or in a well-ventilated area.
Wash hands thoroughly after handling.

Response
IF ON SKIN: Wash with plenty of soap and water. If irritation or rash occurs, seek medical attention.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation persists, seek medical attention.
IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. Seek medical attention.

Storage
Keep container tightly closed and sealed until ready for use. Store in original container protected from sunlight in a dry, cool and well-ventilated area. Keep away from incompatibles.

Disposal
Dispose of material in accordance with all applicable federal, state/provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the sole responsibility of

the waste generator.

Other Hazards None known

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Mixture

Chemical Name	CAS No.	Concentration (% by weight)	Common Names / Synonyms	Other Identifiers
Dibutyl maleate	105-76-0	≥ 25 - ≤ 50%	Not available	Not available
4,4'-Methylenediphenyl Diisocyanate	101-68-8	≥ 10 - ≤ 25%	Not available	Not available
4,4'-Methylenediphenyl diisocyanate, oligomers	25686-28-6	≥ 5 - ≤ 10%	Not available	Not available
Methylenediphenyl diisocyanate	26447-40-5	≥ 0.3 - ≤ 1%	Not available	Not available

Notes Any concentration shown as a range is to protect confidentiality or is due to batch variation. There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

SECTION 4. FIRST-AID MEASURES

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Seek medical attention. If necessary, call a poison centre or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. In the event of any complaints or symptoms, avoid further exposure.

Skin Contact Wash with plenty of soap and water. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 20 minutes. Seek medical attention. In the event of any complaints or

	symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Eye Contact	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Seek medical attention.
Ingestion	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Seek medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Most Important Symptoms and Effects, Acute and Delayed	Causes serious eye irritation. Over-exposure symptoms may include pain, irritation, watering and redness. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Over-exposure symptoms may include respiratory tract irritation, coughing, wheezing, breathing difficulties and asthma. Causes skin irritation. May cause an allergic skin reaction. Over-exposure symptoms may include irritation and redness.
Indication of Immediate Medical Attention and Special Treatment Needed	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. Treat symptomatically. If exposed or concerned, seek medical advice and attention.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media	
Suitable Extinguishing Media	Use media suitable to the surrounding fire.
Unsuitable Extinguishing Media	None known
Specific Hazards Arising from the Product	In a fire or if heated, a pressure increase will occur and the container may burst. Decomposition products may include

carbon dioxide, carbon monoxide and nitrogen oxides.

Special Protective Equipment and Precautions for Firefighters	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not get in eyes or on skin. Do not breathe fume/mist/vapours. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Use appropriate personal protective equipment.
Methods and Material for Containment and Cleaning Up	Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant of proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.
Notification Procedures	If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the relevant authorities in accordance with all applicable regulations.
Environmental Precautions	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling	Put on appropriate personal protective equipment (refer to section 8). Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Avoid exposure – obtain special

instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breath vapour or mist. Do no ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. Good housekeeping is needed during storage, transfer, handling, and use of this material. Handle in accordance with good industrial hygiene and safety procedures. Always wash hands immediately after handling this product.

Conditions for Safe Storage (including incompatibilities)

Store in accordance with local regulations. Store in original container protected from sunlight in a dry, cool and well-ventilated area, away from incompatible materials (water, amines, strong bases, alcohols, copper alloys, aluminum) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters – Occupational Exposure Limits

Chemical Name	Type	Exposure Limit Values	Source
4,4'-Methylenediphenyl Diisocyanate	TWA	0.005 ppm 8 hours	ACGIH TLV (US, 03/2017); Province of British Columbia (Canada, 07/2016). Absorbed through skin. Skin sensitizer.; Province of Ontario (Canada, 07/2015); Province of Saskatchewan (Canada, 07/2013)
4,4'-Methylenediphenyl Diisocyanate	TWA	0.05 mg/m³ 10 hours 0.005 ppm 10 hours	NIOSH REL (US, 10/2016)
4,4'-Methylenediphenyl Diisocyanate	CEIL	0.2 mg/m³ 10 minutes 0.02 ppm 10 minutes	NIOSH REL (US, 10/2016)
4,4'-Methylenediphenyl Diisocyanate	CEIL	0.02 ppm 0.2 mg/m³	OSHA PEL (US, 06/2016)
4,4'-Methylenediphenyl Diisocyanate	8 hrs OEL	0.005 ppm 8 hours 0.05 mg/m³ 8 hours	Province of Alberta (Canada, 04/2009)
4,4'-Methylenediphenyl Diisocyanate	C	0.01 ppm	Province of British Columbia (Canada, 07/2016). Absorbed through skin. Skin sensitizer.
4,4'-Methylenediphenyl Diisocyanate	TWAEV	0.005 ppm 8 hours 0.051 mg/m³ 8 hours	Province of Quebec (Canada, 01/2014). Skin sensitizer.

4,4'-Methylenediphenyl Diisocyanate	STEL	0.015 ppm 15 minutes	Province of Saskatchewan (Canada, 07/2013)
Methylenediphenyl diisocyanate	TWA	0.005 ppm 8 hours	Province of British Columbia (Canada, 07/2016) Province of Ontario (Canada, 07/2015)
Methylenediphenyl diisocyanate	C	0.01 ppm	Province of British Columbia (Canada, 07/2016)
Methylenediphenyl diisocyanate	C	0.02 ppm	Province of Ontario (Canada, 07/2015)

Appropriate Engineering Controls

Use only adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual Protection Measures

Eye/Face Protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin Protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the cases of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory Protection

Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Hygiene Measures

Do not eat, drink, smoke or use cosmetics while working with this product. Upon completion of work, wash hands before

eating, drinking, smoking or use of toilet facilities. Ensure that eyewash stations and safety showers are in close proximity.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear to pale yellow liquid
Odour	Not available
Odour Threshold	Not available
pH	Not available
Melting Point / Freezing Point	Not available
Initial Boiling Point and Boiling Range	Not available
Flash Point	Closed cup: > 93.33°C (> 200°F)
Evaporation Rate (BuAe = 1)	Not available
Flammability (solid, gas)	Not available
Upper/Lower Flammability or Explosive Limits	Not available
Vapour Pressure	Not available
Vapour Density (air = 1)	Not available
Relative Density (water = 1)	1.055 ± 0.015
Solubility in Water	Insoluble in water. Reacts slowly with water to liberate carbon dioxide.
Solubility (other)	Not available
Partition Coefficient, n-octanol / water (logKow)	Not available
Auto-ignition Temperature	Not available
Decomposition Temperature	Not available

Viscosity	Dynamic (room temperature): 400 to 600 mPa·s (400 to 600 cP)

SECTION 10. STABILITY AND REACTIVITY

Reactivity	No specific test data related to reactivity available for this product or its ingredients.
Chemical Stability	Reacts with moisture and other materials that react with isocyanate.
Possibility of Hazardous Reactions	None under normal conditions.
Conditions to Avoid	Avoid extreme heat, direct sunlight, and moisture.
Incompatible Materials	Water, amines, strong bases, alcohols, copper alloys, aluminum.
Hazardous Decomposition Products	By heat and fire: carbon monoxide, oxides of nitrogen, hydrogen.

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicological Data – Acute Toxicity

Chemical Name	Result	Species	Dose	Exposure
Dibutyl maleate	LD50 Dermal	Rabbit	10 g/kg	-
4,4'-Methylenediphenyl Diisocyanate	LD50 Oral	Rat	9200 mg/kg	-

Toxicological Data – Irritation/Corrosion

Chemical Name	Result	Species	Score	Exposure	Observation
4,4'-Methylenediphenyl Diisocyanate	Eyes – Moderate irritant	Rabbit	-	100 mg	-

Respiratory and/or Skin Sensitization	No data available
Reproductive Toxicity	No data available
Germ Cell Mutagenicity	No data available
Aspiration Hazard	No data available

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Information on Likely Routes of Exposure

Inhalation	Yes
Skin Contact	Yes
Eye Contact	Yes
Ingestion	Yes

Signs and Symptoms of Exposure

Inhalation
May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Over-exposure symptoms may include respiratory tract irritation, coughing, wheezing, breathing difficulties, and asthma.

Skin Contact
Causes skin irritation. May cause an allergic skin reaction. Over-exposure symptoms may include irritation and redness.

Eye Contact
Causes serious eye irritation. Over-exposure symptoms may include pain, irritation, watering, and redness.

Ingestion
No known significant effects or critical hazards.

Potential Chronic Health Effects

May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Acute Toxicity

Route	ATE value
Inhalation (vapors)	171.7 mg/L
Inhalation (dusts and mists)	8.194 mg/L

Carcinogenicity

Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Chemical Name	IARC	ACGIH	OSHA
4,4'-Methylenediphenyl Diisocyanate	3	-	-

Specific Target Organ Toxicity - Single Exposure

Name	Category	Target Organs
4,4'-Methylenediphenyl Diisocyanate	Category 3	Respiratory tract irritation
4,4'-Methylenediphenyl diisocyanate, oligomers	Category 3	Respiratory tract irritation

Methylenediphenyl diisocyanate	Category 3	Respiratory tract irritation

Specific Target Organ Toxicity - Repeated Exposure

Name	Category	Target Organs
Dibutyl maleate	Category 2	Kidneys
4,4'-Methylenediphenyl Diisocyanate	Category 2	Not determined
4,4'-Methylenediphenyl diisocyanate, oligomers	Category 2	Respiratory system
Methylenediphenyl diisocyanate	Category 2	Not determined

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity Not available

Persistence and Degradability Not available

Bioaccumulative Potential

Chemical Name	$LogP_{ow}$	BCF	Potential
Dibutyl maleate	3.39	1.91	Low
4,4'-Methylenediphenyl Diisocyanate	4.51	200	Low
4,4'-Methylenediphenyl diisocyanate, oligomers	8.56	200	Low
Methylenediphenyl diisocyanate	4.51	200	Low

Mobility in Soil Not available

Other Adverse Effects No known significant effects or critical hazards.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken

when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14. TRANSPORT INFORMATION

Regulation	UN No.	Proper Shipping Name	Technical Name (for N.O.S. entry)	Transport Hazard Class(es)	Packing Group
TDG	None	Not regulated	Not regulated	Not regulated	Not regulated
49 CFR/DOT	UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.	(4,4'- Methylenediphenyl Diisocyanate) RQ (4,4'-Methylenediphenyl Diisocyanate)	9	III
additional information	**Reportable quantity** 11558 kg / 25458.2 lbs [10955.5 L / 2894.1 gal]. The classification of the product is due solely to the presence of one or more US DOT-listed 'Hazardous substances' that are subject to reportable quantity requirements and only applies to shipments of packages greater than, or equal to, the product reportable quantity. Package sizes less than the product reportable quantity are not regulated as hazardous materials.				
IMDG	None	Not regulated	Not regulated	Not regulated	Not regulated
ICAO/IATA	None	Not regulated	Not regulated	Not regulated	Not regulated

Special Precautions For transport within the user's premises, always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Environmental Hazards Refer to section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not available

SECTION 15. REGULATORY INFORMATION

Canadian Information

Canada inventory (DSL/NDSL) All components are listed or exempted.

NPRI The following components are listed: 4,4'-Metthylenediphenyl Diisocyanate

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CEPA Toxic substances	None of the components are listed.

US Information

TSCA 8(a) PAIR	4,4'-Methylenediphenyl Diisocyanate; Methylenediphenyl diisocyanate
TSCA 8(a) CDR Exempt/Partial exemption	Not determined
United States Inventory (TSCA 8b)	All components are listed or exempted.
TSCA 8(c) call for record of SAR	4,4'-Methylenediphenyl Diisocyanate; Methylenediphenyl diisocyanate
Clean Water Act (CWA) 307	4,4'-Methylenediphenyl Diisocyanate
Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)	Listed
Clean Air Act Section 602 Class I Substances	Not listed
Clean Air Act Section 602 Class II Substances	Not listed
DEA List I Chemicals (Precursor Chemicals)	Not listed
DEA List II Chemicals (Essential Chemicals)	Not listed
SARA 302/304	No products were found.
SARA 304 RQ	Not applicable
SARA 311/312	Skin Corrosion/Irritation – Category 2 Serious Eye Damage/Eye Irritation – Category 2A Respiratory Sensitization – Category 1 Skin Sensitization – Category 1 Carcinogenicity – Category 2 Specific Target Organ Toxicity (Single Exposure) (Respiratory tract irritation) – Category 3 Specific Target Organ Toxcitiy (Repeated Exposure) (respiratory system) – Category 2

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Chemical Name	Classification
Dibutyl maleate	Skin Sensitization – Category 1B Specific Target Organ Toxicity (Repeated Exposure) – Category 2 Specific Target Organ Toxicity (Repeated Exposure) (kidneys) – Category 2
4,4'-Methylenediphenyl Diisocyanate	Acute Toxicity (inhalation) – Category 4 Skin Corrosion/Irritation – Category 2 Serious Eye Damage/Eye Irritation – Category 2A Respiratory Sensitization – Category 1 Skin Sensitization – Category 1 Carcinogenicity – Category 2 Specific Target Organ Toxicity (Single Exposure) (Respiratory tract irritation) – Category 3 Specific Target Organ Toxicity (Repeated Exposure) – Category 2
4,4'-Methylenediphenyl diisocyanate, oligomers	Acute Toxicity (inhalation) – Category 4 Skin Corrosion/Irritation – Category 2 Serious Eye Damage/Eye Irritation – Category 2A Respiratory Sensitization – Category 1 Skin Sensitization – Category 1 Carcinogenicity – Category 2 Specific Target Organ Toxicity (Single Exposure) (Respiratory tract irritation) – Category 3 Specific Target Organ Toxicity (Repeated Exposure) – Category 2 Specific Target Organ Toxicity (Repeated Exposure) (respiratory system) – Category 2
Methylenediphenyl diisocyanate	Acute Toxicity (inhalation) – Category 4 Skin Corrosion/Irritation – Category 2 Serious Eye Damage/Eye Irritation – Category 2A Respiratory Sensitization – Category 1 Skin Sensitization – Category 1 Carcinogenicity – Category 2 Specific Target Organ Toxicity (Single Exposure) (Respiratory tract irritation) – Category 3 Specific Target Organ Toxicity (Repeated Exposure) – Category 2

SARA 313

	Product Name	CAS Number
Form R – Reporting Requirements	4,4'-Methylenediphenyl Diisocyanate	101-68-8
Supplier Notification	4,4'-Methylenediphenyl Diisocyanate	101-68-8

State Regulation (Massachusetts) — The following components are listed: 4,4'-Methylenediphenyl Diisocyanate

State Regulation (New York) — The following components are listed: 4,4'-Methylenediphenyl Diisocyanate

State Regulation (New Jersey) — The following components are listed: 4,4'-Methylenediphenyl Diisocyanate

State Regulation (Pennsylvania) — The following components are listed: 4,4'-Methylenediphenyl Diisocyanate

State Regulation (California Prop. 65)	This product does not require a Safe Harbor warning under California Prop. 65.
International Information	Not available

SECTION 16. OTHER INFORMATION

Date of Latest Revision	July 14, 2020
Disclaimer	The information provided in this document is correct to the best of our knowledge, information and belief at the date of its publication. This information is offered solely for the consideration of the user, subject to their own investigation of compliance with applicable regulations, including the safe use of the product under every foreseeable condition. This information is designed only as a general guidance and is not to be considered a warranty or quality specification. This 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 process, unless specified above.

END OF SAFETY DATA SHEET