



Safety Data Sheet MasterFlex Flexible Epoxy Hardener-Part B

Version 1.0
Date: 05/28/2015

1. Product and Company Information

Product Name : MasterFlex Membrane HB 450 Hardener -Part B
Product Use Description : Epoxy Hardener
Chemical Family : Curing Agent
Manufacturer/ Importer : Master Terrazzo Technologies
Distributor : 8000 Bristol Pike-Levittown, PA
P.O. Box 226
Bristol, PA 19007
Telephone : 1-215-949-1474
Fax : 1-215-949-9422
Emergency telephone number : Chemtel-800-255-3924
Contract #MIS0004752

2. Hazard Identification

OSHA/HCS status : This material is considered hazardous by the ASHA Hazzard Communication Standard (29 CFR 1910.1200).

Classification of the Substance or mixture : SKIN CORROSION/IRRITATION-Category 1C
SERIOUS EYE DAMAGE/ EYE IRRITATION- Category 1
AQUATIC HAZARD (ACUTE)-Category 3
AQUATIC HAZARD (LONG-TERM)-Category 2

GHA label elements
Hazard pictograms



Signal word : Danger

Hazard statements : Causes severe skin burns and eye damage.
Toxic to aquatic life with long lasting effects.

Precautionary statements : Wear protective gloves: >8 hours (breakthrough time): butyl rubber, Ethyl Vinyl Alcohol Laminate (EVAL), nitrile rubber. Wear eye or face protection. Wear protective clothing. Avoid release to the environment. Wash hands thoroughly after handling. Collect spillage. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician. IF SWALLOWED: Immediately call a POISON CENTER or physician. DO NOT induce

vomiting. IF ON SKIN (or hair): Take off all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CRNTER or physician. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician. Store locked up. Dispose of contents and container in accordance with all local, regional, and international regulations.

Other hazards which do not : None known.
Result in classification

3. Composition/ Information on Ingredients

Substance/mixture : Substance

Ingredient name	CAS number
Polyoxypropylenediamine	9046-10-0
3,3'-(Oxybis(2,1-ethane-diyloxy))bis-1-propanamine	4246-51-9
Alkyatedphenol	84852-15-3
Fumed Silica	112945-52-5

4. First Aid Measures

Eye contact : Get medical attention immediately. Call a poison center or physician. 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 10 minutes. Chemical burns must be treated promptly by a physician.

Inhalation : Get medical attention immediately. Call a poison center or physician. 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. 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.

Skin contact : Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician.

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/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.
 Inhalation : May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
 Skin contact : Causes severe burns.
 Ingestion : May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
 Pain
 watering
 redness
 Inhalation : No specific data.
 Skin contact : Adverse symptoms may include the following:
 pain or irritation
 redness
 blistering may occur
 Ingestion : Adverse symptoms may include the following:
 stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Symptomatic and supportive therapy as needed. Following severe exposure medical follow-up should be monitored for at least 48 hours.
 Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

5. Fire-Fighting Measures

Flash point : Closed cup: 128°C (262.4°F)[ISO 2719]
Extinguishing media
 Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.
 Unsuitable extinguishing Media : None known
 Special hazards arising From the chemical : In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
 Hazardous thermal : Decomposition products may include the following materials:

Decomposition products	carbon dioxide carbon monoxide nitrogen oxides
Special protective actions for fire-fighters	: 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.
Special protective equipment for fire-fighters	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Remark	: Not explosive

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

For non-emergency Personnel	: 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 breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Environmental precautions	: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.
Methods and materials 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 or 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 (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

7. Handling and Storage

Precautions for safe handling

Protective measures	: Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read
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	and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. 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.
Advice on general occupational hygiene	: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Conditions for safe storage, including any Incompatibilities	: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) 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.

8. Exposure Controls/Personal Protection

Control parameters

Appropriate engineering controls	: If user operations generate dust, fumes, gas, vapor 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.
Environmental exposure controls	: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures	: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
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 and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
Hand 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 case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection	: 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.
Other skin protection	: Appropriate footwear and any additional skin protection measures 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	: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Thermal hazards	: Not available.

9. Physical and Chemical Properties

Appearance	: Viscous Liquid
Physical state	: Liquid
Odor	: Amine odor
Odor threshold	: Not available
pH	: Not available
Melting point/Freezing point	: Not available
Boiling/condensation point	: Not available
Flash point	: >200°F (>93°C) T.C.C.
Evaporation rate	: Not available
Flammability (solid, gas)	: Not available
Lower and upper explosive (flammable) limits	: Not available
Vapor pressure	: 1 mmHg at 100°C
Vapor density	: Not available
Relative density	: Not available
Solubility in water	: Negligible.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: 0.98 g/cm ³ at 25°C (77°F)

10. Stability and Reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous Reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: Reactive or incompatible with the following materials: acids

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Test	Endpoint	Species	Result
polyoxypropylenediamine	OECD 403 Acute Inhalation Toxicity	LC50 Inhalation Vapor	Rat - Male, Female	>0.74 mg/l
	OECD 402 Acute Dermal Toxicity	LD50 Dermal	Rat – Male, Female	2979.7 mg/kg
	OECD 401 Acute Oral Toxicity	LD50 Oral	Rat – Male, Female	2885.3 mg/kg

Irritation/Corrosion

Product/ingredient name	Test	Species	Result
Polyoxypropylenediamine	OECD 404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Corrosive
	OECD 405 Acute Eye Irritation/Corrosion	Rabbit	Eyes – Corrosive

Conclusion/ Summary

Skin : Corrosive to the skin.
Eyes : Corrosive to eyes.

Sensitization

Not available.

Mutagenicity

Product/ingredient name	Test	Results
Polyoxypropylenediamine	Experiment: In vitro Subject: Bacteria Metabolic activation: +/-	Negative
	Experiment: In vitro Subject: Mammalian-Animal Cell: Somatic Metabolic activation: +/-	Negative
	Experiment: In vivo Subject: Mammalian-Animal	Negative

Conclusion/Summary : Not mutagenic in standard battery of genetic toxicological tests.

Carcinogenicity

Not available.

Reproductive toxicity

Product/ingredient name	Test	Species	Material toxicity	Fertility	Developmental Effects
Polyoxypropylenediamine	OECD 421 Reproduction/ Developmental Toxicity Screening Study	Rat - Male, Female	Negative	Negative	Negative

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact : causes serious eye damage
- Inhalation : May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact : Causes severe burns.
- Ingestion : May cause burns to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation : No specific data.
- Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blasting may occur
- Ingestion : Adverse symptoms may include the following:
stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure**Short term exposure**

Potential : Not available.

immediate effects

Potential delayed : Not available.

effects

Long term exposure

Potential : Not available.

immediate effects

Potential delayed : Not available.

effects

Potential chronic health effects

Product/ingredient name	Test	Endpoint	Species	Result
Polyoxypropylenediamine	OECD 411 Subchronic Dermal Toxicity:90-day Study	Sub-chronic NOAEL Dermal	Rat-Male Female	250 mg/kg/d
	OECD 407 Repeated Dose 28-day Oral Toxicity Study in Rodents	Sub-chronic NOEC Oral	Rat-Male, Female	239 mg/kg/d

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental : No known significant effects or critical hazards.

Effects

Fertility effects : Suspected of damaging fertility.

Numerical measures of toxicity**Acute toxicity estimates**

Not available.

Other information : Not available.

12. Ecological Information**Toxicity**

Product/ingredient name	Test	Endpoint	Exposure	Species	Result
Polyoxypropylenediamine	OECD 202 Daphnia sp. Acute Immobilisation Test	Acute EC50	48 hours	Daphnia	80 mg/l
	ISO	Acute EC50	48 hours Static	Daphnia	418.34 mg/l
	OECD 203 Fish,	Acute EC50	96 hours	Fish	>15 mg/l

	Acute Toxicity Test OECD 201 Alga, Growth Inhibition Test	Acute ErC50 (growth rate)	Semi-static 72 hours Static	Algae	15 mg/l 310 mg/l
	OECD 203 Fish Acute Toxicity Test	Acute LC50	96 hours Static	Fish	772.14 mg/l
	OECD 208 Seedling Emergence and Test	Chronic EC50	3 hours Static	Bacteria	750 mg/l
	OECD 201 Alga, Growth Inhibition Test	Chronic NOEC	72 hours Static	Algae	0.32 mg/l
	OECD 209 Activated Sludge, Respiration Inhibition Test	Chronic NOEC	3 hour Static	Bacteria	310 mg/l
	ISO 10253;2006- Marine algal growth Inhibition test with Skeletonema costatum and Phaeodactylum tricornutum	Chronic NOECb	72 hours Static	Algae	100 mg/l

Persistence and degradability

Product/ingredient name	Test	Period	Result
Polyoxypropylenediamine	OECD 301B Ready Biodegradability –CO ₂ Evolution Test	28 days	0 %

Conclusion/ Summary : Polyoxypropylenediamine Not biodegradable

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Polyoxypropylenediamine	Fresh water 360 days	0.02 to 0.03 day(s)	Not readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Polyoxypropylenediamine	1.34	-	low

Mobility in soil

Not available.

13. Disposal Consideration

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any

regional local authority requirements. Dispose of surplus and no recyclable products via a licensed waste disposal contractor. Waste should not be disposed of 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 emptied 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.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. Transport Information

Proper shipping name

DOT : Amines, liquid, corrosive, n.o.s. (Polyoxypropylenediamine). Marine pollutant
 TDG : Amines, liquid, corrosive, n.o.s. (Polyoxypropylenediamine). Marine pollutant
 IMDG : Amines, liquid, corrosive, n.o.s. (Polyoxypropylenediamine). Marine pollutant
 IATA : Amines, liquid, corrosive, n.o.s. (Polyoxypropylenediamine).

Regulatory information	UN number	Classes	PG*
DOT classification	UN2735	8	III
TDG classification	UN2735	8	III
IMDG classification	UN2735	8	III
IATA Classification	UN2735	8	III

15. Regulatory Information

Safety, health and environmental regulations specific for the product

United States Regulations

TSCA 8(b) inventory : All components are listed or exempted.

TSCA 5(a)2 final significant new use rule (SNUR) : No ingredients listed.

TSCA 5(e) substance consent order : No ingredients listed.

TSCA 12(b) export notification : No ingredients listed.

SARA 311/312 : Immediate (acute) health hazard

Clean Air Act – Ozone Depleting Substances (ODS) : This product does not contain nor is it manufactured with ozone depleting substances.

SARA 313 : No ingredients listed.

CERCLA Hazardous substances

Ingredient name	%	Section 304 CERCLA Hazardous Substance	CERCLA Reportable Quantity (Lbs)	Product reportable Quantity (Lbs)
Propylene oxide	0.01	Listed	100	1000000

State regulations

PENNSYLVANIA-RKT : No ingredients listed.

California Prop 65 : **WARNING:** This product contains less than 0.1% of chemical known to the State of California to cause cancer.

Canadian regulations

CEPA DSL : All components are listed or exempted.

WHMIS Classes : Class E: Corrosive material

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

16. Other Information

Hazardous Material Information System (U.S.A.)

Health : 3
 Flammability : 1
 Physical hazards : 0

National Fire Protection Association (U. S. A.)

Health : 3
 Flammability : 1
 Instability : 0

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