

MulchGard International, Inc.
PO Box 190
Niwot, CO 80544

Emergency Number: 877/685-2442

MULCH GARD™
professional mulch binder

MATERIAL SAFETY DATA SHEET

SECTION I -- IDENTIFICATION OF SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

TRADE NAME: MULCH GARD
CHEMICAL NAME: POLYMER EMULSION
SYNONYMS: MULCH BINDER
CHEMICAL FAMILY: N/A
MOLECULAR WEIGHT: N/A
FORMULA: AQUEOUS ACRYLIC VINYL ACETATE POLYMER EMULSION
CAS REGISTRY NO.: PRODUCT A BLEND - NO NUMBER ASSIGNED

SECTION II -- COMPOSITION/INFORMATION ON INGREDIENTS

<u>NAME</u>	<u>CAS REG NO.</u>	<u>WT. %</u>
Acrylic & Vinyl Acetate Polymer	Non-hazardous	5-50
Water	7732-18-5	95-50

SECTION III -- HAZARDS IDENTIFICATION

Acrylic & Polyvinyl Acetate Polymer	Non-hazardous
Water	Non-hazardous

SECTION IV -- FIRST AID MEASURES

EYES: Flush eyes with flowing water at least 15 minutes, get medical attention.
INHALATION: Move subject to fresh air.
SKIN: Flush with large amount of water or wash with soap and water.
INGESTION: Give water to drink. Call a physician.

NEVER GIVE FLUIDS OR INDUCE VOMITING.

IF PATIENT IS UNCONSCIOUS OR HAVING CONVULSIONS.

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SECTION V -- FIRE FIGHTING MEASURES

FLASH POINT (TEST METHOD): Non-Combustible
AUTOIGNITION TEMPERATURE: N/A
EXTINGUISHING MEDIUM: N/A
SPECIAL FIREFIGHTING PROCEDURES: N/A
UNUSUAL FIRE AND EXPLOSION HAZARDS: Material can splatter above 212°F. Dried polymer film can burn but will not support combustion.

SECTION VI - ACCIDENTAL RELEASE MEASURES

Spill and Leak Procedures:
Dike and control spill. Transfer liquid to containers for recovery or disposal. Keep spills out of sewers and open bodies of water.

SECTION VII -- HANDLING AND STORAGE

Storage: Keep in a cool, dry, ventilated storage area and in closed containers. Minimize contact with the air to prevent microorganism contamination and reduce the formation of skins on the surface. Optimum storage temperatures 55°F (12°C – 32°C).

KEEP FROM FREEZING

Handling: Handle in a well-ventilated workspace.

SECTION VIII -- EXPOSURE CONTROL/PERSONAL PROTECTION

Respiratory Protection: None required if good ventilation is maintained.
Ventilation: Mechanical exhaust at point of contaminant.
Eye Protection: Chemical splash goggles recommended.
Protective Clothing: Impervious gloves recommended.
Other: Under normal handling conditions, the risk of exposure to residual monomer is negligible.

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SECTION IX -- PHYSICAL AND CHEMICAL PROPERTIES

BOILING/MELTING POINT @ 760 mm Hg: 212°F
VAPOR PRESSURE mm Hg @ 20°C: 17
SPECIFIC GRAVITY OR BULK DENSITY: 1.01 to 1.15
SOLUBILITY IN WATER: Dilutable
APPEARANCE: Milky White Liquid
ODOR: Characteristic Acrylic odor
pH: 4.0 to 9.5

SECTION X -- STABILITY AND REACTIVITY

STABILITY: Stable
CHEMICAL INCOMPATIBILITY: No hazardous reactions are expected to occur under normal industrial conditions.
HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition in the presence of air may yield carbon monoxide and/or carbon dioxide and water.
HAZARDOUS POLYMERIZATION: Does not occur
CONDITIONS TO AVOID: N/A
CORROSIVE TO METAL: No
OXIDIZER: No

SECTION XI -- TOXICOLOGICAL INFORMATION

EFFECTS OF OVEREXPOSURE

INHALATION: Vapor from stored, undiluted product can cause headache and nausea.
SKIN: Stored, undiluted product is slightly irritating to skin.
EYES: Slightly irritating to eyes.
INGESTION: May be irritating to digestive tract.

<u>NAME</u>	<u>OSHA</u>		<u>ACGIH</u>	
	<u>TWA</u>	<u>STEL</u>	<u>TWA</u>	<u>STEL</u>
Acrylic & polyvinyl Acetate Polymer	None	None	None	None
Water	None	None		None

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SECTION XII -- ECOLOGICAL INFORMATION

Animal toxicity studies on blended MULCH GARD have not been carried out because we believe the fish toxicity studies done on the blend demonstrate it is as non-toxic as the individual emulsions which go into the blend. TABLE #1 gives the results of our fish toxicity tests.

In summary, these data show that the LC₅₀ of MULCH GARD on goldfish is somewhere above 12,500 ppm. This is extremely low toxicity, especially in view of the legal requirement that chemicals must be labeled "toxic to fish" only if their LC₅₀ is less than 1.0 ppm.

**TABLE I
FISH TOXICITY STUDIES**

EMULSION NUMBER	TYPE OF FISH	HOURS	LC ₅₀ PPM
C	Rainbow Trout	24	10,000
C	Rainbow Trout	96	8,950
C	Bluegill Sunfish	24	10,000
C	Bluegill Sunfish	96	5,640
C	Goldfish	24	4,200
H	Goldfish	24	7,500
G	Goldfish	24	10,000
D	Goldfish	24	13,400
F	Goldfish	24	13,400
MULCH GARD	Goldfish	24	12,500 - 25,000
MULCH GARD	Goldfish	48	12,500 - 25,000
MULCH GARD	Goldfish	72	12,500 - 20,000
B	Goldfish	24	24,000
E	Goldfish	24	24,000

The 48 hour LC₅₀ for Daphnia Magna based on nominal test concentrations and mortality at the end of testing was calculated to be 3,482.8 parts per million (ppm).

SECTION XIII -- DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD:

Coagulate the emulsion by the stepwise addition of ferric chloride and lime or the addition of sand or other absorbent material. Remove the clear supernatant liquid and flush to a chemical sewer or landfill. Incinerate solids and the contaminated diking material according to local, state and federal regulations.

CONTAINER DISPOSAL:

Do not re-use containers. Do not weld on metal containers.

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SECTION XIV -- TRANSPORTATION INFORMATION

D.O.T. PROPER SHIPPING NAME (49CFR172.101): None
HAZARDOUS SUBSTANCE (40CFR116): N/A
REPORTABLE QUANTITY (RQ): N/A
D.O.T. HAZARD CLASSIFICATION (49CFR172.101): Non-regulated
D.O.T. PLACARDS REQUIRED: None
POISON CONSTITUENT (49CFR173.343): N/A
BILL OF LADING DESCRIPTION: Liquid plastic, NOS
C NO.: N/A
UN/NA CODE: N/A

SECTION XV-- REGULATORY INFORMATION

MULCH GARD is not a restricted article according to the Department of Transportation and International Air Transport Association regulations.

EPA SARA Title III hazard class: None
OSHA HCS hazard class: Non-OSHA hazardous (29CFR1910.1200)
EPA SARA Title III Section 313 (40CFR372)

Toxic Chemicals present in quantities greater than the “de minimus” level are: None

TSCA: All ingredients are on the TSCA (Toxic Substance Control Act) inventory or are not required to be listed on the TSCA inventory.

California Proposition 65: This product contains no trace amount of chemical(s) known to the state of California to cause cancer or birth defects.

Canadian DSL: All ingredients are in the Canadian DSL (Domestic Substance List) or are not required to be on the list.

Canadian WHMIS: This product is not a “controlled product” under the Canadian Workplace Hazardous Material Information System (WHMIS)

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SECTION XVI -- OTHER INFORMATION

ABBREVIATIONS AND SYMBOLS:

N.D. - Not Determined
< - LESS THAN

N.A. - Not Applicable
> - MORE THAN

N.T. - Not Tested