

Safety Data Sheet

Issue Date: 19-Aug-2016

Revision Date: 14-Feb-2017

Version 1

1. IDENTIFICATION

Product Identifier

Product Name Avail HV

Other means of identification

SDS # VLS-179R
FFN 4033

Recommended use of the chemical and restrictions on use

Recommended Use Fertilizer.

Details of the supplier of the safety data sheet

Supplier Address

Verdesian Life Sciences, U.S., LLC.
1001 Winstead Drive, Suite 480
Cary, NC 27513

Emergency Telephone Number

Company Phone Number Business Phone: (800) 868-6446
Fax: (919) 535-3652
Emergency Telephone (24 hr) INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Appearance Tan to brown liquid **Physical state** Liquid **Odor** Characteristic

Classification

Skin sensitization	Category 1
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Signal Word

Warning

Hazard statements

May cause an allergic skin reaction



Precautionary Statements - Prevention

Avoid breathing dust/fume/gas/mist/vapors/spray
Contaminated work clothing must not be allowed out of the workplace
Wear protective gloves

Precautionary Statements - Response

IF ON SKIN: Wash with plenty of soap and water
If skin irritation or rash occurs: Get medical advice/attention
Wash contaminated clothing before reuse

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Please also refer to subsequent sections of this SDS for additional information regarding the components of this product.

Chemical Family Carboxylated polymer.

Chemical Name	CAS No.	Weight-%
Maleic acid	110-16-7	Proprietary

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Mixture also contains:
 Mercury (Hg) 0.05 ppm
 Zinc (Zn) 10 ppm
 Selenium (Se) 10 ppm
 Lead (Pb) 5 ppm
 Nickel (Ni) 10 ppm
 Molybendum (Mb) 10 ppm
 Colbalt (Co) 10 ppm
 Cadmium (Cd) 0.05 ppm
 Arsenic (As) 10 ppm.

4. FIRST AID MEASURES**First Aid Measures**

General Advice	Provide this SDS to medical personnel for treatment.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
Skin Contact	Take off contaminated clothing. Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen & get medical attention immediately.
Ingestion	Rinse mouth. Do not induce vomiting without medical advice. If conscious give 2 glasses of water to dilute. Get medical attention.

Most important symptoms and effects

Symptoms Will cause gastrointestinal tract irritation. May cause an allergic skin reaction.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Water spray, dry chemical, carbon dioxide, foam.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

Toxic fumes may be given off when material is exposed to fire.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

Personal Precautions Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so. Soak up and contain spill with an absorbent material.

Methods for Clean-Up Sweep up and shovel into suitable containers for disposal. For waste disposal, see section 13 of the SDS.

7. HANDLING AND STORAGE**Precautions for safe handling**

Advice on Safe Handling Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves. Avoid contact with skin, eyes or clothing. Wash face, hands and any exposed skin thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up.

Incompatible Materials Strong oxidizing agents. Strong reducing agents. Materials incompatible with water. Materials incompatible with ammonium salts.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines No exposure limits noted for ingredient(s). The following information is given as general guidance

Appropriate engineering controls

Engineering Controls Maintain eye wash fountain and quick-drench facilities in work area. Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

Eye/Face Protection	Use chemical safety goggles / face shield. Refer to 29 CFR 1910.133 for eye and face protection regulations.
Skin and Body Protection	Chemical resistant protective gloves. Refer to 29 CFR 1910.138 for appropriate skin and body protection.
Respiratory Protection	If necessary, wear a MSHA/NIOSH-approved respirator. Refer to 29 CFR 1910.134 for respiratory protection requirements.
General Hygiene Considerations	Avoid contact with skin, eyes and clothing. After handling this product, wash hands before eating, drinking, or smoking. If contact occurs, remove contaminated clothing. If needed, take first aid action shown on section 4 of this SDS. Launder contaminated clothing before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties**

Physical state	Liquid	Odor	Characteristic
Appearance	Tan to brown liquid	Odor Threshold	Not determined
Color	Tan to brown		
Property	Values	Remarks • Method	
pH	5.0-5.5		
Melting Point/Freezing Point	-7.22 °C / 19 °F		
Boiling Point/Boiling Range	Not determined		
Flash Point	None		
Evaporation Rate	Not determined		
Flammability (Solid, Gas)	n/a-liquid		
Flammability Limits in Air			
Upper Flammability Limits	Not determined		
Lower Flammability Limit	Not determined		
Vapor Pressure	Not determined		
Vapor Density	Not determined		
Relative Density	1.2 g/mL		
Water Solubility	Not determined		
Solubility in other solvents	Not determined		
Partition Coefficient	Not determined		
Auto-ignition Temperature	Not determined		
Decomposition Temperature	Not determined		
Kinematic Viscosity	Not determined		
Dynamic Viscosity	<50 cP		
Explosive Properties	Not determined		
Oxidizing Properties	Not determined		

10. STABILITY AND REACTIVITY**Reactivity**

Not reactive under normal conditions.

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

Exposure to excessively high pH may lead to ammonia gas evolution. Can react with metals to give off hydrogen, heat and/or steam. Can react with bases and metal oxides with high evolution of heat and/or steam. Can react with carbonates to give off carbon dioxide, heat and/or steam.

Conditions to Avoid

Incompatible Materials.

Incompatible Materials

Strong oxidizing agents. Strong reducing agents. Materials incompatible with water. Materials incompatible with ammonium salts.

Hazardous Decomposition Products

Carbon oxides. Nitrogen oxides (NOx).

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Product Information	To the best of our knowledge, the chemical, physical and toxicological properties of this material have not been thoroughly investigated
Eye Contact	Avoid contact with eyes.
Skin Contact	May cause an allergic skin reaction. May cause temporary irritation on skin contact.
Inhalation	May cause irritation to the mucous membranes and upper respiratory tract.
Ingestion	Can cause gastrointestinal disturbance.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
1,2 Propanediol 57-55-6	= 20 g/kg (Rat)	= 20800 mg/kg (Rabbit)	-
Itaconic Acid 97-65-4	= 2969 mg/kg (Rat)	-	-
Maleic acid 110-16-7	= 708 mg/kg (Rat)	= 1560 mg/kg (Rabbit)	> 720 mg/m ³ (Rat) 1 h

Information on physical, chemical and toxicological effects

Symptoms Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization May cause an allergic skin reaction.

Carcinogenicity Based on the information provided, this product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Harmful to aquatic life with long lasting effects.

Component Information

Chemical Name	Algae/aquatic plants	Fish	Crustacea
1,2 Propanediol 57-55-6	19000: 96 h Pseudokirchneriella subcapitata mg/L EC50	710: 96 h Pimephales promelas mg/L LC50 51600: 96 h Oncorhynchus mykiss mg/L LC50 static 51400: 96 h Pimephales promelas mg/L LC50 static 41 - 47: 96 h Oncorhynchus mykiss mL/L LC50 static	1000: 48 h Daphnia magna mg/L EC50 Static 10000: 24 h Daphnia magna mg/L EC50

Maleic acid 110-16-7		5: 96 h Pimephales promelas mg/L LC50 static	250 - 400: 48 h Daphnia magna mg/L EC50
Itaconic Acid 97-65-4	47: 72 h Desmodemus subspicatus mg/L EC50	190: 24 h Salmo gairdneri mg/L LC50 static	240: 24 h Daphnia magna mg/L EC50

Persistence/Degradability

Not determined.

Bioaccumulation

Not determined.

Mobility

Chemical Name	Partition Coefficient
Maleic acid 110-16-7	-0.79 - 0.32
Itaconic Acid 97-65-4	-0.4

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods**Disposal of Wastes**

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

Contaminated Packaging

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

14. TRANSPORT INFORMATION

Note

Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT

Not regulated

IATA

Not regulated

IMDG

Not regulated

15. REGULATORY INFORMATION

International Inventories

Chemical Name	TSCA	DSL/NDSL	EINECS/E LINCS	ENCS	IECSC	KECL	PICCS	AICS
Maleic-itaconic copolymer, partial ammonium salt	X	X						
1,2 Propanediol	X	X	X	Present	X	Present	X	X
Maleic acid	X	X	X	Present	X	Present	X	X
Itaconic Acid	X	X	X	Present	X	Present	X	X

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

US Federal Regulations

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Maleic acid 110-16-7	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Maleic acid	5000 lb			X

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
1,2 Propanediol 57-55-6	X		X
Maleic acid 110-16-7	X	X	X

16. OTHER INFORMATION**NFPA****Health Hazards****Flammability****Instability****Special Hazards**

Not determined

Not determined

Not determined

Not determined

HMIS**Health Hazards****Flammability****Physical hazards****Personal Protection**

Not determined

Not determined

Not determined

Not determined

Issue Date: 19-Aug-2016**Revision Date:** 14-Feb-2017**Revision Note:** New formula**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The 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 in the text.

End of Safety Data Sheet