

Safety Data Sheet

Issue Date: 18-Feb-2015

Revision Date: 26-Aug-2016

Version : 5

1. IDENTIFICATION

Product Identifier

Product Name PRE-VAIL

Other means of identification

SDS # VLS-067

Other Information Dry seed inoculant containing live culture of nitrogen-fixing bacteria.

Recommended use of the chemical and restrictions on use

Recommended Use Inoculant

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 White powder

Physical state Solid

Odor Odorless

Classification

This chemical does not meet the hazardous criteria set forth by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). However, this Safety Data Sheet (SDS) contains valuable information critical to the safe handling and proper use of this product. This SDS should be retained and available for employees and other users of this product.

3. COMPOSITION/INFORMATION ON INGREDIENTS

The active microbiological ingredient in Pre-Vail is a culture comprised of Rhizobia bacteria and Azospirillum bacteria.

Chemical Name	CAS No.	Weight-%
Quartz	14808-60-7	0.01

Small amounts of quartz are naturally occurring component of the carrier substrate

Contains naturally occurring bacteria on a carrier substrate of clay.

These are symbiotic nitrogen-fixing bacteria, to be applied as a seed treatment or in-furrow at seed planting, to specific legume crops (not a plant food product). See product label for specific crop information, application rates and methods. Not for food, feed or drug use.

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. If eye irritation persists: Get medical advice/attention.
Skin Contact	Wash off immediately with plenty of water. Take off contaminated clothing. Wash contaminated clothing before reuse.
Inhalation	Remove exposed individual(s) to fresh air for 20 minutes. Consult a physician / poison center if individual's condition declines or if symptoms persist.
Ingestion	Do NOT induce vomiting. Rinse mouth. Get medical attention if you feel unwell.

Most important symptoms and effects

Symptoms	May cause eye, skin and respiratory tract irritation.
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Indication of any immediate medical attention and special treatment needed

Notes to Physician	Respiratory tract ailments may be aggravated.
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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

Product is not flammable.

Explosion Data

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 protective equipment as required.
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Environmental precautions

Environmental precautions	See Section 12 for additional Ecological Information.
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Methods and material for containment and cleaning up

Methods for Containment	Prevent further leakage or spillage if safe to do so.
Methods for Clean-Up	Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling Wash thoroughly after handling. Use personal protection recommended in Section 8. Avoid contact with skin, eyes or clothing.

Conditions for safe storage, including any incompatibilities

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

Incompatible Materials Some seed-applied chemicals, including fungicides, may be harmful to the bacteria in this product. See product label for further information on the use of fungicides or other chemicals in conjunction with seed treatment.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Quartz 14808-60-7	TWA: 0.025 mg/m ³ respirable fraction	(vacated) TWA: 0.1 mg/m ³ respirable dust : (30)/(%SiO ₂ + 2) mg/m ³ TWA total dust : (250)/(%SiO ₂ + 5) mppcf TWA respirable fraction : (10)/(%SiO ₂ + 2) mg/m ³ TWA respirable fraction	IDLH: 50 mg/m ³ respirable dust TWA: 0.05 mg/m ³ respirable dust

Appropriate engineering controls

Engineering Controls Apply technical measures to comply with the occupational exposure limits.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Wear eye/face protection.

Skin and Body Protection Refer to 29 CFR 1910.138 for appropriate skin and body protection.

Respiratory Protection Refer to 29 CFR 1910.134 for respiratory protection requirements.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid	Odor	Odorless
Appearance	White powder	Odor Threshold	Not determined
Color	White		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	7.7	
Melting Point/Freezing Point	Not determined	
Boiling Point/Boiling Range	Not determined	
Flash Point	Not determined	
Evaporation Rate	Not determined	
Flammability (Solid, Gas)	Not determined	
Flammability Limits in Air		

Upper Flammability Limits	Not determined
Lower Flammability Limit	Not determined
Vapor Pressure	Not determined
Vapor Density	Not determined
Relative Density	2.4-2.7
Water Solubility	Insoluble in water
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	Not determined
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

None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.

Conditions to Avoid

Incompatible Materials.

Incompatible Materials

Some seed-applied chemicals, including fungicides, may be harmful to the bacteria in this product. See product label for further information on the use of fungicides or other chemicals in conjunction with seed treatment.

Hazardous Decomposition Products

Oxides of carbon.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact	Direct contact with eyes may cause temporary irritation.
Skin Contact	May cause temporary irritation on skin contact.
Inhalation	Dusts of this product may cause irritation of the nose, throat, and respiratory tract.
Ingestion	May cause discomfort if swallowed.

Component Information

Chemical Name	ATEmix (oral)	ATEmix (dermal)	Inhalation LC50
Quartz 14808-60-7	= 500 mg/kg (Rat)	-	-

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 Not a skin sensitizer.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen. However, the product as a whole has not been tested.

Chemical Name	ACGIH	IARC	NTP	OSHA
Quartz 14808-60-7	A2	Group 1	Known	X

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)

A2 - Suspected Human Carcinogen

IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

NTP (National Toxicology Program)

Known - Known Carcinogen

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

Chronic toxicity Chronic inhalation of quartz dust causes lung disease.

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) > 5000 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

This product contains bacterial strain(s) that occur(s) naturally in soil.

Persistence/Degradability

Not determined.

Bioaccumulation

Not determined.

Mobility

Not determined

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
Quartz	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

SARA 313

Not determined

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
Quartz - 14808-60-7	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Quartz 14808-60-7	X	X	X

16. OTHER INFORMATION**NFPA****Health Hazards**

Not determined

Flammability

Not determined

Instability

Not determined

Special Hazards

Not determined

HMIS**Health Hazards**

Not determined

Flammability

Not determined

Physical hazards

Not determined

Personal Protection

Not determined

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28-Aug-2016

Revision Note:

Revised Section 3

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