

SECTION 1 : Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture

 Trade name : Nitragin® Gold pre-inoculant nitrogen-fixing bacteria for clover

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : *Rhizobium* Inoculant

1.3. Details of the supplier of the safety data sheet

Novozymes BioAg

 3101 West Custer Ave

 Milwaukee, WI 53209 - USA

 Information Telephone Number : 1-888-744-5662

 Available 24 hours a day 7 days a week from April 1st to June 15th, otherwise available from 8:00am to 4:30pm CST, Monday to Friday.

1.4. Emergency telephone number

Emergency number : 1-800-424-9300 (Chemtrec) 24 hours every day

SECTION 2 : Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Carcinogen, Category 2 (inhalation)

 STOT-SE, Category 3 (respiratory irritant)

 STOT-RE, Category 1 (lung)

 Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS08

Signal word (GHS-US) :

: Danger

Hazard statements (GHS-US) :

: May cause cancer

 Causes damage to lungs through prolonged or repeated exposure

 Suspected of causing cancer by inhalation

Precautionary statements (GHS-US) :

: Obtain special instructions before use

 Do not handle until all safety precautions have been read and understood

 Wear eye protection, protective gloves, protective clothing

 If exposed or concerned: Get medical advice/attention

 Store locked up

 Dispose of contents/container to comply with applicable local, national and international regulation.

2.3. Other hazards

No additional information available

SECTION 3 : Composition/information on ingredients

3.1. Substances

Not applicable

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3.2. Mixture

Components:

Rhizobium leguminosarum : < 1% w/w
Clay : > 97%

Name	Product identifier	%	GHS-US classification
Titanium dioxide	(CAS No) 13463-67-7	0.26 - 1.29	Carc. 2
Quartz	(CAS No) 14808-60-7	0.064 - 0.64	Carc. 1A

Full text of H-phrases: see section 16

The specific chemical identity and/or concentration range is being withheld because it is trade secret information of Novozymes BioAg.

SECTION 4 : First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Allow victim to breathe fresh air. Allow the victim to rest. In all cases of doubt, or when symptoms persist, seek medical advice.

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.

First-aid measures after eye contact : Rinse immediately with plenty of water for 15 minutes. Obtain medical attention if pain, blinking or redness persist.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Aggravates pre-existing medical conditions: respiratory disease. This product contains beneficial microorganisms. Novozymes exclusively uses non-pathogenic beneficial microorganisms that are considered to be non-allergenic, non-irritating and non-sensitizing when used as directed.

Symptoms/injuries after inhalation : May cause cancer by inhalation.

Symptoms/injuries after eye contact : Dust from this product may cause eye irritation.

Chronic symptoms : Chronic inhalation of quartz dust causes lung disease.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 : Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand. Use extinguishing media appropriate for surrounding fire.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard : None known.

Explosion hazard : None known.

Reactivity : Thermal decomposition generates : oxides of carbon.

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protective equipment for firefighters : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6 : Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

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6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials. Collect all waste in suitable and labelled containers and dispose according to local legislation.

6.4. Reference to other sections

No additional information available

SECTION 7 : Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Ensure adequate ventilation.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practices. Wash exposed skin thoroughly with soap and water after handling. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool well-ventilated place. Keep container closed when not in use.

Incompatible materials : Acids. Bases. Oxidizing agents. Reducing agents. Disinfectants, fungicides, and/or biocides may inactivate.

7.3. Specific end use(s)

No additional information available

SECTION 8 : Exposure controls/personal protection

8.1. Control parameters

Quartz (14808-60-7)		
ACGIH	ACGIH TWA (mg/m ³)	0.025 mg/m ³ (respirable fraction)
Titanium dioxide (13463-67-7)		
ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³
OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ (total dust)
Kaolin (1332-58-7)		
OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)

8.2. Exposure controls

Appropriate engineering controls : Ensure adequate ventilation. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Personal protective equipment : Avoid all unnecessary exposure. Protective goggles. Gloves. Protective clothing. Dust formation: dust mask.



Hand protection : Wear protective gloves.

Eye protection : Use safety glasses with side-shields or goggles.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : Where exposure through inhalation may occur from use, approved respiratory protection equipment is recommended.

Other information : Do not eat, drink or smoke during use.

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SECTION 9 : Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: White solid
Colour	: White
Odour	: No data available
Odour threshold	: No data available
pH	: 7.7
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: Not applicable
Boiling point	: Not applicable
Flash point	: None
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: Not applicable
Relative vapour density at 20 °C	: Not applicable
Relative density	: 2.4 - 2.7 (specific gravity)
Solubility	: Water: Insoluble
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: Not applicable
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: Not applicable

9.2. Other information

No additional information available

SECTION 10 : Stability and reactivity

10.1. Reactivity

Stable

10.2. Chemical stability

Stable

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur

10.4. Conditions to avoid

None

10.5. Incompatible materials

Acids. Bases. Oxidizing agents. Reducing agents. Disinfectants, fungicides, and/or biocides may inactivate.

10.6. Hazardous decomposition products

Fume. Carbon monoxide. Carbon dioxide.

SECTION 11 : Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified (Based on available data, the classification criteria are not met)
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Nitragin® Gold Clover	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rat	> 2000 mg/kg

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Titanium dioxide (13463-67-7)	
LD50 oral rat	> 10000 mg/kg

Skin corrosion/irritation	: Not classified (Based on available data, the classification criteria are not met) pH: 7.7
Serious eye damage/irritation	: Not classified (Based on available data, the classification criteria are not met) pH: 7.7
Respiratory or skin sensitisation	: Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity	: Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity	: May cause cancer.

Quartz (14808-60-7)	
IARC group	1 - Carcinogenic to humans
National Toxicology Program (NTP) Status	2 - Known Human Carcinogens

Titanium dioxide (13463-67-7)	
IARC group	2B - Possibly carcinogenic to humans

Reproductive toxicity	: Not classified (Based on available data, the classification criteria are not met)
Specific target organ toxicity (single exposure)	: Not classified (Based on available data, the classification criteria are not met)
Specific target organ toxicity (repeated exposure)	: Not classified (Based on available data, the classification criteria are not met)
Aspiration hazard	: Not classified (Based on available data, the classification criteria are not met)
Symptoms/injuries after inhalation	: May cause cancer by inhalation.
Symptoms/injuries after eye contact	: Dust from this product may cause eye irritation.
Chronic symptoms	: Chronic inhalation of quartz dust causes lung disease.

SECTION 12 : Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

Nitragin® Gold Clover	
Persistence and degradability	Not established

12.3. Bioaccumulative potential

Nitragin® Gold Clover	
Bioaccumulative potential	Not established

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on ozone layer	: No additional information available
Effect on the global warming	: No additional information available
Other information	: Avoid release to the environment.

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SECTION 13 : Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.

SECTION 14 : Transport information

In accordance with DOT
Not regulated for transport

Additional information

Other information : No supplementary information available.

ADR

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15 : Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

No additional information available

15.2.2. National regulations

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This material is considered hazardous according to the criteria of the US OSHA Hazard Communication Standard (29 CFR 1910.1200).

15.3. US State regulations

California Proposition 65 - This product contains, or may contain, trace quantities of a substance(s) known to the state of California to cause cancer and/or reproductive toxicity

Quartz (14808-60-7)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
Yes	No	No	No	

Titanium dioxide (13463-67-7)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
Yes	No	No	No	

SECTION 16 : Other information

Abbreviations and acronyms : ACGIH (American Conference of Government Industrial Hygienists), CAS - Chemical Abstracts Service, GHS - Globally Harmonised System, HCS - Hazard Communication Standard, IARC (International Agency for Research on Cancer), OSHA - Occupational Safety and Health Administration, PEL- Permissible Exposure Level, STEL- Short-Term Exposure Limit, TWA- Time Weighted Average.

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Other information : None

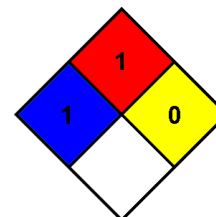
Full text of H-phrases:

Carc. 1A	Carcinogenicity, Category 1A
Carc. 2	Carcinogenicity, Category 2
H350	May cause cancer
H351	Suspected of causing cancer by inhalation

NFPA health hazard : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard : 1 - Must be preheated before ignition can occur.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

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