

1. Product identification

Product use: *Rhizobium* Inoculant
MSDS number: NZBWI-201
Effective date: August 1, 2011

Cell-Tech[®] granular chickpea

2. Composition:

Component	CAS number	OSHA PEL	% (w/w)
Pure cultures of <i>Mesorhizobium ciceri</i> bacterium	Not available	Not available	0.22
Other ingredients	Not available	Not available	>99
Hazardous ingredient	CAS number	OSHA PEL	ACGIH TL V
Crystalline quartz	14808-60-7	10 mg/m ³	0.1 mg/m ³

(Small amounts of quartz are a naturally-occurring component of the carrier substrate.)

Note: 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. Exposure to very high levels of airborne microbial spores may result in very rare respiratory impairments or cause an allergic reaction in sensitized individuals. A Material Safety Data Sheet is supplied with all products.

Emergency overview:

Granular products contain viable bacterial cells. This product may cause adverse effects to individuals allergic to molds and/or fungi and should not be used by immunocompromised and/or immunosuppressed individuals. Absorption by eye or skin contact, inhalation and ingestion must be prevented at all time when handling this product. Users MUST wear standard protective clothing and equipment including gloves, safety glasses and a NIOSH-approved respirator during product use and storage as well as during equipment maintenance and clean-up. In case of contact with skin or eyes, immediately flush exposed areas with plenty of water. Get medical attention if irritation occurs.

3. Hazard identification:

NFPA: Health – 1, Flammability – 1, Reactivity – 0

Potential health effects:

Eyes: Low hazard. However, contact may be irritating or cause mechanical abrasion.

Skin contact: Low hazard for usual handling.

Skin absorption: A single prolonged exposure is not likely to result in this material being absorbed in harmful amounts. Do not expose open cuts or wounds to product.

Ingestion: Small amounts swallowed incidental to industrial handling are not likely to cause injury. Ingestion of large amounts may cause stomach discomfort or pain.

Inhalation: Prolonged or repeated exposure may cause injury to respiratory tract.

Chronic effects: Not a likely hazard

Birth defects: Not available

Reproductive effects: Not available

Mutagenic effects: Not available

Carcinogenicity: Quartz is listed as a carcinogen by NTP and IARC.

4. First aid measures:

Eyes: Flush with a continuous gentle stream of water for 5 minutes. If irritation develops, get medical attention.

Skin: Wash with plenty of soap and water.

Ingestion: Do not induce vomiting unless instructed to do so by qualified medical personnel. If individual is conscious, give plenty of water to drink. Get medical attention if stomach discomfort develops.

Inhalation: Move individual to fresh air. Encourage coughing. Get medical attention if breathing difficulty occurs.

Note to physician: Employ supportive care. Treatment should be based on the judgment of the physician in response to reactions of the patient.

5. Fire-fighting measures:

Flash point: Not applicable

Explosive limits: Not applicable

Auto-ignition temperature: Not available.

Extinguishing media: Use extinguishing medium appropriate to control the surrounding fire.

Unusual fire and explosion hazards: None known

Fire-fighting equipment: Wear positive-pressure self-contained breathing apparatus and full turn-out gear.

Special Fire Fighting Procedures: Caution, burning may continue inside bag after surface is out. Break bag to separate pile to assure that the fire is extinguished. Take care to keep dusting to a minimum.

In Case of Emergency Call: 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.

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6. Accidental release measures:

Sweep up spills and store in a suitable container until proper disposal can be arranged.

7. Handling and storage:

Store any unused product in original unopened containers in a cool, dry place, away from sunlight, drafts and direct heat sources. Practice reasonable caution to avoid contact with this product. Avoid breathing dust if generated. Users should wash hands before eating, drinking, chewing gum, using tobacco or the toilet. Keep out of reach of children. Do not ship or store this product with food, feed, drugs or clothing.

8. Exposure controls, personal protection, and exposure limits:

Mesorhizobium ciceri: Not available

Quartz: OSHA PEL 10 mg/m³, ACGIH 0.1 mg/m³

Engineering controls: Good ventilation is required.

Breathing: Use a NIOSH or MSHA approved air-purifying respirator if respiratory irritation is experienced.

Protective clothing: Wear clean body-covering clothing and impervious gloves when handling this product.

Eyes: Safety glasses with side shields recommended.

Other protection: Washing facilities should be available.

9. Physical and chemical properties:

Boiling point: Not applicable

Vapour pressure: Not applicable

Volatility: Not applicable

pH: 6.5-7.3

Appearance: Dark brown

Odour: Earthy

Coefficient of water/oil distribution: Not available

Bulk density: Not available

Evaporation rate: Not available

Solubility in water: Not soluble

Freezing point: Not applicable

Odour threshold: Not available

Melting point: Not applicable

Physical state: Solid

Vapor density: Not applicable

Specific gravity: 0.6

10. Stability and reactivity:

Stability: Stable

Incompatibility: Acids, bases, oxidizers, reducers, disinfectants, fungicides, and/or biocides may inactivate.

Hazardous decomposition products: Thermal decomposition releases CO, CO₂, hydrocarbons

Hazardous polymerization: Does not occur

11. Toxicological information:

Skin absorption: Not available

Ingestion: Oral LD₅₀ is not available

Inhalation: Inhalation LC₅₀ is not available

12. Ecological information:

Toxicity to bees: Not available. Not a likely hazard

Toxicity to fish: Not available. Not a likely hazard

Toxicity to birds: Not available. Not a likely hazard

13. Disposal considerations:

This product may be disposed of by placement in any landfill approved for domestic waste.

14. Transportation information:

This product is not regulated as a hazardous material for all modes of transportation within the U.S. and Canada.

Hazard class: Not applicable

15. Regulatory information:

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

Proposition 65: Contains no components subject to warning requirements.

Master reference: On file

MSDS status: New MSDS

16. Other information:

Prepared by: M. Sonier

This information may not be adequate for every application and therefore it is up to the user to determine the suitability of this information based on conditions of use, storage or local regulations.

Notice: The information contained in this Material Safety Data Sheet is presented in good faith and is believed to be accurate as of the effective date shown above. However, no other warranty, expressed, or implied, is given. Laws, regulations, and/or third party rights may prevent customers from importing, using, processing and/or reselling the products described herein in a given manner. Without separate written agreement between the customer and Novozymes to such effect this document does not constitute a representation or warranty of any kind and is subject to change without further notice.

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