

MATERIAL SAFETY DATA SHEET**Section 1 : Product/ Company Identification**

Product Code : WA305
Product Name : SuperStar
Product Application : Bioinsecticide
Company Address : Warkem Biotech Pvt. Ltd.
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Section 2 : Hazards Identification

Proprietary liquid formulation/mixture containing agriculturally beneficial microorganisms. Ingredients are non-hazardous. Strain used is non-pathogenic.

Section 3 : Product Composition/Information On Ingredients

Strain Designation: *Verticillium lecanii*
Components: *Verticillium lecanii*, vegetative cells 1% w/w
Inactive Ingredients: 99% as aqueous

Section 4 : First - Aid Measures

Incase of skin contact - Remove contaminated clothing and footwear. Wash off skin immediately with soap and plenty of water. If required seek medical attention.
Incase of inhalation - If inhalation occurs, move person into fresh area and keep person at rest. Give artificial respiration if necessary. If required seek medical attention.
Incase of eye contact - Immediately flush eyes with clean water for atleast 15 mins. If irritation persists, seek medical attention.
Incase of ingestion - If person is fully conscious, immediately give large quantities of water to drink. Never give anything by mouth to an unconscious person. If required seek medical attention.

Section 5 : Fire Fighting Measures

Extinguishing media - Use water spray, alcohol-resistant foam, carbon dioxide, dry chemical.
Precautions for fire-fighters - Wear full protective clothing and self contained breathing apparatus for fire fighting if necessary. Evacuate non-essential personnel from area to prevent human exposure to fire, smoke, fumes, or products of combustion. Use of contaminated buildings, area and equipment has to be avoided until decontaminated.

Section 6 : Accidental Release Measures

Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid breathing vapors, mist or gas. Wear chemical safety goggles, rubber gloves, rubber boots, head cap. Ensure adequate ventilation. Evacuate personnel to safe areas.
Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal. Wash the spill area with water containing a strong detergent.

Section 7 : Handling and storage

Precautions for safe handling
Avoid contact with skin, eyes and clothing. Avoid inhalation of vapour or mist. Wear appropriate protective safety equipments such as hand gloves, rubber boots, safety goggles during product handling. Wash hands thoroughly after product usage. Follow normal hygienic and housekeeping standards for agricultural products.

Conditions for safe storage including any incompatibilities

Store in cool, dry well ventilated place, away from direct heat and sunlight. Do not store the product along with food or animal feed. Do not use empty container for storage of water or food products. Do not store the product along with chemical pesticides. Keep the product away from reach of children and animals.

Recommended storage temperature : Store below 30°C.

Shelf life : Use before expiry date mentioned on product label.

Section 8 : Exposure Controls / Personal Protection

Eye/face protection : Wear tightly fitting safety goggles/faceshields.

Skin protection : Handle the product with gloves. Gloves must be inspected prior to use. Wear gloves made of latex or other impervious material. Use proper glove removal technique (Without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.

Respiratory protection : To avoid breathing dust/drift, use adequate ventilation and wear a NIOSH approved dust or pesticide respirator with a dust filter.

Work hygienic practices : Avoid eating, drinking, smoking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash hands and exposed skin before eating, drinking, after work or using the toilet.

Environment exposure controls : Do not empty into drains

Section 9 : Physical and Chemical Properties

Physical state	-: Liquid
Odour	-: Characteristic but not putrescent
Colour	-: Light yellow to brown
Water solubility	-: Soluble in water
Bulk density	-: 0.70± 0.05 Kg/L

Section 10 : Stability and Reactivity

Stability : Stable at normal storage conditions

Hazardous decomposition products : None

Hazardous polymerization : Will not occur

Incompatibility : Strong acids, alkali compounds, strong oxidizing agents, disinfectants, biocides may inactivate biological cultures.

Conditions to avoid : Heat, flames, ignition sources and incompatibles, Excessive variations in temperatures.

Decomposition : Easily biodegradable

Section 11 : Toxicological Information

Acute Pulmonary Toxicity/Pathogenicity in Wistar rats

LD50/Action: Non-toxic/Non-virulent

Acute Oral Toxicity/Pathogenicity in Wistar rats

LD50/Action: Non-toxic/Non-virulent

Acute Intraperitoneal Toxicity/Pathogenicity in Wistar rats

LD50/Action: Non-toxic/Non-virulent

Acute Pulmonary Toxicity/Pathogenicity in Sprague Dawley rats

LD50/Action : Non-toxic/Non-virulent

Acute Oral Toxicity/Pathogenicity in Sprague Dawley rats

LD50/Action : Non-toxic/Non-virulent

Acute Intraperitoneal Toxicity/Pathogenicity in Sprague Dawley rats

LD50/Action : Non-toxic/Non-virulent

Acute Dermal Toxicity/Pathogenicity in New Zealand White Rabbits

LD50/Action : Non-toxic/Non-virulent

A Study on Irritation - Mucous membrane in New Zealand white rabbits

LD50/Action : Non-irritant

A Study on Primary Skin Irritation in New Zealand white rabbits

LD50/Action : Non-irritant

Acute Oral Toxicity/Pathogenicity in Swiss albino mice

LD50/Action : Non-toxic/Non-virulent

Acute Oral Toxicity/Pathogenicity in Mouse

LD50/Action : Non-toxic/Non-virulent

Caution: Prolonged contact with eyes, skin and respiratory tract may cause irritation. This product is a microbial formulation that is known to be non-pathogenic to humans, animals and plants.

Section 12 : **Ecological Information**

Degradation : Completely biodegradable

Bioaccumulative potential : Not anticipated to bioaccumulate

Environmental effects :

Toxicity to bees : Non-toxic

Toxicity to fish and other aquatic organisms : Non-toxic

Toxicity to earthworms : Non-toxic

Toxicity to other non-target plants : Non-toxic

Persistence in environment : Non-toxic

Section 13 : **Disposal Considerations**

Do not reuse containers. Dispose the product packing materials and residues in accordance with all applicable federal, state and local environmental regulations.

Destroy used containers and bury them in soil in non-crop land away from habitation and underground water course. Do not use empty containers for storing water, food or animal feed.

Section 14 : **Transport Information**

Transportation hazard : Product is non-hazardous for all modes of transportation.

Section 15 : **Regulatory Information**

Clean air act : This formula does not contain any hazardous air pollutants.

Clean water act : None of the chemicals in this product are listed as hazardous, toxic or priority pollutants.

Section 16 : **Other Information**

The information given in this safety data sheet is believed to be correct yet does not claim to be all inclusive. This document is intended only as a guide for appropriate precautionary handling of the material by properly trained individuals, information here being commensurate with the present state of our knowledge regarding the manner and conditions of use, handling, storage or disposal. The information provided herein shall not be considered as guarantee of the properties of the product. Warkem Biotech, shall not be held liable for any damage resulting from improper handling or contact with the above product. Unless explicitly stated on the product or in any of the documentation accompanying the product, it is intended for research or testing in agriculture and is not to be used for any other purpose.

Note : Product for Agricultural Use Only
