

**NFX™**

1. IDENTIFICATION

Product Name:	NFX™ Groundnut & Cowpea
Intended Use/Restrictions of use:	Nitrogen fixing bacteria for groundnuts & cowpeas
Details of Supplier of SDS:	Microbika (Pty) Ltd P.O. Box 1143 Lichtenburg, 2740, South Africa E-mail: info@microbika.com Emergency telephone: 0861-555 777 (AfriTox 24 Hour Service)

2. HAZARDS IDENTIFICATION

Classification of the Substance	CLP / GHS / Hazcom 2012 Classification: Not classified as hazardous
Skin Contact:	Non-irritant
Eye Contact:	Non-irritant
Inhalation:	Not an inhalation hazard under normal conditions of use. Certain individuals may become sensitised to the material, as with any other proteinaceous dust.
Ingestion:	Low toxicity product. It is highly unlikely that a sufficient quantity would be accidentally swallowed to cause any injury.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Bradyrhizobium spp. in a phosphate buffered solution. None of the materials are considered hazardous

4. FIRST AID MEASURES

Skin Contact:	Wash exposed skin with soap and water.
Eye Contact:	Flush thoroughly with water for 15 minutes. If any irritation persists seek medical attention.
Inhalation:	Remove person to fresh air. Get medical attention if any signs of sensitization (e.g. difficult breathing, chest pain, headache, and flu like symptoms) occur.
Ingestion:	Drink water, do not induce vomiting. Seek medical attention.
Advice to Physician:	Symptomatic treatment

5. FIRE-FIGHTING MEASURES

Type of Material:	Non-combustible liquid.
Extinguishing Media:	This product is not flammable or combustible. If caught in a fire, use media appropriate for surrounding fire.
Special Exposure Hazards:	This product does not burn freely. Responders should take into consideration the hazardous risk associated with responding to a fire in the area where the material may be stored or handled

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Special Protective Equipment: Normal firefighting bunker gear.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Use protective clothing, gloves, safety goggles and boots. Do not swallow.

Environmental Precautions: Avoid disposal of large amounts into drains, surface water or groundwater.

Disposal Method(s): Carefully clean up spilled material and wash exposed area with soap and water. Dispose material into suitable container, within local regulations.

7. HANDLING AND STORAGE

Handling Precautions: Follow Biosafety Level 1 procedures.
Do not eat or drink while handling the product.
Wash exposed skin with soap and water after handling this product.

Storage Conditions: Store in accordance with package instructions.
Do not freeze.
Store in a cool, dry and dark place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters: Standard precautionary measures for handling chemicals should be observed.

Exposure Controls:

Eye / face protection	Use safety goggles.
Skin protection	Use protective clothing & gloves.
Respiratory protection	No specific recommendation.
Thermal hazards	None.

9. PHYSICAL AND CHEMICAL PROPERTIES

General Information:

Appearance:	Liquid
Colour:	Cloudy
Smell:	None to slightly sweet
Formulation Type:	Liquid (LQ)

Storage Stability: Store at a constant temperature between 8 and 24°C. Do not freeze. Avoid temperature fluctuations.

Shelf Life: 6 months at room temperature.

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Bulk Density:	1000 kg/m ³
Flammability:	Non-flammable
Flash Point:	Not applicable
pH:	pH 6-7
pH of 1% Aqueous Dilution:	pH 6-7
Oxidizing Properties:	Non-oxidizing
Corrosiveness:	Non-corrosive
Water Content:	98%
Solubility in Water:	Not applicable
Foaming:	Not applicable
Particle size:	Not applicable
Volatility:	Non-volatile
Viscosity:	Not applicable

10. STABILITY AND REACTIVITY

Stability:	Rhizobium cells lose viability with time. This product is stable for 6 months when stored at a constant temperature between 8 and 24°C.
Conditions to Avoid:	Avoid temperature fluctuation. Avoid temperatures above 24°C and below 8°C. Do not freeze.
Materials to Avoid:	Bactericides, antibiotics, sterilants and *non-compatible fungicides and agrochemicals.
Hazardous Decomposition Products:	None known

11. TOXICOLOGICAL INFORMATION

Acute Oral Toxicity:	> 5000 mg not toxic or pathogenic
Eye Irritation:	Not determined
Skin Irritation:	Not determined
Acute Pulmonary:	Not determined
Acute Intra-peritoneal:	Not determined
Intravenous:	Not determined
Chronic Effects:	None of the components is known as carcinogenic; does not contain dangerous goods. Not classified by NTP, IARC or OSHA. Non infective and not pathogenic.

12. ECOLOGICAL INFORMATION

Environmental Behaviour:	Rhizobia occurs naturally in the soil.
Mobility and Bio-accumulation potential:	Not determined



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Ecotoxic Effects:	Not determined
General Information:	No acute or chronic effects are known.

13. DISPOSAL CONSIDERATIONS

Precautions:	None of the ingredients raise concern for the environment.
Disposal of Product:	Unwanted product may be safely disposed of in a land-fill or discarded as non-hazardous waste in accordance with local regulations.

14. TRANSPORT INFORMATION

Road/rail:	Not classified as dangerous in the meaning of transport regulations.
IMDG:	Not classified as dangerous in the meaning of transport regulations.
ICAO:	Not classified as dangerous in the meaning of transport regulations.
ADR:	Not classified as dangerous in the meaning of transport regulations.

15. REGULATORY INFORMATION

Supply Classification:	None
Hazard Symbols:	None
Risk Phrases:	None
Safety Recommendations:	Keep out of reach of children, uninformed persons and animals. Wear protective gloves. Do not swallow. To avoid risks to human health and the environment, comply with the instructions for use.

16. OTHER INFORMATION

Recommended Use:	Nitrogen fixing bacteria for groundnuts & cowpeas.
Further Information:	Product classified and safety datasheet produced according to GHS directives.

The information contained in this SDS was compiled using the latest and most reliable information available to Microbika. The data is based on the current expertise and presents the health, safety and environmental aspects of this product. They form no guarantee of product properties. Recommendations presented in this SDS apply only to the product as originally supplied. If other ingredients are used in the processing of this product, the recommendations for the use and handling of that product must be verified.

This document contains important information in order to ensure the safe storage, handling and use of this product. The information in this document must be brought to the attention of the safety/health/environmental advisor within your organisation. The information in this document must be made known to everyone whose work involves this product.