

# SAFETY DATA SHEET

## POTASSIUMMICROBES

**Section 1-** Identification of the hazardous chemical substance or mixture and supplier or manufacturer.

### Microendo Inc.

MANUFACTURER

**+52 1 33 1133 0388**

PHONE NUMBER

### PotassiumMicrobes

PRODUCT

**0.9817g/ml**

DENSITY

**92°C-94.5°C**

EVAPORATION RANGE

### Soluble in water

SOLUBILITY

### Viscous liquid

APPEARANCE

**N/A**

BOILING POINT

**N/A**

FREEZING POINT

**The product tends to decompose if not stored properly**

RECOMMENDATIONS

**The product is not stable at temperatures above 45°C.**

INSTABILITY

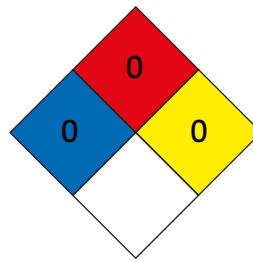
**Section 2-** Hazard identification.

### Not classified as dangerous

CLASSIFICATION ACCORDING TO NCH. 382 OF. 2015

### Not applicable

IDENTIFICATION ACCORDING TO NCH. 2190 OF. 2003



Safety Grades  
Health Grade: 0 - None  
Flammability Grade: 0 - None  
Reactivity Grade: 0 - None  
Special Grades: None

IDENTIFICATION ACCORDING TO NCH. 1411/4 OF.78

### May cause skin and respiratory tract irritation.

HEALTH HAZARDS FOR INDIVIDUALS

### No identified

ENVIRONMENTAL HAZARDS

**Contact with combustible material will not cause spontaneous ignition, but may exacerbate an existing fire.**

PHYSICAL OR CHEMICAL HAZARDS

### Not applicable

HAZARD CLASS AND CATEGORY

### Not applicable

HAZARD INDICATION

CLASSIFICATION ACCORDING TO THE GLOBALLY HARMONIZED SYSTEM (6TH EDITION, 2015)

### Not applicable

PICTOGRAM

### Not applicable

WARNING WORD

### Not applicable

HAZARD INDICATION

### Not applicable

PRECAUTIONARY STATEMENTS

ELEMENTS OF THE LABEL ACCORDING TO THE GLOBALLY HARMONIZED SYSTEM (6TH EDITION, 2015)

# SAFETY DATA SHEET

## POTASSIUMMICROBES

### APPLICATIONS

**PotassiumMicrobes**, owned by Microendo Inc., is a unique and patented bio-fertilizer on the market, whose action is based on the activity of the bacterium *Pantoea spp.* This type of bacteria was selected and patented for its high capacity to solubilize Potassium in the soil, making it available for subsequent uptake by the plant. PotassiumMicrobes increases the bioavailability of K<sup>+</sup> (Potassium) in the plant, by releasing substrate so that the plant can take it more efficiently from its roots and take advantage of it. Potassium is one of the most important macroelements for plants due to its functions for enzymatic activity, protein synthesis, energy transport, stomatal activities, among others.

**PotassiumMicrobes** has another remarkable aspect which is the ability to produce phytohormones that stimulate the growth of the plant.

With the use of **PotassiumMicrobes** you can reduce potassium fertilization by up to 30% and therefore reduce production costs.

**PotassiumMicrobes** comes from a fresh and metabolically active crop, so its use is recommended at the time of receipt. Very early or during the afternoon, avoiding long hours of sun and solar radiation.

The product is injected into the root or in drench directly to the base of the plant. Always make sure that the implement to be used has not had a previous bactericide or fungicide. Wash the pump thoroughly before use. Preferably use neutral powdered soap.

Do not eat, drink or smoke during applications, wash your hands before and after using this product. It is recommended to dilute **1 liter of PotassiumMicrobes per hectare** in natural water as clean as possible for crops of 1-9 kg and for crops of 10-50 kg use 2 liters per hectare and of 60-100 kg use 3 liters per hectare. Do not dilute more than 500 L per liter of **PotassiumMicrobes** because microbial crops require a minimum concentration to act.

#### Section 3- Composition of components.

COMPONENTS	% (P/V)
<b>Viable cells of</b> <i>PANTOEA SPP.</i>	99.9%
<b>Depleted culture medium</b>	0.1%

**Typically, NO hazard.**

CLASSIFICATION OF PRODUCT RISKS

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## POTASSIUMMICROBES

### Section 4- First Aid Measures.

**Mild. Does not cause harmful effects if handled and used under normal conditions as suggested on the label.**

#### HEALTH RISKS TO HUMANS

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**If the product comes into contact with the eyes or skin, irritation may occur. The routes of exposure are oral, inhalation, and ocular. Avoid inhaling spray vapors.**

#### EFFECTS OF ACUTE OVEREXPOSURE (ONCE)

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**It may irritate the skin in some individuals.**

#### SKIN CONTACT

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**It may irritate the eyes in some individuals.**

#### EYE CONTACT

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**It may cause severe stomach discomfort if ingested in large quantities.**

#### INGESTION

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**Non-toxic product for beneficial bacteria.**

#### ENVIRONMENTAL HAZARDS

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**None**

#### SPECIAL HAZARDS OF THE PRODUCT

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**This product is not defined as a hazardous compound. The ingredients of this product are considered non-hazardous.**

#### SPECIFIC RISKS

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**In case of discomfort or suspicion of irritation, stop working and seek medical assistance quickly. Remove the affected person from the danger area. Preferably to an outdoor location. Assist the affected person and keep them at rest.**

#### GENERAL

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**Remove the affected person from the danger area. Preferably to an outdoor location. Assist the affected person and keep them at rest. Call a physician.**

#### INHALATION

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**Quickly remove contaminated clothing. Wash the affected area with plenty of water and soap. Call a doctor if the skin is irritated.**

#### SKIN CONTACT

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**Consult a doctor. Bring the product label or safety data sheet. Contact the poison control center. Do not induce vomiting. If it occurs spontaneously, keep the airways clear. Do not give anything orally to an unconscious person or someone having seizures.**

#### INGESTION

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## POTASSIUMMICROBES

**There is no specific antidote. Symptomatic treatment should be applied.**

ANTIDOTE

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**Consult a doctor.  
Apply first aid measures.**

INGESTION

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**There are no known cases of poisoning.**

HUMAN EXPERIENCES

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Section 5- Firefighting Measures.

**No**

IS IT FLAMMABLE?

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**Use personal protective equipment. Use water pressure. If the area is heavily exposed to fire and conditions permit, allow the fire to extinguish itself, as water may increase the contaminated area. Evacuate all personnel from the area.**

HANDLING IN CASE OF FIRE

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**Use protective equipment with self-contained breathing apparatus or use an approved respirator mask. Avoid inhaling combustion gases.**

PERSONAL PROTECTIVE EQUIPMENT  
FOR FIRE FIGHTING

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Section 6- Measures in case of spills.

**Ventilate the area. Do not direct water into drains. Do not contaminate water bodies or stored water. Delimit the area to contain the spill by creating a barrier with absorbent materials such as sawdust, sand, or clay.**

MEASURES TO TAKE IN CASE OF PRODUCT SPILLS

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**Use full protective equipment, including long-sleeve shirts, long pants, waterproof gloves, and shoes or boots with socks.**

PERSONAL PROTECTIVE EQUIPMENT  
FOR EMERGENCY RESPONSE

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**Read fire and spill regulations before acting.**

PRECAUTIONS TO TAKE TO AVOID  
ENVIRONMENTAL DAMAGE

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**Wash the floor with a strong industrial detergent and rinse with water.**

CLEANUP METHODS

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**Cover the spilled product with sawdust, sand, or clay, or other absorbent materials. Collect with shovels or sweep up. Place it in suitable metal or plastic containers for disposal, in a location authorized for such purposes.**

WASTE DISPOSAL METHODS

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# SAFETY DATA SHEET

## POTASSIUMMICROBES

### Section 7- Handling and Storage of the Product.

**Always read the instructions on the label before using the product. Suggested recommendations in the safety data sheet must be followed.**

#### PRODUCT HANDLING INFORMATION

**Avoid contact with eyes, skin, and clothing. Avoid inhalation of vapors. Do not eat, drink, or smoke during application. Safe handling recommendation: Use gloves and protective clothing. Do not inhale; use an approved respirator for organic powders as appropriate.**

#### PRECAUTIONS

**Store at ambient temperature. Maximum temperature of 45 °C and minimum of 5 °C. Store away from heat, flames, sparks, and direct sunlight.**

#### STORAGE CONDITIONS

**Store only in sealed original containers labeled by the formulator.**

#### RECOMMENDED PACKAGING

### Section 8- Exposure control and personal protection.

**Before using the product, read the authorized label and this safety data sheet if available.**

#### PERSONAL PROTECTIVE EQUIPMENT

### Section 9- Physical and chemical properties.

**Liquid at 20 °C and 1 atmosphere.**

#### APPEARANCE

**Light brown**

#### COLOR

**Not applicable**

#### ODOR

**Not applicable**

#### OLFACTORY THRESHOLD

**6**

#### PH

**Not applicable**

#### MELTING POINT/FREEZING POINT

**Not applicable**

#### INITIAL BOILING POINT AND BOILING RANGE

**Not applicable**

#### FLASH POINT

**Not applicable**

#### EVAPORATION RATE

**Not flammable**

#### FLAMMABILITY

**Not applicable**

#### EXPLOSION/FLAMMABILITY LIMITS

**Not applicable**

#### VAPOR PRESSURE

**Not applicable**

#### VAPOR DENSITY

**0.9817g/ml**

#### RELATIVE DENSITY

# SAFETY DATA SHEET

## POTASSIUMMICROBES

### Soluble in water

SOLUBILITY

### Not applicable

DISTRIBUTION COEFFICIENT N-OCTANOL/WATER

### Not applicable

AUTO-IGNITION TEMPERATURE (AIT)

### Not applicable

DECOMPOSITION TEMPERATURE (°C)

### Not applicable

VISCOSITY

### Not explosive

EXPLOSIVE PROPERTIES

### Non-combustible

COMBUSTIBLE PROPERTIES

### None

OTHER INFORMATION

Section 10- Stability and reactivity.

**No hazardous reactions are expected when handled and stored according to the provisions.**

REACTIVITY

**Stable under normal temperature and storage conditions.**

CHEMICAL STABILITY

### None identified

POSSIBILITY OF HAZARDOUS REACTIONS

**Keep away from flammable materials, combustible substances, strong acids, and reducing agents.**

CONDITIONS TO AVOID

**Flammable, combustible substances, strong acids, strong alkalis, and reducing agents.**

INCOMPATIBLE MATERIALS

**Nitrogen oxides (NO<sub>x</sub>), potassium oxide, potassium nitrite, ammonia, carbon dioxide, carbon monoxide, sulfur oxides, phosphorus oxides.**

HAZARDOUS DECOMPOSITION PRODUCTS

**Use clean clothing before application.**

**Inhalation protection: Use an authorized mask if there is direct and constant contact.**

GENERAL

**Use authorized protective goggles and, if necessary, a face shield. Wear gloves to protect against direct contact.**

EYE PROTECTION

**Wear clothing to avoid prolonged contact, such as long-sleeved shirts, long pants, shoes, or high boots with socks.**

BODY PROTECTION

**Precaution after using the product: Wash hair and body, change clothes, clean protective equipment, and wash the application equipment with water and soap.**

VENTILATION

# SAFETY DATA SHEET

## POTASSIUMMICROBES

Section 11- Toxicological information.

**Not applicable for biological biofungicides.**

Section 12- Ecological information.

**Very stable**

INSTABILITY

**PotassiumMicrobes contains bacteria that are freely found in nature. It is commonly present in various ecological niches such as soil, water, and air.**

PERSISTENCE / DEGRADABILITY

**Not applicable**

BIOACCUMULATION

**Not applicable**

ENVIRONMENTAL EFFECTS

Section 13- Transport information.

**Transport the product in the authorized original container with the authorized label. Secure the load. If there are spills or accidents, they are covered by insurance. It is transported in authorized and conditioned vehicles. Applicable markings or signs: Not applicable. Biological product. Labeling authorized by the competent entity. The biological product does not constitute a hazardous substance according to transportation regulations.**

Section 14- Transport information.

**12, 13 y 15**

UN NUMBER (LAND TRANSPORT (D.S. 298))

**Not applicable**

UN NUMBER (IMDG)

**Not applicable**

OFFICIAL TRANSPORT DESIGNATION  
(LAND TRANSPORT (D.S. 298) AND IMDG)

**Not classified**

TRANSPORT HAZARD CLASS  
(LAND TRANSPORT (D.S. 298) AND IMDG)

**Not applicable**

PACKING GROUP  
(LAND TRANSPORT (D.S. 298) AND IMDG)

**Not applicable**

SAFETY MARKING  
(LAND TRANSPORT (D.S. 298) AND IMDG)

**None**

SPECIAL PRECAUTIONS FOR USERS

**Not applicable**

BULK TRANSPORT ACCORDING TO ANNEX II  
OF MARPOL 73/78 AND THE IBC CODE

Section 15- Información reglamentaria

**Not classified as hazardous**

CLASSIFICATION ACCORDING TO ANCH. 382-2013

**Not applicable**

RISK AND SAFETY INFORMATION  
ACCORDING TO ANCH. 2190

**Not applicable**

SUPREME DECREE NO 78. REGULATION ON  
THE STORAGE OF HAZARDOUS SUBSTANCES

# SAFETY DATA SHEET

## POTASSIUMMICROBES

### Section 16- Other Information.

This safety data sheet complies with NCh 2245 Of 2015.

The data provided in this information sheet comes from reliable sources and corresponds to the current state of Microendo's knowledge of the product, without constituting a guarantee on our part. It is intended to describe our products in terms of safety aspects required for handling and/or transport and should not be understood as a warranty of specific properties. Safe use conditions of the product are the responsibility of the user.

This safety sheet is an unsigned document.

### Safety sheets for raw materials.

**This safety data sheet has been prepared and is intended only for this product.**

DATA SOURCE

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**Octubre 2023**

DATE OF PREPARATION

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**Octubre 2024**

REPLACES

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### Indication of changes

Format change and adjustment of information requirements according to GHS.  
Product names (Section 1).

Identified and discouraged uses (Section 1).

Supplier phone numbers update (Section 1).

Identification NCh 1411/4 of. 78 (Section 2).

Hazard identification according to GHS (Section 2).

Product composition (Section 3).

Information in all sections has been reviewed and updated.