

# MATERIAL SAFETY DATA SHEET

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In compliance with European Regulation (EC) n° 1907/2006 (REACH) and (EC) No. 1272/2008 (CLP)

**M.R.O.**

Version 5

Date: 2025-02-03

1.	<p><b>IDENTIFICATION OF THE SUBSTANCE/PRODUCT AND OF THE COMPANY/UNDERTAKING</b></p> <p><b>1.1</b> <b>Identification of the Substance or Preparation</b>      <b>M.R.O.</b></p> <p><b>1.2</b> <b>Intended use of the Substance/Preparation:</b></p> <p>"Natural blend for the treatment of animal husbandry by-products - slurry, manure, and liquid manure."</p> <p><b>1.2</b> <b>Company/Undertaking Identification:</b> HANTPOL Sp. J. 02-851 Warszawa, Puchalska 5</p> <p><b>1.4</b> <b>Emergency Telephone Number:</b> 00 48 22 8522582, 00 48 509510123 (Poland)</p>
2.	<p><b>HAZARDS IDENTIFICATION</b></p> <p><b>2.1</b> <b>Health Hazard (inhalation, ingestion, contact with skin or eyes):</b> Most Important Hazards: The preparation is not classified as dangerous according to the criteria laid down in EU Council Directive No. 1272/2008 (CLP) Most Important Adverse Human Health Effects: None identified.</p> <p><b>2.2</b> <b>Environmental Hazard:</b> Some components of this preparation are water soluble, others are miscible. The preparation is not classified as dangerous for environment.</p>
3.	<p><b>COMPOSITION/INFORMATION ON INGREDIENTS</b></p> <p>Dry preparation containing a natural existing consortium of Class 1 bacterial cultures (see Section 16), and a natural inert base. No enzyme additive.</p>
4.	<p><b>FIRST-AID MEASURES</b></p> <p><b>4.1 Exposure by Inhalation:</b> Remove victim to fresh air. Seek medical attention if symptoms occur.</p> <p><b>4.2 Exposure by skin:</b> Immediately wash affected area thoroughly with water. Seek medical attention if irritation develops. Organisms used may cause infection when in contact with open wounds.</p> <p><b>4.3 Exposure by eyes contact:</b> Immediately flush eyes with plenty of water and seek medical attention if irritation develops.</p> <p><b>4.4 Exposure by Ingestion:</b> Do not induce vomiting. Seek medical attention. The micro-organisms are susceptible to many commonly used antibiotics.</p>

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5.	<p><b>FIRE FIGHTING MEASURES</b></p> <p><b>5.1 Suitable Extinguishing Media:</b> Water, foam, dry chemical or carbon dioxide extinguishers may be used.</p> <p><b>5.2 Extinguishing Media not to be used:</b> None</p> <p><b>5.3 Specific Exposure Hazards:</b> If the substance is involved in a fire, oxides of carbon and nitrogen may be evolved.</p> <p><b>5.4 Protective Equipment for Firefighters:</b> Full protective clothing and self-contained breathing apparatus should be worn.</p>
6.	<p><b>ACCIDENTAL RELEASE MEASURES</b></p> <p><b>6.1 Personal Precautions:</b> Refer to section 8. Avoid inhalation of dust, where mask if working in a confined space.</p> <p><b>6.2 Environmental Precautions:</b> The product is designed to natural bacterial cultures for biological degradation of organic wastes in aqueous environment. It is not anticipated to be hazardous for environment.</p> <p><b>6.3 Methods for Cleaning Up:</b> For small spills, flush to waste stream or sewer. For larger spills contain and collect for re-use.</p>
7.	<p><b>HANDLING AND STORAGE</b></p> <p><b>7.1</b></p> <p><b>Handling:</b> Precautions: The substance should be handled under conditions of good industrial hygiene and in conformity with any local regulations in order to avoid unnecessary exposure. Technical Measures: The use of gloves is recommended to reduce exposure to the preparation. Specific Requirements: None.</p> <p><b>7.2</b></p> <p><b>Storage:</b> Specific design for storage rooms or vessels: None Incompatible Materials: Strong acids or alkali compounds may inactivate biological cultures. Do not store in metallic containers. Conditions of Storage: Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Avoid freezing temperatures and above 45 °C to preserve biological stability. Quantity Limits: None Packaging Materials: Empty packaging can be recycled or reused</p>

8.

**EXPOSURE CONTROLS/PERSONAL PROTECTION**

**8.1 Exposure limits**

VME 8h dusts =10 mg/m<sup>3</sup> (particles of a diameter < 100µ) et 5 mg/m<sup>3</sup> (particle of a diameter < 5µ)

**8.2 Professional exposure control**

**Personal Protective Equipment:** The provision of personal protective equipment and the need to provide engineering control measures should be decided upon by the user as part of a formal exposure risk assessment. Based upon the available toxicological information the protective measures described below should be regarded as a minimum.

**Respiratory Protection:**

No special ventilation is usually necessary. However if operating conditions create high airborne concentrations of this material, based upon available information and in the absence of occupational exposure limits the use of an half mask to a minimum standard of EN405 FFA1P1 is recommended.

**Hand Protection:**

Avoid prolonged or frequent repeated skin contact especially with broken skin. Protective gloves to a Standard EN374 should be provided. Usage periods should not exceed the breakthrough times for the chemical stated by the manufacturer of the gloves.

**Eye Protection:**

Care should be used to prevent eye exposure and ideally eye protection should be used when handling the preparation. The protection should be capable of giving protection as classified in BS2092 or EN166.

**Skin Protection:**

No special clothing or equipment is usually necessary. Avoid contact with broken skin. However in case of prolonged/frequent direct handling of the material it is recommended to wear protective clothing of type 6 according to standard NF EN 13982-1 (type 5).

**Engineering Measures:**

None

This will depend though entirely upon the intended application.

**Specific Control Parameters:** None

9.

**PHYSICAL AND CHEMICAL PROPERTIES**

Physical state: powder Appearance:

Brownish /tan, free-flowing powder

Odour: yeast

pH (10%): 6.5-8.5

Boiling Point/Boiling Range: Not applicable

Melting Point/Melting Range: Not applicable

Flash Point: Not determined

Flammability (Solid, Gas): Not applicable

Autoflammability: Not determined

Explosive Properties: Not determined.

Oxidizing Properties: Not determined

Vapour Pressure: No applicable

Relative Density: 0.6-0.8 g/cm<sup>3</sup>

Solubility

- Water solubility: dispersible

- Fat solubility: Not determined

Partition coefficient n-octanol / water: Not determined

Other Data: None available

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10	<p><b>STABILITY AND REACTIVITY</b></p> <p><b>10.1 Conditions to Avoid:</b> Excessive temperature variations, below 0°C or above 45 °C</p> <p><b>10.2 Materials to Avoid:</b> Strong acids or alkali compounds and strong oxidizing agents may inactivate biological cultures.</p> <p><b>10.3 Hazardous Decomposition Products:</b> None anticipated</p> <p><b>10.4 Hazardous Polymerization:</b> None</p> <p><b>10.5 Hazardous Reactions:</b> None Identified</p>
11.	<p><b>TOXICOLOGICAL INFORMATION</b></p> <p><b>11.1 Acute toxic effects</b></p> <p>11.1.1 Ingestion, LD50 Rat oral (mg/kg): Not determined</p> <p>11.1.2 Inhalation, LC50 Rat inhalation (mg/l/4h): Not determined</p> <p>11.1.3 Skin, LD50 Rat dermal (mg/kg) Not determined</p> <p>11.1.4 Eye irritation Not determined</p> <p><b>11.2 Chronic toxic effects</b></p> <p>11.2.1 Sensitization Not determined</p> <p>Contact with skin may cause irritation after long time.</p>
12.	<p><b>ECOLOGICAL INFORMATION</b></p> <p><b>12.1 Mobility:</b> Some components of this preparation are water soluble, others are miscible. These components are, therefore, likely to distribute predominantly to the aqueous environment. The bran carrier is not immediately soluble in water.</p> <p><b>12.2 Biodegradability:</b> The preparation is expected to biodegrade rapidly.</p> <p><b>12.3 Accumulation:</b> Not anticipated to bioaccumulate due to high water solubility and hence biomagnification is not likely.</p> <p><b>12.4 Ecotoxicity:</b> The preparation is not anticipated to pose any environmental hazard. No data on toxicity specifically to soil organisms, plants and terrestrial animals are available.</p> <p><b>12.5 Other adverse effects:</b> There is no ozone depletion, photochemical ozone creation or global warming potential.</p>
13.	<p><b>DISPOSAL CONSIDERATIONS</b></p> <p><b>13.1 Waste from Residues:</b> Dispose of by incineration, landfill or to drain in accordance with local regulations. Stack gases should be scrubbed.</p> <p><b>13.2 Contaminated Packaging:</b> Dispose of by incineration or landfill</p>

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	<p>in accordance with local regulations. Empty packaging can be recycled or reused.</p>
14.	<p><b>TRANSPORT INFORMATION</b> International Regulations Land: Not applicable. Inland waterways: Not applicable. Sea: Not applicable. Air: Not applicable. UN classification number: None Local Regulations: Any relevant local regulations concerning transport should be observed.</p>
15.	<p><b>REGULATORY INFORMATION</b> <b>EC Regulations:</b> The preparation is <b>not</b> classified as dangerous according to the requirements of EU Council Directives 67/548/EEC (Annex VI of Directive 2001/59/EC) and 1999/45/EC.</p> <p><b>Classification proposal</b> Symbols: None R-phrases: None S-phrases: None</p> <p><b>Microbial classification</b> The preparation is not deemed 'hazardous' according to the requirements of Council Directive 2000/54/EEC. All bacteria contained in this preparation are designated Class 1 according to Council Directive 90/679/EEC (as amended by Council Directive 93/88/EEC) and all other recognized classification systems for micro-organisms.</p> <p><b>Local Regulations:</b> Any relevant local regulations should be observed.</p>
16.	<p><b>OTHER INFORMATION</b> Safety/Classification: Occupational Exposure:<a href="http://europa.eu.int/eur-lex/pri/en/oj/dat/2000/l_262/l_26220001017en00210045.pdf">http://europa.eu.int/eur-lex/pri/en/oj/dat/2000/l_262/l_26220001017en00210045.pdf</a> The above information is based on the present state of our knowledge at the time of publication. It is given in good faith, no warranty is implied with respect to quality or specification of product. The user must satisfy himself that the product is entirely suitable. Version 5: revised points: 1-16 (2025-02-03)</p>