



## MATERIAL SAFETY DATA SHEET

### BIOLOGICAL INSECTICIDE "BACTOCULICIDE"

Date of issue: 14.09.2016  
DOC: MMSDS\_Bactoculicid\_en.docen

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SECTION 1. PRODUCT AND COMPANY IDENTIFICATION	
<u>1.1. Product identification:</u>	
Commercial product name	«Bactoculicide»
<u>1.2. Substance/mixture assignment:</u>	The "Bactoculicide" preparation is intended for the control of mosquito larvae of any type. The toxin, getting into the body of the larvae, causes the digestive process violation, toxicosis and death. The biological effect of the $\delta$ -endotoxins of the preparation "Bactoculicide" is based on their cytopathological effect on the insect's intestine epithelial cells. In turn, the specificity of these proteins is determined by their interaction with receptors located in the epithelial cells' apical membrane.
<u>1.3. Information about the manufacturer / supplier:</u>	
Company:	Daughter enterprise «ENZIM»
Address:	Ukraine, 24321, Ladyzhyn, Khlebozavodskaya str., 2
Phone/Fax:	+38 (0432) 329 249; +38 (0432) 555 620
E-mail:	<a href="mailto:info@enzim.biz">info@enzim.biz</a>
<u>1.3 Emergency telephone number:</u>	+38 (0432) 329 249; +38 (0432) 555 620
SECTION 2. HAZARDS IDENTIFICATION	
<u>2.1 Substances/mixtures classification:</u>	In accordance with government standards it refers to low-hazard for human health and the environment
<ul style="list-style-type: none"><li>- Acute toxicity (<i>per os</i>)</li><li>- application to the skin</li><li>- inhalation toxicity</li><li>- irritating effect on skin</li><li>- irritating effect on eyes mucous membranes</li><li>- Sensitizing action</li></ul>	<ul style="list-style-type: none"><li>- IV Hazard class – «low-hazard»;</li><li>- IV Hazard class – «low-hazard»;</li><li>- IV Hazard class – «low-hazard»;</li><li>- none;</li><li>- none;</li><li>- none;</li></ul>



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<u>2.2. Label elements:</u>  Hazards identification:  Signal word:  Safety tips:	Preparation hazard class - IV hazard class - "low-hazard";  "low-hazard" not toxic;  - Keep out of reach of children; - Read the instructions carefully before use
2.3. Other hazards:	- Do not eat, drink or smoke while working with the preparation; - Wear protective gloves / protective clothing / eye protection; - In case of insufficient ventilation, wear respiratory protection; - Persons under 18 years of age, pregnant or lactating women, and persons with medical contraindications are not allowed to work.  This mixture does not contain substances that are considered to be stable, bioaccumulative or toxic;
<b>3. COMPOSITION / INFORMATION ON INGREDIENTS</b>	
SporocrySTALLINE complex which contains delta-endotoxin of entomopathogenic spore bacteria <i>Bacillus thuringiensis</i> var. <i>israelensis</i> , which appears in the process of culture fermentation, dry milk 5-50% (dry form of biological preparation) and/or growth medium residues up to 10%	
<b>4. FIRST-AID MEASURES</b>	
If inhaled (dry form)  At skin contact  At eyes contact  Swallowing	If symptoms of irritation or sensitization occur (difficult breathing, wheezing or coughing), consult a doctor.  If the product gets on skin, wash it with soap and water or a mild soda solution. If symptoms of irritation appear, consult a doctor.  If the product gets into eyes, rinse immediately with plenty of water or with 2% solution of baking soda. If irritation symptoms appear, consult a doctor.  If swallowed, immediately give several glasses of water or a solution of potassium permanganate (slightly pink), then by mechanical stimulation of the posterior pharyngeal wall provoke vomiting. It should be repeated several times for more complete preparation's removal from the body. Get medical attention if symptoms of



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	poisoning appear.
<b>5. FIRE FIGHTING MEASURES</b>	
5.1. General characteristic of fire hazard:	Not fire hazardous
5.2. Suitable extinguishing media	Standard extinguishing media
5.3. Unsuitable extinguishing media	None
5.4. Personal protective equipment for fire extinguishing	Fireproof suit with self-contained positive pressure respirator
<b>6. ACCIDENTAL RELEASE MEASURES</b>	
6.1. Personal precautions, protective equipment and emergency procedures	<ul style="list-style-type: none"><li>- Workers in contact with the preparation must use personal protective equipment in accordance with state standards</li><li>- Avoid formation of dust, spraying and aerosol formation;</li></ul>
6.2. Environmental precautions	<ul style="list-style-type: none"><li>- Place spilled material into appropriate waste containers for disposal.</li></ul>
<b>7. HANDLING AND STORAGE</b>	
7.1. Recommendations for safe handling	<ul style="list-style-type: none"><li>- The preparation contains not pathogenic microorganisms isolated from the environment;</li><li>- Ensure sufficient ventilation of the room when handling the product;</li><li>- When handling the preparation, use the personal protective equipment described in Section 8;</li><li>- Wash hands thoroughly with soap after using the product</li></ul>
7.2 Conditions for safe storage	<ul style="list-style-type: none"><li>- The preparation should be stored in warehouses that meet sanitary requirements. Keep in tightly closed and original container with indicated the production date of the preparation on the packaging label.</li><li>- keep the liquid form in cool and dry place at a temperature of 4 - 8 °C, dry form 4-30 °C with sufficient ventilation. Protect from influence of sunrays and heat sources. Protect the preparation from freezing;</li><li>- Keep out of reach of children, away from food and animal feed;</li><li>- Avoid contact with alkalis, acids, chemical pesticides,</li></ul>



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7.3. Container	strong oxidants. Do not store in metal containers.  - Product's tare could be recycled.
<b>8. EXPOSURE CONTROL / PERSONAL PROTECTION</b>	
Control parameters <b>PEL<sub>working zone</sub> – 5 *10<sup>4</sup> CFU/m<sup>3</sup></b> <b>PEL<sub>working zone</sub> – 5 *10<sup>3</sup> CFU/m<sup>3</sup></b>	
Appropriate technical control is carried out for the product's bioagent according to the current hygiene standards and regulations:	
Respiratory tract protection	For normal conditions of preparation use and instructions, there is no need for special ventilation. However, if a high concentration of the material in the air is formed when using the preparation, use a mask or respirator to protect from dust.
Hand Protection	Minimize contact with skin, especially if there is damage of the skin. Use chemical resistant gloves.
Eye protection	If there is a risk of getting into eyes use tight protective glasses.
Skin and body protection	Use protective clothing that provides protection from the preparation. After work, remove protective clothing, take a shower, wash your skin with soap.
<b>9. PHYSICAL AND CHEMICAL PROPERTIES</b>	
Product form	
Preparative form	Powder; Liquid form
Colour	Powder from light gray to dark brown color Liquid of light brown color
Odor	specific smell
Volatility	Nonvolatile



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Solubility in water	Forms a suspension, which eventually precipitates
Oxidizing properties	Does not have oxidizing properties;
Flammability, explosive properties	Fireproof, explosion-proof
Autoignition point	not specified
Flash point	not specified
<b>10. STABILITY AND REACTIVITY</b>	
Stability in storage - stable up to the expiration date of storage in accordance with the manufacturer's recommendations, in the original container, decomposes under the influence of ultraviolet, is sensitive to acids and alkalis (at pH of aqueous solution 4 and 9).	
Conditions to Avoid	High and low temperatures
Incompatible Materials	None
Hazardous decomposition products	None
<b>11. TOXICOLOGICAL INFORMATION</b>	
11.1. Information on toxic effects:	
<u>Acute toxicity per os</u>	LD <sub>50</sub> for mice – > 1,0*10 <sup>9</sup> g/animal; rats – > 1,0*10 <sup>10</sup> g/animal
<u>Inhalation toxicity</u>	LD <sub>50</sub> for mice – > 1,0*10 <sup>7</sup> g/animal; rats – > 1,0*10 <sup>8</sup> g/animal
<u>Acute toxicity when applied to skin</u>	Does not have an irritant effect on the rats' skin
Irritating effect on skin	According to the results of these studies, there is no irritating effect of the preparation on rats
Irritating effect on eyes mucous membranes	Does not show a sensitizing effect on the skin of rats.
<u>Sensitizing effect</u>	None
<b>12. ECOLOGICAL INFORMATION</b>	
<u>Behavior in soil</u>	The preparation does not accumulate



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<u>Behavior in water</u>	The preparation does not accumulate
<u>Behavior in plants</u>	The preparation does not accumulate
<u>Persistence and decomposition</u>	The preparation does not accumulate
<b>13. DISPOSAL CONSIDERATION</b>	
Preparation disposal	The preparation can be disposed in a landfill or in a sewage system in accordance with local legislation and regulations
Container disposal	Preparation container must be recycled. Use of container from under the preparation is not allowed for food purposes.
<b>14. TRANSPORT INFORMATION</b>	
Transportation is carried out in accordance with the requirements of the approved state	
UN № Proper Shipping Name Transport hazard class Packaging group	None None None None
<u>Sea transport</u> UN № Proper Shipping Name Transport hazard class Packaging group	None None None None
<u>Auto / Railway</u> UN № Proper Shipping Name Transport hazard class Packaging group	None None None None
<u>Air transport</u> UN № Proper Shipping Name Transport hazard class Packaging group	None None None None
<b>16. OTHER INFORMATION</b>	
The information provided in this material safety data sheet at the date of publication is believed to be true and reliable. However, the accuracy and completeness of this information and any recommendation or proposal is provided without any obligation or guarantee. Since the conditions of use are beyond the control of our company, the responsibility for determining the conditions for the safe use of this preparation is the sole responsibility of the user. The information in this safety data sheet does not represent analytical specifications, please refer to the product's technical descriptions and the quality certificate.	



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3. ДСП 2001-97. Державні санітарні правила охорони атмосферного повітря населених місць (від забруднення хімічними та біологічними речовинами)
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