




SECTION 1: IDENTIFICATION

- 1.1 Product identifier:** ES202 - ES202 BIO ACTIVE A/P DIGESTANT
- Other means of identification:**
ES202
- 1.2 Recommended use of the chemical and restrictions on use:**
Relevant uses: Enzymatic or Bioenergetic Products
Uses advised against: All uses not specified in this section or in section 7.3
- 1.3 Initial supplier identifier:**
Charlotte Products Ltd.
2060 Fisher Drive
K9J 6X6 Peterborough - Ontario - Canada
Phone: 705-740-2880 - Fax: 705-745-1239
www.charlotteproducts.com
- 1.4 Emergency phone number:** Infotrac 1-800-535-5053 (North America), 011-1-352-323-3500 (International)

SECTION 2: HAZARD IDENTIFICATION

- 2.1 Classification of the substance or mixture:**
- WHMIS 2015:**
Classification of this product has been carried out in accordance with Part 2 of Hazardous Products Regulations (SOR/2015-17 amended by SOR/2022-272)
Eye Irrit. 2: Eye irritation, Category 2, H319
Repr. 1B: Reproductive toxicity, Category 1B, H360
- 2.2 Label elements:**
- WHMIS 2015:**
Danger
- 
- Hazard statements:**
Eye Irrit. 2: H319 - Causes serious eye irritation.
Repr. 1B: H360 - May damage fertility or the unborn child.
- Precautionary statements:**
P101: If medical advice is needed, have product container or label at hand.
P102: Keep out of reach of children.
P201: Obtain special instructions before use.
P264: Wash thoroughly after use.
P280: Wear protective gloves/protective clothing/eye protection/protective footwear.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313: IF exposed or concerned: Get medical advice/attention.
P501: Dispose of contents and / or their container according to the separated collection system used in your municipality.
- Substances that contribute to the classification**
N-methyl-2-pyrrolidone
- Additional labeling:**
CCCR 2001 >> Sub-Category "Irritant": Eyes.
CAUTION.
IRRITANT. MAY IRRITATE EYES. Do not get in eyes. Keep out of reach of children.
FIRST AID TREATMENT
If swallowed, call a Poison Control Centre or doctor immediately. Do not induce vomiting. If in eyes, rinse with water for 15 minutes.
- 2.3 Health and physical hazards not otherwise classified (HHNOC - PHNOC):**
Not relevant

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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances:



Non-applicable

3.2 Mixtures:

Chemical description: Aqueous solution of organic and inorganic compounds, glycol-ethers, surfactants, enzymes and colourants.

Components:

In accordance with Schedule I of the Hazardous Products Regulations (SOR/2015-17), the product contains:

| Identification | Chemical name/Classification | Concentration |
|-----------------|--|--|
| CAS: 68002-97-1 | Alcohols, C10-16, ethoxylated Acute Tox. 4: H302; Eye Dam. 1: H318; Skin Irrit. 2: H315 - Danger |  1 - <5 % |
| CAS: 872-50-4 | N-methyl-2-pyrrolidone Eye Irrit. 2: H319; Flam. Liq. 4: H227; Repr. 1B: H360; Skin Irrit. 2: H315; STOT SE 3: H335 - Danger |  <1 % |

To obtain more information on the hazards of the substances consult sections 11, 12 and 16.

SECTION 4: FIRST-AID MEASURES

4.1 Description of necessary measures:

The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the SDS of this product.

By inhalation:

This product is not classified as hazardous through inhalation, however, it is recommended in case of intoxication symptoms to remove the person affected from the area of exposure, provide clean air and keep at rest. Request medical attention if symptoms persist.

By skin contact:

This product is not classified as hazardous when in contact with the skin. However, in case of skin contact it is recommended to remove contaminated clothes and shoes, rinse the skin or shower the person affected if necessary thoroughly with cold water and neutral soap. In case of serious reaction consult a doctor.

By eye contact:

Rinse eyes thoroughly with lukewarm water for at least 15 minutes. Do not allow the person affected to rub or close their eyes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, as this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS of the product.

By ingestion/aspiration:

Do not induce vomiting, but if it does happen keep the head down to avoid aspiration. Keep the person affected at rest. Rinse out the mouth and throat, as they may have been affected during ingestion.

4.2 Most important symptoms/effects, acute and delayed:

Acute and delayed effects are indicated in sections 2 and 11.

4.3 Indication of immediate medical attention and special treatment needed, if necessary:

Not relevant

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable (and unsuitable) extinguishing media:

Suitable extinguishing media:

Product is non-flammable under normal conditions of storage, manipulation and use, but the product contains flammable substances. In the case of inflammation as a result of improper manipulation, storage or use preferably use polyvalent powder extinguishers (ABC powder), in accordance with the Regulation on fire protection systems.

Unsuitable extinguishing media:

IT IS RECOMMENDED NOT to use full jet water as an extinguishing agent.

5.2 Specific hazards arising from the chemical:

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SECTION 5: FIRE-FIGHTING MEASURES (continued)

As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

5.3 Special protective equipment and precautions for fire-fighters:

Depending on the magnitude of the fire it may be necessary to use full protective clothing and individual respiratory equipment. Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...)

Additional provisions:

Act in accordance with the Internal Emergency Plan and the Information Sheets on actions to take after an accident or other emergencies. Destroy any source of ignition. In case of fire, refrigerate the storage containers and tanks for products susceptible to inflammation, explosion or BLEVE as a result of high temperatures. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Isolate leaks provided that there is no additional risk for the people performing this task. Personal protection equipment must be used against potential contact with the spilt product (See section 8). Evacuate the area and keep out those who do not have protection.

For emergency responders:

Wear protective equipment. Keep unprotected persons away. See section 8.

6.2 Environmental precautions:

This product is not classified as hazardous to the environment. Keep product away from drains, surface and underground water.

6.3 Methods and materials for containment and cleaning up:

It is recommended:

Absorb the spillage using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. For any concern related to disposal consult section 13.

6.4 Reference to other sections:

See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

A.- General precautions for safe use

Comply with the current legislation concerning the prevention of industrial risks with regards manually handling weights. Maintain order, cleanliness and dispose of using safe methods (section 6).

B.- Technical recommendations for the prevention of fires and explosions

Product is non-flammable under normal conditions of storage, manipulation and use. It is recommended to transfer at slow speeds to avoid the generation of electrostatic charges that can affect flammable products. Consult section 10 for information on conditions and materials that should be avoided.

C.- Technical recommendations on general occupational hygiene

PREGNANT WOMEN SHOULD NOT BE EXPOSED TO THIS PRODUCT. Transfer in fixed places that comply with the necessary security conditions (emergency showers and eyewash stations in close proximity), using personal protection equipment, especially on the hands and face (See section 8). Limit manual transfers to containers of small amounts. Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

D.- Technical recommendations to prevent environmental risks

It is recommended to have absorbent material available at close proximity to the product (See subsection 6.3)

7.2 Conditions for safe storage, including any incompatibilities:

A.- Technical measures for storage

| | |
|----------------|-----------|
| Minimum Temp.: | 5 °C |
| Maximum Temp.: | 30 °C |
| Maximum time: | 12 Months |

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SECTION 7: HANDLING AND STORAGE (continued)

B.- General conditions for storage

Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

7.3 Specific end use(s):

Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters:

Substances whose occupational exposure limits have to be monitored in the workplace:

ONTARIO R.R.O. 1990, REGULATION 833 (Last amendment: 449/19)- CONTROL OF EXPOSURE TO BIOLOGICAL OR CHEMICAL AGENTS:

| Identification | Occupational exposure limits | |
|--|------------------------------|-----------------------|
| | TWA | 400 mg/m ³ |
| N-methyl-2-pyrrolidone ⁽¹⁾ CAS: 872-50-4 | STEL | |

⁽¹⁾ Likely absorption through the skin

8.2 Appropriate engineering controls:

A.- Individual protection measures, such as personal protective equipment


As a preventative measure it is recommended to use basic Personal Protection Equipment. For more information on Personal Protection Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For more information see subsection 7.1.

All information contained herein is a recommendation which needs some specification from the labour risk prevention services as it is not known whether the company has additional measures at its disposal.

B.- Respiratory protection


The use of protection equipment will be necessary if a mist forms or if the occupational exposure limits are exceeded.

C.- Specific protection for the hands

| Pictogram | PPE | Remarks |
|--|---|--|
|  Mandatory hand protection | Chemical protective gloves (Material: Linear low-density polyethylene (LLDPE), Breakthrough time: > 480 min, Thickness: 0.062 mm) | Replace the gloves at any sign of deterioration. |

As the product is a mixture of several substances, the resistance of the glove material can not be calculated in advance with total reliability and has therefore to be checked prior to the application.

D.- Eye and face protection

| Pictogram | PPE | Remarks |
|--|---|---|
|  Mandatory face protection | Panoramic glasses against splash/projections. | Clean daily and disinfect periodically according to the manufacturer's instructions. Use if there is a risk of splashing. |

E.- Bodily protection



| Pictogram | PPE | Remarks |
|-----------|----------------------|---|
| | Work clothing | Replace before any evidence of deterioration. |
| | Anti-slip work shoes | Replace before any evidence of deterioration. |

F.- Additional emergency measures

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

| Emergency measure | Standards | Emergency measure | Standards |
|---|---|--|--|
|  Emergency shower | ANSI Z358-1 ISO 3864-1:2011, ISO 3864-4:2011 |  Eyewash stations | DIN 12 899 ISO 3864-1:2011, ISO 3864-4:2011 |

Environmental exposure controls:

In accordance with the community legislation for the protection of the environment it is recommended to avoid environmental spillage of both the product and its container. For additional information see subsection 7.1.D

Volatile organic compounds (VOC) according to Canadian Environmental Protection Act, 1999:

| | |
|-----------------------------|-----------------------------------|
| Volatile organic compounds: | 0.2 % weight |
| V.O.C. density at 20 °C: | 2.06 kg/m ³ (2.06 g/L) |

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

For complete information see the product datasheet.

Appearance:

| | |
|--------------------------|----------------|
| Physical state at 20 °C: | Liquid |
| Appearance: | Opaque |
| Colour: | White |
| Odour: | Fruity |
| Odour threshold: | Not relevant * |

Volatility:

| | |
|---|-------------------------|
| Boiling point or initial boiling point and boiling range: | 100 °C |
| Vapour pressure at 20 °C: | 2349 Pa |
| Vapour pressure at 50 °C: | 12376.44 Pa (12.38 kPa) |
| Evaporation rate at 20 °C: | Not relevant * |

Product description:

| | |
|--|--------------------------|
| Density at 20 °C: | 1029.6 kg/m ³ |
| Relative density at 20 °C: | 1 - 1.006 |
| Dynamic viscosity at 20 °C: | Not relevant * |
| Kinematic viscosity at 20 °C: | Not relevant * |
| Kinematic viscosity at 40 °C: | Not relevant * |
| Concentration: | Not relevant * |
| pH: | 6 - 8.5 |
| Relative vapour density at 20 °C: | Not relevant * |
| Partition coefficient — n-octanol/water (logarithmic value) 20 °C: | Not relevant * |
| Solubility in water at 20 °C: | Not relevant * |
| Solubility properties: | Not relevant * |
| Decomposition temperature: | Not relevant * |
| Melting point/freezing point: | Not relevant * |

Flammability:

| | |
|----------------------------|------------------------|
| Flash Point: | Non Flammable (>93 °C) |
| Flammability (solid, gas): | Not relevant * |
| Autoignition temperature: | 346 °C |

*Not relevant due to the nature of the product, not providing information property of its hazards.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)

Lower flammability limit: Not relevant *
Upper flammability limit: Not relevant *

Particle characteristics:

Median equivalent diameter: Non-applicable

9.2 Other information:

Information with regard to physical hazard classes:

Explosive properties: Not relevant *
Oxidising properties: Not relevant *
Corrosive to metals: Not relevant *
Heat of combustion: Not relevant *
Aerosols-total percentage (by mass) of flammable components: Not relevant *

Other safety characteristics:

Surface tension at 20 °C: Not relevant *
Refraction index: Not relevant *

*Not relevant due to the nature of the product, not providing information property of its hazards.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7 from Safety Data Sheet.

10.2 Chemical stability:

Chemically stable under the indicated conditions of storage, handling and use.

10.3 Possibility of hazardous reactions:

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

10.4 Conditions to avoid:

Applicable for handling and storage at room temperature:

| Shock and friction | Contact with air | Increase in temperature | Sunlight | Humidity |
|--------------------|------------------|-------------------------|------------|----------------|
| Not applicable | Not applicable | Precaution | Precaution | Not applicable |

10.5 Incompatible materials:

| Acids | Water | Oxidising materials | Combustible materials | Others |
|--------------------|----------------|---------------------|-----------------------|-------------------------------|
| Avoid strong acids | Not applicable | Not applicable | Not applicable | Avoid alkalis or strong bases |

10.6 Hazardous decomposition products:

See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO₂), carbon monoxide and other organic compounds.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

The experimental information related to the toxicological properties of the product itself is not available

Dangerous health implications:

In case of exposure that is repetitive, prolonged or at concentrations higher than recommended by the occupational exposure limits, it may result in adverse effects on health depending on the means of exposure:

A- Ingestion (acute effect):

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SECTION 11: TOXICOLOGICAL INFORMATION (continued)

- Acute toxicity: Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous for consumption. For more information see section 3.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met. However, it does contain substances classified as hazardous for this effect. For more information see section 3.
- B- Inhalation (acute effect):
 - Acute toxicity : Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for inhalation. For more information see section 3.
 - Corrosivity/Irritability: Based on available data, the classification criteria are not met. However, it contains substances classified as hazardous for inhalation. For more information see section 3.
- C- Contact with the skin and the eyes (acute effect):
 - Contact with the skin: Based on available data, the classification criteria are not met. However, it contains substances classified as hazardous for skin contact. For more information see section 3.
 - Contact with the eyes: Produces eye damage after contact.
- D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):
 - Carcinogenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for the effects mentioned. For more information see section 3.
IARC: Not relevant
 - Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.
 - Reproductive toxicity: May damage fertility or the unborn child
- E- Sensitizing effects:
 - Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous with sensitising effects. For more information see section 3.
 - Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.
- F- Specific target organ toxicity (STOT) - single exposure:

Based on available data, the classification criteria are not met. However, it contains substances classified as hazardous for inhalation. For more information see section 3.
- G- Specific target organ toxicity (STOT)-repeated exposure:
 - Specific target organ toxicity (STOT)-repeated exposure: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.
 - Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.
- H- Aspiration hazard:

Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

Other information:

Not relevant

Specific toxicology information on the substances:

| Identification | Acute toxicity | | Genus |
|----------------|---|-------------|-------|
| | N-methyl-2-pyrrolidone CAS: 872-50-4 | LD50 oral | |
| | LD50 dermal | >5000 mg/kg | Rat |
| | LC50 inhalation | | |

SECTION 12: ECOLOGICAL INFORMATION

The experimental information related to the eco-toxicological properties of the product itself is not available
Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect.
For more information see section 3.

12.1 Ecotoxicity (aquatic and terrestrial, where available):

Acute toxicity:

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SECTION 12: ECOLOGICAL INFORMATION (continued)

| Identification | Concentration | | Species | Genus |
|---|---------------|------------------|-------------------------|------------|
| N-methyl-2-pyrrolidone CAS: 872-50-4 | LC50 | 832 mg/L (96 h) | Lepomis macrochirus | Fish |
| | EC50 | 4897 mg/L (48 h) | Daphnia magna | Crustacean |
| | EC50 | 500 mg/L (72 h) | Scenedesmus subspicatus | Algae |

Chronic toxicity:

| Identification | Concentration | | Species | Genus |
|---|---------------|--------------|---------------|------------|
| N-methyl-2-pyrrolidone CAS: 872-50-4 | NOEC | Not relevant | | |
| | NOEC | 12.5 mg/L | Daphnia magna | Crustacean |

12.2 Persistence and degradability:

Substance-specific information:

| Identification | Degradability | | Biodegradability | |
|----------------|---|------------|------------------|---------------|
| | N-methyl-2-pyrrolidone CAS: 872-50-4 | BOD5 | 1.09 g O2/g | Concentration |
| COD | | 1.6 g O2/g | Period | 28 days |
| BOD5/COD | | 0.68 | % Biodegradable | 73 % |

12.3 Bioaccumulative potential:

Substance-specific information:

| Identification | Bioaccumulation potential | |
|---|---------------------------|-------|
| N-methyl-2-pyrrolidone CAS: 872-50-4 | BCF | 0.23 |
| | Pow Log | -0.46 |
| | Potential | Low |

12.4 Mobility in soil:

| Identification | Absorption/desorption | | Volatility | |
|---|-----------------------|----------------------|------------|--------------|
| N-methyl-2-pyrrolidone CAS: 872-50-4 | Koc | Not relevant | Henry | Not relevant |
| | Conclusion | Not relevant | Dry soil | Not relevant |
| | Surface tension | 4.007E-2 N/m (25 °C) | Moist soil | Not relevant |

12.5 Results of PBT and vPvB assessment:

Non-applicable

12.6 Other adverse effects:

Not described

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

Waste management (disposal and evaluation):

Consult the authorized waste service manager on the assessment and disposal operations. In case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-hazardous residue. Waste should not be disposed of to drains. See epigraph 6.2.

Regulations related to waste management:

Legislation related to waste management:

Canadian Environmental Protection Act, 1999

SECTION 14: TRANSPORT INFORMATION

This product is not regulated for transport.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations specific for the product in question:

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SECTION 15: REGULATORY INFORMATION (continued)

- Domestic Substances List (DSL): *Alcohols, C10-16, ethoxylated (68002-97-1) ; N-methyl-2-pyrrolidone (872-50-4)*
- Non-Domestic Substances List (NDSL): Not relevant

Specific provisions in terms of protecting people or the environment:

It is recommended to use the information provided in this safety data sheet as a foundation for conducting workplace-specific risk assessments. These assessments will help establish the appropriate risk prevention measures for handling, using, storing, and disposing of this product.

Other legislation:

Canadian Environmental Protection Act, 1999

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with Part 4 and Schedule I of the Hazardous Products Regulations (SOR/2015-17), amended by SOR/2020-38 and SOR/2022-272.

Texts of the legislative phrases mentioned in section 2:

H360: May damage fertility or the unborn child.

H319: Causes serious eye irritation.

Texts of the legislative phrases mentioned in section 3:

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3

WHMIS 2015:

Acute Tox. 4: H302 - Harmful if swallowed.

Eye Dam. 1: H318 - Causes serious eye damage.

Eye Irrit. 2: H319 - Causes serious eye irritation.

Flam. Liq. 4: H227 - Combustible liquid.

Repr. 1B: H360 - May damage fertility or the unborn child.

Skin Irrit. 2: H315 - Causes skin irritation.

STOT SE 3: H335 - May cause respiratory irritation.

Advice related to training:

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources:

<http://whmis.org/>

Abbreviations and acronyms:

IMDG: International maritime dangerous goods code

IATA: International Air Transport Association

ICAO: International Civil Aviation Organisation

COD: Chemical Oxygen Demand BOD5: 5-day biochemical oxygen demand

BCF: Bioconcentration factor LD50: Lethal Dose 50 CL50: Lethal Concentration 50

EC50: Effective concentration 50

Log-POW: Octanol-water partition coefficient

Koc: Partition coefficient of organic carbon

IARC: International Agency for Research on Cancer

Date of compilation: 2024-04-15

The information contained in this safety data sheet is based on sources, technical knowledge and current legislation, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product, it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within our awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

END OF SAFETY DATA SHEET