



## Technical Data Sheet

**Product Name:** Ergexis™ L-Ergothioneine 99%

**Product Code:** EZ891314a

| 1.Technical Data Sheet                                                                                                                                                                                                                                                                                                 |                                                                                                                    |                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------|
| Chemical Name                                                                                                                                                                                                                                                                                                          | L-Ergothioneine                                                                                                    |                     |
| CAS Number                                                                                                                                                                                                                                                                                                             | 497-30-3                                                                                                           |                     |
| Molecular Weight                                                                                                                                                                                                                                                                                                       | 229.3 g/mol                                                                                                        |                     |
| Molecular Formula                                                                                                                                                                                                                                                                                                      | C <sub>9</sub> H <sub>15</sub> N <sub>3</sub> O <sub>2</sub> S                                                     |                     |
| Compliance (Food / Pharmacopoeia / FCC / Feed)                                                                                                                                                                                                                                                                         | Food                                                                                                               |                     |
| <b>Brief Introduction:</b><br>L-Ergothioneine (L-ET) is a naturally occurring amino acid derivative, found primarily in mushrooms and certain bacteria. It is synthesized by fungi and mycobacteria and accumulates in human tissues via a specific transporter (OCTN1), suggesting its essential physiological roles. |                                                                                                                    |                     |
| Item                                                                                                                                                                                                                                                                                                                   | Standard                                                                                                           | Analysis Method     |
| Appearance                                                                                                                                                                                                                                                                                                             | White to off-white powder                                                                                          | Visual              |
| Identification                                                                                                                                                                                                                                                                                                         | Positive                                                                                                           | TLC/HPLC            |
| Odor &Taste                                                                                                                                                                                                                                                                                                            | Characteristic                                                                                                     | Organoleptic        |
| Assay                                                                                                                                                                                                                                                                                                                  | 99.0%                                                                                                              | HPLC                |
| Purity                                                                                                                                                                                                                                                                                                                 | 99.99%                                                                                                             | HPLC                |
| Ash Content                                                                                                                                                                                                                                                                                                            | ≤0.2%                                                                                                              | Eur.Ph. <2.4.16>    |
| Loss on Drying                                                                                                                                                                                                                                                                                                         | ≤0.5%                                                                                                              | Eur.Ph.7.0 [2.8.17] |
| <b>Heavy metals</b>                                                                                                                                                                                                                                                                                                    |                                                                                                                    |                     |
| Total Heavy Metals                                                                                                                                                                                                                                                                                                     | ≤10 ppm                                                                                                            | USP <233>           |
| Lead                                                                                                                                                                                                                                                                                                                   | ≤1.0 ppm                                                                                                           | USP <233>           |
| Arsenic                                                                                                                                                                                                                                                                                                                | ≤1.0 ppm                                                                                                           | USP <233>           |
| Cadmium                                                                                                                                                                                                                                                                                                                | ≤0.3 ppm                                                                                                           | USP <233>           |
| Mercury                                                                                                                                                                                                                                                                                                                | ≤0.1 ppm                                                                                                           | USP <233>           |
| <b>Microorganism</b>                                                                                                                                                                                                                                                                                                   |                                                                                                                    |                     |
| Total plate count                                                                                                                                                                                                                                                                                                      | ≤1000 cfu/g                                                                                                        | USP <61>            |
| Molds & Yeasts                                                                                                                                                                                                                                                                                                         | ≤100 cfu/g                                                                                                         | USP <61>            |
| E. coli                                                                                                                                                                                                                                                                                                                | Negative/10g                                                                                                       | USP <62>            |
| Salmonella                                                                                                                                                                                                                                                                                                             | Negative/10g                                                                                                       | USP <62>            |
| Staphylococcus                                                                                                                                                                                                                                                                                                         | Negative/10g                                                                                                       | USP <62>            |
| <b>Storage &amp; Shelf Life</b>                                                                                                                                                                                                                                                                                        |                                                                                                                    |                     |
| Package                                                                                                                                                                                                                                                                                                                | 25kg/drum                                                                                                          |                     |
| Shelf Life                                                                                                                                                                                                                                                                                                             | The shelf life for the product is 24 months from date of production. Use it as soon as possible once it is opened. |                     |



|         |                                                                                       |
|---------|---------------------------------------------------------------------------------------|
| Storage | Store in unopened original package under clean and dry condition, away from sunlight. |
|---------|---------------------------------------------------------------------------------------|

| 2.Origin & Ingredient                                               |                                                  |                                                                 |         |
|---------------------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------------|---------|
| Country of origin of the product: China                             |                                                  | Origin statement: available <input checked="" type="checkbox"/> |         |
| This product is a pure material <input checked="" type="checkbox"/> |                                                  | This product is a compound material <input type="checkbox"/>    |         |
| Animal origin                                                       | <input type="checkbox"/> bovine                  | Specific Source: /                                              |         |
|                                                                     | <input type="checkbox"/> porcine                 | Specific Source : /                                             |         |
|                                                                     | <input type="checkbox"/> ovine                   | Specific Source : /                                             |         |
|                                                                     | <input type="checkbox"/> others:                 | Specific Source: /                                              |         |
| Synthetic                                                           | <input type="checkbox"/>                         | Starting material:                                              | Origin: |
| Biotechnological processing                                         | <input type="checkbox"/> Catalysis By Enzymes    | Name of Enzyme: /<br>Sources of Enzymes : /                     |         |
|                                                                     | <input checked="" type="checkbox"/> Fermentation | Source of Medium: /<br>Strain: /                                |         |
| Botanical Origin                                                    | Botanical Name:                                  | /                                                               |         |
|                                                                     | Part:                                            | /                                                               |         |
|                                                                     | Wild or Cultivated :                             | /                                                               |         |
|                                                                     | Country of Origin:                               | /                                                               |         |
|                                                                     | Solvent Used :                                   | /                                                               |         |

| 3.Nutrition Data                                                                            |                                                                                   |
|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Nutritional Composition                                                                     | <input checked="" type="checkbox"/> Per 100g <input type="checkbox"/> Per Serving |
| <input type="checkbox"/> Energy (KJ) <input checked="" type="checkbox"/> Energy (Kcal)      | 0kcal                                                                             |
| Fat (g)                                                                                     | 0                                                                                 |
| Carbohydrates (g)                                                                           | 0                                                                                 |
| Protein (g)                                                                                 | 0                                                                                 |
| Sodium (mg)                                                                                 | 0                                                                                 |
| Remarks: Nutrition Data Are Obtained By 3 <sup>rd</sup> Party Lab; Tested on A Yearly Basis |                                                                                   |

| 4. Non-GMO Declaration                                                                                                                                                   |                          |                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------|
|                                                                                                                                                                          | YES                      | NO (Means Not Contain)              |
| The product does not contain or consist of GMO                                                                                                                           | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| The product is not produced from GMO or not contain ingredients produced from GMO (irrespective of whether there is NDA or protein of GM origin in the final production) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

|                                                                                                                                                                                      |                                     |                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|
| This product is not produced by means of GM microorganism including precursor substances, e.g., with GMOs or Genetically Modified microorganisms processing aids (bacteria, yeast,). | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| This product is not produced with the help of enzymes, which were obtained from GMOs                                                                                                 | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| Does the product contain any ingredients from animal?                                                                                                                                | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| If yes, are genetically modified crops contained in the feed for the animal?                                                                                                         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| We confirm that this product complies with regulations EC/1829/2003 and EC1831/2003 and keep non-GMO statement available.                                                            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |

## 5. Allergen Declaration

We have carefully reviewed this product according to EU Regulation 1169/2011 and modifications and confirm the following:

|                                                    | Direct incorporation as a base raw material or in a derivative form (don't forget the carriers, the additives, and the processing aids) |    | CROSS CONTAMINATION             |    |                                     |    |                                    |    |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|----|---------------------------------|----|-------------------------------------|----|------------------------------------|----|
|                                                    |                                                                                                                                         |    | Presence on the production line |    | Presence on the production workshop |    | Presence on the production factory |    |
|                                                    | Yes (Precise nature)                                                                                                                    | No | Yes (precise the nature)        | No | Yes (precise the nature)            | No | Yes (precise the nature)           | No |
| Cereals containing gluten (1) and products thereof |                                                                                                                                         | N  |                                 | N  |                                     | N  |                                    | N  |
| Crustaceans and products thereof                   |                                                                                                                                         | N  |                                 | N  |                                     | N  |                                    | N  |
| Eggs and products thereof                          |                                                                                                                                         | N  |                                 | N  |                                     | N  |                                    | N  |
| Fish and products thereof (2)                      |                                                                                                                                         | N  |                                 | N  |                                     | N  |                                    | N  |
| Peanuts and products thereof                       |                                                                                                                                         | N  |                                 | N  |                                     | N  |                                    | N  |
| Soybeans and products thereof (3)                  |                                                                                                                                         | N  |                                 | N  |                                     | N  |                                    | N  |
| Milk and products thereof (including               |                                                                                                                                         | N  |                                 | N  |                                     | N  |                                    | N  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |   |  |   |  |   |  |   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---|--|---|--|---|--|---|
| lactose) (4)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |   |  |   |  |   |  |   |
| Nuts (5) or products thereof                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | N |  | N |  | N |  | N |
| Celery and products thereof                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | N |  | N |  | N |  | N |
| Mustard and products thereof                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | N |  | N |  | N |  | N |
| Sesame seeds and product thereof                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  | N |  | N |  | N |  | N |
| Sulphur dioxide and sulphites at concentrations of more than 10mg/kg or 10 mg/l expressed as SO <sub>2</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | N |  | N |  | N |  | N |
| Lupines and products thereof                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | N |  | N |  | N |  | N |
| Mollusc and product thereof                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | N |  | N |  | N |  | N |
| <p>Cereals which contain gluten (i.e. wheat, rye, barley, oats, spelt, kamut or their hybridised strains) except: wheat-based glucose syrups including dextrose, wheat-based maltodextrins, glucose syrups based on barley, cereals used for making distillates or ethyl alcohol of agricultural origin for spirit drinks and other alcoholic beverages;</p> <p>Except: fish gelatine used as carrier for vitamin or carotenoid preparations, fish gelatine or Isinglass used as fining agent in beer and wine.</p> <p>Except fully refined soybean oil and fat, natural mixed tocopherols (E306), natural D-alpha tocopherol, natural D-alpha tocopherol acetate, natural D-alpha tocopherol succinate from soybean sources; vegetable oils derived phytosterols and phytosterol esters from soybean sources; plant stanol ester produced from vegetable oil sterols from soybean sources.</p> <p>Except when used for making distillates or ethyl alcohol of agricultural origin for spirit drinks and other alcoholic beverages, lactitol.</p> <p>Almond (<i>Amygdalus communis</i> L.) hazelnuts (<i>Corylus avellana</i>), walnut (<i>Juglans regia</i>), cashew (<i>Anacardium occidentale</i>), pecan nuts (<i>Carya illinoensis</i>), Brazil nut (<i>Bertholletia excelsa</i>), pistachio nut (<i>Pistacia vera</i>), macadamia nut and Queensland nut (<i>Macadamia terniflora</i>) and products thereof, except nuts used for making distillates or ethyl alcohol of agricultural origin for spirit drinks and other alcoholic beverages;</p> |  |   |  |   |  |   |  |   |

## 6. Non-Irradiation

(According to EU directive 1999/2/EC & 1999/3/EC)

|                                                                                               |                                         |                                                     |
|-----------------------------------------------------------------------------------------------|-----------------------------------------|-----------------------------------------------------|
| This product has not been treated with ionising radiation                                     | <input type="checkbox"/> YES            | <input checked="" type="checkbox"/> NO, not treated |
| None of the raw materials we used for this product have been treated with ionising radiation. | <input type="checkbox"/> YES            | <input checked="" type="checkbox"/> NO, not treated |
| We confirm above non-Irradiation statement is available                                       | <input checked="" type="checkbox"/> YES |                                                     |

## 7. Nanomaterial

(According to EU Regulation (EU) No. 1363/2013)



|                                                                                   |                                         |                                                                         |
|-----------------------------------------------------------------------------------|-----------------------------------------|-------------------------------------------------------------------------|
| This product does not contain any nanomaterials as defined in EU food legislation | <input type="checkbox"/> YES            | <input checked="" type="checkbox"/> NO, does not contain                |
| This product has not been made with nanotechnology                                | <input type="checkbox"/> YES            | <input checked="" type="checkbox"/> NO, is not made with nanotechnology |
| We confirm above non-Nanomaterial statement is available                          | <input checked="" type="checkbox"/> YES |                                                                         |

### 8. Residual Solvents

(According to UE Directive 2009/32 modified by (UE)2010/59; EP5.4; USP476; ICH Q3C(R7))

|                                                                                                                                |                                                                                                                                                                                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| For this product following solvents are used during production process:<br>Solvent A:                      max residual level: | <input checked="" type="checkbox"/> solvent used.<br><br><input type="checkbox"/> solvent not used                                                                                                                                                    |
| We confirm solvent residual of this product complies with:                                                                     | <input checked="" type="checkbox"/> EP 7.0<br><br><input checked="" type="checkbox"/> USP <476><br><br><input checked="" type="checkbox"/> ICH Q3C(R7)<br><br><input checked="" type="checkbox"/> Directive 2010/59/EU<br><input type="checkbox"/> NA |
| We confirm Solvent residual statement is available                                                                             | <input checked="" type="checkbox"/> YES                                                                                                                                                                                                               |

### 9. Pesticide Residual

(According to EC 396/2005; EP07; USP <561>)

|                                                              |                                                                                                                                                                                               |
|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| This product is of vegetable origin                          | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO                                                                                                                           |
| We confirm pesticide residual of this product complies with: | <input checked="" type="checkbox"/> EC 396/2005<br><br><input checked="" type="checkbox"/> EP 07/2008<br><br><input checked="" type="checkbox"/> USP<561><br><br><input type="checkbox"/> N/A |
| Pesticide residual statement available                       | <input checked="" type="checkbox"/> YES                                                                                                                                                       |

### 10.BSE/TSE Information

(According to EU No. 2019/319; EP general chapter 5.2.8)

|                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cattle, sheep, goats, and other animals naturally susceptible to infection with transmissible spongiform encephalopathy (TSE) agents, or those susceptible to infection through the oral route (excluding humans and non-human primates), are defined as "BSE-relevant animal species." Pigs |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                                                                                                                       |                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| and birds, however, are not naturally susceptible to infection via the oral route and, therefore, are not considered TSE-relevant species. Similarly, dogs, rabbits, and fish are also not classified as TSE-relevant animal species.                 |                                                                                                                               |
| The product contains no ingredients of ruminant origin and no materials derived from or exposed to ruminants affected by or under quarantine for Transmitting Transmissible Spongiform Encephalopathy (TSE) / Bovine Spongiform Encephalopathy (BSE). | <input type="checkbox"/> YES<br><input checked="" type="checkbox"/> NO<br><input type="checkbox"/> NA                         |
| In the manufacturing of this product, there is not any raw or source material and /or reagent used that is of animal origin i.e., bovine, serum-albumin, enzymes, culture broths including those used to prepare working or master cell tanks.        | <input type="checkbox"/> YES<br><input checked="" type="checkbox"/> NO                                                        |
| Equipment/systems/tools use for processing or storage of the material do not come into contact at any time with materials of animal origin (e.g., components of media filler used to check such system).                                              | <input type="checkbox"/> YES<br><input checked="" type="checkbox"/> NO                                                        |
| The material is not purified by using solvents, chromatographic media or buffers that contain components of animal origin.                                                                                                                            | <input type="checkbox"/> YES<br><input checked="" type="checkbox"/> NO                                                        |
| We confirm this product complies with:                                                                                                                                                                                                                | <input checked="" type="checkbox"/> EU legislation 999/2001 &<br><input checked="" type="checkbox"/> EP general chapter 5.2.8 |
| We confirm BSE/TSE statement is available                                                                                                                                                                                                             | <input checked="" type="checkbox"/> YES                                                                                       |

|                                                                                                                                                                  |                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>11. Contaminants Information</b><br>(According to UE regulation NO.1881/2006 and NO.629/2008 as regards maximum levels for certain contaminants in foodstuff) |                                                                                                       |
| Aflatoxin B1 <5ppb<br>Aflatoxins B1 + B2 + G1 + G2 <10ppb<br>Ochratoxin A <15ppb                                                                                 | <input checked="" type="checkbox"/> YES<br><input type="checkbox"/> NO<br><input type="checkbox"/> NA |
| Melamine Free                                                                                                                                                    | <input checked="" type="checkbox"/> YES                                                               |
| Dioxins, Furans, Polychlorinated Biphenyls Free                                                                                                                  | <input checked="" type="checkbox"/> YES                                                               |

|                                                                                                                                                                                                                                                                                                                                    |                                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| For polycyclic aromatic hydrocarbons, in cocoa fiber, banana chips, food supplements and their preparations, dried herbs <i>and dried spices</i> .<br>Maximum level of 10 µg/kg of benzo(a)pyrene<br>50 µg/kg for the sum of PAH4 (PAH4; benzo[a]pyrene, chrysene, Benz[a]anthracene and benzo[b]fluoranthene) in food supplements | <input checked="" type="checkbox"/> YES<br><br><input type="checkbox"/> NO<br><br><input type="checkbox"/> NA |
| We confirm this product complies with NO.1881/2006 and NO.629/2008 and keep compliance statement available                                                                                                                                                                                                                         | <input checked="" type="checkbox"/> YES                                                                       |

## 12. WADA Statement

We confirm that none of the products manufactured or stored within our facility contain any prohormones, stimulants, steroids, or other substances listed on the current WADA (World Anti-Doping Agency) list.

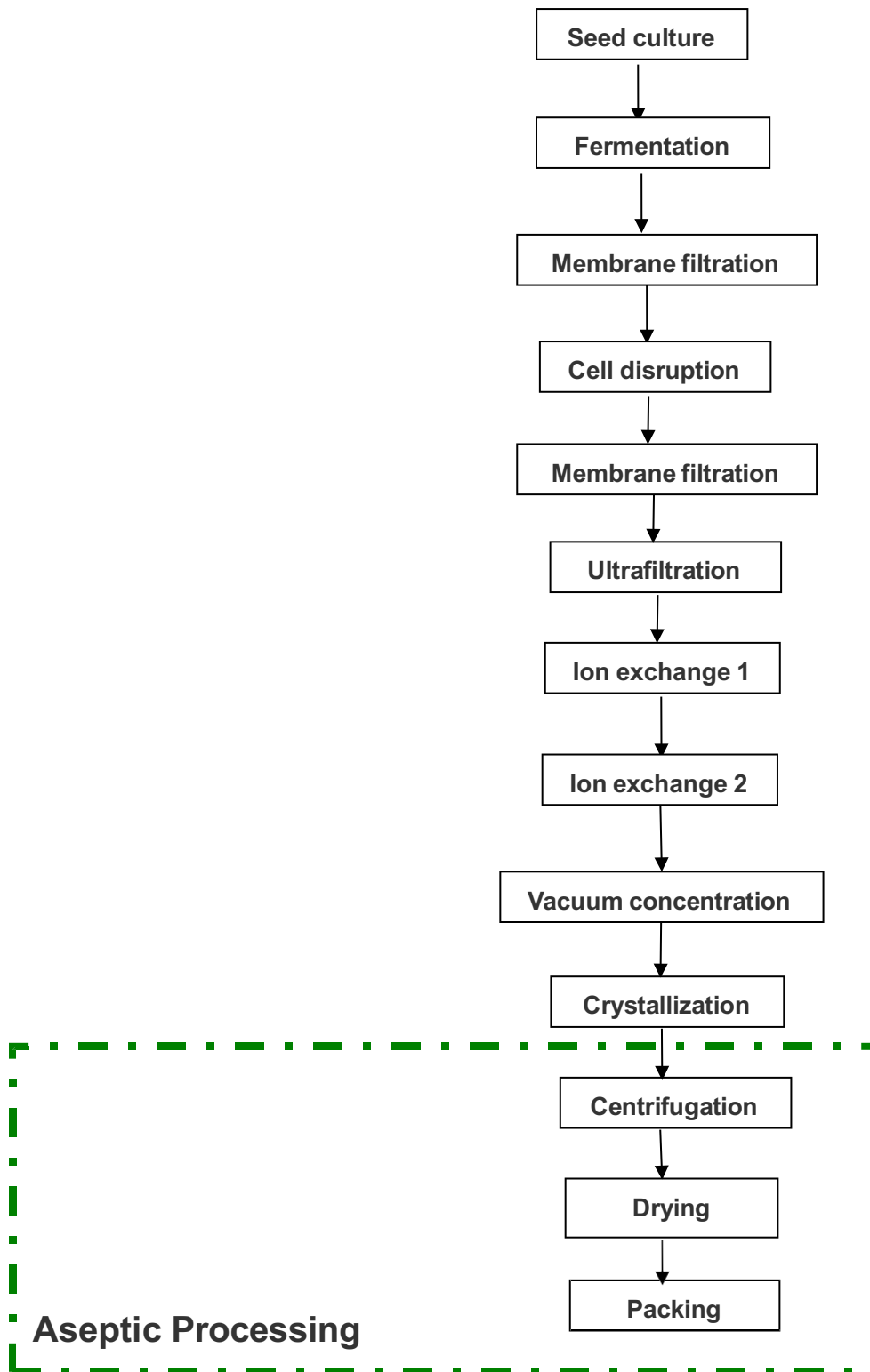
## 13. ETO Free Statement

We hereby confirm that ethylene oxide (ETO), 2-chloroethanol, or any other chemical sterilizing agents are not used during the manufacturing, storage, or transportation of our products.

## 14. Other Statements

|                                                                                            |                                                                                                       |
|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| We confirm Nitrates of this product complies with EU No 1258/2011                          | <input checked="" type="checkbox"/> YES<br><input type="checkbox"/> NO<br><input type="checkbox"/> NA |
| We confirm Mycotoxins / Aflatoxins of this product complies with EU No 165/2010            | <input checked="" type="checkbox"/> YES<br><input type="checkbox"/> NO<br><input type="checkbox"/> NA |
| We confirm 3-MCPD of this product complies with EU No. 2020/1322                           | <input checked="" type="checkbox"/> YES<br><input type="checkbox"/> NO<br><input type="checkbox"/> NA |
| We confirm Pyrrolizidine alkaloids of this product complies with Regulation (EU) 2020/2040 | <input checked="" type="checkbox"/> YES<br><input type="checkbox"/> NO<br><input type="checkbox"/> NA |

## Flow Chart of L-Ergothioneine





# Material Safety Data Sheet

## SECTION 1: Chemical product and company identification

**Product Name:** L-(+)-Ergothioneine

**CAS number:** 497-30-3

## SECTION 2: Composition/information on ingredients

**Molecular formula:**  $C_9H_{15}N_3O_2S$

**Molecular weight:** 229.3

| Chemical name       | Weight% | CAS NO.  | EINECS NO. |
|---------------------|---------|----------|------------|
| L-(+)-Ergothioneine | 100%    | 497-30-3 | 207-843-5  |

## SECTION 3: Hazards summarizing

### Classification of the substance or mixture

Skin irritation, Category 2

Eye irritation, Category 2

Specific target organ toxicity - single exposure, Category 3

**Hazard statement(s):** H315 Causes skin irritation; H319 Causes serious eye irritation; H335 May cause respiratory irritation.

**Precautionary statement(s) Prevention:** P264 Wash ... thoroughly after handling.; P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/..; P261 Avoid breathing dust/fume/gas/mist/ vapors/ spray.; P271 Use only outdoors or in a well-ventilated area

**Storage:** P403+P233 Store in a well-ventilated place. Keep container tightly closed.; P405 Store locked up.

**Disposal:** P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

## **SECTION 4: First-aid measures**

### **Description of first-aid measures if inhaled.**

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

### **Following skin contact**

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

### **Following eye contact**

Rinse with pure water for at least 15 minutes. Consult a doctor.

### **Following ingestion**

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

## **SECTION 5: Fire-fighting measures**

### **Suitable extinguishing media**

Use dry chemical, carbon dioxide or alcohol-resistant foam.

### **Special protective actions for fire-fighters**

Wear self-contained breathing apparatus for firefighting if necessary.

## **SECTION 6: Accidental release measures**

### **Personal precautions, protective equipment and emergency procedures**

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

### **Environmental precautions**

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

### **Methods and materials for containment and cleaning up**

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

## **SECTION 7: Handling and storage**

### **Precautions for safe handling**

Handling in a well-ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

### **Conditions for safe storage, including any incompatibilities.**

Keep dry and away from oxidizing agent, long term storage at 2°C to 8°C, avoid direct sunshine.

## **SECTION 8: Exposure controls/personal protection**

### **Appropriate engineering controls**

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

### **Individual protection measures, such as personal protective equipment (PPE)**

#### **Eye/face protection**

Wear tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

#### **Skin protection**

Wear fire/flammable resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

#### **Respiratory protection**

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

## **SECTION 9: Physical and chemical properties**

Physical state

White to off-white powder

Colour

White

|                                                          |                            |
|----------------------------------------------------------|----------------------------|
| Odor                                                     | no data available          |
| Melting point                                            | 265-267°C (dec.)           |
| Boiling point or initial boiling point and boiling range | no data available          |
| Flammability                                             | no data available          |
| Lower and upper explosion limit/flammability limit       | no data available          |
| Flashpoint                                               | no data available          |
| Auto-ignition temperature                                | no data available          |
| Decomposition temperature                                | no data available          |
| pH                                                       | no data available          |
| Kinematic viscosity                                      | no data available          |
| Solubility                                               | no data available          |
| Partition coefficient n-octanol/water                    | no data available          |
| Vapour pressure                                          | no data available          |
| Density                                                  | 0.65-0.85g/cm <sup>3</sup> |
| Relative vapour density                                  | no data available          |
| Particle characteristics                                 | no data available          |

## **SECTION 10: Stability and reactivity**

|                                           |                   |
|-------------------------------------------|-------------------|
| <b>Reactivity</b>                         | no data available |
| <b>Chemical stability</b>                 | no data available |
| <b>Possibility of hazardous reactions</b> | no data available |
| <b>Conditions to avoid</b>                | no data available |
| <b>Incompatible materials</b>             | no data available |
| <b>Hazardous decomposition products</b>   | no data available |

## **SECTION 11: Toxicological information**

### **Acute toxicity**

Oral: no data available

Inhalation: no data available



Dermal: no data available

## **SECTION 12: Ecological information**

### **Toxicity**

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

## **SECTION 13: Disposal**

### **Disposal methods**

#### **Product**

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### **Contaminated packaging**

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

## **SECTION 14: Transport information**

### **UN Number**

|                            |                         |                         |
|----------------------------|-------------------------|-------------------------|
| ADR/RUD: no data available | IMDG: no data available | IATA: no data available |
|----------------------------|-------------------------|-------------------------|

### **UN Proper Shipping Name**

|                            |                         |                         |
|----------------------------|-------------------------|-------------------------|
| ADR/RUD: no data available | IMDG: no data available | IATA: no data available |
|----------------------------|-------------------------|-------------------------|

### **Transport hazard class(es)**

|                            |                         |                         |
|----------------------------|-------------------------|-------------------------|
| ADR/RUD: no data available | IMDG: no data available | IATA: no data available |
|----------------------------|-------------------------|-------------------------|

### **Packing group, if applicable**

|                            |                         |                         |
|----------------------------|-------------------------|-------------------------|
| ADR/RUD: no data available | IMDG: no data available | IATA: no data available |
|----------------------------|-------------------------|-------------------------|

**Environmental hazards**

ADR/RUD: no data available

IMDG: no data available

IATA: no data available

**Special precautions for user**

no data available

**Transport in bulk according to IMO instruments**

no data available

**SECTION 15: Regulatory information****Safety, health and environmental regulations specific for the product in question**

European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed. EC Inventory

Listed.

United States Toxic Substances Control Act (TSCA) Inventory      Not

Listed. China Catalog of Hazardous chemicals 2015      Not

Listed.

New Zealand Inventory of Chemicals (NZioC) Listed.

Philippines Inventory of Chemicals and Chemical Substances (PICCS) Not Listed. Vietnam National Chemical Inventory Listed.

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC) Not Listed.

Korea Existing Chemicals List (KECL) Not Listed.

**SECTION 16: Other Information****Further Information**



We shall not be held liable for any damage resulting from handling or from contact with the above product.

This material must only be handled by suitably qualified experienced scientists in appropriately equipped and authorized facilities. The above information is believed to be correct but does not purport to be all inclusive and should be used as a guide only for experienced personnel. Always consult your safety advisor and follow appropriate local and national safety legislature. The absence of warning must not, under any circumstance, be taken to mean that no hazard exists.