


## Product Description:

| Name of the Product                          | Trademark   | Description   | Composition                              |
|--|---|---|--|
| Dried Bovine Hemoglobin<br>Human Consumption |  | <p>It is an organic product, obtained from the centrifugation of bovine blood, from slaughterhouses with ante- and post-mortem veterinary inspection (IPSA), collected and processed under strict hygiene conditions and traceability.</p> <p>The hemoglobin is spray dried which guarantees high solubility, preserves the functional and nutritional properties of the product (proteins of high biological value).</p> | Bovine Hemoglobin<br>+<br>Sodium Citrate |

## Specifications

### Sensorial

| Parameter           | Specification       | Method       |
|---------------------|---------------------|--------------|
| Physical appearance | Fine dust particles | Visual       |
| Color               | Red Wine            | Visual       |
| Odor                | Characteristic      | Organoleptic |
| Flavor              | Characteristic      | Organoleptic |

### Chemical Physicists

| Parameter  | Specification    | Method                     |
|------------|------------------|----------------------------|
| Humidity   | 8% maximum       | Oven 105°C constant weight |
| Fat        | 0.2 %            | Extraction Soxhlet         |
| pH         | 7 - 8            | pH-meter                   |
| Solubility | 95 ± 1 % minimum | Gravimetric (w/w)          |
| Ash        | 4% máximo        | Calcination to 550°C       |

**Microbiological**

| Parameter              | Specification   | Method                          |
|------------------------|-----------------|---------------------------------|
| Aerobic Mesophiles     | ≤ 100,000 UFC/g | AOAC 990.12                     |
| Salmonella (25g)       | Ausencia        | MLG 4.05 USDA-FSIS              |
| Total Coliforms        | ≤100 UFC/g      | (BAM), 8 th Edition, Chapter 4. |
| Generic E. Coli        | ≤100 UFC/g      | (BAM), 8 th Edition, Chapter 4. |
| E. Coli 0157-H7 (25 g) | Ausencia        | AOAC 991.14                     |

**Amino acid (%w/w base don dry matter)**

| Parameter     | Specification | Method        |
|---------------|---------------|---------------|
| Total Lysine  | 6.25 %        | ESS_3.4.7.219 |
| Arginine      | 4.63 %        | ESS_3.4.7.219 |
| Methionine    | 1.94 %        | ESS_3.4.7.219 |
| Threonine     | 0.73 %        | ESS_3.4.7.219 |
| Leucine       | 2.84 %        | ESS_3.4.7.219 |
| Valine        | 6.84 %        | ESS_3.4.7.219 |
| Histidine     | 4.97 %        | ESS_3.4.7.219 |
| Phenylalanine | 2.14 %        | ESS_3.4.7.219 |
| Cystine       | 3.88 %        | ESS_3.4.7.219 |
| Tryptophan    | 2.27 %        | ESS_3.4.7.219 |
| Isoleucine    | 3.83 %        | ESS_3.4.7.219 |
| Tyrosine      | 1.30 %        | ESS_3.4.7.219 |
| Glycine       | 2.52 %        | ESS_3.4.7.219 |
| Serine        | 5.06 %        | ESS_3.4.7.219 |
| Proline       | 3.83 %        | ESS_3.4.7.219 |
| Alanine       | 3.27 %        | ESS_3.4.7.219 |
| Aspartic Acid | 7.43 %        | ESS_3.4.7.219 |
| Glutamic acid | 10.3 %        | ESS_3.4.7.219 |

\* Analysis performed at Laboratorios Exact Scientific Inc. (USA), 1355 Pacific Place, Suite 101, Ferndale, WA 98248. Phone: (360) 733-1205, Fax: (888) 818-2978. Email: lab@exactscientific.com. Date: 17/1/2018

**Nutrition Facts ( 100 g)**

| Parameters    | Specification      |
|---------------|--------------------|
| Calories      | 362                |
| Proteins      | 90g                |
| Fat           | 0.2g               |
| Carbohydrates | 0g                 |
| Heminic Iron  | 250 mg (2,500 ppm) |

## Product Applications

|  |   |
|--|---|
| <b>Applications:</b>                         | <ul style="list-style-type: none"> <li>As an ingredient fortifying Foods with hemic iron</li> <li>As a natural colorant in processed meat industries</li> <li>Protein supplement, meat substitute and/or complement</li> </ul>            |
| <b>Recommended use:</b>                      | <p><u>Fortification:</u> Dosage 1 - 7 % according to food type</p> <p><u>Natural Food Coloring:</u> 0.5 a 1 % depending on ingredients in formulation</p>   |
| <b>Presentation and Packaging:</b>           | Screen-printed virgin polypropylene bags with polyethylene inner bag/lining. Net weight: 25kg   |
| <b>Distribution System:</b>                  | It is transported in closed trucks/containers at room temperature.  |
| <b>Shelf life:</b>                           | 1 year from its manufacture date  |
| <b>Handling and conservation conditions:</b> | This product should be stored in a cool, dry place without sun exposure. Stow on pallets at a minimum height of 15 cm from the floor, 50 cm from the wall. For export, wooden pallets are required to be fumigated and certified by IPSA. |
| <b>GTIN Identification number:</b>           | 74-33200-73901-3  |

