

## SAFETY DATA SHEET

**Product Name:** Crude Glycerin**Review:** 01**Last Review:** 06/05/2024

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### 1. IDENTIFICATION

|  |  |
|--|--|
| Product name (trade name):             | Crude Glycerin/ Glycerol   |
| Product name (chemical name):          | 1,2,3-propanetriol – C <sub>3</sub> H <sub>8</sub> O <sub>3</sub>  |
| Internal Product Code:                 | SDS-2476   |
| Recommended main uses for the product: | Product can be used as raw material in the distillation plants glycerin specific applications defined by industry. |
| Company name:                          | Be8 S.A  |
| Address:                               | BR285, km 294 - Industrial District – Passo Fundo/RS – ZIP Code 99050-700  |
| Contact telephone number:              | 55+(54) 2103-7193 / 55+(54) 2103-7215/ 55+(54) 2103-7100   |
| Emergency telephone number:            | 55+(54) 2103-7165 / 55+(54) 9143-7441  |
| E-mail:                                | fispq@be8energy.com  |

### 2. HAZARDS IDENTIFICATION

|  |   |
|--|---|
| Classification of the Substance or Mixture:          | Product is not classified as hazardous. |
| Classification system used:                          | GHS                                     |
| Other hazards which do not result in classification: | Product is not classified as hazardous. |
| <b>APPROPRIATE LABELING ELEMENTS</b>                 |   |
| Pictograms:  | Not applicable.                         |

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|                                 |   |
|---------------------------------|---|
| Warning words:                  | Not applicable.   |
| Hazards statements:             | Not applicable.   |
| Precautionary statements (GHS): | P270 - do not eat, drink or smoke while using this product;<br>P390 - Absorb spilled product in order to avoid material damage. |

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

#### Chemical Product: Substance

| Ingredients contributing to the hazard: | Chemical name  | Registration number<br>CAS | Concentration<br>range |
|---|--|----------------------------|------------------------|
|   | 1,2,3 propanetriol, C <sub>3</sub> H <sub>8</sub> O <sub>3</sub> | 56-81-5                    | More than 80 %         |

### 4. FIRST AID MEASURES

|   |   |
|---|---|
| Inhalation:   | Remove victim to fresh air and monitor respiratory function. If necessary, give them artificial respiration.  |
| Skin Contact:   | Wash with mild soap and water.  |
| Eye Contact:  | Do not wear contact lenses when handling chemicals. If eye contact occurs, flush with water. If irritation persists even after washing, seek medical attention. |
| Ingestion:  | If swallowed, rinse the victim's mouth with plenty of water. Seek medical attention. Do not induce vomit.   |
| Most Important Symptoms and Effects, Acute and Delayed: | Nausea and diarrhea.  |

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|                                   |   |
|-----------------------------------|---|
| Protecting the First-Aid:         | For the removal of casualties in case of fire that has reached the product, use respiratory protective equipment. For other first-aid operations, use nitrile gloves, goggles, safety shoes, pants and shirt. |
| Indication for Medical Attention: | Treat symptomatically.  |

### 5. FIRE SAFETY MEASURES

|   |  |
|---|--|
| Extinguishing Media:                          | Water spray, foam, carbon dioxide (CO <sup>2</sup> ) or chemical powder.   |
| Specific Hazards of the Substance or Mixture: | There are no specific hazards.   |
| Protective Measures of Fire Fighting Team:    | Move containers from fire area if this can be done without risk. During combat wear full protection and mask for organic vapors. |

### 6. ACCIDENTAL RELEASE MEASURES

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

|   |   |
|---|---|
| For non-emergency personnel:                          | Isolate the area affected by the leakage. Avoid moving around the place to avoid an accident due to slippery surface.   |
| For emergency responders:                             | Wear safety boots, goggles, pants, shirt, and PVC gloves.   |
| Environmental precautions:                            | Do not allow product to reach sewage system.  |
| Methods and material for containment and cleaning up: | Collect the spilled product and place in an appropriate container. Adsorb remaining product using sand, sawdust or soil, or any other inert material. Collect the adsorbed material, store in suitable containers and remove them to a covered location, or ensure that the container is properly closed to prevent water from entering. If leakage or spillage has already reached or is likely to reach |

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|   |   |
|---|---|
|   | watercourses, provide containment barriers. For final destination, proceed as directed in Section 13 of this SDS. |
| Differences in the action of large and small leaks: | The same actions are recommended for large and small leaks.   |

### 7. HANDLING AND STORAGE

#### Technical measures for safe handling

|                                |   |
|--------------------------------|---|
| Precautions for safe handling: | Avoid prolonged or repeated contact with skin. Avoid inhalation of vapors and / or mists. When handling product barrel, use appropriate equipment for handling / moving this type of packaging.                             |
| Hygiene measurements:          | Comply with good personal hygiene practices, such as washing hands after handling the product. Do not eat, drink and smoke. Remove and clean contaminated clothing and protective equipment after leaving the working area. |

#### Conditions for safe storage, including incompatibilities

|                               |   |
|-------------------------------|---|
| Measurements to prevent fire: | Keep the containers closed and away from open flames and sparks. Do not smoke while handling the product.   |
| Proper conditions:            | Keep the packaging closed and labeled. Place it in an indoor area with a containment for chemicals. Do not expose the product to direct sunlight. |
| Compatible Packaging:         | Containers, barrel and steel or plastic cylinders.  |
| Incompatible Packaging:       | Not applicable  |

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### 8. EXPOSURE CONTROL AND PERSONAL PROTECTION

#### Exposure controls

Occupational Health Limits:

| Chemical name      | TLV-TWA<br>(ACGIH, 2020) | TLV-STEL<br>(ACGIH, 2020) | LT<br>(NR15, 2014)    |
|--------------------|--------------------------|---------------------------|-----------------------|
| 1,2,3-propanotriol | Limit not established    | Limit not established     | Limit not established |

Biological Indicators:

Unfixed Biological Limits.

Engineering Control Measures:

Provide emergency shower and eyewash at area for product handling. Provide adequate ventilation when handling indoors.

#### Personal Protection Measures

Eye / face protection:

Protective goggles.

Skin Protection:

PVC gloves, safety shoes, pants and shirt.

Breath protection:

If during the handling of the heated product, there is formation of mists of biodiesel, use respirator approved for organic vapors.

Thermal Hazards:

Does not present thermal hazards.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, shape and color):

Amber.

Odor:

Grain-like.

Odor Limit:

Unavailable data.

pH:

4.5 to 9.0

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|  |   |
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| Fusion point:  | About 18 °C.  |
| Freezing point:                                      | 18,17 °C a 101,3 kPa.   |
| Initial Boiling Point and Boiling Temperature Range: | 290 °C a 101,3 kPa.   |
| Flash Point:   | Minimum 130°C (ASTM D 93 - Closed Cup).   |
| Evaporation Rate:                                    | Hygroscope.   |
| Flammability (solid or gas):                         | Product not classified as flammable.  |
| Lower Flammability or Explosivity Limit:             | 2,7% below atmospheric pressure.  |
| Upper Flammable or Explosive Limit:                  | 19% higher atmospheric pressure.  |
| Steam pressure:                                      | 0,0025 mm Hg a 50 °C.   |
| Vapor Density:                                       | 3,17 (air = 1).   |
| Relative density:                                    | ≈1.22 g/cm <sup>3</sup> at 20 °C (líquid).  |
| Solubility:  | Soluble in water and alcohol. Insoluble in benzene, chloroform, carbon tetrachloride, carbon disulfide, petroleum ether and oils. |
| Partition coefficient -n-octanol/ water:             | Log P <sub>ow</sub> : -1,75.  |
| Auto-ignition temperature:                           | 370 °C.   |
| Kinematic viscosity (20°C):                          | 1.412 mPa/s   |

### 10. STABILITY AND REACTIVITY

|                     |   |
|---------------------|---|
| Reactivity:         | Product suffers reactions when in contact with incompatible substances. |
| Chemical stability: | Stable product.   |

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|                                     |   |
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| Possibility of hazardous reactions: | React with acetic acid, acetic anhydride, calcium oxychloride, chromium oxides and alkali metal hydrides. |
| Conditions to avoid:                | Contact with incompatible substances. Contact with ignition.  |
| Incompatible materials:             | Strong oxidizing agents.  |
| Hazardous decomposition products:   | In case of combustion releases vapor and gases.   |

### 11. TOXICOLOGICAL INFORMATION

|   |   |
|---|---|
| Acute toxicity:                                     | LD <sub>50</sub> (Rat, oral) > 18,700 mg/kg.  |
| Skin corrosion or irritation:                       | Shall not be classified as corrosive or irritant to skin.   |
| Serious eye damage/eye irritation:                  | Shall not be classified as irritant to eyes.  |
| Respiratory or skin sensitisation:                  | Unavailable data.   |
| Germ cell mutagenicity:                             | Substance does not affect growth, fertility and reproductive performance.   |
| Carcinogenicity:                                    | Shall not be classified as carcinogenic.  |
| Reproductive toxicity:                              | Substance does not show any effect on reproduction tracing.   |
| Specific target organ toxicity - repeated exposure: | There is no relevant information related to systemic toxicity to certain target organs following repeated exposure of this substance. |
| Aspiration hazard:                                  | In case of aspiration, can cause pneumonia.   |

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### 12. ECOLOGICAL INFORMATION

#### Environmental effects, product behavior and impact

|                                |   |
|--------------------------------|---|
| Ecotoxicity:                   | This substance is not toxic to the aquatic environment.                             |
| Persistence and degradability: | It exhibits rapid biodegradation under aerobic conditions.                          |
| Bio accumulative potential:    | Based on Log Pow: - 1.75, the substance will have a low bio accumulation potential. |
| Mobility in soil:              | High mobility.  |
| Others adverse effects:        | Unavailable data.   |

### 13. DISPOSAL CONSIDERATIONS

#### Waste treatment methods

|   |   |
|---|---|
| Product:  | Check local regulations for waste disposal and transportation. Small amounts of product can be adsorbed with sawdust, sand and / or other inert adsorbent material, and routed to licensed landfills. For large quantities where the adsorption of the material is impracticable, seek companies that work with treatment and disposal of liquid waste. |
| Remains of product:                                   | Keep product residues in their original containers and properly closed. Disposal should be carried out as directed for the product.   |
| Used Packaging:                                       | Never reuse containers. These should be sent for decontamination by companies licensed or sent to licensed industrial landfills.  |
| PPE Required for the Treatment and disposal of Waste: | Use the same PPE described in item 8 of this SDS.   |

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### 14. TRANSPORT INFORMATION

The product is not covered by international regulations on the transport of dangerous goods. (IMDG, IATA, TDG, DOT). Attention should be paid to the federal regulations.

### 15. REGULATORY INFORMATION

#### Safety, health and environmental regulations/legislation specific for the substance or mixture

The regulatory information section identifies safety, health, and environmental regulations that have not been listed in any of the previous sections. Attention should be paid to the federal and local regulations.

### 16. OTHER INFORMATION

#### Important information, but not specifically described to previous sections

This SDS has been developed based on the current knowledge of the chemical and provides information on protection, safety, health and the environment. It is advised that the handling of any chemical substance requires prior knowledge of its hazards by the user. It is up to the company that uses the product to promote the training of its employees and contractors regarding the possible risks arising from the product.

This substance is considered to be UVCB (Substances of unknown or variable composition, complex reaction products or biological materials).

#### Subtitles and abbreviations:

CAS – *Chemical Abstracts Service*

ACGIH – *American Conference of Governmental Industrial Hygienists*

TLV – *Threshold Limit Value*

TWA – *Time Weighted Average*

STEL – *Short Term Exposure Level*

LT – *Tolerance Limit*

NR – *Regulatory standard*

LD<sub>50</sub> – *Administered dose resulting in death of 50% of experimental animals*

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PPE – *Personal Protective Equipment*

GHS – *Globally Harmonized System.*

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