# Material Safety Data Sheet
# Bio Essentials

## 1. Product and compagny identification:

**Product name :** Bio Essentials
**Chemical Family :** A mixture of plant nutrition minerals in aqueous solution
**Supplier/Manufacturer:** GENERAL HYDROPONICS Europe
boulevard du Biopole
32500 Fleurance

## 2. Hazards identification

**Carcinogenicity** : None
**Target Organs**: Respiratory system, eyes and skin.
**Ingestion**: Ingestion of small amounts of Bio Essentials™ can cause weakness, general depression, headache. Ingestion of large amounts can cause dizziness, abdominal cramps, vomiting, bloody diarrhea, weakness, convulsions, and collapse.
**Eye contact:** May cause eye irritation.
**Dermal contact**: May cause skin rash or sores.
**First Aid:**
**Eye contact**: Flush eyes, including under the eyelids, with flooding amounts of running clean water for at least fifteen (15) minutes. Seek medical attention if irritation persists.
**Skin contact:** Thoroughly wash affected area with mild soap and water. Seek medical attention if irritation persists.
**Inhalation**: Remove victim from exposure. Restore/aid breathing as necessary. Get medical assistance.
**Ingestion:** Delay absorption of ingested Bio Essentials™ by giving milk or activated charcoal, and then remove by gastric larvage or emisis. Maintain blood pressure.
**Note:** never give anything by mouth to an unconscious person.

## 3. Composition/information on ingredients

**Ingredients :** Bio Essentials™ is an especially formulated mixture of chemicals that are mixed in proportions to assure excellent plant nutrition. The chemical identity of the compounds and exact proportions used in the mixture are a trade secret, however, they are derived from : DPTA chelate of iron, EDTA chelates of Manganese and Zinc, Sodium Molybdate, Citric Acid, Potassium Carbonate and Cobalt Sulfate.

## 4. First aid measures

**Eye contact**: Flush eyes, including under the eyelids, with flooding amounts of running clean water for at least fifteen (15) minutes. Seek medical attention if irritation persists.
**Skin contact:** Thoroughly wash affected area with mild soap and water. Seek medical attention if irritation persists.
**Inhalation**: Remove victim from exposure. Restore/aid breathing as necessary. Get medical assistance.
**Ingestion:** Delay absorption of ingested Bio Essentials™ by giving milk or activated charcoal, and then remove by gastric larvage or emisis. Maintain blood pressure.
**Note:** never give anything by mouth to an unconscious person.

## 5. Fire-fighting measures

Bio Essentials™ is not combustible. However, some components can produce, at high temperatures, small quantities of carbon dioxide, and carbon monoxide.
**Extinguishing Agents**: Flood fires involving Bio Essentials™ with water. Keep fire exposed containers cool with water spray. Remove containers from the fire area, if it can be done safely.
**Special fire Fighting Procedures**: Toxic fumes/gases can be evolved in a fire situation. Fire fighters should use self contained breathing apparatus (SCBA). Wear full protective gear, and avoid skin and eye exposure. Be aware of runoff from fire control methods. Do not release to sewers or waterways.

# 6. Accidental release measures

**Personal precautions:** No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
**Environmental precautions:** Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

**Methods for cleaning up**

**Small spill :** Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Do not absorb in sawdust or other combustible material. It may lead to a fire risk when it dries out. Use spark-proof tools and explosion-proof equipment. Dispose via a licensed waste disposal contractor.
**Large spill :** Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Do not absorb in sawdust or other combustible material. It may lead to a fire risk when it dries out. Use spark-proof tools and explosion-proof equipment. Dispose via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

# 7. Handling and storage

**Handling :** Avoid ingestion, skin and eye contact as well as inhalation.
**Storage :** Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

# 8. Exposure controls/personal protection

**Recommended monitoring procedures:** If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.
**Engineering measures:** Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
**Hygiene measures:** Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Personal protection**

**Respiratory:** Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
**Hands:** Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
**Eyes:** Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
**Skin:** Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Environmental exposure controls:** Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

# 9. Physical and chemical properties

**Physical State:** Liquid (Aqueous solution)
**Color:** Brown.
**Odor:** Odorless

# 10. Stability and reactivity

**Chemical Stability:** The product is stable.
**Hazardous Decomposition Products:** Under normal conditions of storage and use, hazardous decomposition products should not be produced.

# 11. Toxicological information

Most of the chemicals in Bio Essentials are toxic by ingestion, and dermal contact.

# 12. Ecological information

**Ecotoxicity:** No known significant effects or critical hazards.
**Aquatic ecotoxicity:**
**Persistence/degradability:** There is no data available.

# 13. Disposal considerations

**Waste disposal:** The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

# 14. Transport information

| Regulatory information | Un number |
|---|---|
| **DOT classification** | Not regulated |
| **IMDG Class** | Nog regulated |
| **DATA-DGR Class** | Not regulated |

# 15. Regulatory information

Labelling according to CE regulations
No special warnings
National regulations

# 16. Other information

GHE's Bio Essentials is a plant nutrition product. Information assembled for this MSDS is for the use of this product as intended by the manufacturer. Users should take all precautions recommended herein while working with this product. GHE provides the information contained herein in good faith, but makes no representation as to its comprehensiveness or accuracy.
This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgement in using this product.