# SAFETY DATA SHEET

**FLORA DUO A**

## Section 1. Identification

<table>
<thead>
<tr>
<th><strong>GHS product identifier</strong></th>
<th>FLORA DUO A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Other means of identification</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Product type</strong></td>
<td>Liquid.</td>
</tr>
</tbody>
</table>

**Relevant identified uses of the substance or mixture and uses advised against**

**Identified uses**

Not available.

**Supplier's details**

General Hydroponics  
2877 Giffen Ave  
Santa Rosa, CA 95407  
Tel: (707) 824-9376  
Fax: (707) 824-9377

**Emergency telephone number (with hours of operation)**

CHEMTREC, U.S.: 1-800-424-9300  
International: +1-703-527-3887  
24/7

## Section 2. Hazards identification

**OSHA/HCS status**

While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

**Classification of the substance or mixture**

Not classified.

**GHS label elements**

**Signal word**

No signal word.

**Hazard statements**

No known significant effects or critical hazards.

**Precautionary statements**

**Prevention**

Not applicable.

**Response**

Not applicable.

**Storage**

Not applicable.

**Disposal**

Not applicable.

**Hazards not otherwise classified**

None known.
Section 3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other means of identification</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

CAS number/other identifiers

<table>
<thead>
<tr>
<th>CAS number</th>
<th>Product code</th>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Calcium ammonium nitrate</td>
<td>≥25-≤50</td>
<td>15245-12-2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ammonium nitrate</td>
<td>≥1-≤3</td>
<td>6484-52-2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Magnesium nitrate hexahydrate</td>
<td>≥1-≤3</td>
<td>13446-18-9</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Section 4. First aid measures

**Description of necessary first aid measures**

**Eye contact**: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

**Inhalation**: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Skin contact**: Flush contaminated skin with plenty of water. Get medical attention if symptoms occur.

**Ingestion**: Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

**Most important symptoms/effects, acute and delayed**

**Potential acute health effects**

- **Eye contact**: No known significant effects or critical hazards.
- **Inhalation**: No known significant effects or critical hazards.
- **Skin contact**: No known significant effects or critical hazards.
- **Ingestion**: No known significant effects or critical hazards.

**Over-exposure signs/symptoms**

- **Eye contact**: No known significant effects or critical hazards.
- **Inhalation**: No known significant effects or critical hazards.
- **Skin contact**: No known significant effects or critical hazards.
- **Ingestion**: No known significant effects or critical hazards.

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

**Notes to physician**: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Specific treatments**: No specific treatment.

**Protection of first-aiders**: No action shall be taken involving any personal risk or without suitable training.
Section 4. First aid measures

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical

Hazardous thermal decomposition products : Decomposition products may include the following materials:
  - carbon dioxide
  - carbon monoxide
  - nitrogen oxides
  - metal oxide/oxides

No specific fire or explosion hazard.

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Special protective actions for fire-fighters : No special measures are required.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

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 and materials for containment and cleaning up

Spill : Stop leak if without risk. Move containers from spill area. 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). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.
Section 7. Handling and storage

**Precautions for safe handling**

- **Protective measures**
  - Put on appropriate personal protective equipment (see Section 8).

- **Advice on general occupational hygiene**
  - Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.

- **Conditions for safe storage, including any incompatibilities**
  - Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) 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.

Section 8. Exposure controls/personal protection

**Control parameters**

**Occupational exposure limits**

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium ammonium nitrate</td>
<td>None.</td>
</tr>
<tr>
<td>Ammonium nitrate</td>
<td>None.</td>
</tr>
<tr>
<td>Magnesium nitrate hexahydrate</td>
<td>None.</td>
</tr>
</tbody>
</table>

- **Appropriate engineering controls**
  - Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

- **Environmental exposure controls**
  - Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

**Individual protection measures**

- **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.

- **Eye/face protection**
  - 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, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

- **Skin protection**
  - **Hand protection**
    - 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.

  - **Body protection**
    - 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.

  - **Other skin protection**
    - Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

  - **Respiratory protection**
    - Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
Section 9. Physical and chemical properties

**Appearance**

- **Physical state**: Liquid.
- **Color**: Not available.
- **Odor**: Not available.
- **Odor threshold**: Not available.
- **pH**: Not available.
- **Melting point**: Not available.
- **Boiling point**: Not available.
- **Flash point**: Not available.
- **Evaporation rate**: Not available.
- **Flammability (solid, gas)**: Not available.
- **Lower and upper explosive (flammable) limits**: Not available.
- **Vapor pressure**: Not available.
- **Vapor density**: Not available.
- **Relative density**: Not available.
- **Solubility**: Soluble in water.
- **Partition coefficient: n-octanol/water**: Not available.
- **Auto-ignition temperature**: Not available.
- **Decomposition temperature**: Not available.
- **Viscosity**: Not available.

Section 10. Stability and reactivity

**Reactivity**

- No specific test data related to reactivity available for this product or its ingredients.

**Chemical stability**

- The product is stable.

**Possibility of hazardous reactions**

- Under normal conditions of storage and use, hazardous reactions will not occur.

**Conditions to avoid**

- No specific data.

**Incompatible materials**

- Not available.

**Hazardous decomposition products**

- Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

**Acute toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium ammonium nitrate</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>4715 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Ammonium nitrate</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>2217 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Magnesium nitrate hexahydrate</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>5440 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

**Irritation/Corrosion**
## Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium nitrate hexahydrate</td>
<td>Eyes - Mild irritant, Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 mg</td>
<td>-</td>
</tr>
</tbody>
</table>

**Sensitization**
There is no data available.

**Mutagenicity**
There is no data available.

**Carcinogenicity**
There is no data available.

**Reproductive toxicity**
There is no data available.

**Teratogenicity**
There is no data available.

**Specific target organ toxicity (single exposure)**
There is no data available.

**Specific target organ toxicity (repeated exposure)**
There is no data available.

**Aspiration hazard**
There is no data available.

**Information on the likely routes of exposure**
- Dermal contact
- Eye contact
- Inhalation
- Ingestion

**Potential acute health effects**

<table>
<thead>
<tr>
<th>Route</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye contact</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

**Symptoms related to the physical, chemical and toxicological characteristics**

<table>
<thead>
<tr>
<th>Route</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye contact</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

**Delayed and immediate effects and also chronic effects from short and long term exposure**

**Short term exposure**

<table>
<thead>
<tr>
<th>Effect</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate effects</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Delayed effects</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

**Long term exposure**

<table>
<thead>
<tr>
<th>Effect</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate effects</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Delayed effects</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

**Potential chronic health effects**

<table>
<thead>
<tr>
<th>Effect</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>
Section 11. Toxicological information

**Mutagenicity**: No known significant effects or critical hazards.

**Teratogenicity**: No known significant effects or critical hazards.

**Developmental effects**: No known significant effects or critical hazards.

**Fertility effects**: No known significant effects or critical hazards.

**Numerical measures of toxicity**

**Acute toxicity estimates**

<table>
<thead>
<tr>
<th>Route</th>
<th>ATE value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>8106.9 mg/kg</td>
</tr>
</tbody>
</table>

Section 12. Ecological information

**Toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium nitrate</td>
<td>Chronic NOEC 6 to 12 mg/L Fresh water</td>
<td>Crustaceans - Cladocera</td>
<td>21 days</td>
</tr>
</tbody>
</table>

**Persistence and degradability**

There is no data available.

**Bioaccumulative potential**

There is no data available.

**Mobility in soil**

- **Soil/water partition coefficient ($K_{OC}$)**: There is no data available.

**Other adverse effects**: No known significant effects or critical hazards.

Section 13. Disposal considerations

**Disposal methods**: 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. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Section 14. Transport information

<table>
<thead>
<tr>
<th>DOT Classification</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Packing group</td>
<td>No.</td>
<td>No.</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>Remarks</td>
<td>Remarks</td>
</tr>
<tr>
<td>Additional information</td>
<td>Special Provision 58: Concentrations of FLORA DUO A, at the minimum temperature encountered during normal transportation, will not exceed 80% of the saturation limit.</td>
<td>Special Provision A270: Concentrations of FLORA DUO A, at the minimum temperature encountered during normal transportation, will not exceed 80% of the saturation limit.</td>
</tr>
</tbody>
</table>

Special precautions for user: Transport within user’s premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

U.S. Federal regulations: TSCA 8(a) CDR Exempt/Partial exemption: Not determined
United States inventory (TSCA 8b): All components are listed or exempted.
Clean Water Act (CWA) 307: Disodium [[N,N'-ethylenediylbis[N-(carboxylatomethyl) glycinate]](4-)N,N',O,O',ON,ON]zincate(2-); Disodium [[N,N'-ethylenebis[N-(carboxymethyl)glycinate]](4-)N,N',O,O',ON,ON]cuprate(2-); Sulfuric acid, nickel(2+) salt, hydrate
Clean Water Act (CWA) 311: Sulfuric acid, nickel(2+) salt, hydrate

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs): Listed
Clean Air Act Section 602 Class I Substances: Not listed
Clean Air Act Section 602 Class II Substances: Not listed
DEA List I Chemicals (Precursor Chemicals): Not listed
DEA List II Chemicals (Essential Chemicals): Not listed
SARA 302/304 Composition/information on ingredients
Section 15. Regulatory information

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312 Classification : Not applicable.

Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Fire hazard</th>
<th>Sudden release of pressure</th>
<th>Reactive</th>
<th>Immediate (acute) health hazard</th>
<th>Delayed (chronic) health hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium nitrate</td>
<td>≥1 - ≤3</td>
<td>Yes.</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>No.</td>
</tr>
<tr>
<td>Magnesium nitrate hexahydrate</td>
<td>≥1 - ≤3</td>
<td>Yes.</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>No.</td>
</tr>
</tbody>
</table>

SARA 313

<table>
<thead>
<tr>
<th>Product name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form R - Reporting requirements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potassium nitrate</td>
<td>7757-79-1</td>
<td>≥10 - ≤25</td>
</tr>
<tr>
<td>Ammonium nitrate</td>
<td>6484-52-2</td>
<td>≥1 - ≤3</td>
</tr>
<tr>
<td>Magnesium nitrate hexahydrate</td>
<td>13446-18-9</td>
<td>≥1 - ≤3</td>
</tr>
<tr>
<td>Supplier notification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potassium nitrate</td>
<td>7757-79-1</td>
<td>≥10 - ≤25</td>
</tr>
<tr>
<td>Ammonium nitrate</td>
<td>6484-52-2</td>
<td>≥1 - ≤3</td>
</tr>
<tr>
<td>Magnesium nitrate hexahydrate</td>
<td>13446-18-9</td>
<td>≥1 - ≤3</td>
</tr>
</tbody>
</table>

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: Potassium nitrate; Ammonium nitrate
New York : None of the components are listed.
New Jersey : The following components are listed: Potassium nitrate; Ammonium nitrate
Pennsylvania : The following components are listed: Potassium nitrate; Ammonium nitrate

California Prop. 65

WARNING: This product contains less than 0.1% of a chemical known to the State of California to cause cancer.

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Cancer</th>
<th>Reproductive</th>
<th>No significant risk level</th>
<th>Maximum acceptable dosage level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfuric acid, nickel(2+) salt, hydrate</td>
<td>Yes.</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
</tr>
</tbody>
</table>

Section 16. Other information

Procedure used to derive the classification

Not classified.

History

Date of issue mm/dd/yyyy : 10/30/2016
Date of previous issue : 05/15/2016
Version : 4
Prepared by : KMK Regulatory Services Inc.
Section 16. Other information

Notice to reader
To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.