

**1. Identification**

**Product name** 8-16-8, 2% Sulfur Starter/Transplant Solution  
**Product code** 8412  
**Other Identification:** **Common Name:** Liquid Fertilizer  
**Chemical Family:** Inorganic Salt Solution  
**Chemical Description:** Fertilizer solution derived from urea, ammonium nitrate, ammonium polyphosphate, potassium chloride, potassium thiosulfate

**Recommended use** Turf & Horticulture-Inorganic Salt Solution

**Manufacturer & Distributor information**  
**Corporate Office** **Plant Food Company, Inc.**  
 38 Hightstown-Cranbury Station Road  
 Cranbury, NJ 08512 United States  
 Information: 1-609-448-0935  
[www.plantfoodco.com](http://www.plantfoodco.com)  
[pfc@plantfoodco.com](mailto:pfc@plantfoodco.com)

**Telephone**  
**Website**  
**E-mail**  
**Contact person** **SDS-Regulatory Department**


**Emergency phone number** **1-800-424-9300 CCN725928**

**Call CHEMTREC Day or Night Within USA and Canada** **or +1 703-527-3887 (collect calls accepted)**  
**Other Countries** 1-609-448-0935

**2. Hazard(s) identification**

**Physical hazards** Not classified.  
**Health hazards** Acute toxicity, oral Category 4  
 Serious eye damage/eye irritation Category 2A  
 Specific target organ toxicity, single exposure Category 3 respiratory tract irritation

**Environmental hazards** Hazardous to the aquatic environment, acute hazard Category 2  
**OSHA defined hazards** Not classified.  
**Label elements**



**Signal word** **Warning**  
**Hazard statement** Harmful if swallowed. Causes serious eye irritation. May cause respiratory irritation.  
**Precautionary statement**  
**Prevention** Use only outdoors or in a well-ventilated area. Avoid breathing mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear eye/face protection.  
**Response** If swallowed: Call a poison center/doctor if you feel unwell. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor if you feel unwell. Rinse mouth. If eye irritation persists: Get medical advice/attention.  
**Hazard(s) not otherwise classified (HNOC)** None known.

**3. Composition/information on ingredients**

| <u>Chemical Name</u>               | <u>Synonym Common Name</u> | <u>CAS Number</u> | <u>EINECS No.</u> |
|------------------------------------|----------------------------|-------------------|-------------------|
| Carbonyl Diamide                   | Urea                       | 57-13-6           | 200-315-5         |
| Ammonium Nitrate                   | Ammonium Nitrate           | 6484-52-2         | 229-347-8         |
| Ammonium Polyphosphate Solution    | Ammonium Polyphosphate     | 68333-79-9        | 268-789-9         |
| Potassium Chloride                 | Potassium Chloride         | 7447-40-7         | 231-211-8         |
| Thiosulfuric acid dipotassium salt | Potassium thiosulfate      | 10294-66-3        | 233-666-8         |

**4. First-aid measures**

|                                                                               |                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Inhalation</b>                                                             | Remove victim from contaminated atmosphere. If breathing is labored, administer oxygen. If breathing has ceased, clear airway and start CPR. Obtain medical attention.                                                                |
| <b>Skin contact</b>                                                           | Immediately flush with large quantities of water. Remove contaminated clothing under a safety shower. Continue rinsing. Obtain medical attention if irritation occurs.                                                                |
| <b>Eye contact</b>                                                            | Immediately flush eyes with plenty of water for at least 15 minutes. Continue rinsing. Remove contact lenses, if present and easy to do. If eye irritation persists: Get medical advice/attention.                                    |
| <b>Ingestion</b>                                                              | Rinse mouth. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. If victim is conscious, give two to four glasses of water and induce vomiting by touching finger to back of throat. Obtain medical attention. |
| <b>Most important symptoms/effects, acute and delayed</b>                     | Irritation of eyes and mucous membranes.                                                                                                                                                                                              |
| <b>Indication of immediate medical attention and special treatment needed</b> | Provide general supportive measures and treat symptomatically. Keep victim warm. In case of shortness of breath, give oxygen. Keep victim under observation. Symptoms may be delayed.                                                 |
| <b>General information</b>                                                    | Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).       |

**5. Fire-fighting measures**

|                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Flammable Properties:</b>                                         | NFPA: Health - 1 Flammability - 0 Reactivity - 0                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Suitable extinguishing media</b>                                  | Not flammable, use media suitable for combustibles involved in fire.                                                                                                                                                                                                                                                                                                                                                     |
| <b>Unsuitable extinguishing media</b>                                | Not applicable.                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Specific hazards arising from the chemical</b>                    | During fire, gases hazardous to health may be formed. Heating (flames) of closed or sealed containers may cause violent rupture of container due to thermal expansion of compressed gases. Heating causes release of ammonia vapors. Vapors are irritating to eyes, skin and respiratory tract. Heating to dryness may cause the release of ammonia, ammonium sulfate, sulfur and oxides of sulfur (respiratory hazard). |
| <b>Special protective equipment and precautions for firefighters</b> | Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Move containers from fire area if you can do so without risk. Keep containers/storage vessels in fire area cooled with water spray.                                                                                                                                                                                        |
| <b>Fire-fighting equipment/instructions</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Specific methods</b>                                              | Move container from fire area if it can be done without risk.                                                                                                                                                                                                                                                                                                                                                            |
| <b>General fire hazards</b>                                          | Heating this product will evolve ammonia                                                                                                                                                                                                                                                                                                                                                                                 |

**6. Accidental release measures**

|                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Personal precautions, protective equipment and emergency procedures</b> | Keep people away from any upwind of spill/leak. Keep out of low areas. Keep unnecessary personnel away. Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.      |
| <b>Environmental precautions</b>                                           | Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.                                                                                                                                                                       |
| <b>Methods and materials for containment and cleaning up</b>               | Stop the flow of material, if this is without risk.<br>Large Spills: Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills in original containers for re-use. For waste disposal, see section 13 of the SDS. |

**7. Handling and storage**

|                                                                     |                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Precautions for safe handling</b>                                | Do not taste or swallow. Avoid breathing mist or vapor. Avoid contact with eyes. Provide adequate ventilation. Wear appropriate personal protective equipment. When using, do not eat, drink or smoke. Observe good industrial hygiene practices. Wash hands thoroughly after handling. Avoid release to the environment. Do not empty into drains. |
| <b>Conditions for safe storage, including any incompatibilities</b> | Store locked up. Store in original tightly closed container. Store in a cool, dry place out of direct sunlight. Store away from incompatible materials (see Section 10 of the SDS).                                                                                                                                                                 |

**8. Exposure controls/personal protection**

|                                                                              |                                                                                                                                                                                                                                                               |
|------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Occupational exposure limits</b>                                          | No exposure limits noted for ingredient(s).                                                                                                                                                                                                                   |
| <b>Biological limit values</b>                                               | No biological exposure limits noted for ingredient(s).                                                                                                                                                                                                        |
| <b>Appropriate engineering controls</b>                                      | Provide eyewash station.                                                                                                                                                                                                                                      |
| <b>Individual protection measures, such as personal protective equipment</b> |                                                                                                                                                                                                                                                               |
| <b>Eye/face protection</b>                                                   | Wear eye/face protection. Wear safety glasses with side shields (or goggles).                                                                                                                                                                                 |
| <b>Skin protection</b>                                                       |                                                                                                                                                                                                                                                               |
| <b>Hand protection</b>                                                       | For prolonged or repeated skin contact use suitable protective gloves.                                                                                                                                                                                        |
| <b>Other</b>                                                                 | Wear suitable protective clothing. Wash contaminated clothing prior to reuse.                                                                                                                                                                                 |
| <b>Respiratory protection</b>                                                | In case of insufficient ventilation, wear suitable respiratory equipment.                                                                                                                                                                                     |
| <b>Thermal hazards</b>                                                       | Wear appropriate thermal protective clothing, when necessary.                                                                                                                                                                                                 |
| <b>General hygiene considerations</b>                                        | When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. |



## SAFETY DATA SHEET 8-16-8, 2% Sulfur Starter/Transplant Solution

### 9. Physical and chemical properties

|                                              |                                         |
|----------------------------------------------|-----------------------------------------|
| Appearance (physical state, color, etc)      | Clear/Hazy liquid, Green/Amber in color |
| Odor                                         | Slightly musty                          |
| Odor threshold                               | Not available.                          |
| pH                                           | 6.5 - 7.0                               |
| Melting point/freezing point                 | 32 °F (0° C) (Typical))                 |
| Initial boiling point and boiling range      | 222°F (106°C)                           |
| Flash point                                  | Not available.                          |
| Evaporation rate                             | Not determined                          |
| Flammability (solid, gas)                    | Not applicable                          |
| Upper/lower flammability or explosive limits | Not applicable                          |
| Vapor pressure                               | Not available.                          |
| Vapor density                                | Not available.                          |
| Relative density                             | 10.8 lbs/gal (1.29 kg/L)                |
| Solubility                                   | Complete                                |
| Solubility (water)                           | 100%                                    |
| Partition coefficient (n-octanol/water)      | Not available.                          |
| Auto-ignition temperature                    | Not available.                          |
| Decomposition temperature                    | Data not available                      |
| Viscosity                                    | 1-10 CPS @ 21°C                         |
| Other information                            |                                         |
| Shelf life                                   | > 2 years                               |

### 10. Stability and reactivity

|                                    |                                                                                                                                   |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Reactivity                         | Avoid interaction with heat (flames), oxidizers, acids or alkalis (see details below in this section).                            |
| Chemical stability                 | Material is stable under normal conditions.                                                                                       |
| Possibility of hazardous reactions | Strong oxidizers such as nitrates, nitrites or chlorates can cause explosive mixtures if heated to dryness                        |
| Conditions to avoid                | Temperatures above 120°F (49°C) and below 32°F (0°C).                                                                             |
| Hazardous decomposition products   | Heating this product will evolve ammonia. Heating to dryness will produce ammonia, ammonium sulfate, sulfur and oxides of sulfur. |

### 11. Toxicological information

|                                          |                                     |
|------------------------------------------|-------------------------------------|
| Information on likely routes of exposure |                                     |
| Oral                                     | Not determined                      |
| Inhalation                               | Not determined                      |
| Skin contact                             | Not determined                      |
| Eye contact                              | Not determined                      |
| Chronic/Carcinogenicity:                 | Not listed in NTP, IARC or by OSHA. |
| Teratology:                              | Data not available.                 |
| Reproduction:                            | Data not available.                 |
| Mutagenicity:                            | Data not available.                 |



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| <b>12. Ecological information</b>                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Ecotoxicity                                                                      | Not determined                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Persistence and degradability                                                    | No data is available on the degradability of this product.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Bioaccumulative potential                                                        | This product is not bioaccumulative.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Mobility in soil                                                                 | Not determined                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Other adverse effects                                                            | Not determined                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>13. Disposal considerations</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Disposal instructions                                                            | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Hazardous waste code                                                             | The waste code should be assigned in discussion between the user, the producer and the waste disposal company.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Waste from residues / unused products                                            | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Contaminated packaging                                                           | Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>14. Transport information</b>                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| DOT                                                                              | Not regulated as dangerous goods.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| IATA                                                                             | Not regulated as dangerous goods.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| IMDG                                                                             | Not regulated as dangerous goods.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>15. Regulatory information</b>                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| US federal regulations                                                           | This product meets the criteria of the OSHA Hazard Communication Standard, 29 CFR 1910.1200.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)                    | Not regulated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| CERCLA Hazardous Substance List (40 CFR 302.4)                                   | Not listed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| SARA 304 Emergency release notification                                          | Not regulated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Hazard categories                                                                | Immediate Hazard - Yes<br>Delayed Hazard - No<br>Fire Hazard - No<br>Pressure Hazard - No<br>Reactivity Hazard - No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| SARA 302 Extremely hazardous substance                                           | Not listed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Other federal regulations                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)                   | Not listed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List             | Not regulated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130) | Not regulated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Safe Drinking Water Act (SDWA)                                                   | Not regulated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>16. Other information, including date of preparation or last revision</b>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Issue date                                                                       | 6/1/2015                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Revision date                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Version #                                                                        | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Disclaimer                                                                       | While the information contained herein is presented in good faith and believed to be accurate, it is provided for your guidance only. Because many factors may affect processing or application, we recommend that you make tests to determine the suitability of a product for your particular purpose prior to use. No warranties of any kind, either expressed or implied, including warranties of merchantability or fitness for a particular purpose, are made regarding products described or information set forth, or that the products, or information may be used without infringing the intellectual property rights of others. In no case shall the information provided be considered a part of our terms and conditions of sale. Further, you expressly understand and agree that the information furnished by our company hereunder is given gratis and we assume no obligation or liability for the information given or results obtained, all such being given and accepted at your risk. |
| Revision Information                                                             | Composition / Information on Ingredients: Ingredients<br>Physical & Chemical Properties: Multiple Properties                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |