SECTION 1: COMPANY AND PRODUCT INFORMATION

1.1 Product identifiers

<table>
<thead>
<tr>
<th>Product name</th>
<th>Ferrous Sulfate Heptahydrate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product code</td>
<td>40600028</td>
</tr>
<tr>
<td>CAS number</td>
<td>7782-63-0</td>
</tr>
<tr>
<td>Synonyms</td>
<td>Vitriolgrün, Ferrous sulphate, Ferrous sulfate</td>
</tr>
</tbody>
</table>

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

Identified uses: For research and laboratory use only.

1.3 Details of the supplier of the safety data sheet

Address: Genelinx International Inc, dba bioWORLD
4150 Tuller Rd. Suite 228
Dublin, OH 43017

Email: tech@bio-world.com
Phone: 614-792-8680, Toll free: 1-888-bio-PLUS
Fax: 614-792-8685

1.4 Emergency telephone number

Emergency phone: 1-888-bio-PLUS

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture

Acute toxicity, Oral (Category 4), H302.
Skin irritation (Category 2), H315.
Eye irritation (Category 2A), H319.

2.2 GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 4), H302.
Skin irritation (Category 2), H315.
Eye irritation (Category 2A), H319.

2.3 Label elements and precautionary statements

Pictogram: 🚸
Signal word: Warning
Hazard statement(s):
H302 - Harmful if swallowed.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
Precautionary statement(s)  
P264 - Wash skin thoroughly after handling.  
P270 - Do not eat, drink or smoke when using this product.  
P280 - Wear eye protection/face protection/protective gloves.  
P301+312+330 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.  
P302+352 - IF ON SKIN: Wash with plenty of soap and water.  
P305+351+338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P332+313 - If skin irritation occurs: Get medical advice/attention.  
P337+313 - If eye irritation persists: Get medical advice/attention.  
P362 - Take off contaminated clothing and wash before reuse.  
P501 - Dispose of contents/container to an approved waste disposal plant.

2.4 Hazards not otherwise classified (HNOC) or not covered by GHS
No unclassified hazards known.

2.5 NFPA Rating
Health hazard : 2  
Fire hazard : 0  
Reactivity hazard : 0

2.6 HMIS Rating
Health hazard : 2  
Chronic health hazard : *  
Reactivity hazard : 0  
Flammability : 0  
Physical hazard : 0

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS#</th>
<th>EC#</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ferrous sulfate heptahydrate</td>
<td>7782-63-0</td>
<td>231-753-5</td>
<td>&lt;= 100 %</td>
</tr>
<tr>
<td>M.F: FeO₄S • 7H₂O</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M.W: 278.01 g/mol</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.2 Hazardous components & classification
Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2A; H302, H315, H319

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician if symptoms are severe or persistent. Provide this data sheet to medical personnel. If product is spilled or leaked, evacuate area.

In case of inhalation
If inhaled, move person to fresh air and monitor breathing. If not breathing, give artificial ventilation. Consult a physician if symptoms are severe or persistent.

In case of skin contact
Immediately wash with excess soap and water. If spilled on clothing, remove all affected clothing. Consult a physician if symptoms are severe or persistent.

**In case of eye contact**
Flush eyes with water or eye wash solution as a precaution for 15 minutes. Consult a physician if symptoms are severe or persistent.

**In case of ingestion**
Only induce vomiting if recommended by medical personnel. If subject is unconscious, do not give anything by mouth. If conscious, rinse mouth with water. Consult a physician if symptoms are severe or persistent.

### 4.2 Most important symptoms and effects, both acute and delayed
All known important symptoms are described in Section 2 and/or Section 11. No other important symptoms to report.

### 4.3 Indication of any immediate medical attention and special treatment needed
No special treatment indicated. Provide treatment in accordance with exhibited systems.

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**SECTION 5: FIREFIGHTING MEASURES**

**5.1 Suitable extinguishing media**
Water spray, alcohol-resistant foam, dry chemical, and carbon dioxide extinguishers are suitable.

**5.2 Unsuitable extinguishing media**
No known unsuitable extinguishing media.

**5.3 Special hazards arising from the substance**
No special hazards are known to exist regarding combustion of this product.

**5.4 Advice for firefighters**
Wear protective gear, such as self-contained breathing apparatus, if necessary.

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**SECTION 6: ACCIDENTAL RELEASE MEASURES**

**6.1 Personal precautions, protective equipment and emergency procedures**
Provide suitable ventilation. Use any necessary personal protective equipment. Avoid contact with skin and eyes, and avoid creation and inhalation of vapor or dust. Keep all unnecessary personnel away.

*For personal protection see section 8*

**6.2 Environmental precautions**
Prevent product from entering public sewers and waterways.

**6.3 Methods and material for containment and cleaning up**
Use inert absorbent material to absorb any spilled or leaked product. Keep in suitable, closed containers for disposal.

*For proper disposal see section 13*

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**SECTION 7: HANDLING AND STORAGE**

**7.1 Precautions for safe handling**
Provide suitable ventilation. Wear any necessary personal protective equipment.

*For precautions see section 2*

**7.2 Conditions for safe storage, including any incompatibilities**
Storage conditions: Store upright, closed container in arid, ventilated environment.

Incompatible materials: Strong oxidizing agents are incompatible with this product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Ferrous sulfate heptahydrate, CAS No.: 7782-63-0

TWA: 1 mg/m³. Basis: USA. ACGIH Threshold Limit Values (TLV). Remarks: Upper Respiratory Tract irritation, skin irritation, varies.
TWA: 1 mg/m³. Basis: USA. NIOSH Recommended Exposure Limits.
PEL: 1 mg/m³. Basis: California permissible exposure limits for chemical contaminants (Title 8, Article 107).

8.2 Engineering controls

Follow good industrial hygiene and safety practices when handling product.

8.3 Personal protective equipment

Eye/face protection: Use only government-approved safety glasses with side-shields.

Skin protection: Use gloves when handling product. Inspect gloves before use to ensure suitability for use. Remove without exposing skin to the gloves outer surface. Discard used gloves according to all pertinent laws and/or current good practices (cGXP). Wash hands with soap and water.

Body protection: Wear appropriate clothing. Ensure clothing is in good condition, with no holes or tears. When selecting clothing, consider the concentration and amount of substance to be handled.

Respiratory protection: Use only approved respirators and components which comply with CDC and NIOSH (US) or CEN (EU) regulations. Required only when vapors or aerosols are created.

Control of environmental exposure: Prevent product from entering the environment, especially through public sewers or waterways.

General hygiene considerations: Comply with general industrial hygiene practice guidelines.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance: Blue-green
b) Physical states: Solid
c) Odor: Not available
d) Odor threshold: Not available
e) Melting point: 64°C
f) Boiling point range: Not available
g) pH : 3.0-4.0 at 50 g/L @ 25°C
h) Density : Not available
i) Flash point : Not available
j) Evaporation rate : Not available
k) Flammability : Not available
l) Upper/lower flammability or explosive limits: : Not available
m) Vapor pressure : 14.6 hPa (11.0 mmHg) @ 25°C
n) Vapor density : Not available
o) Relative density : 1.898 g/cm³ at 25°C
p) Water solubility : Not available
q) Partition coefficient: n-octanol/water : Not available
r) Autoignition temperature : Not available
s) Decomposition temperature : Not available
t) Kinematic viscosity : Not available
u) Explosive properties : Not available
v) Oxidizing properties : Not available
w) Solubility in other solvents : Not available
x) Surface tension : Not available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity
No special reactivity is known.

10.2 Chemical stability
Product is stable when stored and used as recommended.

10.3 Stability note(s)
No special or unusual instability known.

10.4 Polymerization
No known polymerization.

10.5 Possibility of hazardous reactions
No hazardous reactions are known.

10.6 Incompatible materials
Strong oxidizing agents are incompatible with this product.

10.7 Hazardous decomposition products
Sulfur oxides and iron oxides can form if fire occurs.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Acute toxicity
LD50 Oral : Mouse - 1,520 mg/kg
LD50 Dermal : No toxicity data available.
11.2 Skin corrosion/irritation
No skin/corrosion irritation data available.

11.3 Serious eye damage/eye irritation
No eye damage/irritation data available.

11.4 Respiratory or skin sensitization
No sensitization data available.

11.5 Germ cell mutagenicity
No mutagenicity data available.

11.6 Carcinogenicity
IARC: Product and components are not regulated by the IARC.
ACGIH: Product and components are not regulated by the ACGIH.
NTP: Product and components are not regulated by the NTP.
OSHA: Product and components are not regulated by OSHA.

11.7 Reproductive toxicity
No reproductive toxicity data available.

11.8 Specific target organ toxicity – single exposure
No specific organ toxicity data available.

11.9 Specific target organ toxicity – repeated exposure
No specific organ toxicity data available.

11.10 Aspiration hazard
No aspiration hazard data available.

11.11 Additional Information
RTECS: NO8510000.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity
No ecological toxicity data available.

12.2 Aquatic toxicity
No aquatic toxicity data available.

12.3 Persistence and degradability
No persistence/degradability data available.

12.4 Bioaccumulative potential
No bioaccumulation data available.

12.5 Mobility in soil
No soil mobility data available.

12.6 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment is not required/was not conducted.
12.7 Other adverse effect
No other adverse effect data available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Product
Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult and adhere to local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

13.2 Packaging
Packaging should be disposed of in the same manner as unused product.

13.3 Recommendation
Disposal must be made according to official regulations.

SECTION 14: TRANSPORTATION INFORMATION

14.1 DOT (US)
UN# 3077
Class: 9
Packing group: III
Proper shipping name: Environmentally hazardous substances, solid, n.o.s. (Ferrous sulfate heptahydrate)
Reportable Quantity (RQ): 1000 lb
Poison Inhalation Hazard: No

14.2 IMDG
Not a dangerous good under IMDG regulations.

14.3 IATA
Not a dangerous good under IATA regulations.

SECTION 15: REGULATORY INFORMATION

15.1 SARA
SARA 302: This product and components are not subject to the reporting requirements of SARA Title III, Section 302.
SARA 313: This product does not contain any components with known CAS numbers that exceed the threshold reporting levels established by SARA Title III, Section 313.
SARA 311/312: Acute Health Hazard

15.2 Clean water act (CWA)
This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).
Ferrous sulfate heptahydrate CAS No.: 7782-63-0

15.3 Right to know components
Massachusetts: Ferrous sulfate heptahydrate CAS No.: 7782-63-0
Pennsylvania: Ferrous sulfate heptahydrate CAS No.: 7782-63-0
New Jersey: Ferrous sulfate heptahydrate CAS No.: 7782-63-0
SECTION 16: OTHER INFORMATION

16.1 Disclaimer

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16.2 Preparation Information

Create Date: 2017-04-11 00:00:00/ Revision Date: 2018-07-26 04:41:16/ Print Date: 2019-10-29