Dear Customer,

This File Contains Both The ANSI Material Safety Data Sheet and The GHS Safety Data Sheet For The Same Product

Spectrum is currently transitioning all chemical product labeling from the ANSI\(^1\) format to the GHS\(^2\) format (see note below). In order to ensure that you receive complete labelling during the transition, we have included both the ANSI MSDS and the GHS SDS in a single file. The ANSI MSDS is given first, followed by the GHS SDS. Please use whichever matches the container label.

**Why It Matters:**

The complete precautionary labeling for this chemical consists of BOTH the label on the container AND the matching Material Safety Data Sheet (for ANSI labels) or Safety Data Sheet (for GHS labels). Both elements of the labeling [Label + (M)SDS] are written to be read and understood together, so as to provide complete precautionary information. It is intended for you to read and understood BOTH before handling or using the chemical.

**Picking the Right One: 2 Easy Ways To Tell Whether Your Container Has an ANSI Label or a GHS Label**

1) GHS labels: any pictogram displayed in the upper left-hand corner will be inside a red diamond. ANSI labels: pictograms, if present, will be inside individual black boxes.

2) GHS labels: on the bottom of the right-hand panel of the label, locate the Lot Number. Directly to the left will be a string of control characters, followed by a single letter. For GHS labels, the string of characters will end in "GHS:"

---

**Label in ANSI Format**

![Label](image)

---

**CORPORATE OFFICES**

14422 South San Pedro Street
Gardena, California 90248
PHONE 310.516.8000
FAX 310.516.9843

AN ISO 9001:2008 REGISTERED COMPANY  www.spectrumchemical.com
1 American National Standards Institute
2 Globally Harmonized System for Hazard Communication

Sincerely,

Regulatory Affairs
# MATERIAL SAFETY DATA SHEET

<table>
<thead>
<tr>
<th>NFPA</th>
<th>HMIS</th>
<th>Personal Protective Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="1-1-0" /></td>
<td><img src="image" alt="1" /></td>
<td><img src="image" alt="goggles" /> <img src="image" alt="mask" /> <img src="image" alt="respirator" /> <img src="image" alt="gloves" /></td>
</tr>
</tbody>
</table>

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

- **Product code:** F1053  
- **Product Name:** FERROUS GLUCONATE, FCC  
- **Chemical Name:** No information available  
- **Synonyms:** No information available  
- **Recommended use:** In foods.  
- **CAS #:** 12389-15-0  
- **RTECS #:** Not available  
- **Formula:** C12-H22-FeO14.2H2O  
- **CI#:** Not available  
- **Supplier:** Spectrum Chemicals and Laboratory Products, Inc.  
  14422 South San Pedro St.  
  Gardena, CA 90248  
  (310) 516-8000  
  Order Online At: [https://www.spectrumchemical.com](https://www.spectrumchemical.com)  
- **Emergency Telephone Number:** CHEMTREC: 1-800-424-9300  
- **Contact Person:** Regina Wachenheim (East Coast)  
- **Contact Person:** Martin LaBenz (West Coast)

## 2. HAZARDS IDENTIFICATION

See Section 8.
2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
May cause skin and eye irritation
May cause irritation of respiratory tract

Odor: No information available.
Physical state: Solid.
Appearance: Powder.

OSHA Regulatory Status
This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

POTENTIAL HEALTH EFFECTS

Principal Routes of Exposure:
Ingestion. Inhalation.

Acute Potential Health Effects:

Skin Contact:
May cause skin irritation.

Eye Contact:
Contact with eyes may cause irritation.

Inhalation:
May cause irritation of respiratory tract.

Ingestion:
Expected to be a low hazard for usual industrial handling. May cause nausea and vomiting. May cause hypermotility, diarrhea.

Chronic Potential Health Effects:

Component
Ferrous Gluconate, dihydrate 12389-15-0 (100)
Carcinogen Status:
No information available

Target Organs: No information available
Mutagenic Effects: No information available
Teratogenic Effects: No information available
Aggravated Medical Conditions: No information available

See Section 11 for additional Toxicological Information

POTENTIAL ENVIRONMENTAL EFFECTS
No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight %</th>
</tr>
</thead>
</table>

Product code: F1053
Product name: FERROUS GLUCONATE, FCC
3. COMPOSITION/INFORMATION ON INGREDIENTS

Ferrous Gluconate, dihydrate 12389-15-0 100

4. FIRST AID MEASURES

General Advice: Poison information centres in each State capital city can provide additional assistance for scheduled poisons (13 1126)

Skin Contact: Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation develops. Consult a physician if necessary.

Eye Contact: Flush eye with water for 15 minutes. Get medical attention if irritation occurs. If symptoms persist, call a physician.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Notes to Physician: Treat symptomatically

5. FIRE-FIGHTING MEASURES

Flammable Properties

Flashpoint (°C/°F): No information available.

Flash Point Tested according to: Not available

Lower Explosion Limit (%): No information available

Upper Explosion Limit (%): No information available

Autoignition Temperature (°C/°F): No information available

Suitable Extinguishing Media: Carbon dioxide (CO2). Dry chemical. Water spray mist or foam.

Unsuitable Extinguishing Media: No information available.

Hazardous Combustion Products: Carbon monoxide; Carbon dioxide; iron oxides

Specific hazards: May be combustible at high temperatures. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

Specific Methods: No information available.
6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:**
Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Remove all sources of ignition.

**Environmental Precautions:**
No information available.

**Methods for Cleaning Up:**
Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

**Handling**

**Technical Measures/Precautions:**
Provide sufficient air exchange and/or exhaust in work rooms. Avoid dust formation. All equipment used when handling the product must be grounded. Keep away from incompatible materials.

**Safe Handling Advice:**
Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Avoid dust formation. Do not ingest. Do not breathe vapours/dust. Handle in accordance with good industrial hygiene and safety practice.

**Storage**

**Technical Measures/Storage Conditions:**
Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

**Incompatible Materials:**
Strong oxidizing agents.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering measures to reduce exposure:**
Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Personal Protective Equipment**

**Eye protection:** Safety glasses. Safety glasses with side-shields.

**Skin and body protection:** Long sleeved clothing. Chemical resistant apron. Gloves.

**Respiratory protection:** Effective dust mask. Wear respirator with dust filter..

**Hygiene measures:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

**National occupational exposure limits**

**United States**

**U.S Occupational Exposure Limits:** Not determined

---

**Product code:** F1053

**Product name:** FERROUS GLUCONATE, FCC
9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Physical state:</th>
<th>Appearance:</th>
<th>Color:</th>
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<table>
<thead>
<tr>
<th>Odor:</th>
<th>Taste</th>
<th>Molecular/Formula weight:</th>
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<tbody>
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<table>
<thead>
<tr>
<th>Flash point (°C):</th>
<th>Lower Explosion Limit (%):</th>
<th>Upper Explosion Limit (%):</th>
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</thead>
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<td>No information available</td>
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<table>
<thead>
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<th>Autoignition Temperature (°C/°F):</th>
<th>Melting point/range(°C/°F):</th>
<th>Boiling point/range(°C/°F):</th>
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</table>

<table>
<thead>
<tr>
<th>pH:</th>
<th>Specific gravity:</th>
<th>Density (g/cm3):</th>
</tr>
</thead>
<tbody>
<tr>
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<td>No information available</td>
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</table>

<table>
<thead>
<tr>
<th>Decomposition temperature(°C/°F):</th>
<th>Bulk density:</th>
<th>Vapor pressure @ 20°C (kPa):</th>
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</thead>
<tbody>
<tr>
<td>188 °C/370.4 °F</td>
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<table>
<thead>
<tr>
<th>Evaporation rate:</th>
<th>Vapor density:</th>
<th>VOC content (g/L):</th>
</tr>
</thead>
<tbody>
<tr>
<td>No information available</td>
<td>No information available</td>
<td>No information available</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Odor threshold (ppm):</th>
<th>Partition coefficient</th>
<th>Miscibility:</th>
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<tbody>
<tr>
<td>No information available</td>
<td>(n-octanol/water):</td>
<td>No information available</td>
</tr>
</tbody>
</table>

| Solubility: | |
|-------------| Soluble in Water |

10. STABILITY AND REACTIVITY

| Stability: | |
|------------| Stable at normal conditions |

| Conditions to avoid: | |
|----------------------| Heat. Avoid dust formation. Dust may form explosive mixture in air. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. |

| Incompatible Materials: | |
|-------------------------| Strong oxidizing agents. |

Possibility of Hazardous Reactions: No information available

Polymerization: Hazardous polymerisation does not occur

Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

Ferrous Gluconate, dihydrate - 12389-15-0
- LD50/oral/rat = No information available
- LD50/oral/mouse = No information available
- LD50/dermal/rat = No information available
- LD50/dermal/rabbit = No information available
- LC50/inhalation/rat = No information available
- LC50/inhalation/mouse = No information available
- Other LD50 or LC50 information = No information available

Product Information

LC50/inhalation/rat No information available
LC50/Inhalation/mouse No information available
LD50/dermal/rabbit No information available
LD50/dermal/rat No information available
LD50/oral/mouse = No information available
LD50/oral/rat = No information available

Local Effects

Skin irritation: May cause skin irritation.
Eye irritation: Contact with eyes may cause irritation.
Inhalation: May cause irritation of respiratory tract.
Ingestion: Low hazard. May cause hypermotility, diarrhea. Ingestion may cause nausea, vomiting.
Sensitization: No information available

Chronic Toxicity

Chronic Toxicity No information available.

Carcinogenic effects: Not considered carcinogenic.

<table>
<thead>
<tr>
<th>Components</th>
<th>NTP</th>
<th>IARC</th>
<th>OSHA HCS - Carcinogens</th>
<th>ACGIH - Carcinogens</th>
<th>Australia - Prohibited Carcinogenic Substances</th>
<th>Australia - Notifiable Carcinogenic Substances</th>
</tr>
</thead>
</table>

Product code: F1053  
Product name: FERROUS GLUCONATE, FCC
Mutagenic Effects: No information available
Reproductive Effects: No information available
Teratogenic Effects: No information available
Target Organs: No information available

12. ECOLOGICAL INFORMATION

ECOTOXICITY

Toxicity to terrestrial and aquatic plants and animals: No information available
Ecotoxicity effects: No data available.
Aquatic toxicity: No information available
Mobility: No information available
Persistence and degradability: No information available
Bioaccumulative potential: No information available

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ferrous Gluconate, dihydrate</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

14. TRANSPORT INFORMATION

DOT

UN-No: Not regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Packing Group: None
Subsidiary Risk: Not applicable
Marine Pollutant: No data available
ERG No: No information available
DOT RQ (lbs): No information available

TDG (Canada)

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Packing Group: No information available
Subsidiary Risk: No information available
Description: No information available
ADR
UN-No: No information available
Proper Shipping Name: No information available
Hazard Class: No information available
Packing Group: No information available
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available
CEFIC Tremcard No: No information available

IMO / IMDG
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Packing Group: No information available
Subsidiary Risk: No information available
Description: No information available
IMDG Page: No information available
Marine Pollutant: No information available
MFAG: No information available
Maximum Quantity: No information available

RID
UN-No: No information available
Proper Shipping Name: No information available
Hazard Class: No information available
Packing Group: No information available
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available

ICAO
UN-No: No information available
Proper Shipping Name: No information available
Hazard Class: No information available
Packing Group: No information available
Subsidiary Risk: No information available
Description: No information available

IATA
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Packing Group: No information available
Subsidiary Risk: No information available
Description: No information available

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Components</th>
<th>U.S. TSCA</th>
<th>Philippines (PICCS)</th>
<th>KOREA KECL</th>
<th>Japan ENCS</th>
<th>CHINA</th>
<th>Australia (AICS)</th>
<th>EINECS-No.</th>
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<tbody>
<tr>
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<td>Not present</td>
<td>Not present</td>
<td>Not present</td>
<td>Not present</td>
<td>Not present</td>
<td>Not present</td>
</tr>
</tbody>
</table>

U.S. Regulations

Product code: F1053
Product name: FERROUS GLUCONATE, FCC

Chemicals Known to the State of California to Cause Cancer:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

<table>
<thead>
<tr>
<th>Components</th>
<th>Carcinogen</th>
<th>Developmental Toxicity</th>
<th>Male Reproductive Toxicity</th>
<th>Female Reproductive Toxicity</th>
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</thead>
<tbody>
<tr>
<td>Ferrous Gluconate, dihydrate</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
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</tbody>
</table>

CERCLA/SARA

<table>
<thead>
<tr>
<th>Components</th>
<th>CERCLA - Hazardous Substances and their Reportable Quantities</th>
<th>Section 302 Extremely Hazardous Substances and TPQs</th>
<th>Section 302 Extremely Hazardous Substances and RQs</th>
<th>Section 313 - Chemical Category</th>
<th>Section 313 - Reporting de minimis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ferrous Gluconate, dihydrate</td>
<td>None</td>
<td>None</td>
<td>None</td>
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</table>

U.S. TSCA

<table>
<thead>
<tr>
<th>Components</th>
<th>TSCA Section 5(a)(2) - Chemicals With Significant New Use Rules (SNURS)</th>
<th>TSCA 8(d) - Health and Safety Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ferrous Gluconate, dihydrate</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

Canada

WHMIS hazard class:
Non-controlled

Canada Controlled Products Regulation:
This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Inventory

<table>
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<tr>
<th>Components</th>
<th>Canada (DSL)</th>
<th>Canada (NDSL)</th>
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</thead>
<tbody>
<tr>
<td>Ferrous Gluconate, dihydrate</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>

Components | CEPA Schedule 1 - Toxic Substances | CEPA - 2010 Greenhouse Gases Subject to Manditory Reporting |
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Ferrous Gluconate, dihydrate</td>
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</tr>
</tbody>
</table>

EU Classification

R-phrase(s)
not determined

S-phrase(s)
none

<table>
<thead>
<tr>
<th>Components</th>
<th>Classification</th>
<th>Concentration Limits:</th>
<th>Safety Phrases</th>
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</thead>
<tbody>
<tr>
<td>Ferrous Gluconate, dihydrate</td>
<td></td>
<td>No information</td>
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</tr>
</tbody>
</table>

Product code: F1053
Product name: FERROUS GLUCONATE, FCC
The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:
Not dangerous

16. OTHER INFORMATION

The MSDS format complies with ANSI Z400.1/Z129.1-2010 standards.

Preparation Date: 04-Apr-2014

Reason for revision: Not applicable

Prepared by: Sonia Owen

Literature reference: No information available

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. The physical properties reported in this MSDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user’s responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.
SAFETY DATA SHEET

1. IDENTIFICATION

Product identifier

Product code: F1053
Product Name: FERROUS GLUCONATE, FCC

Other means of identification

Synonyms: No information available
CAS #: 12389-15-0
RTECS #: Not available
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: In foods.
Uses advised against: No information available

Supplier: Spectrum Chemicals and Laboratory Products, Inc.
14422 South San Pedro St.
Gardena, CA  90248
(310) 516-8000

Order Online At: https://www.spectrumchemical.com

Emergency telephone number
Chemtrec 1-800-424-9300

Contact Person:
Martin LaBenz (West Coast)
Regina Wachenheim (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Label elements

Not classified according to 2012 OSHA Hazard Communication Standard

Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

May be harmful if swallowed
GHS Acute Oral Toxicity Category 5, which has not been adopted by OSHA
3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight %</th>
<th>Trade Secret</th>
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<tbody>
<tr>
<td>Ferrous Gluconate, dihydrate</td>
<td>12389-15-0</td>
<td>100</td>
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</table>

4. FIRST AID MEASURES

First aid measures

General Advice: Poison information centres in each State capital city can provide additional assistance for scheduled poisons (13 1126)

Skin Contact: Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation develops. Consult a physician if necessary.

Eye Contact: Flush eye with water for 15 minutes. Get medical attention if irritation occurs. If symptoms persist, call a physician.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Most important symptoms and effects, both acute and delayed

Symptoms: May cause eye/skin irritation. May cause diarrhea.

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Carbon dioxide (CO2). Dry chemical. Water spray mist or foam.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: Carbon monoxide; Carbon dioxide; iron oxides

Specific hazards: May be combustible at high temperatures. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Special Protective Actions for Firefighters

Specific Methods: No information available.

Product code: F1053

Product name: FERROUS GLUCONATE, FCC
Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

---

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

**Personal Precautions:** Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Remove all sources of ignition.

**Environmental precautions** No information available. Prevent further leakage or spillage if safe to do so.

**Methods and material for containment and cleaning up**

**Methods for containment** Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

**Methods for cleaning up** Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

---

### 7. HANDLING AND STORAGE

**Precautions for safe handling**

**Technical Measures/Precautions:** Provide sufficient air exchange and/or exhaust in work rooms. Avoid dust formation. All equipment used when handling the product must be grounded. Keep away from incompatible materials.

**Safe Handling Advice:**
Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Avoid dust formation. Do not ingest. Do not breathe vapours/dust. Handle in accordance with good industrial hygiene and safety practice.

**Conditions for safe storage, including any incompatibilities**

**Technical Measures/Storage Conditions:**
Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

**Incompatible Materials:**
Strong oxidizing agents.

---

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

**National occupational exposure limits**

**U.S Occupational Exposure Limits:** Not determined

**United States**

<table>
<thead>
<tr>
<th>Components</th>
<th>OSHA</th>
<th>NIOSH</th>
<th>ACGIH</th>
<th>AIHA WHEEL</th>
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</thead>
<tbody>
<tr>
<td>Ferrous Gluconate, dihydrate - 12389-15-0</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
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</tbody>
</table>

**Canada**

**Canada Occupational Exposure Limits:** Not determined
### Appropriate engineering controls

**Engineering measures to reduce exposure:**
Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Individual protection measures, such as personal protective equipment**

**Personal Protective Equipment**

- **Eye protection:** Safety glasses. Safety glasses with side-shields.
- **Skin and body protection:** Long sleeved clothing. Chemical resistant apron. Gloves.
- **Respiratory protection:** Effective dust mask. Wear respirator with dust filter.
- **Hygiene measures:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

### 9. PHYSICAL AND CHEMICAL PROPERTIES
## 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Powder</td>
</tr>
<tr>
<td>Odor</td>
<td>No information available</td>
</tr>
<tr>
<td>Taste</td>
<td>No information available</td>
</tr>
<tr>
<td>Molecular/Formula weight</td>
<td>482.17</td>
</tr>
<tr>
<td>Flash Point Tested according to</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Autoignition Temperature (°C/°F)</td>
<td>No information available</td>
</tr>
<tr>
<td>Boiling point/range(°C/°F)</td>
<td>No information available</td>
</tr>
<tr>
<td>Density (g/cm³)</td>
<td>No information available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information available</td>
</tr>
<tr>
<td>Odor threshold (ppm)</td>
<td>No information available</td>
</tr>
<tr>
<td>Miscibility</td>
<td>No information available</td>
</tr>
<tr>
<td>Appearance</td>
<td>Powder</td>
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<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Yellowish Gray. Pale greenish-yellow.</td>
</tr>
<tr>
<td>Taste</td>
<td>No information available</td>
</tr>
<tr>
<td>Formula</td>
<td>C12-H22-FeO14.2H2O</td>
</tr>
<tr>
<td>Flash point (°C):</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Lower Explosion Limit (%):</td>
<td>No information available</td>
</tr>
<tr>
<td>Upper Explosion Limit (%):</td>
<td>No information available</td>
</tr>
<tr>
<td>pH</td>
<td>No information available</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>No information available</td>
</tr>
<tr>
<td>Melting point/range(°C/°F):</td>
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</tr>
<tr>
<td>Decomposition temperature(°C/°F):</td>
<td>188 °C/370.4 °F</td>
</tr>
<tr>
<td>Bulk density</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No information available</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water):</td>
<td>No information available</td>
</tr>
<tr>
<td>Partition coefficient (g/L):</td>
<td>No information available</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water):</td>
<td>No information available</td>
</tr>
</tbody>
</table>

## 10. STABILITY AND REACTIVITY

**Reactivity**

Reactive with oxidizing agents

**Chemical stability**

**Stability:** Stable at normal conditions

**Possibility of Hazardous Reactions:** Hazardous polymerization does not occur

**Conditions to avoid:** Heat. Avoid dust formation. Dust may form explosive mixture in air. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

**Incompatible Materials:** Strong oxidizing agents.

**Hazardous decomposition products:** Carbon monoxide. Carbon dioxide. Iron oxides. When heated to decomposition it emits acrid smoke and irritating fumes.

**Other Information**

**Corrosivity:** No information available

**Special Remarks on Corrosivity:** No information available

## 11. TOXICOLOGICAL INFORMATION

**Product code:** F1053  
**Product name:** FERROUS GLUCONATE, FCC
11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Ingestion. Inhalation.

Acute Toxicity

Component Information

Ferrous Gluconate, dihydrate - 12389-15-0

- **LD50/oral/rat** = No information available
- **LD50/oral/mouse** = No information available
- **LD50/dermal/rabbit** = No information available
- **LD50/dermal/rat** = No information available
- **LC50/inhalation/rat** = No information available
- **LC50/inhalation/mouse** = No information available
- **Other LD50 or LC50 information** = No information available

Product Information

- **LD50/oral/rat** = No information available
- **LD50/oral/mouse** = No information available
- **LD50/dermal/rabbit** = No information available
- **LD50/dermal/rat** = No information available
- **LC50/inhalation/rat** = No information available
- **LC50/inhalation/mouse** = No information available
- **Other LD50 or LC50 information** = No information available

Symptoms

- **Skin Contact:** May cause skin irritation.
- **Eye Contact:** Contact with eyes may cause irritation.
- **Inhalation:** May cause irritation of respiratory tract.
- **Ingestion:** Low hazard. May cause hypermotility, diarrhea. Ingestion may cause nausea, vomiting.
- **Aspiration hazard** = No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Product code: F1053
Product name: FERROUS GLUCONATE, FCC
Chronetic Toxicity: No information available.

Sensitization: No information available

Mutagenic Effects: No information available

Carcinogenic effects: Not considered carcinogenic.

<table>
<thead>
<tr>
<th>Components</th>
<th>ACGIH - Carcinogens</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA HCS - Carcinogens</th>
<th>Australia - Prohibited Carcinogenic Substances</th>
<th>Australia - Notifiable Carcinogenic Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ferrous Gluconate, dihydrate</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Reproductive toxicity: No data is available

Reproductive Effects: No information available

Developmental Effects: No information available

Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure: No information available

STOT - repeated exposure: No information available

Target Organs: No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: No data available.

Persistence and degradability: No information available

Bioaccumulative potential: No information available

Mobility: No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ferrous Gluconate, dihydrate</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

Product code: F1053  
Product name: FERROUS GLUCONATE, FCC
### DOT
- **UN-No:** Not regulated
- **Proper Shipping Name:** No information available
- **Hazard Class:** No information available
- **Subsidiary Risk:** Not applicable
- **Packing Group:** None
- **Marine Pollutant**
  - **Not available**
- **ERG No:** No information available
- **DOT RQ (lbs):** No information available

### TDG (Canada)
- **UN-No:** Not Regulated
- **Proper Shipping Name:** No information available
- **Hazard Class:** No information available
- **Packing Group:** No information available
- **Description:** No information available

### ADR
- **UN-No:** Not Regulated
- **Proper Shipping Name:** No information available
- **Hazard Class:** No information available
- **Packing Group:** No information available
- **Classification Code:** No information available
- **Description:** No information available
- **CEFIC Tremcard No:** No information available

### IMO / IMDG
- **UN-No:** Not Regulated
- **Proper Shipping Name:** No information available
- **Hazard Class:** No information available
- **Subsidiary Risk:** No information available
- **Packing Group:** No information available
- **Description:** No information available
- **IMDG Page:** No information available
- **Marine Pollutant**
  - **No information available**
- **MFAG:** No information available
- **Maximum Quantity:** No information available

### RID
- **UN-No:** Not Regulated
- **Proper Shipping Name:** No information available
- **Hazard Class:** No information available
- **Subsidiary Risk:** No information available
- **Packing Group:** No information available
- **Classification Code:** No information available
- **Description:** No information available

### ICAO
- **UN-No:** Not Regulated
- **Proper Shipping Name:** No information available
- **Hazard Class:** No information available
- **Subsidiary Risk:** No information available

---

**Product code:** F1053  
**Product name:** FERROUS GLUCONATE, FCC
14. TRANSPORT INFORMATION

Packing Group: No information available
Description: No information available

IATA
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Description: No information available

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Components</th>
<th>U.S. TSCA</th>
<th>KOREA KECL (PICCS)</th>
<th>Philippines (PICCS)</th>
<th>Japan ENCS</th>
<th>CHINA</th>
<th>Australia (AICS)</th>
<th>EINECS-No.</th>
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<tbody>
<tr>
<td>Ferrous Gluconate, dihydrate</td>
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<td>Not present</td>
<td>Not present</td>
<td>Not present</td>
<td>Not present</td>
<td>Not present</td>
<td>Not present</td>
</tr>
</tbody>
</table>

U.S. Regulations


Chemicals Known to the State of California to Cause Cancer:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

<table>
<thead>
<tr>
<th>Components</th>
<th>Carcinogen</th>
<th>Developmental Toxicity</th>
<th>Male Reproductive Toxicity</th>
<th>Female Reproductive Toxicity</th>
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<tbody>
<tr>
<td>Ferrous Gluconate, dihydrate</td>
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<td>Not Listed</td>
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</table>

CERCLA/SARA

<table>
<thead>
<tr>
<th>Components</th>
<th>CERCLA - Hazardous Substances and their Reportable Quantities</th>
<th>Section 302 Extremely Hazardous Substances and TPQs</th>
<th>Section 302 Extremely Hazardous Substances and RQs</th>
<th>Section 313 - Chemical Category</th>
<th>Section 313 - Reporting de minimis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ferrous Gluconate, dihydrate</td>
<td>None</td>
<td>None</td>
<td>None</td>
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</table>

U.S. TSCA

<table>
<thead>
<tr>
<th>Components</th>
<th>TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)</th>
<th>TSCA 8(d) - Health and Safety Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ferrous Gluconate, dihydrate</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

Canada

WHMIS hazard class:
Non-controlled

Canada Controlled Products Regulation:
This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Product code: F1053
Product name: FERROUS GLUCONATE, FCC
Inventory

<table>
<thead>
<tr>
<th>Components</th>
<th>Canada (DSL)</th>
<th>Canada (NDSL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ferrous Gluconate, dihydrate</td>
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<td>Not Listed</td>
</tr>
</tbody>
</table>

EU Classification

**R-phrase(s)**
not determined

**S -phrase(s)**
none

<table>
<thead>
<tr>
<th>Components</th>
<th>Classification</th>
<th>Concentration Limits:</th>
<th>Safety Phrases</th>
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</thead>
<tbody>
<tr>
<td>Ferrous Gluconate, dihydrate</td>
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<td>No information</td>
<td></td>
</tr>
</tbody>
</table>

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:
Not dangerous

16. OTHER INFORMATION
16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA</th>
<th>HMIS</th>
<th>Personal Protective Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
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</tr>
<tr>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Preparation Date: 4/4/2014
Revision Date: 4/4-2014
Prepared by: Sonia Owen

Disclaimer:
All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

See Section 8.

End of Material Safety Data Sheet