

SAFETY DATA SHEET

1. Identification

Product identifier 7-7-7 Seven Iron

Other means of identification

Product code 30071

Recommended use Agricultural/ Horticultural Use- Micronutrient Fertilizer- Refer to product label.

Recommended restrictions Refer to product label.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name Grigg Bros.

Address P.O. Box 125
Albion, ID 83311
United States

Telephone Office 208-673-6340
Fax 208-673-6342

Website www.griggbros.com

E-mail Not available.

Emergency phone number 1-888-246-8873

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Acute toxicity, oral Category 4
Skin corrosion/irritation Category 2
Serious eye damage/eye irritation Category 2A

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements



Signal word Warning

Hazard statement Harmful if swallowed. Causes serious eye irritation.

Precautionary statement

Prevention Wear eye/face protection. Wash thoroughly after handling. Do not eat, drink or smoke when using this product.

Response If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Storage Store away from incompatible materials.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Gypsum, (Ca(SO4).2H2O)		13397-24-5	10 - < 20*

Chemical name	Common name and synonyms	CAS number	%
Urea		57-13-6	10 - < 20*
FERROUS SULFATE		7782-63-0	5 - < 10*
Humic Acid Ore / Leonardite		129521-66-0	5 - < 10*
Manganese Sulfate, monohydrate		10034-96-5	1 - < 3*
Manganese(II) Oxide		1344-43-0	1 - < 3*
Calcium Oxide		1305-78-8	< 0.3*
Calcium Sulfate, dihydrate (Gypsum)		7778-18-9	< 0.3*
Sulfuric acid, zinc salt (1:1)		7733-02-0	< 0.3*
Quartz, Dust, Respirable Fraction		14808-60-7	< 0.1*
Other components below reportable levels			50 - < 60

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	If dust from the material is inhaled, remove the affected person immediately to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Severe eye irritation.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Use water spray to cool unopened containers.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid inhalation of dust from the spilled material. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Stop the flow of material, if this is without risk. Dike far ahead of spill for later disposal. If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Collect dust using a vacuum cleaner equipped with HEPA filter. Following product recovery, flush area with water. Sweep up or vacuum up spillage and collect in suitable container for disposal. Minimize dust generation and accumulation. Prevent entry into waterways, sewer, basements or confined areas. For waste disposal, see section 13 of the SDS.

Environmental precautions Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Do not taste or swallow. Avoid breathing dust. Avoid contact with eyes. Avoid prolonged exposure. Wear appropriate personal protective equipment. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Observe good industrial hygiene practices. Practice good housekeeping.

Conditions for safe storage, including any incompatibilities Store in original tightly closed container. Keep container tightly closed. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Calcium Oxide (CAS 1305-78-8)	PEL	5 mg/m ³	
Calcium Sulfate, dihydrate (Gypsum) (CAS 7778-18-9)	PEL	5 mg/m ³	Respirable fraction.
Gypsum, (Ca(SO ₄),2H ₂ O) (CAS 13397-24-5)	PEL	15 mg/m ³	Total dust.
		5 mg/m ³	Respirable fraction.
Manganese Sulfate, monohydrate (CAS 10034-96-5)	Ceiling	15 mg/m ³	Total dust.
		5 mg/m ³	
Manganese(II) Oxide (CAS 1344-43-0)	Ceiling	5 mg/m ³	

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Quartz, Dust, Respirable Fraction (CAS 14808-60-7)	TWA	0.3 mg/m ³	Total dust.
		0.1 mg/m ³	Respirable.
		2.4 mppcf	Respirable.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Calcium Oxide (CAS 1305-78-8)	TWA	2 mg/m ³	
Calcium Sulfate, dihydrate (Gypsum) (CAS 7778-18-9)	TWA	10 mg/m ³	Inhalable fraction.
Gypsum, (Ca(SO ₄),2H ₂ O) (CAS 13397-24-5)	TWA	10 mg/m ³	Inhalable fraction.
Manganese Sulfate, monohydrate (CAS 10034-96-5)	TWA	0.1 mg/m ³	Inhalable fraction.
		0.02 mg/m ³	Respirable fraction.
Manganese(II) Oxide (CAS 1344-43-0)	TWA	0.1 mg/m ³	Inhalable fraction.
		0.02 mg/m ³	Respirable fraction.
Quartz, Dust, Respirable Fraction (CAS 14808-60-7)	TWA	0.025 mg/m ³	Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Calcium Oxide (CAS 1305-78-8)	TWA	2 mg/m ³	
Calcium Sulfate, dihydrate (Gypsum) (CAS 7778-18-9)	TWA	5 mg/m ³	Respirable.
		10 mg/m ³	Total
Gypsum, (Ca(SO ₄),2H ₂ O) (CAS 13397-24-5)	TWA	5 mg/m ³	Respirable.
		10 mg/m ³	Total

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Manganese Sulfate, monohydrate (CAS 10034-96-5)	STEL	3 mg/m ³	Fume.
Manganese(II) Oxide (CAS 1344-43-0)	TWA	1 mg/m ³	Fume.
	STEL	3 mg/m ³	Fume.
Quartz, Dust, Respirable Fraction (CAS 14808-60-7)	TWA	1 mg/m ³	Fume.
	TWA	0.05 mg/m ³	Respirable dust.

US. AIHA Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value	Form
Urea (CAS 57-13-6)	TWA	10 mg/m ³	Total particulate.

Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. Provide eyewash station.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Face shield is recommended. Wear safety glasses with side shields (or goggles). Use tight fitting goggles if dust is generated.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear suitable protective clothing.
Respiratory protection	Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Respiratory protection not required.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Keep away from food and drink. 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.

9. Physical and chemical properties**Appearance**

Physical state	Solid.
Form	Powder.
Color	Not available.

Odor Not available.

Odor threshold Not available.

pH Not available.

Melting point/freezing point 149 °F (65 °C) estimated

Initial boiling point and boiling range 572 °F (300 °C) estimated

Flash point Not available.

Evaporation rate Not available.

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure 0.00002 hPa estimated

Vapor density Not available.

Relative density	1.702 g/cm ³ estimated
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	2.17 g/cm ³ estimated
Specific gravity	2.17 estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).
Incompatible materials	Aluminum.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful. Inhalation of dusts may cause respiratory irritation.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Causes serious eye irritation. Dust in the eyes will cause irritation.
Ingestion	Harmful if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Severe eye irritation.

Information on toxicological effects

Acute toxicity	Harmful if swallowed. Not known.
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Product	Species	Test Results
7-7-7 Seven Iron		
Acute		
Dermal		
LD50	Rat	14466 mg/kg estimated
Inhalation		
LC50	Rat	8.8 mg/l, 192 hours estimated
Oral		
LD100	Mouse	26180 mg/kg estimated
LD50	Mouse	24464 mg/kg estimated
	Rat	12025 mg/kg estimated
Components	Species	Test Results
Manganese Sulfate, monohydrate (CAS 10034-96-5)		
Acute		
Oral		
LD100	Mouse	305 mg/kg

Components	Species	Test Results
Sulfuric acid, zinc salt (1:1) (CAS 7733-02-0)		
Acute		
Dermal		
LD50	Rat	> 2000 mg/kg
Oral		
LD50	Mouse	57 mg/kg
	Rat	623 mg/kg
Urea (CAS 57-13-6)		
Acute		
Oral		
LD50	Rat	8471 mg/kg
	Sheep	28500 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Causes serious eye irritation. Dust in the eyes will cause irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not available.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Quartz, Dust, Respirable Fraction (CAS 14808-60-7)	1 Carcinogenic to humans.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not regulated.	
US. National Toxicology Program (NTP) Report on Carcinogens	
Quartz, Dust, Respirable Fraction (CAS 14808-60-7)	Known To Be Human Carcinogen.
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not available.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Product	Species	Test Results
7-7-7 Seven Iron		
Aquatic		
Crustacea	EC50	Daphnia
		2066.1431 mg/l, 48 hours estimated
Fish	LC50	Fish
		3301.9841 mg/l, 96 hours estimated
Components	Species	Test Results
Calcium Sulfate, dihydrate (Gypsum) (CAS 7778-18-9)		
Aquatic		
Fish	LC50	Fathead minnow (Pimephales promelas)
		> 1970 mg/l, 96 hours

Components	Species	Test Results
Gypsum, (Ca(SO ₄).2H ₂ O) (CAS 13397-24-5)		
Aquatic		
Fish	LC50	Fathead minnow (Pimephales promelas) > 1970 mg/l, 96 hours
Manganese Sulfate, monohydrate (CAS 10034-96-5)		
Aquatic		
Crustacea	EC50	Water flea (Daphnia obtusa) 30.8 - 44.1 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas) 36.9 mg/l, 96 hours 29.7 - 52.7 mg/l, 192 hours
Sulfuric acid, zinc salt (1:1) (CAS 7733-02-0)		
Aquatic		
Crustacea	EC50	Rotifer (Philodina acuticornis) 0.3 mg/l, 48 hours
Fish	LC50	Rainbow trout, donaldson trout (Oncorhynchus mykiss) 0.162 mg/l, 96 hours
Urea (CAS 57-13-6)		
Aquatic		
Crustacea	EC50	Water flea (Daphnia magna) 3910 mg/l, 48 hours
Fish	LC50	Carp (Leuciscus idus melanotus) > 10000 mg/l, 48 hours Guppy (Poecilia reticulata) 16200 - 18300 mg/l, 96 hours Harlequinfish, red rasbora (Rasbora heteromorpha) 12000 mg/l, 96 hours Mozambique tilapia (Tilapia mossambica) 590 - 730 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential Not available.

Partition coefficient n-octanol / water (log Kow)

Urea -2.11

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable 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.

14. Transport information

DOT
Not regulated as dangerous goods.

IATA
Not regulated as dangerous goods.

IMDG
Not regulated as dangerous goods.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by 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)

FERROUS SULFATE (CAS 7782-63-0)	Listed.
Manganese Sulfate, monohydrate (CAS 10034-96-5)	Listed.
Manganese(II) Oxide (CAS 1344-43-0)	Listed.
Sulfuric acid, zinc salt (1:1) (CAS 7733-02-0)	Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Manganese Sulfate, monohydrate	10034-96-5	1 - < 3
Manganese(II) Oxide	1344-43-0	1 - < 3

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Manganese Sulfate, monohydrate (CAS 10034-96-5)
Manganese(II) Oxide (CAS 1344-43-0)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Quartz, Dust, Respirable Fraction (CAS 14808-60-7)

US. Massachusetts RTK - Substance List

Calcium Oxide (CAS 1305-78-8)
Calcium Sulfate, dihydrate (Gypsum) (CAS 7778-18-9)
FERROUS SULFATE (CAS 7782-63-0)
Gypsum, (Ca(SO₄).2H₂O) (CAS 13397-24-5)
Quartz, Dust, Respirable Fraction (CAS 14808-60-7)
Sulfuric acid, zinc salt (1:1) (CAS 7733-02-0)

US. New Jersey Worker and Community Right-to-Know Act

Calcium Oxide (CAS 1305-78-8)
Calcium Sulfate, dihydrate (Gypsum) (CAS 7778-18-9)
Gypsum, (Ca(SO₄).2H₂O) (CAS 13397-24-5)
Manganese Sulfate, monohydrate (CAS 10034-96-5)
Manganese(II) Oxide (CAS 1344-43-0)
Quartz, Dust, Respirable Fraction (CAS 14808-60-7)
Sulfuric acid, zinc salt (1:1) (CAS 7733-02-0)

US. Pennsylvania Worker and Community Right-to-Know Law

Calcium Oxide (CAS 1305-78-8)
Calcium Sulfate, dihydrate (Gypsum) (CAS 7778-18-9)
FERROUS SULFATE (CAS 7782-63-0)
Gypsum, (Ca(SO₄).2H₂O) (CAS 13397-24-5)
Quartz, Dust, Respirable Fraction (CAS 14808-60-7)
Sulfuric acid, zinc salt (1:1) (CAS 7733-02-0)

US. Rhode Island RTK

FERROUS SULFATE (CAS 7782-63-0)
Manganese Sulfate, monohydrate (CAS 10034-96-5)
Manganese(II) Oxide (CAS 1344-43-0)
Sulfuric acid, zinc salt (1:1) (CAS 7733-02-0)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Quartz, Dust, Respirable Fraction (CAS 14808-60-7) Listed: October 1, 1988

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 12-27-2016

Version # 01

Disclaimer The information provided in this Safety Data Sheet is correct to the best of Manufacturer's knowledge, information and belief at the date of its publication; however, it is provided only as a guidance for safe handling, use, processing, storage, transportation, disposal and release of the Product. No warranties of any kind, either expressed or implied, including warranties of merchantability or fitness for a particular purpose, are made with respect to the Product or the information provided herein, or that the Product or information herein may be used without infringing the intellectual property rights of others. The information provided in this Safety Data Sheet relates only to the specific Product designated and may not be valid if the Product is used in combination with other materials or in any other process, unless specified herein. The user assumes all risk and liability for loss, injury, damage or expense due to any use, handling, storage or disposal of the Product, and Manufacturer recommends that the user conducts its own tests of the Product to determine suitability of the Product for user's particular use.

Revision information Product and Company Identification: Product and Company Identification
Hazard(s) identification: Prevention
GHS: Classification