



Safety Data Sheet

Section 1: Identification

Product Name • **Green Foundry Sand**

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

Recommended use • No data available

Details of the supplier of the safety data sheet

Manufacturer • Waupaca Foundry, Inc.
1955 Brunner Drive
PO Box 249
Waupaca, WI 54981
United States
www.waupacafoundry.com

Telephone (General) • 715-258-6611

Emergency telephone number

Manufacturer • 715-258-6611

Section 2: Hazard Identification

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

Classification of the substance or mixture

OSHA HCS 2012 • Carcinogenicity 1A
Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation
Specific Target Organ Toxicity Single Exposure 1
Specific Target Organ Toxicity Repeated Exposure 1

Label elements

OSHA HCS 2012

DANGER





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Hazard statements • No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs include:
May cause skin and eye irritation.
May cause respiratory irritation.
May cause cancer through prolonged or repeated exposure via inhalation of respirable dust.
May cause damage to Lungs - Silicosis - through prolonged or repeated exposure via inhalation of respirable dust.

Precautionary statements

- Prevention** • Obtain any special instructions from your employer before use.
Always use in an area with adequate ventilation.
Do not handle unless and until all safety precautions have been read and understood.
Do not breathe dust in areas without adequate ventilation.
In case of inadequate ventilation wear respiratory protection.
Do not eat, drink or smoke when using this product.
Wear protective work gloves and safety glasses when using this product.
- Response** • Skin may be washed with soap and water. If skin irritation occurs: Get medical advice/attention.
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.
IF INHALED: If exposure results in breathing difficulties, remove person to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Get medical advice/attention.
If overexposed or concerned about exposure: Get medical advice/attention.

Storage/Disposal • Store in a controlled area.
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Other information

NFPA • Health = 1, Flammability = 0, Reactivity = 0, Special Information = None

HMIS • Health = *1, Flammability = 0, Reactivity = 0, PPE = E

* Chronic Health Hazard

E = Safety glasses, gloves and a dust respirator



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Section 3 - Composition/Information on Ingredients

Mixture

Composition			
Chemical Name	Identifiers	%	Hazardous
Quartz	CAS:14808-60-7	> 65%	Yes
Iron oxide	CAS:1309-37-1	> 4%	No
Bentonite	CAS:1302-78-9	5% TO 10%	Yes
Bituminous coal	CAS: Not Available	2% TO 5%	No
Cellulose	CAS:9004-34-6	0.1% TO 1%	Yes
Aluminum oxide (non-fibrous)	CAS:1344-28-1	5% TO 15%	No
Calcium oxide	CAS:1305-78-8	> 1%	Yes

CALIFORNIA RESIDENTS: This product contains one or more chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

Section 4: First-Aid Measures

Description of first aid measures

- Inhalation** • IF INHALED: If exposure results in breathing difficulties, remove person to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Get medical advice/attention.
- Skin** • Skin may be washed with soap and water. If skin irritation occurs: Get medical advice/attention.
- Eye** • 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.
- Ingestion** • Health effects are not known or expected to occur under normal use or under circumstances involving ingestion of the product. Low hazard for usual industrial or commercial handling.

Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

Section 5: Fire-Fighting Measures

Extinguishing media

- Suitable Extinguishing Media** • Not Applicable, Green Foundry Sand is neither a fire nor an explosion hazard. Dust may be used to smother Class A and B fires.
- Unsuitable Extinguishing Media** • Not Applicable.
- Firefighting Procedures** • Not Applicable.



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Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards • Not Applicable (Note: Explosibility testing has indicated that Green Foundry Sand does not pose a fire/explosion hazard when finely suspended in the air. It is still recommended that best management practices be applied at the site of use to prevent the creation of conditions favorable to dust explosions.)

Hazardous Combustion Products • Not applicable.

Advice for firefighters

- Not Applicable.

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Personal Precautions • Ensure there is adequate ventilation in enclosed areas. Wear appropriate personal protective equipment and protective clothing.

Emergency Procedures • Not applicable. Green Foundry Sand is an inert material.

Environmental precautions

- No known significant environmental effects.

Methods and material for containment and cleaning up

Containment/Clean-up Measures • Mechanically retrieve spilled material and return it to the original container for reuse.

Prohibited Materials • Not applicable. Green Foundry Sand is an inert material.

Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

Section 7 - Handling and Storage

Precautions for safe handling

Handling • No special requirements needed. Avoid spillage and practice good housekeeping.

Conditions for safe storage, including any incompatibilities

Storage • Store in a controlled area.
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.



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Incompatible Materials or Ignition Sources

- Not applicable. Green Foundry Sand is an inert material.

Section 8 - Exposure Controls/Personal Protection

Exposure Limits/Guidelines

- No specific information is available for Green Foundry Sand. Product ingredient information provided below.

Exposure Limits/Guidelines for Ingredients				
	Result	ACGIH	NIOSH	OSHA
Cellulose (9004-34-6)	TWAs	10 mg/m ³ TWA	10 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable dust)	15 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable fraction)
Calcium oxide (1305-78-8)	TWAs	2 mg/m ³ TWA	2 mg/m ³ TWA	5 mg/m ³ TWA
Iron oxide (1309-37-1)	TWAs	5 mg/m ³ TWA (respirable fraction)	5 mg/m ³ TWA (dust and fume, as Fe)	10 mg/m ³ TWA (fume); 15 mg/m ³ TWA (total dust, listed under Rouge); 5 mg/m ³ TWA (respirable fraction, listed under Rouge)
Aluminum oxide (non-fibrous) (1344-28-1)	TWAs	Not established	Not established	15 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable fraction)
Quartz (14808-60-7)	TWAs	0.025 mg/m ³ TWA (respirable fraction)	0.05 mg/m ³ TWA (respirable dust)	$\frac{\text{Total dust TWA} = 30 \text{ mg/m}^3}{\% \text{SiO}_2 + 2}$ $\text{Respirable fraction TWA} = \frac{10 \text{ mg/m}^3}{\% \text{SiO}_2 + 2}$

Exposure controls

Engineering Measures/Controls

- Adequate ventilation systems as needed to control concentrations of airborne dust below applicable limits.

Personal Protective Equipment

Pictograms



Respiratory

- Use of a NIOSH approved dust respirator is recommended where airborne dust levels exceed appropriate exposure limits.

Eye/Face

- Wear safety glasses.

Hands

- Wear standard work gloves.

Skin/Body

- No data available.



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General Industrial Hygiene Considerations • Practice good housekeeping and avoid creating/breathing excessive amounts of dust. Do not allow dust to collect. Maintain, clean, and fit test respirators in accordance with OSHA regulations.

Environmental Exposure Controls • No data available

Section 9 - Physical and Chemical Properties

Information on Physical and Chemical Properties

Material Description			
Physical Form	Solid Dust	Appearance/Description	Fine granular
Color	Gray or black	Odor	Odorless
Taste	No data available	Odor Threshold	No data available
General Properties			
Boiling Point	4046 F(2230 C)	Melting Point	3000 F(1649 C)
Decomposition Temperature	No data available	pH	No data available
Specific Gravity/Relative Density	= 2.65	Bulk Density	No data available
Water Solubility	Insoluble		
Volatility			
Vapor Pressure	Not relevant	Vapor Density	Not relevant
Flammability			
Flash Point	Not relevant	UEL	Not relevant
LEL	Not relevant		

Section 10: Stability and Reactivity

Reactivity

- The product is stable.

Chemical stability

- Stable

Possibility of hazardous reactions

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

Conditions to avoid

- Incompatible materials. See below.

Incompatible materials

- Incompatible Materials: Oxidizers (strong), Hydrofluoric acid (7664-39-3)



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Hazardous decomposition products

Not Applicable.

Section 11 - Toxicological Information

Other Material Information

- No specific toxicological information is available for Green Foundry Sand. Product ingredient information provided below.

Components		
Quartz (> 65%)	14808-60-7	<p>Acute Toxicity: Inhalation-Human TClO • 16 mppcf 8 Hour(s) 17.9 Year(s)-Intermittent; <i>Lungs, Thorax, or Respiration:</i>Fibrosis, focal (pneumoconiosis); <i>Lungs, Thorax, or Respiration:</i>Cough; <i>Lungs, Thorax, or Respiration:</i>Dyspnea; Inhalation-Rat TClO • 200 mg/kg; <i>Lungs, Thorax, or Respiration:</i>Fibrosis, focal (pneumoconiosis); <i>Lungs, Thorax, or Respiration:</i>Other changes; <i>Nutritional and Gross Metabolic:</i>Changes in Chemistry or Temperature:Fe;</p> <p>Multi-dose Toxicity: Inhalation-Rat TClO • 6.2 mg/m³ 6 Hour(s) 6 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:</i>Other changes; <i>Blood:</i>Changes in spleen; <i>Immunological Including Allergic:</i>Increase in cellular immune response; Inhalation-Rat TClO • 80 mg/m³ 26 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:</i>Fibrosis, focal (pneumoconiosis); <i>Blood:</i>Changes in spleen; <i>Immunological Including Allergic:</i>Decrease in cellular immune response;</p> <p>Tumorigen / Carcinogen: Inhalation-Rat TClO • 50 mg/m³ 6 Hour(s) 71 Week(s)-Intermittent; <i>Tumorigenic:</i>Carcinogenic by RTECS criteria; <i>Lung:</i>Tumors</p>
Iron oxide (> 4%)	1309-37-1	<p>Acute Toxicity: Inhalation-Rat TClO • 0.8 mg/kg; <i>Lungs, Thorax, or Respiration:</i>Emphysema; <i>Biochemical:</i>Enzyme inhibition, induction, or change in blood or tissue levels:Multiple enzyme effects; <i>Biochemical:</i>Metabolism (intermediary):Effect on inflammation or mediation of inflammation</p>
Bentonite (5% TO 10%)	1302-78-9	<p>Multi-dose Toxicity: Ingestion/Oral-Rat TDLo • 700 mg/kg 7 Day(s)-Intermittent; <i>Endocrine:</i>Other changes;</p> <p>Tumorigen / Carcinogen: Ingestion/Oral-Mouse TDLo • 12000 g/kg 28 Week(s)-Continuous; <i>Tumorigenic:</i>Equivocal tumorigenic agent by RTECS criteria; <i>Liver:</i>Tumors</p>
Aluminum oxide (5% TO 15%)	1344-28-1	<p>Multi-dose Toxicity: Inhalation-Rat LC50 • 0.2 mg/L 5 Hour(s) 28 Week(s) • Comments: Rat Lung, Thorax, or Respiration: Structural or functional change in trachea or bronchi Lung, Thorax, or Respiration: Chronic pulmonary edema or congestion</p>

Results of health hazard classification

GHS Properties	Classification
Acute toxicity	OSHA HCS 2012 • Acute Toxicity - No Data Available; Acute Toxicity - Dermal - No Data Available; Acute Toxicity - Inhalation - No Data Available; Acute Toxicity - Oral - No Data Available
Aspiration Hazard	OSHA HCS 2012 • No Data Available
Carcinogenicity	OSHA HCS 2012 • Carcinogenicity 1A
Germ Cell Mutagenicity	OSHA HCS 2012 • No Data Available
Skin corrosion/Irritation	OSHA HCS 2012 • No Data Available
Skin sensitization	OSHA HCS 2012 • No Data Available
STOT-RE	OSHA HCS 2012 • Specific Target Organ Toxicity Repeated Exposure 1



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GHS Properties (cont'd)	Classification
STOT-SE	OSHA HCS 2012 • Specific Target Organ Toxicity Single Exposure 1; Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation
Toxicity for Reproduction	OSHA HCS 2012 • No Data Available
Respiratory sensitization	OSHA HCS 2012 • No Data Available
Serious eye damage/Irritation	OSHA HCS 2012 • No Data Available

Target Organs

- Lungs

Route(s) of entry/exposure

- Inhalation, Skin, Eye

Medical Conditions

Aggravated by Exposure

- Dusts may aggravate asthma or other respiratory disorders.

Potential Health Effects

No adverse health effects are expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects may arise if the product is mishandled and overexposure occurs.

Inhalation

Acute (Immediate)

- Intermittent dust exposure may cause respiratory irritation. Short periods of very heavy exposure to dusts may result in rapidly developing Silicosis.

Chronic (Delayed)

- Repeated and prolonged exposure to respirable dust may cause irritation. Chronic overexposure to dust containing respirable sized crystalline silica can cause delayed lung injury (Silicosis). Inhalation of dust containing respirable sized crystalline silica may contribute to pre-existing pulmonary diseases such as asthma and lung disorders associated with smoking. Repeated and prolonged exposure to respirable sized dusts may cause cancer.

Skin

Acute (Immediate)

- May cause irritation (abrasion).

Chronic (Delayed)

- Repeated and prolonged exposure may cause irritation.

Eye

Acute (Immediate)

- May cause irritation.

Chronic (Delayed)

- Repeated and prolonged exposure may cause irritation.

Ingestion

Acute (Immediate)

- Under normal conditions of use, no health effects are expected.

Chronic (Delayed)

- Under normal conditions of use, no health effects are expected.



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Reproductive Effects • No data available.

Mutagenic Effects • No data available.

Carcinogenic Effects • No data available on product

Carcinogenic Effects			
	CAS	IARC	NTP
Iron oxide	1309-37-1	Group 3-Not Classifiable	Not Listed
Quartz	14808-60-7	Group 1-Carcinogenic	Known Human Carcinogen

Section 12 - Ecological Information

Toxicity

- Green Foundry Sand is an inert material with minimal environmental impacts. Detailed ecological information for Green Foundry Sand is available upon request.

Persistence and degradability

- No data available. Due to material insolubility of Green Foundry Sand not expected to biodegrade.

Bioaccumulative potential

- No data available.

Mobility in Soil

- No data available.

Results of PBT and vPvB assessment

- No data available on product.

Other adverse effects

Ecological Fate • No data available.

Potential • No data available.

Environmental Effects



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Section 13 - Disposal Considerations

Waste treatment methods

Product waste • Reuse or recycle. Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	UN number	UN proper shipping name	Transport hazard class(es)	Packing group	Environmental hazards
DOT	NDA	NDA	NDA	NDA	NDA
TDG	NDA	NDA	NDA	NDA	NDA

Special precautions for user

- No special precautions.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- No data available

Other information

- Do not store and transport with oxidizers etc.

DOT • Not regulated as a hazardous material.

TDG • Not regulated as a dangerous good.

Section 15 - Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA Hazard Classifications (40 CFR § 370.2)

- Acute, Chronic

Inventory		
Component	CAS	TSCA
Green Foundry Sand	NDA	Not listed. All components are on the TSCA inventory or are excluded from listing.



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United States

Labor

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

•Green Foundry Sand and ingredients (unless listed below) Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

•Green Foundry Sand and ingredients (unless listed below) Not Listed

Environment

U.S. - CERCLA/SARA – Section 302.4 Hazardous Substances and their Reportable Quantities

•Green Foundry Sand and ingredients (unless listed below) Not Listed

U.S. - CERCLA/SARA - Section 304 Extremely Hazardous Substances EPCRA RQs

•Green Foundry Sand and ingredients (unless listed below) Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

•Green Foundry Sand and ingredients (unless listed below) Not Listed

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

•Green Foundry Sand and ingredients (unless listed below) Not Listed

U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing

•Green Foundry Sand and ingredients (unless listed below) Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

•Green Foundry Sand and ingredients (unless listed below)		Not Listed
•Quartz	14808-60-7	carcinogen, initial date 10/1/88 (airborne particles of respirable size)

Section 16 - Other Information

- Classification method for mixtures** • Carcinogenicity classification based upon cut-off values/concentration limits of ingredients.
- Last Revision Date** • July 8, 2010
- Preparation Date** • February 23, 2015
- Disclaimer/Statement of Liability** • The information and recommendations made herein apply to our products only, and are not to be combined with other product(s). The material contained herein is believed to be accurate. No guaranty of accuracy is made. It is the purchaser's responsibility before using any product to verify this data under their own conditions and to determine if the product is suitable for their purposes.