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Meets the Requirements of OSHA Standard 29 CFR 1910.1200
Hazard Communication and EPA Supplier Notification
Requirements under Section 313 of the Emergency Planning and
Community Right-to-Know Act.

SAFETY DATA SHEET (SDS)

SPENT FOUNDRY SAND

(Silica-based Spent Sand from Iron, Steel & Aluminum Foundries Only)

SDS SC-000-066

DATE ISSUED

04/16

SECTION 1 — PRODUCT IDENTIFICATION & COMPANY INFORMATION

PRODUCT NAME

SPENT FOUNDRY SAND (Silica-based spent foundry sand from IRON, STEEL & ALUMINUM foundries)

Other Designations

Spent Foundry Sand is as characterized in the 2014 Environmental Protection Agency (EPA) publication “Risk Assessment of Spent Foundry Sands In Soil-Related Applications—Evaluating Silica-based Spent Foundry Sand From Iron, Steel, and Aluminum Foundries,” Report Number EPA-530-R-14-003.

This Safety Data Sheet (SDS) template is provided for informational purposes only. Spent sand with other materials not included in the EPA report (e.g., core room materials, abrasive blasting fines, etc.) or from foundries processing alloys that are different from those characterized in the EPA report requires additional assessment.

The final SDS content is the responsibility of the generator of the spent foundry sand and the American Foundry Society, Inc. (AFS) has no liability for damages due to errors or omissions.

PRODUCT IDENTIFICATION (Label Identifier)

MANUFACTURER’S NAME

STREET ADDRESS

EMERGENCY TELEPHONE NO.

MAILING ADDRESS

TELEPHONE NO.

CITY, STATE, ZIP CODE, COUNTRY

FAX NO.

E-MAIL ADDRESS/WEBSITE

RECOMMENDED USE OF CHEMICAL AND RESTRICTIONS ON USE

CLASSIFICATION**Globally Harmonized System (GHS)–US classification**

- Category 1A: Carcinogen (H350)
- Category 1: Specific Target Organ Toxicity (STOT)—damage to organs through prolonged or repeated exposure (H372)
- Category 3: Specific Target Organ Toxicity (STOT)—respiratory irritation (H335)

LABEL ELEMENTS**GHS-US Labeling / Hazard Pictograms****SIGNAL WORD**

- **DANGER**

HAZARD STATEMENTS

- May cause respiratory irritation.
- May cause cancer (inhalation).
- Causes damage to organs (lung/respiratory system) through prolonged or repeated exposure (inhalation).

PRECAUTIONARY STATEMENTS (GHS-US)**Prevention**

- Obtain any special instructions from your employer before use.
- Do not handle until all safety precautions have been read and understood.
- Do not breathe dust.
- Always use in an area with adequate ventilation.
- Wear respiratory protection in case of inadequate ventilation.
- Wash hands and forearms thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Wear eye protection, protective clothing and protective gloves.

Response

- **SKIN CONTACT:** Skin may be washed with soap and water. If skin irritation occurs get medical advice/attention.
- **EYE CONTACT:** 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.
- **INHALATION:** If exposure results in breathing difficulties, move person to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms get medical advice/attention.
- Get medical advice and attention if you feel unwell.

Storage/Disposal

- Store in a controlled area.
- Dispose of contents/container according to local, regional, national and international regulations.

OTHER INFORMATION

- No additional information.

SECTION 3 — COMPOSITION / INFORMATION ON INGREDIENTS

CHEMICAL NAME/ COMMON NAME/ SYNONYM	Wt %	CAS NUMBER
Crystalline silica (quartz)	>90	14808-60-7
Aluminum	0-2	7429-90-5
Aluminum oxide	0-2	1344-28-1
Calcium oxide	0-6	1305-78-8
Iron	0.1-6.4	7439-89-6
Iron oxide	0.1-6.4	1309-37-1

SECTION 4 — FIRST AID MEASURES

EYE CONTACT: 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.

SKIN CONTACT: Skin may be washed with soap and water. If skin irritation occurs get medical advice/attention.

INGESTION: Health effects are not known or expected to occur under normal conditions of use.

INHALATION: 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.

SECTION 5 — FIREFIGHTING MEASURES

FLAMMABLE PROPERTIES: Not Applicable

EXTINGUISHING MEDIA: Not Applicable

PROTECTION OF FIREFIGHTERS: Not Applicable

SECTION 6 — ACCIDENTAL RELEASE MEASURES**STEPS TO BE TAKEN WHEN MATERIAL IS RELEASED OR SPILLED**

Do not breathe dust. Avoid generation of dust during clean-up of spills. Recover the product by wetting and then by vacuuming, shoveling or sweeping. Vacuum should be fitted with a HEPA filter to prevent release of fine particulates during clean-up.

Wear suitable protective clothing, gloves and eye/face protection. Use recommended respiratory protection.

This product is not subject to the reporting requirements of SARA Title III Section 313, and 40 CFR 372.

SECTION 7 — HANDLING & STORAGE**PROCEDURES FOR SAFE HANDLING**

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

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Store in a controlled area.

Dispose of contents/container according to local, regional, national, and international regulations

INCOMPATIBLE MATERIALS OF IGNITION SOURCES

Not applicable.

SECTION 8 — EXPOSURE CONTROLS/ PERSONAL PROTECTION**ENGINEERING CONTROLS**

None Required.

SUBSTANCE	ACGIH TLV mg/m ³	OSHA PEL mg/m ³
Crystalline Silica (quartz) (See 29CFR1910.1053)	0.025	0.050 (PEL) 0.025 (AL)
Aluminum Metal	1 (R)	15 (Total Dust) 5 (R)
Aluminum Oxide	N/E	15 (Total Dust) 5 (R)
Calcium Oxide	2	5
Iron Oxide	5 (R)	10 (Fume)

TERMS

All exposure limits referenced above are 8-hour time-weighted averages (TWAs) unless otherwise noted

AL = Action Level

N/E = None Established

C = Ceiling

I = Inhalable Fraction

R = Respirable Fraction

TLV = Threshold Limit Value/American Conference of Industrial Hygienists (ACGIH)

PEL = Permissible Exposure Limit/OSHA

mg/m³ = Milligrams per Cubic Meter

EXPOSURE CONTROLS/ PERSONAL PROTECTION**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 with side protection.

Hands

Wear standard work gloves.

Skin/Body

No special clothing required.

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 & CHEMICAL PROPERTIES**APPEARANCE /PHYSICAL STATE**

Gray or black solid dust or granular material

ODOR/ODOR THRESHOLD None	VAPOR DENSITY Not applicable
MELTING POINT/FREEZING POINT Approximately 1649°C (3000°F)	SPECIFIC GRAVITY (Relative Density) 2.65 (based on quartz)
BOILING POINT 2230°C (4046°F)	VAPOR PRESSURE Not applicable
FLASH POINT Not applicable	EVAPORATION RATE Not applicable

FLAMMABILITY Not flammable	SOLUBILITY IN WATER Insoluble
UPPER AND LOWER FLAMMABILITY LIMITS Not applicable	pH 6.67–10.2
AUTO IGNITION TEMPERATURE Not applicable	VISCOSITY Not applicable
DECOMPOSITION TEMPERATURE Not applicable	PARTITION COEFFICIENT Not applicable

SECTION 10 — STABILITY & REACTIVITY

CHEMICAL STABILITY Stable	
CONDITIONS TO AVOID None	
REACTIVITY Not reactive under normal conditions of use.	INCOMPATIBLE MATERIALS Contact with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride may cause fire and/or explosions.
HAZARDOUS DECOMPOSITION PRODUCTS Silica dissolves in hydrofluoric acid producing a corrosive gas—silicon tetrafluoride.	POSSIBILITY OF HAZARDOUS REACTIONS Under normal conditions of storage and use, hazardous reactions will not occur.

SECTION 11 — TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

EYE CONTACT: Contact may cause mechanical irritation and possible injury.

SKIN: May cause irritation by abrasion.

INGESTION: No adverse effects expected for normal, incidental ingestion.

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.

Carcinogen Classification of Ingredients

INGREDIENT	OSHA	NTP	IARC	TARGET ORGAN
Quartz	NL	K (respirable)	1	Lung
Aluminum	NL	NL	NL	--
Aluminum oxide	NL	NL	NL	--
Calcium oxide	NL	NL	NL	--
Iron	NL	NL	NL	--
Iron oxide	NL	NL	3	Lung

TERMS

OSHA—Occupational Safety & Health Administration
 Y = Listed as a Human Carcinogen

NTP – National Toxicology Program

K = Known to be a Human Carcinogen
 R = Reasonably Anticipated to be a Human Carcinogen (RAHC)

IARC—International Agency for Research on Cancer

1 = Carcinogen to Humans
 2A = Probably Carcinogenic to Humans
 2B = Possibly Carcinogenic to Humans
 3 = Unclassifiable as to Carcinogenicity in Humans
 4 = Probably not Carcinogenic to Humans

Other

NL = Not Listed

SECTION 12 — ECOLOGICAL INFORMATION

ECOTOXICITY Not Applicable	PERSISTENCE AND DEGRADABILITY Not Applicable
BIOACCUMULATION POTENTIAL Not Applicable	MOBILITY IN SOIL Negligible
OTHER ADVERSE EFFECTS No specific adverse effects are known.	

SECTION 13 — DISPOSAL CONSIDERATIONS

Recover or recycle if possible. Dispose of according to federal, state and local regulations.

SECTION 14 — TRANSPORT INFORMATION

US DEPARTMENT OF TRANSPORTATION (DOT) – HMR (Hazardous Materials Registration) Not Regulated	CANADIAN TRANSPORTATION OF DANGEROUS GOODS (TDG) Not regulated
UN SHIPPING NAME Not regulated	UN NUMBER Not regulated
TRANSPORT HAZARD CLASS Not regulated	PACKING GROUP Not regulated
ENVIRONMENTAL HAZARDS None	LABEL(S) REQUIRED? No
TRANSPORT IN BULK Not applicable	SPECIAL SHIPPING INFORMATION Not applicable

SECTION 15 — REGULATORY INFORMATION**US-OSHA Process Safety Management – Highly Hazardous Chemicals**

Green Foundry Sand and Ingredients (unless listed below): Not Listed

US-OSHA – Specifically Regulated Chemicals

Green Foundry Sand and Ingredients (unless listed below): Not listed

US-EPA

Toxic Substances Control Act – (TSCA): Crystalline silica (Quartz) is on the TSCA inventory list.

CERCLA/SARA Title III: Spent foundry sand is not an extremely hazardous substance under Section 302 and is not a toxic chemical subject to reporting under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 72. (CERCLA = Comprehensive Environmental Response, Compensation and Liability Act.)

CANADIAN DSL (Domestic Substance List) Inventory Status

Crystalline silica (quartz) is on the DSL Inventory.

European Inventory of Existing Commercial Substances (EINECS)

Crystalline Silica (Quartz)- No. 238-878-4

Restriction of Hazardous Substances (RoHS)

Crystalline silica (quartz) is not listed.

CALIFORNIA PROPOSITION 65 Compliance

WARNING: Crystalline silica (quartz) is known to the State of California to cause cancer and birth defects (or other reproductive harm). (California Health & Safety Code 25248.5 et seq.)

US STATE REGULATORY INFORMATION

Crystalline silica (quartz) may be covered under specific state regulations (CA, MA, PA, TX).

DATE

04/16

SECTION 16 — OTHER INFORMATION**SAFETY DATA SHEET (SDS) PREPARED BY**

American Foundry Society, Inc.
Occupational Safety & Health Committee (10-Q)

NOTE

This data is offered in good faith as typical values and not as a product specification. No warranty either expressed or implied is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review the recommendations in specific context of the intended use and determine if they are appropriate.

Addendum: Label Information

<p><u>PRODUCT IDENTIFIER</u></p> <p>SC-000-066 SPENT FOUNDRY SAND (Silica-based Spent Sand from Iron, Steel & Aluminum Foundries Only)</p>	
<p><u>SUPPLIER IDENTIFICATION</u></p> <p>Company Name _____</p> <p>Street Address _____</p> <p>Mailing Address _____</p> <p>City _____ State _____</p> <p>Zip/Postal Code _____ Country _____</p> <p>Emergency Phone Number _____</p> <p>Other Info _____</p>	<p><u>HAZARD PICTOGRAMS</u></p> <p>According to OSHA 29 CFR 1910.1200 HCS</p> <div style="text-align: center;">  </div> <hr/> <p><u>SIGNAL WORD</u></p> <p>DANGER</p>
<p><u>HAZARD STATEMENTS / PRECAUTIONARY STATEMENTS</u></p> <p>No adverse health effects expected if the product is handled in accordance with this product label and the Safety Data Sheet. Symptoms or effects that may arise if the product is mishandled and overexposure occurs include:</p> <ul style="list-style-type: none"> • May cause respiratory irritation. • May cause cancer (inhalation). • Causes damage to organs (lung/respiratory system) through prolonged or repeated exposure (inhalation). <p>Prevention</p> <ul style="list-style-type: none"> • Obtain any special instructions from your employer before use. • Do not handle until all safety precautions have been read and understood. • Do not breathe dust. • Always use in an area with adequate ventilation. • Wear respiratory protection In case of inadequate ventilation. • Wash hands and forearms thoroughly after handling. • Do not eat, drink or smoke when using this product. • Wear eye protection, protective clothing and protective gloves. <p>Response</p> <ul style="list-style-type: none"> • SKIN CONTACT: Skin may be washed with soap and water. If skin irritation occurs get medical advice/attention. • EYE CONTACT: 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. • INHALATION: 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. • Get medical advice and attention if you feel unwell. <p>Storage/Disposal</p> <ul style="list-style-type: none"> • Store in a controlled area. • Dispose of contents/container according to local, regional, national and international regulations. 	
<p><u>OTHER INFORMATION</u></p> <ul style="list-style-type: none"> • None 	