SDS ID No.: CLF-4017

Safety Data Sheet (SDS)

Facilities: Cleveland, Indian Harbor, Riverdale and Burns Harbor

Section 1 – Identification

1(a) Product Identifier Used on Label: Steel Furnace Slag

1(b) Other Means of Identification: Basic Oxygen Furnace Slag, BOF Slag, BOP Slag, Q-BOP Slag, Steel Slag, Steelmaking Slag, C-fines, Metallic C-Fines, formerly AM USA-4017, CLF-4017

1(c) Recommended Use of the Chemical and Restrictions on Use: None

1(d) Name, Address, and Telephone Number:

Cleveland-Cliffs Steel	Phone number: 219-787-4901 or
1 South Dearborn Street	email at: sdssupport@clevelandcliffs.com
Chicago, IL 60603-9888	

1(e) Emergency Phone Number: 1-760-476-3962, (Verisk 3E Company Code: 333211) or CHEMTREC (Day or Night) 1-800-424-9300

Section 2 – Hazard(s) Identification

2(a) Classification of the Chemical: Steel Furnace Slag is not considered a hazardous material according to the criteria specified in REACH [REGULATION (EC) No 1907/2006] and CLP [REGULATION (EC) No 1272/2008] but is considered hazardous under OSHA 29 CFR 1910.1200 Hazard Communication Standard. The categories of Health Hazards as defined in “GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS), Third revised edition ST/SG/AC.10/30/Rev. 3” United Nations, New York and Geneva, 2009 have been evaluated. Refer to Section 3, 8 and 11 for additional information.

2(b) Signal Word, Hazard Statement(s), Symbols and Precautionary Statement(s):

Hazard Symbol	Hazard Classification	Signal Word	Hazard Statement(s)
	Carcinogenicity-1A	**DANGER**	May cause cancer.

Precautionary Statement(s):

Prevention	Response	Storage/Disposal
Wear protective gloves/protective clothing/eye protection/face protection. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.	If exposed or concerned: Get medical advice/attention.	Dispose of contents in accordance with federal, state and local regulations. Store locked up.

2(c) Hazards not Otherwise Classified: None Known

2(d) Unknown Acute Toxicity Statement (Mixture): None Known

Section 3 – Composition/Information on Ingredients

3(a-c) Chemical Name, Common Name (Synonyms), CAS Number and Other Identifiers, and Concentration:

Chemical Name	CAS Number	EC Number	% weight
Slags, Steel Making	65996-71-6	266-004-1	100%

Slag, steelmaking, and converter – BOF: Converter slag is a product of the conversion of liquid iron (hot metal) into steel during a batch process in a basic oxygen furnace. The slag is generated by the addition of fluxes, such as limestone and/or dolomite, during blowing oxygen into the melt. Due to the oxidizing conditions some elements (like Fe and Mn) are partly oxidized and contribute to the formation of the slag. Furthermore, some components are either oxidized to gas (like carbon) or are chemically bound in the slag (like silicon or phosphorus). The liquid slag which has tapping temperatures of around 1600°C is air-cooled under controlled conditions in pits forming crystalline slag.

This product is a complex mixture of iron oxides (calcium iron oxide), metallic silicates (larnite, beta-dicalcium-silicate, srebrodolskite, batrurite, tricalcium-silicate, spinel, wuestite), free lime and calcium oxides. The following components were used for hazard determination:

Chemical Name	CAS Number	EC Number	% weight
Crystalline Silica (as Quartz)	14808-60-7	238-878-4	0-2

EC- European Community

CAS- Chemical Abstract Service

Section 4 – First-aid Measures

4(a) Description of Necessary Measures:

- **Inhalation**: If exposed, concerned or feel unwell: Get medical advice/attention, call a poison center or doctor/physician.
- **Eye Contact:** If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- **Skin Contact:** Rinse skin with water/shower.
- **Ingestion:** If swallowed: Rinse mouth.

Section 4 – First-aid Measures (continued)

4(b) Most Important Symptoms/Effects, Acute and Delayed (Chronic):

Acute effects:

- **Inhalation:** Excessive exposure to high concentrations of dust may cause irritation to the eyes, skin and mucous membranes of the upper respiratory tract.
- **Eye:** Excessive exposure to high concentrations of dust may cause irritation to the eyes.
- **Skin:** Skin contact with dusts may cause irritation or dermatitis.
- **Ingestion:** Ingestion of dust may cause nausea and/or vomiting.

Chronic Effects:

Individuals with chronic respiratory disorders (i.e., asthma, chronic bronchitis, emphysema, etc.) may be adversely affected by any airborne particulate matter exposure. Persons with pre-existing skin disorders may be more susceptible to dermatitis.

4(c) Immediate Medical Attention and Special Treatment: Treat symptomatically

Section 5 – Fire-fighting Measures

5(a) Suitable (and Unsuitable) Extinguishing Media: Use extinguishers appropriate for surrounding materials.

5(b) Specific Hazards Arising from the Chemical: Not applicable for solid product.

5(c) Special Protective Equipment and Precautions for Fire-fighters: Self-contained NIOSH approved respiratory protection and full protective clothing should be worn when fumes and/or smoke from fire are present. Heat and flames cause emittance of acrid smoke and fumes. Do not release runoff from fire control methods to sewers or waterways. Firefighters should wear full face-piece self-contained breathing apparatus and chemical protective clothing with thermal protection. Direct water stream will scatter and spread flames and, therefore, should not be used.

Section 6 - Accidental Release Measures

6(a) Personal Precautions, Protective Equipment and Emergency Procedures: For spills involving finely divided particles, clean-up personnel should be protected against contact with eyes and skin. If material is in a dry state, avoid inhalation of dust. Personnel should be protected against contact with eyes and skin. Fine, dry material should be removed by vacuuming or wet sweeping methods to prevent spreading of dust. Avoid using compressed air. Do not release into sewers or waterways.

6(b) Methods and Materials for Containment and Clean Up: Collect material in appropriate, labeled containers for recovery or disposal in accordance with federal, state, and local regulations. Follow applicable OSHA regulations (29 CFR 1910.120) and all other pertinent state and federal requirements.

Section 7 - Handling and Storage

7(a) Precautions for Safe Handling: Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Do not breathe dusts. Wear protective gloves / protective clothing / eye protection / face protection. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Emergency safety showers and eye wash stations should be present.

7(b) Conditions for Safe Storage, including any Incompatibilities: Whenever feasible, store locked up.

Section 8 - Exposure Controls / Personal Protection

8(a) Occupational Exposure Limits (OELs): The following exposure limits are offered as reference, for an experience industrial hygienist to review.

Ingredients	OSHA PEL [1]	ACGIH TLV [2]	NIOSH REL [3]	IDLH [4]
Metallic Silicates *	NE	NE	NE	NE
Iron Oxides	10 mg/m³ (iron oxide fume)	5.0 mg/m³ (iron oxide, respirable fraction[5])	5.0 mg/m³ (iron oxide dust and fume)	2,500 mg/m³ (as Fe)
Calcium Oxide	5.0 mg/m³ (as calcium oxide)	2.0 mg/m³ (as calcium oxide)	2.0 mg/m³ (as calcium oxide)	25 mg/m³ (as calcium oxide)
Crystalline Silica (as Quartz)	0.05 mg/m³ "AL" 0.025 mg/m³	0.025 mg/m³ (as respirable fraction)	0.05 mg/m³ (as respirable dust), Ca	50 mg/m³ (as quartz, Tripoli) 25 mg/m³ (as cristobalite, tridymite), Ca

NE - None Established

* Varying metallic silicates may be present in varying forms.

1. OSHA PELs (Permissible Exposure Limits) are 8-hour TWA (time-weighted average) concentrations unless otherwise noted. A ("C") designation denotes a ceiling limit, which should not be exceeded during any part of the working exposure unless otherwise noted. A Short Term Exposure Limit (STEL) is defined as a 15-minute exposure, which should not be exceeded at any time during a workday. An Action level (AL) is used by OSHA and NIOSH to express a health or physical hazard. They indicate the level of a harmful or toxic substance/activity, which requires medical surveillance, increased industrial hygiene monitoring, or biological monitoring. Action Levels are generally set at one half of the PEL but the actual level may vary from standard to standard. The intent is to identify a level at which the vast majority of randomly sampled exposures will be below the PEL.
2. Threshold Limit Values (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH) are 8-hour TWA concentrations unless otherwise noted. ACGIH TLVs are for guideline purposes only and as such are not legal, regulatory limits for compliance purposes. DSEN – May cause dermal sensitization. This notation is used to indicate the potential for dermal sensitization resulting from the interaction of an absorbed agent and ultraviolet light (i.e. photosensitization). RSEN – May cause respiratory sensitization.

Section 8 - Exposure Controls / Personal Protection

8(a) Occupational Exposure Limits (OELs) (continued):

3. The National Institute for Occupational Safety and Health Recommended Exposure Limits (NIOSH-REL)- Compendium of Policy and Statements. NIOSH, Cincinnati, OH (1992). NIOSH is the federal agency designated to conduct research relative to occupational safety and health. As is the case with ACGIH TLVs, NIOSH RELs are for guideline purposes only and as such are not legal, regulatory limits for compliance purposes.
4. The "immediately dangerous to life or health air concentration values (IDLHs)" are used by NIOSH as part of the respirator selection criteria and were first developed in the mid-1970's by NIOSH. The Documentation for Immediately Dangerous to Life or Health Concentrations (IDLHs) is a compilation of the rationale and sources of information used by NIOSH during the original determination of 387 IDLHs and their subsequent review and revision in 1994. Ca is designated as carcinogen.
5. Respirable fraction. The concentration of respirable dust for the application of this limit is to be determined from the fraction passing a size-selector with the characteristics defined in ACGIH 2021 TLVs ® and BEIs ® Appendix D, paragraph C.

8(b) Appropriate Engineering Controls: Local exhaust ventilation should be used to control the emission of air contaminants. General dilution ventilation may assist with the reduction of air contaminant concentrations. Emergency eye wash stations and deluge safety showers should be available in the work area.

8(c) Individual Protection Measures:

- **Respiratory Protection:** Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, use only a NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. Concentration in air of the various contaminants determines the extent of respiratory protection needed. Half-face, negative-pressure, air-purifying respirator equipped with P100 filter is acceptable for concentrations up to 10 times the exposure limit. Full-face, negative-pressure, air-purifying respirator equipped with P100 filter is acceptable for concentrations up to 50 times the exposure limit. Protection by air-purifying negative-pressure and powered air respirators is limited. Use a positive-pressure-demand, full-face, supplied air respirator or self-contained breathing apparatus (SCBA) for concentrations above 50 times the exposure limit. If exposure is above the IDLH (immediately dangerous to life or health) for any of the constituents, or there is a possibility of an uncontrolled release or exposure levels are unknown, then use a positive-demand, full-face, supplied air respirator with escape bottle or SCBA.

  Warning! Air-purifying respirators both negative-pressure and powered-air do not protect workers in oxygen-deficient atmospheres.
- **Eyes**: Wear eye protection/face protection. A face shield should be used when appropriate to prevent contact with splashed materials. Chemical goggles, face shields or glasses should be worn to prevent eye contact. Contact lenses should not be worn where industrial exposure to this material is likely.
- **Skin**: Persons handling this product should wear appropriate clothing to prevent skin contact. Take off contaminated clothing and wash before reuse. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves.
- **Other protective equipment**: An eyewash fountain and deluge shower should be readily available in the work area.

Section 9 - Physical and Chemical Properties

9(a) Appearance (physical state, color, etc.): Dark Gray to light brown, Gravel/Rock Like

9(b) Odor: NA

9(c) Odor Threshold: NA

9(d) pH: NA

9(e) Melting Point/Freezing Point: ND

9(f) Initial Boiling Point and Boiling Range: NA

9(g) Flash Point: NA

9(h) Evaporation Rate: NA

9(i) Flammability (solid, gas): Not flammable

9(j) Upper/Lower Flammability or Explosive Limits: NA

9(k) Vapor Pressure: NA

9(l) Vapor Density (Air = 1): NA

9(m) Relative Density: NA

9(n) Solubility(ies): ND

9(o) Partition Coefficient n-octanol/water: NA

9(p) Auto-ignition Temperature: ND

9(q) Decomposition Temperature: ND

9(r) Viscosity: ND

NA - Not Applicable
ND - Not Determined for product as a whole

Section 10 - Stability and Reactivity

10(a) Reactivity: Not Determined (ND)

10(b) Chemical Stability: **Steel Furnace Slag** is stable under normal storage and handling conditions.

10(c) Possibility of Hazardous Reaction: None Known

10(d) Conditions to Avoid: Storage with strong acids or calcium hypochlorite.

10(e) Incompatible Materials: Iron oxide dusts in contact with calcium hypochlorite evolve oxygen and may cause an explosion.

10(f) Hazardous Decomposition Products: Toxic fumes and vapors may be released at elevated temperatures.

Section 11 - Toxicological Information

11 Information on toxicological effects: The following toxicity data has been determined for **Steel Furnace Slag** when further processed using the information available for its components applied to the guidance on the preparation of an SDS under the GHS requirements of OSHA and the EU CPL:

Hazard Classification	Hazard Category		Hazard Symbols	Signal Word	Hazard Statement
	EU	OSHA			
Germ Cell Mutagenicity (covers Categories 1A, 1B and 2)	2	NR *	NA	NA	NA
Carcinogenicity (covers Categories 1A, 1B and 2)	NR	1A [g]		**Danger**	May cause cancer.

* NR Not Rated - Available data does not meet criteria for classification.

Below is additional toxicological data regarding this product:

a. The following LC_{50} or LD_{50} has been established for **Steel Furnace Slag** and it's components:

- **Slags, Steel Making:** Rat LD_{50} > 2000 mg/kg (3 rat studies with same results
- **Iron Oxide:** LD_{50}= >10,000 mg/kg (Oral/ Rat)
- **Calcium Oxide:** LD_{50}= >500 mg/kg but < 2000 mg/kg (Oral/ Rat)
- **Silicon Dioxide:** LD_{50} > 15,000 mg/kg (Oral/Rat)
- **Silica:** LD_{50} = 500 mg/kg (Oral/ Rat)

b. The following Skin (Dermal) Irritation data available for **Steel Furnace Slag**:

- **Slags, Steel Making:** Rabbit not irritating.

c. The following Eye Irritation data available for **Steel Furnace Slag**:

- **Slags, Steel Making:** Rabbit not irritating.

d. The following Skin (Dermal)/Respiratory Sensitization data available for **Steel Furnace Slag**:

- **Slags, Steel Making:** Guinea Pig not sensitizing.

e. No Aspiration Hazard data available for **Steel Furnace Slag** as a mixture or its individual components.

f. No Germ Cell Mutagenicity data available for **Steel Furnace Slag** as a mixture. The following Germ Cell Mutagenicity information was found for the components:

- **Iron Oxide:** Both positive and negative data.

g. Carcinogenicity: IARC, NTP, and OSHA do not list **Steel Furnace Slag** as carcinogens. The following Carcinogenicity information was found for the components:

- **Silicon Dioxide:** IARC-1 (silica, crystalline), carcinogen to humans; ACGIH TLV-A2 (silica, crystalline), suspected human carcinogen; NTP–K, known to be a carcinogen; NIOSH–Ca, potential occupational carcinogen; OSHA-Ca, carcinogen.
- **Iron Oxide:** IARC-3, unclassifiable as to carcinogenicity in humans; ACGIH TLV-A4, not classifiable as a human carcinogen.

h. No Toxic Reproduction data available for **Steel Furnace Slag** as a mixture or its individual components.

i. No Specific Target Organ Toxicity (STOT) following a Single Exposure data available for **Steel Furnace Slag** as a mixture. The following STOT following a Single Exposure data was found for the components:

- **Calcium Oxide**: Can cause respiratory tract irritation, skin and eye irritation.
- **Silicon Dioxide:** Single exposure to very high airborne levels may cause lung irritation in exposed humans.
- **Iron Oxide:** May cause lung irritation.

j. No Specific Target Organ Toxicity (STOT) following Repeated Exposure data was available for **Steel Furnace Slag** as a whole. The following STOT following Repeated Exposure data was found for the components:

- **Silicon Dioxide:** Repeated exposure to crystalline silica causes silicosis and kidney damage as well as increased incidence of autoimmune disorders in humans.
- **Iron Oxide**: Some pulmonary and lung effects reported from Iron oxide exposure in humans.

The above toxicity information was determined from available scientific sources to illustrate the prevailing posture of the scientific community. The scientific resources includes: The American Conference of Governmental Industrial Hygienist (ACGIH) Documentation of the Threshold Limit Values (TLVs) and Biological Exposure indices (BEIs) with Other Worldwide Occupational Exposure Values 2021, The International Agency for Research on Cancer (IARC), The National Toxicology Program (NTP) updated documentation, the World Health Organization (WHO) and other available resources, the International Uniform Chemical Information Database (IUCLID), European Union Risk Assessment Report (EU-RAR), Concise International Chemical Assessment Documents (CICAD), European Union Scientific Committee for Occupational Exposure Limits (EU-SCOEL), Agency for Toxic Substances and Disease Registry (ATSDR), Hazardous Substance Data Bank (HSDB), and International Programme on Chemical Safety (IPCS), European Union Classification, Labeling and Packaging. (EU CPL), Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), International Uniform Chemical Information Database (IUCLID), TOXicology Data NETwork (TOXNET), European Risk Assessment Reports (EU RAR).

The following health hazard information is provided regardless to classification criteria and is based on the individual component(s):

Acute Effects by Component:

- **IRON OXIDE:** Iron is harmful if swallowed, causes skin irritation, and causes eye irritation. Contact with iron oxide has been reported to cause skin irritation and serious eye damage.
- **CALCIUM OXIDE:** Calcium oxide is an eye and skin irritant.
- **CRYSTALINE SILICA (Silicon Dioxide):** Causes irritation and inflammation of the respiratory tract. May cause abrasion of the cornea. Inhalation may cause cough. A single exposure to very high airborne levels may cause lung irritation in exposed humans.

Section 11 - Toxicological Information (continued)

Delayed (chronic) Effects by Component:

- **IRON OXIDE:** Chronic inhalation of excessive concentrations of iron oxide dusts may result in the development of a benign lung disease, called siderosis, which is observable as an X-ray change. No physical impairment of lung function has been associated with siderosis. Inhalation of excessive concentrations of ferric oxide may enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens.
- **CALCIUM OXIDE:** Depending on the concentration and duration of exposure, repeated or prolonged inhalation may cause inflammation of the respiratory passages, ulcers of the mucous membranes, and possible perforation of the nasal septum. Repeated or prolonged skin contact may cause dermatitis.
- **CRYSTALLINE SILICA (Crystalline Quartz):** Chronic exposure can cause silicosis, a form of lung scarring that can cause shortness of breath, reduced lung function, and in severe cases, death. Repeated exposure may cause kidney damage as well as increased incidence of autoimmune disorder.

Section 12 - Ecological Information

12(a) Ecotoxicity (aquatic & terrestrial): No data available for the product, **Steel Furnace Slag** as a whole. However, individual components of the product have been found to be toxic to the environment. Dusts may migrate into soil and groundwater and be ingested by wildlife as follows:

- **Iron Oxide**: LC_{50}: >1000 mg/L; Fish
- **Calcium Oxide:** LC_{50}: 159 mg/L; invertebrates

12(b) Persistence & Degradability: No Data Available

12(c) Bioaccumulative Potential: No Data Available

12(d) Mobility (in soil): No Data Available

Additional Information:

Hazard Category: NA

Signal Word: No Signal Word

Hazard Symbol: NA

Hazard Statement: NA

Section 13 - Disposal Considerations

Disposal: Dispose of in accordance with Local, State, Federal and International regulations. Observe safe handling precautions.

Container Cleaning and Disposal: Follow Local, State, Federal and International regulations. Observe safe handling precautions

Section 14 - Transport Information

14 (a-g) Transportation Information:

US Department of Transportation (DOT) under 49 CFR 172.101 may regulate **Steel Furnace Slag** as a hazardous material. All Local, State, Federal and International regulations that apply to the transport of this type of material must be adhered to.

Section 15 - Regulatory Information

Regulatory Information: *The following listing of regulations relating to a Cleveland-Cliffs Steel product may not be complete and should not be solely relied upon for all regulatory compliance responsibilities.* This product and/or its constituents are subject to the following regulations:

OSHA Regulations: Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-2, Z-3): The product, **Steel Furnace Slag** as a whole is not listed. However, individual components of the product are listed: Refer to Section 8, Exposure Controls and Personal Protection.

EPA Regulations: The product, **Steel Furnace Slag** is not listed as a whole in the following regulatory listings. However, individual components of the product may be listed.

SARA Potential Hazard Categories: Immediate Acute Health Hazard, Delayed Chronic Health Hazard

Section 313 Supplier Notification: The product, **Steel Furnace Slag** does not contain toxic chemicals subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372:

State Regulations: The product, **Steel Furnace Slag** as a whole is not listed in any state regulations. However, individual components of the product are listed in various state regulations:

Pennsylvania Right to Know (RTK): Contains regulated material in the following categories:

- Hazardous Substances: Iron Oxide, Calcium Oxide, Silica Quartz

California Prop. 65: The product, **Steel Furnace Slag** can expose you to chemicals including silica, crystalline (airborne particles of respirable size) which is known to the State of California to cause cancer; and does not contain chemicals which is known to the State of California to cause reproductive toxicity. For more information go to www.P65Warnings.ca.gov.

Section 15 - Regulatory Information (continued)

State Regulations (continued):

New Jersey: Contains regulated material in the following categories:

- Hazardous Substance: Iron Oxide, Calcium Oxide, Silica Quartz
- Special Health Hazard Substances: Calcium Oxide, Silica Quartz

Minnesota: Silicon Dioxide, Iron Oxide (fume), Silica Quartz

Massachusetts: Iron Oxide, Calcium Oxide, Silica Quartz

Other Regulations:

WHMIS Classification (Canadian): The product, **Steel Furnace Slag** is not listed as a whole. However individual components are listed.

Ingredients	WHMIS Classification
Calcium Oxide	Skin corrosion/irritation - Category 1; Serious eye damage/eye irritation - Category 1; Health hazards not otherwise classified (corrosion) - Category 1
Silica Quartz	Carcinogenicity - Category 1A; Specific target organ toxicity - repeated exposure - Category 1

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

Section 16 - Other Information

Prepared By: Cleveland-Cliffs Steel

Original Date of Issue: 5/25/2015

Revised Date: 10/05/2023

Additional Information:

Hazardous Material Identification System (HMIS) Classification

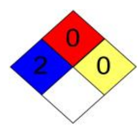
Health Hazard	2
Fire Hazard	0
Physical Hazard	0

HEALTH= **2** * Temporary or minor injury may occur.

FIRE= **0**, Materials that will not burn.

PHYSICAL HAZARDS = **0**, Materials that are normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosives.

National Fire Protection Association (NFPA)



HEALTH = **2**, Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

FIRE = **0,** Materials that will not burn.

INSTABILITY = **0**, Normally stable, even under fire exposure conditions, and are not reactive with water.

ABBREVIATIONS/ACRONYMS:

ACGIH	American Conference of Governmental Industrial Hygienists	**NIF**	No Information Found
BEIs	Biological Exposure Indices	**NIOSH**	National Institute for Occupational Safety and Health
CAS	Chemical Abstracts Service	**NTP**	National Toxicology Program
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	**ORC**	Organization Resources Counselors
CLP	Classification, Labelling and Packaging	**OSHA**	Occupational Safety and Health Administration
CFR	Code of Federal Regulations	**PEL**	Permissible Exposure Limit
CNS	Central Nervous System	**PNOR**	Particulate Not Otherwise Regulated
GI, GIT	Gastro-Intestinal, Gastro-Intestinal Tract	**PNOC**	Particulate Not Otherwise Classified
HMIS	Hazardous Materials Identification System	**PPE**	Personal Protective Equipment
IARC	International Agency for Research on Cancer	**ppm**	parts per million
LC50	Median Lethal Concentration	**RCRA**	Resource Conservation and Recovery Act
LD50	Median Lethal Dose	**REACH**	Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals
LD_{Lo}	Lowest Dose to have killed animals or humans	**RTECS**	Registry of Toxic Effects of Chemical Substances
LEL	Lower Explosive Limit	**SARA**	Superfund Amendment and Reauthorization Act
LOEL	Lowest Observed Effect Level	**SCBA**	Self-contained Breathing Apparatus
LOAEC	Lowest Observable Adverse Effect Concentration	**SDS**	Safety Data Sheet
$\mu g/m^3$	microgram per cubic meter of air	**STEL**	Short-term Exposure Limit
mg/m^3	milligram per cubic meter of air	**TLV**	Threshold Limit Value
mppcf	million particles per cubic foot	**TWA**	Time-weighted Average
MSHA	Mine Safety and Health Administration	**UEL**	Upper Explosive Limit
NFPA	National Fire Protection Association		

Section 16 - Other Information (continued)

Disclaimer: This information is taken from sources or based upon data believed to be reliable. Our objective in sending this information is to help you protect the health and safety of your personnel and to comply with the OSHA Hazard Communication Standard and Title III of the Emergency Planning and Community Right-to-Know Act. Cleveland-Cliffs Steel makes no warranty as to the absolute correctness, completeness, or sufficiency of any of the foregoing, or any additional, or other measures that may not be required under particular conditions. THIS CLEVELAND-CLIFFS STEEL SDS MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, OR ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY IMPLIED WARRANTIES OTHERWISE ARISING FROM COURSE OF DEALING OR TRADE.

Steel Furnace Slag

Signal Word: **DANGER** **Symbols:** 

HAZARD STATEMENTS:

May cause cancer.

PRECAUTIONARY STATEMENTS

Wear protective gloves/protective clothing/eye protection/face protection.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
If exposed or concerned: Get medical advice/attention.
Dispose of contents in accordance with federal, state and local regulations.
Store locked up.

SDS ID No.: CLF-4017

Cleveland-Cliffs Steel
1 South Dearborn Street
Chicago, IL 60603-9888

General Information: Phone: 219-787-4901 or email at: sdssupport@clevelandcliffs.com

CHEMTREC (Day or Night): 1-800-424-9300

Emergency Contact: 1-760-476-3962, (Verisk 3E Company Code: 333211)

Original Issue Date: 5/25/2015 **Revised:** 10/05/2023