# United States Steel Corporation

## Basic Blast Furnace Slag

Safety Data Sheet (SDS)

**USS IHS Number:** 7631

**Locations:** Mon Valley, Fairfield, Gary, Granite City, Great Lakes, Hamilton, and Lake Erie

**Original: 12/16/2010** **Revision: 9/27/2020**

## Section 1 – Identification

**1(a) Product Identifier used on Label: Basic Blast Furnace Slag**

**1(b) Other Means of Identification:** Blast Furnace Slag, Air Cooled Blast Furnace Slag

**1(c) Recommended use of the chemical and restrictions on use:** None

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

United States Steel Corporation
600 Grant Street, Room 1662
Pittsburgh, PA 15219-2800

Phone number: (412) 433-6840 (8:00 am to 5:00 pm)
FAX: (412) 433-5019

**1(e) Emergency Phone Number:** 1-800-262-8200 (CHEMTREC)

## Section 2 – Hazard(s) Identification

**2(a) Classification of the Chemical: Basic Blast Furnace Slag** is considered a hazardous material according to the criteria specified in REACH [REGULATION (EC) No 1907/2006] and CLP [REGULATION (EC) No 1272/2008] and 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<br>Single Target Organ Toxicity (STOT) Single Exposure - 2<br>STOT Repeated Exposure - 1 | **DANGER** | May cause cancer.<br>May cause mechanical irritation to skin and lung irritation.<br>Causes damage to lungs through prolonged or repeated exposure. |

**Precautionary Statement(s):**

| Prevention | Response | Storage/Disposal |
|---|---|---|
| Do not breathe dusts or fumes.<br>Wear protective gloves / protective clothing / eye protection / face protection.<br>Wash thoroughly after handling.<br>Obtain special instructions before use.<br>Do not handle until all safety precautions have been read and understood.<br>Do not eat, drink or smoke when using this product. | If exposed, concerned or feel unwell: Get medical advice/attention, call a poison center or doctor/physician. | Store locked up.<br>Dispose of contents in accordance with federal, state and local regulations. |

**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, ferrous metal, blast furnace | 65996-69-2 | 266-002-0 | 100% |
| The following components comprise this Basic Blast Furnace Slag product and were used for hazard determination: | | | |
| Metallic Silicates and Aluminosilicates * | Various | Various | 94-100 |
| Crystalline Silica (as Quartz) | 14808-60-7 | 238-878-4 | 0-2.5 |

## Section 3 – Composition/Information on Ingredients (continued)

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

| Chemical Name | CAS Number | EC Number | % weight |
|---|---|---|---|
| Calcium Sulfide | 20548-54-3 | 234-873-5 | 2-4 |

**EC** - European Community **CAS** - Chemical Abstract Service

*The majority of components in slag are composed of various metallic silicates (Iron, Calcium, Magnesium, Aluminum, and Titanium Silicates), including: Dicalcium Silicate ($Ca_2SiO_4$) 14284-23-2, Merwinite ($Ca_3MgSi_2O_8$) 13813-64-4, and Gehlenite ($Ca_2Al_2SiO_7$) 1302-56-3

## Section 4 – First-aid Measures

**4(a) Description of Necessary Measures:** If exposed, concerned or feel unwell: Get medical advice/attention, call a poison center or doctor/physician.

- **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:** If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- **Ingestion:** If swallowed: Rinse mouth.

**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 into 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 |

## Section 8 - Exposure Controls / Personal Protection (continued)

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

| Ingredients | OSHA PEL [1] | ACGIH TLV [2] | NIOSH REL [3] | IDLH [4] |
|---|---|---|---|---|
| Crystalline Silica (as Quartz) | 0.05 mg/m$^3$<br>"AL" 0.025 mg/m$^3$ | 0.025 mg/m$^3$ (as respirable fraction [5]) | 0.05 mg/m$^3$ (as respirable dust), Ca | 50 mg/m$^3$ (as quartz, Tripoli)<br>25 mg/m$^3$ (as cristobalite, tridymite), Ca |
| Calcium Sulfide | NE | NE | NE | NE |

NE - None Established

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.
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 2020 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. 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.):** Light to dark, vesicular, stone-like.

**9(b) Odor:** slight sulfur odor

**9(c) Odor Threshold:** NA

**9(d) pH:** NA

**9(e) Melting Point/Freezing Point:** ~2700°F

**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):** Insoluble

**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 (continued)

**10(a) Reactivity:** Not Determined (ND)

**10(b) Chemical Stability:** **Basic Blast 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 incompatible materials. Flames and ignition sources where dust can accumulate.

**10(e) Incompatible Materials:** Strong acids and bases.

**10(f) Hazardous Decomposition Products:** Oxides of carbon, sulfur, metal oxides, hydrogen sulfide and other toxic vapors may be releases at elevated temperatures.

## Section 11 - Toxicological Information

**11(a-e) Information on Toxicological Effects:** The following toxicity data has been determined for **Basic Blast Furnace Slag** by 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. |
| **Specific Target Organ Toxicity (STOT) Following Single Exposure** (covers Categories 1-3) | 2 | 2 [i] |  | **Warning** | May cause mechanical irritation to skin and lung irritation. |
| **STOT Following Repeated Exposure** (covers Categories 1 and 2) | 1 | 1 [j] |  | **Danger** | Causes damage to lungs through prolonged or repeated exposure. |

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

The Toxicological data listed below are presented regardless to classification criteria. Individual hazard classification categories where the toxicological information has met or exceeded a classification criteria threshold are listed above.

a. No $LC_{50}$ or $LD_{50}$ has been established for **Basic Blast Furnace Slag**. The following data has been determined for the components:
- **Silica:** Rat $LD_{50}$ = 500 mg/kg (Oral/ Rat)

b. No Skin (Dermal) Irritation data available for **Basic Blast Furnace Slag** as a mixture. The following Skin (Dermal) Irritation data has been determined for the components:
- **Merwinite**: Causes mild skin irritation.
- **Calcium Sulfide**: Causes Skin irritation.

c. No Eye Irritation data available for **Basic Blast Furnace Slag** as a mixture. The following Eye Irritation information was found for the components:
- **Merwinite:** Causes eye irritation.
- **Crystalline Silica:** May cause abrasion of the cornea.
- **Calcium Sulfide:** Causes eye irritation.

d. No Skin (Dermal)/Respiratory Sensitization data available for **Basic Blast Furnace Slag** as a mixture or its individual components.

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

f. No Germ Cell Mutagenicity data available for **Basic Blast Furnace Slag** as a mixture or its individual components.

g. Carcinogenicity: IARC, NTP, and OSHA do not list **Basic Blast 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.
- **Crystalline Silica (as Quartz):** IARC-3, unclassifiable as to carcinogenicity in humans

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

i. No Specific Target Organ Toxicity (STOT) following a Single Exposure data available for **Basic Blast Furnace Slag** as a mixture. The following STOT following a Single Exposure data was found for the components:
- **Silicon Dioxide:** Single exposure to very high airborne levels may cause lung irritation in exposed humans.
- **Calcium Sulfide:** May cause respiratory irritation. Contact with stomach acids may liberate $H_2S$.

j. No Specific Target Organ Toxicity (STOT) following Repeated Exposure data was available for **Basic Blast 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.

## Section 11 - Toxicological Information (continued)

**11(a-e) Information on Toxicological Effects (continued):**

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 2020, 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).

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

**Acute Effects by Component:**

- **METALLIC SILICATES:** Magnesium Silicate may irritate the eyes. Potassium Silicate may be harmful if swallowed or contacts skin. Calcium silicate may be harmful if swallowed.
- **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.
- **CALCIUM SULFIDE:** Causes skin irritation, eye irritation and may cause respiratory irritation.

**Delayed (chronic) Effects by Component:**

- **METALLIC SILICATES:** Magnesium and Potassium Silicates are suspected of causing cancer by inhalation. Lifetime inhalation exposure of rats and mice to atmospheres of magnesium silicate resulted in interstitial fibrosis of the lung and reduced pulmonary function in rats at =,> 6 $mg/m^3$. Calcium Silicate exposure to wollastonite miners suggests that occupational exposure can cause impaired respiratory function and pneumoconiosis.
- **CRYSTALINE SILICA (Crystalline Quartz):** Inhalation of quartz is classified by IARC as a probable human carcinogen. 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.
- **CALCIUM SULFIDE:** Not Reported/ Not Classified

## Section 12 - Ecological Information

**12(a) Ecotoxicity (aquatic & terrestrial):** No data available for the product, **Basic Blast Furnace Slag** as a whole.

**12(b) Persistence & Degradability**: No Data Available

**12(c) Bioaccumulative Potential**: No Data Available

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

**12(e) Other Adverse Effects:** None Known

**Additional Information:**

**Hazard Category:** Not Reported

**Signal Word:** No Signal Word

**Hazard Symbol:** No Symbol

**Hazard Statement:** No Statement

## Section 13 - Disposal Considerations

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

**Container Cleaning and Disposal:** Follow applicable federal, state and local regulations. Observe safe handling precautions. European Waste Catalogue 10-02-99 (unprocessed slag), or 10-02-99 (wastes not otherwise specified).

**Please note this information is for Basic Blast Furnace Slag in its original form. Any alterations can void this information.**

## Section 14 - Transport Information

**14 (a-g) Transportation Information:**

**US Department of Transportation (DOT)** under 49 CFR 172.101 does not regulate **Basic Blast Furnace Slag** as a hazardous material. All federal, state, and local laws and regulations that apply to the transport of this type of material must be adhered to.

| | | |
|---|---|---|
| **Shipping Name:** NOT DOT Regulated | **Packaging Authorizations:** | **Quantity Limitations:** |
| **Shipping Symbols:** NA | **a) Exceptions:** NA | **a) Passenger Aircraft or Rail:** NA |
| **Hazard Class:** NA | **b) Non-bulk:** NA | **b) Cargo Aircraft Only:** NA |
| **UN No.:** NA | **c) Bulk:** NA | |
| **Packing Group:** NA | | **Vessel Stowage Location:** NA |
| **DOT/ IMO Label:** NA | | |
| **Special Provisions (172.102):** NA | | **DOT reportable quantities**: NA |

**International Maritime Dangerous Goods (IMDG) and the Regulations Concerning the International Carriage of Dangerous Goods by Rail (RID)** classification, packaging and shipping requirements follow the US DOT Hazardous Materials Regulation.

## Section 14 - Transport Information (continued)

**Regulations Concerning the International Carriage of Dangerous Goods by Road (ADR)** does not regulate **Basic Blast Furnace Slag** as a hazardous material.

| | | |
|---|---|---|
| **Shipping Name:** N OT DOT Regulated<br>**Classification Code:** NA<br>**UN No.:** NA<br>**Packing Group:** NA<br>**ADR Label:** NA<br>**Special Provisions:** NA<br>**Limited Quantities:** NA | **Packaging:**<br>**a) Packing Instructions:** NA<br>**b) Special Packing Provisions:** NA<br>**c) Mixed Packing Provisions:** NA | **Portable Tanks & Bulk Containers:**<br>**a) Instructions:** NA<br>**b) Special Provisions:** NA |

**International Air Transport Association (IATA)** does not regulate **Basic Blast Furnace Slag** as a hazardous material.

| | **Passenger & Cargo Aircraft** | | | |
|---|---|---|---|---|
| | **Limited Quantity (EQ)** | | **Cargo Aircraft Only:** | **Special Provisions:** |
| **Shipping Name:** NOT DOT Regulated<br>**Class/Division:** NA<br>**Hazard Label (s):** NA<br>**UN No.:** NA<br>**Packing Group:** NA<br>**Excepted Quantities (EQ):** NA | **Pkg Inst:** NA<br>**Max Net Qty/Pkg:** NA | **Pkg Inst:** NA<br>**Max Net Qty/Pkg:** NA | **Pkg Inst:** NA<br>**Max Net Qty/Pkg:** NA | NA<br>**ERG Code:** NA |

Pkg Inst – Packing Instructions Max Net Qty/Pkg – Maximum Net Quantity per Package ERG – Emergency Response Drill Code

**Basic Blast Furnace Slag** does not have a **Transport Dangerous Goods (TDG)** classification.

## Section 15 - Regulatory Information

**Regulatory Information**: *The following listing of regulations relating to a U. S. 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:

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

**Section 313 Supplier Notification:** The product, **Basic Blast Furnace Slag** does not contain any of the 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, **Basic Blast Furnace Slag** as a whole is not listed in any state regulations. However, individual components of the product are listed in various state regulations:

California Prop. 65:  This product can expose you to crystalline silica (airborne particles of respirable size only), which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

**Other Regulations:**

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

| Ingredients | WHMIS Classification |
|---|---|
| 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:** United States Steel Corporation

**Revision History:**

08/27/2020 – Revisions to sections 2, 8, 11, & 16
06/23/2017 – Update WHMIS 2015
04/14/2015 - Revision
07/07/2014 - Update to OSHA HAZCOM 2012
07/25/2011 – Update of content and format to comply with GHS
10/25/1985 - Original

**Expiration Date:** 09/27/2023

**Additional Information:**

**Hazardous Material Identification System (HMIS) Classification**

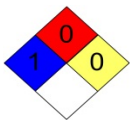
| | |
|---|---|
| Health Hazard | 1 |
| Fire Hazard | 0 |
| Physical Hazard | 0 |

HEALTH= **1**, * Denotes possible chronic hazard if airborne dusts or fumes are generated Irritation or minor reversible injury possible.

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 = **1**, Exposure could cause irritation but only minor residual injury even if no treatment is given.

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

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

## Section 16 - Other Information (continued)

**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 |
| **CFR** | Code of Federal Regulations | **OSHA** | Occupational Safety and Health Administration |
| **CNS** | Central Nervous System | **PEL** | Permissible Exposure Limit |
| **GI, GIT** | Gastro-Intestinal, Gastro-Intestinal Tract | **PNOR** | Particulate Not Otherwise Regulated |
| **HMIS** | Hazardous Materials Identification System | **PNOC** | Particulate Not Otherwise Classified |
| **IARC** | International Agency for Research on Cancer | **PPE** | Personal Protective Equipment |
| **LC50** | Median Lethal Concentration | **ppm** | parts per million |
| **LD50** | Median Lethal Dose | **RCRA** | Resource Conservation and Recovery Act |
| **$LD_{Lo}$** | 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 |
| **$\mu g/m^3$** | microgram per cubic meter of air | **SCBA** | Self-contained Breathing Apparatus |
| **$mg/m^3$** | milligram per cubic meter of air | **STEL** | Short-term Exposure Limit |
| **mppcf** | million particles per cubic foot | **TLV** | Threshold Limit Value |
| **SDS** | Safety Data Sheet | **TWA** | Time-weighted Average |
| **MSHA** | Mine Safety and Health Administration | **UEL** | Upper Explosive Limit |
| **NFPA** | National Fire Protection Association | | |

**Disclaimer:** This information is taken from sources or based upon data believed to be reliable. However, United States Steel Corporation makes no warranty as to the absolute correctness or sufficiency of any of the foregoing or that additional or other measures may not be required under particular conditions.