

# Safety Data Sheet


according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: February 11, 2021

## 1 Identification

- **Product identifier**
- **Trade name: BLACK BEAUTY® STEELMAKING SLAG**
- **Product code:** No other identifiers
- **Recommended use and restriction on use**
- **Recommended use:** Raw Material - Industrial Uses.
- **Restrictions on use:** Contact manufacturer/supplier
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**  
Harsco Corporation  
Harsco Environmental  
350 Poplar Church Road  
Camp Hill, PA 17011  
Phone: 717-763-7064  
E-Mail: reedcs@harsco.com
- **Emergency telephone number:**  
Emergency Contact: Verisk 3E  
Emergency Phone: 855-393-9889 (Access Code: 13793)  
Manufacturer Contact: Customer Service Department  
Manufacturer Emergency Phone: 888-733-3646 ext. 2

## 2 Hazard(s) identification

- **Classification of the substance or mixture**  
Carc. 1B H350 May cause cancer. Route of exposure: Inhalation.  
STOT RE 1 H372 Causes damage to the lung through prolonged or repeated exposure. Route of exposure: Inhalation.
- **Label elements**
- **GHS label elements**  
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:**  
  
GHS08
- **Signal word:** Danger
- **Hazard statements:**  
H350 May cause cancer. Route of exposure: Inhalation.  
H372 Causes damage to the lung through prolonged or repeated exposure. Route of exposure: Inhalation.
- **Precautionary statements:**  
P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P260 Do not breathe dust.  
P264 Wash thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.

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P314 Get medical advice/attention if you feel unwell.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Other hazards** There are no other hazards not otherwise classified that have been identified.

## 3 Composition/information on ingredients

· **Chemical characterization: Substances**

· **CAS No. Description**

65996-71-6 Steelmaking Slags

· **Chemical characterization: Mixtures**

· **Components:**

1309-37-1	Diiron trioxide / iron (III) oxide	30-35%
60676-86-0	Silica, fused	15-20%
1309-48-4	Magnesium oxide	5-10%
1344-28-1	Aluminum oxide ⚠ STOT RE 2, H373	5-10%
11129-60-5	Manganese oxide	5-10%
1308-38-9	Chromium (III) oxide	<2%
13463-67-7	Titanium dioxide ⚠ Carc. 2, H351	<1.0%
14808-60-7	Quartz (SiO <sub>2</sub> ) ⚠ Carc. 1A, H350; STOT RE 1, H372	0.1%
7440-43-9	cadmium ⚠ Pyr. Sol. 1, H250 ⚠ Acute Tox. 3, H301; Acute Tox. 2, H330 ⚠ Muta. 2, H341; Carc. 1B, H350; Repr. 2, H361; STOT RE 1, H372	<0.005%
7440-41-7	beryllium ⚠ Acute Tox. 3, H301; Acute Tox. 2, H330 ⚠ Carc. 1B, H350; STOT RE 1, H372 ⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335	<0.0005%

## 4 First-aid measures

· **Description of first aid measures**

· **After inhalation:** Seek medical treatment in case of complaints.

· **After skin contact:**

Wash with soap and water.

If skin irritation is experienced, consult a doctor.

· **After eye contact:**

Remove contact lenses if worn.

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:**

Rinse out mouth and then drink plenty of water.

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- Do not induce vomiting; immediately call for medical help.
- **Most important symptoms and effects, both acute and delayed:**  
Gastric or intestinal disorders when ingested.  
Mechanical irritation to eyes and skin.
- **Danger:**  
May cause cancer. Route of exposure: Inhalation.  
Causes damage to the lung through prolonged or repeated exposure. Route of exposure: Inhalation.
- **Indication of any immediate medical attention and special treatment needed:**  
If medical advice is needed, have product container or label at hand.

## 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
Use fire fighting measures that suit the environment.  
The product is not flammable.
- **For safety reasons unsuitable extinguishing agents:** No relevant information available.
- **Special hazards arising from the substance or mixture** No relevant information available.
- **Advice for firefighters**
- **Protective equipment:**  
Wear self-contained respiratory protective device.  
Wear fully protective suit.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Ensure adequate ventilation.  
Use respiratory protective device against the effects of fumes/dust/aerosol.
- **Environmental precautions**  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Methods and material for containment and cleaning up**  
Vacuum or sweep and collect in a suitable container. For a large spill, collect uncontaminated product for possible re-use. Avoid creating dusty conditions.  
Sweep up and place into an appropriate container.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

## 7 Handling and storage

- **Handling**
- **Precautions for safe handling:**  
Prevent formation of dust.  
Any deposit of dust which cannot be avoided must be regularly removed.  
Use appropriate industrial vacuum cleaners or central vacuum systems for dust removal.

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- Do not dry clean dust covered objects and floors. Wash thoroughly with plenty of water.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:**  
Store away from oxidizers, strong acids, strong bases.  
Store away from foodstuffs.
- **Further information about storage conditions:** Store in dry conditions.
- **Specific end use(s)** No relevant information available.

## 8 Exposure controls/personal protection

### · Control parameters

#### · Components with limit values that require monitoring at the workplace:

#### 1309-37-1 Diiron trioxide / iron (III) oxide

PEL (USA)	Long-term value: 10* mg/m <sup>3</sup> *Fume
REL (USA)	Long-term value: 5 mg/m <sup>3</sup> Dust & fume, as Fe
TLV (USA)	Long-term value: 5* mg/m <sup>3</sup> *as respirable fraction
EL (Canada)	Short-term value: 10** mg/m <sup>3</sup> Long-term value: 5* 10*** 3**** mg/m <sup>3</sup> *dust & fume**fume; Rouge: ***total dust****resp.
EV (Canada)	Long-term value: 5* 10** mg/m <sup>3</sup> *respirable, including Rouge;**total dust
LMPE (Mexico)	Long-term value: 5* mg/m <sup>3</sup> A4, *fracción respirable

#### 60676-86-0 Silica, fused

PEL (USA)	20mppcf or 80mg/m <sup>3</sup> /%SiO <sub>2</sub>
TLV (USA)	TLV withdrawn
EV (Canada)	Long-term value: 0.1 mg/m <sup>3</sup> respirable
LMPE (Mexico)	Long-term value: 0.1 mg/m <sup>3</sup> (j)

#### 1309-48-4 Magnesium oxide

PEL (USA)	Long-term value: 15* mg/m <sup>3</sup> fume; *total particulate
TLV (USA)	Long-term value: 10* mg/m <sup>3</sup> *as inhalable fraction
EL (Canada)	Short-term value: 10** mg/m <sup>3</sup> Long-term value: 10* 3** mg/m <sup>3</sup> *inhalable fume;**respirable dust and fume
EV (Canada)	Long-term value: 10 mg/m <sup>3</sup>

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LMPE (Mexico)	inhalable Long-term value: 10* mg/m <sup>3</sup> A4, *fracción respirable
<b>1344-28-1 Aluminum oxide</b>	
PEL (USA)	Long-term value: 15*; 5** mg/m <sup>3</sup> *Total dust; ** Respirable fraction
REL (USA)	Long-term value: 10* 5** mg/m <sup>3</sup> as Al*Total dust**Respirable/pyro powd./welding f.
TLV (USA)	Long-term value: 1* mg/m <sup>3</sup> as Al; *as respirable fraction
EL (Canada)	Long-term value: 1.0 mg/m <sup>3</sup> respirable, as Al
EV (Canada)	Long-term value: 10 mg/m <sup>3</sup> total dust
LMPE (Mexico)	Long-term value: 1* mg/m <sup>3</sup> A4, *fracción respirable
<b>1308-38-9 Chromium (III) oxide</b>	
PEL (USA)	Long-term value: 0.5 mg/m <sup>3</sup> as Cr
REL (USA)	Long-term value: 0.5 mg/m <sup>3</sup> as Cr; See Pocket Guide App. C
TLV (USA)	Long-term value: 0.003 mg/m <sup>3</sup> as Cr(III);inhalable; soluble comp.: DSEN;RSEN
EL (Canada)	Long-term value: 0.5 mg/m <sup>3</sup> as Cr; S(D); water soluble only: S(R)
LMPE (Mexico)	Long-term value: 0.5 mg/m <sup>3</sup> A4
<b>13463-67-7 Titanium dioxide</b>	
PEL (USA)	Long-term value: 15* mg/m <sup>3</sup> *total dust
REL (USA)	See Pocket Guide App. A
TLV (USA)	Long-term value: 10 mg/m <sup>3</sup>
EL (Canada)	Long-term value: 10* 3** mg/m <sup>3</sup> *total dust;**respirable fraction; IARC 2B
EV (Canada)	Long-term value: 10 mg/m <sup>3</sup> total dust
LMPE (Mexico)	Long-term value: 10 mg/m <sup>3</sup> A4
<b>14808-60-7 Quartz (SiO<sub>2</sub>)</b>	
PEL (USA)	Long-term value: 0.05* mg/m <sup>3</sup> *resp. dust; 30mg/m <sup>3</sup> /%SiO <sub>2</sub> +2
REL (USA)	Long-term value: 0.05* mg/m <sup>3</sup> *respirable dust; See Pocket Guide App. A
TLV (USA)	Long-term value: 0.025* mg/m <sup>3</sup>

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EL (Canada)	*as respirable fraction Long-term value: 0.025 mg/m <sup>3</sup> ACGIH A2; IARC 1
EV (Canada)	Long-term value: 0.10* mg/m <sup>3</sup> *respirable fraction
LMPE (Mexico)	Long-term value: 0.025* mg/m <sup>3</sup> A2, *fracción respirable
<b>Particulates Not Otherwise Regulated (Total)</b>	
TWA (USA)	Long-term value: 15 mg/m <sup>3</sup>
<b>Particulates Not Otherwise Regulated (Respirable Fraction)</b>	
TLV (USA)	Long-term value: 3 mg/m <sup>3</sup>
TWA (USA)	Long-term value: 5 (15 mppcf*) mg/m <sup>3</sup> *mppcf = Millions of particles per ft <sup>3</sup> of air
<b>7440-43-9 cadmium</b>	
PEL (USA)	Long-term value: 0.005 mg/m <sup>3</sup> as Cd; see 29 CFR 1910.1027
REL (USA)	See Pocket Guide App. A
TLV (USA)	Long-term value: 0.01 0.002* mg/m <sup>3</sup> as Cd; *respirable fraction; BEI
EL (Canada)	Long-term value: 0.01 0.002* mg/m <sup>3</sup> as Cd; ACGIH A2, IARC 1; *respirable
EV (Canada)	Long-term value: 0.01 0.002* mg/m <sup>3</sup> *respirable
LMPE (Mexico)	Long-term value: 0.01 0.002** mg/m <sup>3</sup> A2, IBE; *fracción resp.
<b>7440-41-7 beryllium</b>	
PEL (USA)	Short-term value: 0.002 mg/m <sup>3</sup> Long-term value: 0.0002; 0.002* mg/m <sup>3</sup> Ceiling limit value: 0.025**/** mg/m <sup>3</sup> , 0.005* ppm as Be; *see 1910.1024; **30 min peak/8-hr shift
REL (USA)	Ceiling limit value: 0.0005 mg/m <sup>3</sup> as Be; See Pocket Guide App. A
TLV (USA)	Long-term value: 0.00005 mg/m <sup>3</sup> as Be; inhalable; RSEN; soluble comp.: Skin, DSEN
EL (Canada)	Long-term value: 0.00005 mg/m <sup>3</sup> as Be; ACGIH A1, IARC 1; Skin, S(R); soluble: S(D)
EV (Canada)	Short-term value: 0.01 mg/m <sup>3</sup> Long-term value: 0.002 mg/m <sup>3</sup> as Be; revoked as of 01/01/18
LMPE (Mexico)	Long-term value: 0.00005* mg/m <sup>3</sup> A1, PIEL, SEN, *fracción inhalable; como Be

· **Exposure controls**

· **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

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Keep away from foodstuffs, beverages and feed.

· **Engineering controls:** Provide adequate ventilation.

· **Breathing equipment:**

A NIOSH approved dust respirator should be used for operations generating dust.

Filter P3

· **Protection of hands:** When needed, wear gloves for protection against mechanical hazards.

· **Eye protection:**



Safety glasses

Follow relevant national guidelines concerning the use of protective eyewear.

· **Body protection:** Not required.

· **Limitation and supervision of exposure into the environment** No special requirements.

· **Risk management measures** No special requirements.

## 9 Physical and chemical properties

### · Information on basic physical and chemical properties

· **Appearance:**

Form: Solid

Color: Light grey

· **Odor:** Odorless

· **Odor threshold:** Not determined.

· **pH-value:** Not applicable.

· **Melting point/Melting range:** Not determined.

· **Boiling point/Boiling range:** Not determined.

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Product is not flammable.

· **Auto-ignition temperature:** Not determined.

· **Decomposition temperature:** Not determined.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits**

Lower: Not determined.

Upper: Not determined.

· **Oxidizing properties:** Non-oxidizing.

· **Vapor pressure:** Not determined.

· **Density:**

Relative density: Not determined.

Vapor density: Not applicable.

Evaporation rate: Not applicable.

· **Solubility in / Miscibility with**

Water: Soluble.

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- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity**
  - Dynamic:** Not applicable.
  - Kinematic:** Not applicable.
- **Other information** No relevant information available.

## 10 Stability and reactivity

- **Reactivity:** No relevant information available.
- **Chemical stability:** Stable under normal temperatures and pressures.
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions**  
Reacts with strong acids and alkali.  
Reacts with strong oxidizing agents.
- **Conditions to avoid** No relevant information available.
- **Incompatible materials** Oxidizers
- **Hazardous decomposition products**  
Under fire conditions only:  
Metal oxide smoke.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:** Based on available data, the classification criteria are not met.
- **LD/LC50 values that are relevant for classification:** None.
- **Primary irritant effect:**
- **On the skin:** Mechanical irritation only.
- **On the eye:** Mechanical irritation only.
- **Sensitization:** Based on available data, the classification criteria are not met.

### · IARC (International Agency for Research on Cancer):

13463-67-7	Titanium dioxide	2B
14808-60-7	Quartz (SiO <sub>2</sub> )	1
11099-02-8	Nickel oxide	1
1306-19-0	Cadmium oxide	1
1304-56-9	Beryllium oxide	1

### · NTP (National Toxicology Program):

14808-60-7	Quartz (SiO <sub>2</sub> )	K
11099-02-8	Nickel oxide	K
1306-19-0	Cadmium oxide	K
1304-56-9	Beryllium oxide	K

### · OSHA-Ca (Occupational Safety & Health Administration):

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1306-19-0 | Cadmium oxide

- **Probable route(s) of exposure:**  
Ingestion.  
Inhalation.  
Eye contact.  
Skin contact.
- **Acute effects (acute toxicity, irritation and corrosivity):**  
May cause mechanical irritation to eyes and skin.
- **Repeated dose toxicity:** Possible risk of irreversible effects.
- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** May cause cancer. Route of exposure: Inhalation.
- **Reproductive toxicity:** Based on available data, the classification criteria are not met.
- **STOT-single exposure:** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure:**  
Causes damage to the lung through prolonged or repeated exposure. Route of exposure: Inhalation.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity** No relevant information available.
- **Persistence and degradability** No relevant information available.
- **Bioaccumulative potential:** No relevant information available.
- **Mobility in soil:** No relevant information available.
- **Additional ecological information**
- **General notes:**  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Other adverse effects** No relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Smaller quantities can be disposed of with household waste.  
The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.
- **Uncleaned packagings**
- **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

- **UN-Number**
- **DOT, ADR/RID/ADN, IMDG, IATA** Not regulated.

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- |  |                 |
|--|-----------------|
| · <b>UN proper shipping name</b>   |                 |
| · DOT, ADR/RID/ADN, IMDG, IATA   | Not regulated.  |
| · <b>Transport hazard class(es)</b>  |                 |
| · DOT, ADR/RID/ADN, IMDG, IATA   |                 |
| · <b>Class</b>   | Not regulated.  |
| · <b>Packing group</b>   |                 |
| · DOT, ADR/RID/ADN, IMDG, IATA   | Not regulated.  |
| · <b>Environmental hazards</b>   |                 |
| · <b>Marine pollutant:</b>   | No              |
| · <b>Special precautions for user</b>  | Not applicable. |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |

## 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **United States (USA)**
- **SARA**

### · Section 302 (extremely hazardous substances):

None of the ingredients are listed.

### · Section 313 (Specific toxic chemical listings):

1344-28-1	Aluminum oxide
1308-38-9	Chromium (III) oxide

### · TSCA (Toxic Substances Control Act)

All ingredients are listed or exempt.

### · Proposition 65 (California)

#### · **Chemicals known to cause cancer:**

13463-67-7	Titanium dioxide
14808-60-7	Quartz (SiO <sub>2</sub> )
11099-02-8	Nickel oxide
1306-19-0	Cadmium oxide
1304-56-9	Beryllium oxide

#### · **Chemicals known to cause developmental toxicity for females:**

None of the ingredients are listed.

#### · **Chemicals known to cause developmental toxicity for males:**

None of the ingredients are listed.

#### · **Chemicals known to cause developmental toxicity:**

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None of the ingredients are listed.

· **EPA (Environmental Protection Agency):**

1308-38-9	Chromium (III) oxide	D, CBD
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· **IARC (International Agency for Research on Cancer):**

13463-67-7	Titanium dioxide	2B
14808-60-7	Quartz (SiO <sub>2</sub> )	1
11099-02-8	Nickel oxide	1
1306-19-0	Cadmium oxide	1
1304-56-9	Beryllium oxide	1

· **Canadian Domestic Substances List (DSL):**

All ingredients listed on DSL or NDSL.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Abbreviations and acronyms:**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

OSHA: Occupational Safety & Health Administration

Pyr. Sol. 1: Pyrophoric solids – Category 1

Acute Tox. 3: Acute toxicity – Category 3

Acute Tox. 2: Acute toxicity – Category 2

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

Skin Sens. 1: Skin sensitisation – Category 1

Muta. 2: Germ cell mutagenicity – Category 2

Carc. 1A: Carcinogenicity – Category 1A

Carc. 1B: Carcinogenicity – Category 1B

Carc. 2: Carcinogenicity – Category 2

Repr. 2: Reproductive toxicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

· **Sources**

Website, European Chemicals Agency ([echa.europa.eu](http://echa.europa.eu))

Website, US EPA Substance Registry Services ([ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do](http://ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do))

Website, Chemical Abstracts Registry, American Chemical Society ([www.cas.org](http://www.cas.org))

Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6

Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaassen, Curtis D., ed., ISBN: 978-0-07-176923-5.

Safety Data Sheets, Individual Manufacturers