

### SECTION 1: Identification

#### 1.1. Product identifier

Product form : Mixture  
 Product name : Steel Mill Scale  
 Product group : Trade product

#### 1.2. Recommended use and restrictions on use

Recommended use : Industrial use  
 Restrictions on use : None known

#### 1.3. Supplier

Gerdau Long Steel North America  
 4221 West Boy Scout Blvd.  
 Suite 600  
 33607 Tampa  
 T (800) 876-3626

#### 1.4. Emergency telephone number

Emergency number : 800-424-9300 CHEMTREC

### SECTION 2: Hazard identification

#### 2.1. Classification of the substance or mixture

##### Classification (GHS-CA)

Acute toxicity (oral), Category 4 H302  
 Acute toxicity (inhalation:dust,mist) Category 4 H332  
 Skin corrosion/irritation, Category 2 H315  
 Serious eye damage/eye irritation, Category 2A H319  
 Skin sensitisation, Category 1 H317  
 Germ cell mutagenicity, Category 2 H341  
 Carcinogenicity, Category 1 H350  
 Reproductive toxicity, Category 1 H360  
 Specific target organ toxicity — Repeated exposure, Category 1 H372

Full text of H statements : see section 16

#### 2.2. GHS Label elements, including precautionary statements

##### GHS-CA labelling

Hazard pictograms (GHS-CA) : 

Signal word (GHS-CA) : Danger

Hazard statements (GHS-CA) : H302+H332 - Harmful if swallowed or if inhaled  
 H315 - Causes skin irritation.  
 H317 - May cause an allergic skin reaction.  
 H319 - Causes serious eye irritation.  
 H341 - Suspected of causing genetic defects.  
 H350 - May cause cancer (Inhalation).  
 H360 - May damage fertility or the unborn child.  
 H372 - Causes damage to organs through prolonged or repeated exposure.

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Precautionary statements (GHS-CA)	: P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. P260 - Do not breathe dust, fume, vapours. P264 - Wash hands thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P271 - Use only outdoors or in a well-ventilated area. P272 - Contaminated work clothing should not be allowed out of the workplace. P280 - Wear eye protection, face protection, protective clothing, protective gloves. P301+P312 - IF SWALLOWED: Call a POISON CENTER if you feel unwell. P302+P352 - IF ON SKIN: Wash with plenty of water. P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P312 - Call a POISON CENTER or doctor if you feel unwell. P330 - Rinse mouth. P333+P313 - If skin irritation or rash occurs: Get medical advice/attention. P337+P313 - If eye irritation persists: Get medical advice/attention. P362+P364 - Take off contaminated clothing and wash it before reuse. P405 - Store locked up. P501 - Dispose of contents/container to Collection point
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### 2.3. Other hazards

Other hazards not contributing to the classification : Inhalation of fumes may cause metal fume fever.

### 2.4. Unknown acute toxicity (GHS-CA)

No data available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Chemical name / Synonyms	Product identifier	%	Classification (GHS-CA)
Iron oxide (Fe2O3)	C.I. 77491 / C.I. Pigment Red 101 / Diiron trioxide / Ferric oxide / Iron sesquioxide / Iron(III) oxide / Red Iron Oxide / Rouge / CI 77491 / Iron trioxide / Sienna / Pigment Red 101 / Red iron oxide / Red iron oxide pigment / Iron Oxide Red / Diiron(III) trioxide	(CAS-No.) 1309-37-1	50 - 99	Not classified
Calcium	Calcium metal	(CAS-No.) 7440-70-2	0 - 50	Water-react. 2, H261
Aluminum	Aluminium / Aluminium metal / Aluminium, metal / Aluminum metal / Aluminum, elemental / Aluminum, metal / C.I. 77000 / CI 77000 / Aluminum (metal) / Aluminium powder (stabilised) / Aluminium powder (stabilized) / Aluminium powder / Pigment Metal 1 / Aluminium fumes / Aluminum powder / Aluminium pyrophoric	(CAS-No.) 7429-90-5	0 - 10	Flam. Sol. 1, H228 Water-react. 2, H261
Manganese	Manganese, elemental / Manganese metal / Manganese elemental	(CAS-No.) 7439-96-5	0 - 5	Not classified
Sulfur	Sulphur / Sulphur, molten / Elemental sulfur / Brimstone / SULFUR / Elemental sulphur / Sulfur, elemental	(CAS-No.) 7704-34-9	0 - 1	Skin Irrit. 2, H315
Potassium	Potassium metal / Potassium, metal / Potassium 40	(CAS-No.) 7440-09-7	0 - 1	Water-react. 1, H260 Skin Corr. 1B, H314
Arsenic	Arsenic, elemental / Arsenic metal / Arsenic (elemental) / Arsenic inorganic oxides / Arsenic, inorganic / Inorganic arsenic	(CAS-No.) 7440-38-2	0 - 1	Acute Tox. 2 (Oral), H300 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Zinc oxide (ZnO)	Zinc oxide / C.I. 77947 / C.I. Pigment White 4 / Zinc White / CI 77947 / Pigment White 4	(CAS-No.) 1314-13-2	0 - 1	Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Copper	C.I. 77400 / C.I. Pigment Metal 2 / Copper, elemental / CI 77400 / Copper metal / Copper, metallic / Pigment Metal 2 / Granulated copper	(CAS-No.) 7440-50-8	0 - 1	Not classified
Chromium	Chromium metal / Chromium, elemental / Chromium, metal / Chromium, metallic / Chromium (hexavalent)	(CAS-No.) 7440-47-3	0 - 1	Comb. Dust
Tungsten	Tungsten, elemental / Tungsten, metal / Tungsten metal	(CAS-No.) 7440-33-7	0 - 1	Not classified

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Name	Chemical name / Synonyms	Product identifier	%	Classification (GHS-CA)
Nickel	Nickel metal / Nickel, elemental / Nickel, metallic / Nickel, metal / C.I. 77775	(CAS-No.) 7440-02-0	0 - 1	Skin Sens. 1, H317 Carc. 1B, H350 STOT RE 1, H372
Lead	C.I. Pigment Metal 4 / Lead metal / Lead, elemental / Lead (elemental) / Lead (metal) / C.I. 77575 / Lead massive	(CAS-No.) 7439-92-1	0 - 1	Carc. 2, H351 Repr. 1, H360 STOT RE 1, H372
Titanium dioxide	C.I. 77891 / C.I. Pigment White 6 / Titanium oxide (TiO <sub>2</sub> ) / C.I. 77891 / Titanium(IV) oxide / C.I. Pigment White 7 / Pigment White 6 / Titanium dioxide nanoparticles / TITANIUM DIOXIDE / Titanium oxide	(CAS-No.) 13463-67-7	0 - 1	Not classified
Cadmium oxide (CdO)	Cadmium monoxide / Cadmium oxide / Cadmium oxide (non-pyrophoric)	(CAS-No.) 1306-19-0	0 - 1	Acute Tox. 3 (Oral), H301 Acute Tox. 2 (Inhalation:dust,mist), H330 Muta. 2, H341 Carc. 1B, H350 STOT RE 1, H372 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of hazard classes and H-statements : see section 16

### SECTION 4: First-aid measures

#### 4.1. Description of first aid measures

First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Allow the victim to rest. Call a POISON CENTER/doctor if you feel unwell.
First-aid measures after skin contact	: Take off contaminated clothing. Wash skin with plenty of water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse eyes with water as a precaution. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a POISON CENTER/doctor if you feel unwell.
First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

#### 4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation	: May be harmful if inhaled.
Symptoms/effects after skin contact	: Causes skin irritation. May cause an allergic skin reaction.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: Swallowing a small quantity of this material will result in serious health hazard. May be harmful if swallowed.
Chronic symptoms	: May cause cancer. May cause hereditary genetic damage.
Potential adverse human health effects and symptoms	: Harmful if swallowed. Harmful if inhaled.

#### 4.3. Immediate medical attention and special treatment, if necessary

Other medical advice or treatment	: Not applicable.
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### SECTION 5: Fire-fighting measures

#### 5.1. Suitable extinguishing media

Suitable extinguishing media	: Carbon dioxide. Water spray. Sand. Dry powder. Foam.
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#### 5.2. Unsuitable extinguishing media

Unsuitable extinguishing media	: Do not use a heavy water stream.
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#### 5.3. Specific hazards arising from the hazardous product

Explosion hazard	: May form flammable/explosive vapour-air mixture.
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#### 5.4. Special protective equipment and precautions for fire-fighters

Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

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### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.

#### 6.2. Methods and materials for containment and cleaning up

For containment : Collect spillage.

Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials. Notify authorities if product enters sewers or public waters. In case of large spillages: Shovel or sweep up and put in a closed container for disposal. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal.

Other information : Dispose of materials or solid residues at an authorized site.

#### 6.3. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection"

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. No open flames. No smoking. Use personal protective equipment as required. Do not breathe dust/ fumes. Avoid contact with skin and eyes. Wear personal protective equipment. Use only outdoors or in a well-ventilated area. Do not handle until all safety precautions have been read and understood. Limit quantities of product at the minimum necessary for handling and limit the number of exposed workers. Provide local exhaust or general room ventilation. Floors, walls and other surfaces in the hazard area must be cleaned regularly. Obtain special instructions before use.

Hygiene measures : Wash hands and any exposed areas thoroughly after handling. Wash contaminated clothing before reuse. Separate working clothes from town clothes. Launder separately. Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Contaminated work clothing should not be allowed out of the workplace.

Additional hazards when processed : Handle empty containers with care because residual vapours are flammable. Do not allow contact with water.

#### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Proper grounding procedures to avoid static electricity should be followed. Provide local exhaust or general room ventilation.

Storage conditions : Heat sources. Keep in fireproof place. Store locked up. Store in a well-ventilated place. Keep cool.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight. Do not allow contact with water.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

Iron oxide (Fe <sub>2</sub> O <sub>3</sub> ) (1309-37-1)		
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> (dust and fume)
Alberta	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> (respirable)
British Columbia	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (fume)
British Columbia	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (total particulate matter containing no Asbestos and <1% Crystalline silica-total particulate)
Ontario	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> (respirable)
Aluminum (7429-90-5)		
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Alberta	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (dust)
British Columbia	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup> (respirable)
Ontario	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup> (respirable)
Manganese (7439-96-5)		
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	0.2 mg/m <sup>3</sup> (total dust and fume)
Alberta	OEL TWA (mg/m <sup>3</sup> )	0.2 mg/m <sup>3</sup>
British Columbia	OEL TWA (mg/m <sup>3</sup> )	0.2 mg/m <sup>3</sup>
Ontario	OEL TWA (mg/m <sup>3</sup> )	0.2 mg/m <sup>3</sup>
Sulfur (7704-34-9)		
Alberta	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>

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<b>Arsenic (7440-38-2)</b>		
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Alberta	OEL TWA (mg/m <sup>3</sup> )	0.01 mg/m <sup>3</sup>
British Columbia	OEL TWA (mg/m <sup>3</sup> )	0.01 mg/m <sup>3</sup>
Ontario	OEL STEL (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup> (designated substances regulation)
Ontario	OEL TWA (mg/m <sup>3</sup> )	0.01 mg/m <sup>3</sup> (designated substances regulation)
<b>Zinc oxide (ZnO) (1314-13-2)</b>		
Canada (Quebec)	VECD (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (fume)
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (containing no Asbestos and <1% Crystalline silica-total dust)
Alberta	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (respirable)
Alberta	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup> (respirable)
British Columbia	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (respirable)
British Columbia	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup> (respirable)
Ontario	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (respirable)
Ontario	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup> (respirable)
<b>Copper (7440-50-8)</b>		
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	0.2 mg/m <sup>3</sup> (fume)
Alberta	OEL TWA (mg/m <sup>3</sup> )	0.2 mg/m <sup>3</sup> (fume)
British Columbia	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup> (dust and mist)
Ontario	OEL TWA (mg/m <sup>3</sup> )	0.2 mg/m <sup>3</sup> (fume)
<b>Chromium (7440-47-3)</b>		
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup>
Alberta	OEL TWA (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup>
British Columbia	OEL TWA (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup>
Ontario	OEL TWA (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup>
<b>Tungsten (7440-33-7)</b>		
Alberta	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Alberta	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
British Columbia	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
British Columbia	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
Ontario	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Ontario	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
<b>Nickel (7440-02-0)</b>		
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Alberta	OEL TWA (mg/m <sup>3</sup> )	1.5 mg/m <sup>3</sup>
British Columbia	OEL TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup>
Ontario	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup> (inhalable)
<b>Lead (7439-92-1)</b>		
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup>
Alberta	OEL TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup>
British Columbia	OEL TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup>
Ontario	OEL TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup> (designated substances regulation)
<b>Titanium dioxide (13463-67-7)</b>		
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (containing no Asbestos and <1% Crystalline silica-total dust)
Alberta	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
British Columbia	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (total dust)
Ontario	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>

### 8.2. Appropriate engineering controls

- Appropriate engineering controls : Ensure good ventilation of the work station.  
Environmental exposure controls : Avoid release to the environment.

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### 8.3. Individual protection measures/Personal protective equipment

#### Personal protective equipment:

Avoid all unnecessary exposure.

#### Hand protection:

Wear protective gloves.

#### Eye protection:

Safety glasses

#### Skin and body protection:

Wear suitable protective clothing

#### Respiratory protection:

In case of inadequate ventilation wear respiratory protection.

#### Other information:

Do not eat, drink or smoke during use.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: No data available
Colour	: black
Odour	: odourless
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Relative evaporation rate (ether=1)	: No data available
Melting point	: 2800 °F
Freezing point	: Not applicable
Boiling point	: >= 5000 °F
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Flammability (solid, gas)	: Non flammable.
Vapour pressure	: No data available
Vapour pressure at 50 °C	: No data available
Relative density	: 7.85
Solubility	: Water: Insoluble
Log Pow	: No data available
Viscosity, kinematic	: Not applicable
Explosive limits	: Not applicable

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Reactivity	: The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	: Not established.
Possibility of hazardous reactions	: No dangerous reactions known under normal conditions of use.
Conditions to avoid	: Extremely high or low temperatures. Open flame. Overheating. Sparks.
Incompatible materials	: Strong acids. Strong bases.
Hazardous decomposition products	: May release flammable gases.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral)	: Oral: Harmful if swallowed.
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Acute toxicity (dermal) : Not classified  
 Acute toxicity (inhalation) : Inhalation:dust,mist: Harmful if inhaled.

ATE CA (oral)	1241.379 mg/kg bodyweight
ATE CA (dust,mist)	5 mg/l/4h

<b>Iron oxide (Fe<sub>2</sub>O<sub>3</sub>) (1309-37-1)</b>	
LD50 oral rat	> 10000 mg/kg

<b>Manganese (7439-96-5)</b>	
LD50 oral rat	9 g/kg

<b>Sulfur (7704-34-9)</b>	
LD50 oral rat	> 3000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 9.23 mg/l/4h

<b>Arsenic (7440-38-2)</b>	
LD50 oral rat	15 mg/kg

<b>Zinc oxide (ZnO) (1314-13-2)</b>	
LD50 oral rat	> 5000 mg/kg

<b>Nickel (7440-02-0)</b>	
LD50 oral rat	> 9000 mg/kg

<b>Titanium dioxide (13463-67-7)</b>	
LD50 oral rat	> 10000 mg/kg

<b>Cadmium oxide (CdO) (1306-19-0)</b>	
LD50 oral rat	72 mg/kg

Skin corrosion/irritation : Causes skin irritation.  
 Serious eye damage/irritation : Causes serious eye irritation.  
 Respiratory or skin sensitization : May cause an allergic skin reaction.  
 Germ cell mutagenicity : Suspected of causing genetic defects.  
 Carcinogenicity : May cause cancer (Inhalation).

Reproductive toxicity : May damage fertility or the unborn child.

STOT-single exposure : Not classified  
 STOT-repeated exposure : Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified

Potential adverse human health effects and symptoms : Harmful if swallowed. Harmful if inhaled.  
 Symptoms/effects after inhalation : May be harmful if inhaled.  
 Symptoms/effects after skin contact : Causes skin irritation. May cause an allergic skin reaction.  
 Symptoms/effects after eye contact : Causes serious eye irritation.  
 Symptoms/effects after ingestion : Swallowing a small quantity of this material will result in serious health hazard. May be harmful if swallowed.

Chronic symptoms : May cause cancer. May cause hereditary genetic damage.  
 Other information : Exposure to dust or fumes from some metal including iron, zinc, manganese, chromium, cobalt, and copper can produce a condition known as metal fume fever.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : Toxic to aquatic life with long lasting effects. Toxic to aquatic life.  
 Acute aquatic toxicity : Not classified  
 Chronic aquatic toxicity : Not classified

<b>Sulfur (7704-34-9)</b>	
LC50 fish 1	866 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])
LC50 fish 2	< 14 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])

<b>Copper (7440-50-8)</b>	
LC50 fish 1	0.0068 - 0.0156 mg/l (Exposure time: 96 h - Species: Pimephales promelas)

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<b>Copper (7440-50-8)</b>	
LC50 fish 2	< 0.3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 Daphnia 1	0.03 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 72h algae (1)	0.0426 - 0.0535 mg/l (Species: Pseudokirchneriella subcapitata [static])
EC50 96h algae (1)	0.031 - 0.054 mg/l (Species: Pseudokirchneriella subcapitata [static])

<b>Nickel (7440-02-0)</b>	
LC50 fish 1	> 100 mg/l (Exposure time: 96 h - Species: Brachydanio rerio)
LC50 fish 2	1.3 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [semi-static])
EC50 Daphnia 1	> 100 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 Daphnia 2	1 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 72h algae (1)	0.18 mg/l (Species: Pseudokirchneriella subcapitata)
EC50 96h algae (1)	0.174 - 0.311 mg/l (Species: Pseudokirchneriella subcapitata [static])

<b>Lead (7439-92-1)</b>	
LC50 fish 1	0.44 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [semi-static])
LC50 fish 2	1.17 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])
EC50 Daphnia 1	600 µg/l (Exposure time: 48 h - Species: water flea)

### 12.2. Persistence and degradability

<b>Steel Mill Scale</b>	
Persistence and degradability	Not established.

### 12.3. Bioaccumulative potential

<b>Steel Mill Scale</b>	
Bioaccumulative potential	Not established.

### 12.4. Mobility in soil

<b>Steel Mill Scale</b>	
Ecology - soil	Not established.

### 12.5. Other adverse effects

Ozone	: Not classified
Other information	: Avoid release to the environment.
Effect on the global warming	: Not established.

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Additional information	: Handle empty containers with care because residual vapours are flammable.
Ecology - waste materials	: Avoid release to the environment.

## SECTION 14: Transport information

### 14.1. Basic shipping description

In accordance with TDG

#### Transportation of Dangerous Goods

Not regulated for transport

### 14.2. Transport information/DOT

#### Department of Transport

Not regulated for transport

### 14.3. Air and sea transport

#### IMDG

Not regulated for transport

#### IATA

Class (IATA) : Not regulated for transport

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### SECTION 15: Regulatory information

#### 15.1. National regulations

**Steel Mill Scale**

Listed on the Canadian DSL (Domestic Substances List)

**Iron oxide (Fe<sub>2</sub>O<sub>3</sub>) (1309-37-1)**

Listed on the Canadian DSL (Domestic Substances List)

**Calcium (7440-70-2)**

Listed on the Canadian DSL (Domestic Substances List)

**Aluminum (7429-90-5)**

Listed on the Canadian DSL (Domestic Substances List)

**Manganese (7439-96-5)**

Listed on the Canadian DSL (Domestic Substances List)

**Sulfur (7704-34-9)**

Listed on the Canadian DSL (Domestic Substances List)

**Potassium (7440-09-7)**

Listed on the Canadian DSL (Domestic Substances List)

**Arsenic (7440-38-2)**

Listed on the Canadian DSL (Domestic Substances List)

**Zinc oxide (ZnO) (1314-13-2)**

Listed on the Canadian DSL (Domestic Substances List)

**Copper (7440-50-8)**

Listed on the Canadian DSL (Domestic Substances List)

**Chromium (7440-47-3)**

Listed on the Canadian DSL (Domestic Substances List)

**Tungsten (7440-33-7)**

Listed on the Canadian DSL (Domestic Substances List)

**Nickel (7440-02-0)**

Listed on the Canadian DSL (Domestic Substances List)

**Lead (7439-92-1)**

Listed on the Canadian DSL (Domestic Substances List)

**Titanium dioxide (13463-67-7)**

Listed on the Canadian DSL (Domestic Substances List)

**Cadmium oxide (CdO) (1306-19-0)**

Listed on the Canadian DSL (Domestic Substances List)

#### 15.2. International regulations

**Iron oxide (Fe<sub>2</sub>O<sub>3</sub>) (1309-37-1)**

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Japanese ISHL (Industrial Safety and Health Law)  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on Turkish inventory of chemical

**Calcium (7440-70-2)**

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on Turkish inventory of chemical

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### Aluminum (7429-90-5)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on Turkish inventory of chemical

### Manganese (7439-96-5)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Japanese Pollutant Release and Transfer Register Law (PRTR Law)  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on Turkish inventory of chemical

### Sulfur (7704-34-9)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on Turkish inventory of chemical

### Potassium (7440-09-7)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Japanese Poisonous and Deleterious Substances Control Law  
Listed on INSQ (Mexican National Inventory of Chemical Substances)

### Arsenic (7440-38-2)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Japanese Poisonous and Deleterious Substances Control Law  
Japanese Pollutant Release and Transfer Register Law (PRTR Law)  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on Turkish inventory of chemical

### Zinc oxide (ZnO) (1314-13-2)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Japanese ISHL (Industrial Safety and Health Law)  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on Turkish inventory of chemical

# Steel Mill Scale

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### Copper (7440-50-8)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on Turkish inventory of chemical

### Chromium (7440-47-3)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Japanese Pollutant Release and Transfer Register Law (PRTR Law)  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on Turkish inventory of chemical

### Tungsten (7440-33-7)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Listed on INSQ (Mexican National Inventory of Chemical Substances)

### Nickel (7440-02-0)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Japanese Pollutant Release and Transfer Register Law (PRTR Law)  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on Turkish inventory of chemical

### Lead (7439-92-1)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Japanese Pollutant Release and Transfer Register Law (PRTR Law)  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on Turkish inventory of chemical

Toxic Substance (CEPA – Schedule I)

Yes

### Titanium dioxide (13463-67-7)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Japanese ISHL (Industrial Safety and Health Law)  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on Turkish inventory of chemical

# Steel Mill Scale

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according to the Hazardous Products Regulation (February 11, 2015)

### Cadmium oxide (CdO) (1306-19-0)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Japanese ISHL (Industrial Safety and Health Law)  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Japanese Poisonous and Deleterious Substances Control Law  
Japanese Pollutant Release and Transfer Register Law (PRTR Law)  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on Turkish inventory of chemical

### SECTION 16: Other information

Revision date : 12/21/2017

Other information : None.

Full text of H-statements:

H228	Flammable solid.
H260	In contact with water releases flammable gases which may ignite spontaneously.
H261	In contact with water releases flammable gases.
H300	Fatal if swallowed.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H351	Suspected of causing cancer.
H360	May damage fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

SDS Canada (GHS)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*