

**1. Identification**

**Product identifier** Iron Rich Filter Cake  
**Other means of identification**  
**SDS number** WS013  
**Recommended use** Not available.  
**Recommended restrictions** None known.  
**Manufacturer/Importer/Supplier/Distributor information**  
**Manufacturer/Supplier** The Worthington Steel Company  
**Address** 200 Old Wilson Bridge Road  
 Columbus, OH 43085  
 United States  
**Email:** steel@worthingtonindustries.com  
**Telephone Number:** 800-944-3733  
**CHEMTREC - 24 HOURS:** Within US: 800-424-9300 International: +1 703-741-5970  
 (collect calls accepted)

**2. Hazard(s) identification**

**Physical hazards** Not classified.  
**Health hazards** Skin corrosion/irritation Category 2  
 Serious eye damage/eye irritation Category 1  
**OSHA defined hazards** Not classified.

**Label elements**


**Signal word** Danger  
**Hazard statement** Causes skin irritation. Causes serious eye damage.  
**Precautionary statement**  
**Prevention** Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.  
**Response** If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor.  
**Storage** Store away from incompatible materials.  
**Disposal** Dispose of waste and residues in accordance with local authority requirements.  
**Hazard(s) not otherwise classified (HNOC)** None known.

**3. Composition/information on ingredients**
**Mixtures**

Chemical name	CAS number	%
Water	7732-18-5	55-75
Iron oxide	1309-37-1	10-30
Calcium oxide	1305-78-8	1-5

Magnesium oxide	1309-48-4	1-5
Silicon dioxide	7631-86-9	0-3
Aluminum oxide	1344-28-1	0-2

**Composition comments** All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

#### 4. First-aid measures

**Inhalation** If symptomatic, move to fresh air. Get medical attention if symptoms persist.

**Skin contact** Wash with soap and water. Get medical attention if symptoms occur.

**Eye contact** Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention immediately.

**Ingestion** In case of ingestion: Seek medical advice.

**Most important symptoms/effects, acute and delayed** Causes skin irritation. Causes serious eye damage. Symptoms include itching, burning, redness, and tearing of eyes.

**Indication of immediate medical attention and special treatment needed** Treat symptomatically.

**General information** Show this safety data sheet to the doctor in attendance.

#### 5. Fire-fighting measures

**Suitable extinguishing media** Use fire-extinguishing media appropriate for surrounding materials.

**Unsuitable extinguishing media** None.

**Specific hazards arising from the chemical** None known.

**Special protective equipment and precautions for firefighters** Firefighters should wear full protective clothing including self contained breathing apparatus.

**Fire fighting equipment/instructions** Move containers from fire area if you can do it without risk.

**Specific methods** Use standard firefighting procedures and consider the hazards of other involved materials.

**General fire hazards** Not a fire hazard.

#### 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures** Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid inhalation of vapors/dust and contact with skin and eyes. Local authorities should be advised if significant spills cannot be contained.

**Methods and materials for containment and cleaning up** Avoid generation and spreading of dust. Vacuum or sweep up material and place in a disposal container. For waste disposal, see Section 13 of the SDS.

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Do not contaminate water.

#### 7. Handling and storage

**Precautions for safe handling** Avoid dust formation. Provide adequate ventilation. Wear appropriate personal protective equipment (See Section 8). Avoid contact with eyes and prolonged or repeated contact with skin. Wash thoroughly after handling. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities** Store in a closed container. Store in a cool, dry, well-ventilated place. Store away from incompatible materials.

#### 8. Exposure controls/personal protection

##### Occupational exposure limits

##### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Aluminum oxide (CAS 1344-28-1)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Calcium oxide (CAS 1305-78-8)	PEL	5 mg/m <sup>3</sup>	
Iron oxide (CAS 1309-37-1)	PEL	10 mg/m <sup>3</sup>	Fume.
Magnesium oxide (CAS 1309-48-4)	PEL	15 mg/m <sup>3</sup>	Total particulate.

### US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value
Silicon dioxide (CAS 7631-86-9)	TWA	0.8 mg/m <sup>3</sup>
		20 mppcf

### US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Aluminum oxide (CAS 1344-28-1)	TWA	1 mg/m <sup>3</sup>	Respirable fraction.
Calcium oxide (CAS 1305-78-8)	TWA	2 mg/m <sup>3</sup>	
Iron oxide (CAS 1309-37-1)	TWA	5 mg/m <sup>3</sup>	Respirable fraction.
Magnesium oxide (CAS 1309-48-4)	TWA	10 mg/m <sup>3</sup>	Inhalable fraction.

### US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Calcium oxide (CAS 1305-78-8)	TWA	2 mg/m <sup>3</sup>	
Iron oxide (CAS 1309-37-1)	TWA	5 mg/m <sup>3</sup>	Dust and fume.
Silicon dioxide (CAS 7631-86-9)	TWA	6 mg/m <sup>3</sup>	

<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).
<b>Exposure guidelines</b>	Use personal protective equipment as required. Keep working clothes separately.
<b>Appropriate engineering controls</b>	Ventilation is not normally required.
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Eye/face protection</b>	Risk of splashes: Wear approved safety glasses or goggles.
<b>Skin protection</b>	
<b>Hand protection</b>	Chemical resistant gloves.
<b>Other</b>	Rubber apron.
<b>Respiratory protection</b>	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>General hygiene considerations</b>	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical and chemical properties

### Appearance

<b>Physical state</b>	Solid Semi-liquid.
<b>Form</b>	Moist solid.
<b>Color</b>	Red to brown.
<b>Odor</b>	Not available.

<b>Odor threshold</b>	Not available.
<b>pH</b>	6 - 8
<b>Melting point/freezing point</b>	Not available.
<b>Initial boiling point and boiling range</b>	Not available.
<b>Flash point</b>	Not applicable.
<b>Evaporation rate</b>	0.6 (Butyl acetate = 1)
<b>Flammability (solid, gas)</b>	Non flammable.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not applicable.
<b>Flammability limit - upper (%)</b>	Not applicable.
<b>Vapor pressure</b>	Not applicable.
<b>Vapor density</b>	Not applicable.
<b>Relative density</b>	2 - 3 (Water = 1)
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Not soluble.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not applicable.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Other information</b>	
<b>Percent volatile</b>	55 - 75 % Water

## 10. Stability and reactivity

<b>Reactivity</b>	The product is non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	Contact with incompatible materials.
<b>Incompatible materials</b>	Strong acids. Alkalis.
<b>Hazardous decomposition products</b>	None known.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	Dust may irritate respiratory system.
<b>Skin contact</b>	Causes skin irritation.
<b>Eye contact</b>	Causes serious eye damage.
<b>Ingestion</b>	Not likely, due to the form of the product. Ingestion of this product may cause nausea, vomiting and diarrhea.

**Symptoms related to the physical, chemical and toxicological characteristics** Causes skin irritation. Causes serious eye damage. Symptoms include itching, burning, redness, and tearing of eyes.

### Information on toxicological effects

**Acute toxicity** May cause discomfort if swallowed.

<b>Components</b>	<b>Species</b>	<b>Test Results</b>
Calcium oxide (CAS 1305-78-8)		
<b>Acute</b>		
<i>Oral</i>		
LD50	Rat	500 - 2000 mg/kg

<b>Skin corrosion/irritation</b>	Causes skin irritation.
<b>Serious eye damage/eye irritation</b>	Causes serious eye damage.
<b>Respiratory or skin sensitization</b>	
<b>Respiratory sensitization</b>	No data available.
<b>Skin sensitization</b>	No data available.
<b>Germ cell mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Carcinogenicity</b>	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>	
Iron oxide (CAS 1309-37-1)	3 Not classifiable as to carcinogenicity to humans.
Silicon dioxide (CAS 7631-86-9)	3 Not classifiable as to carcinogenicity to humans.
<b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)</b>	
Not listed.	
<b>Reproductive toxicity</b>	Not classified.
<b>Specific target organ toxicity - single exposure</b>	Not classified.
<b>Specific target organ toxicity - repeated exposure</b>	Not classified.
<b>Aspiration hazard</b>	Not classified.
<b>Chronic effects</b>	None known.

## 12. Ecological information

**Ecotoxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components	Species	Test Results
Calcium oxide (CAS 1305-78-8)		
<b>Aquatic</b>		
Fish	LC50 Carp (Cyprinus carpio)	1070 mg/l, 96 Hours

<b>Persistence and degradability</b>	No data available.
<b>Bioaccumulative potential</b>	No data available.
<b>Mobility in soil</b>	Expected to be slightly to moderately mobile in soil.
<b>Other adverse effects</b>	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## 13. Disposal considerations

<b>Disposal instructions</b>	Dispose waste and residues in accordance with applicable federal, state, and local regulations.
<b>Local disposal regulations</b>	Dispose of in accordance with local regulations.
<b>Hazardous waste code</b>	Not regulated.
<b>Waste from residues / unused products</b>	Dispose in accordance with all applicable regulations.
<b>Contaminated packaging</b>	Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 14. Transport information

<b>DOT</b>	Not regulated as dangerous goods.
<b>IATA</b>	Not regulated as dangerous goods.
<b>IMDG</b>	Not regulated as dangerous goods.
<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	Not applicable.

## 15. Regulatory information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

### CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

**Hazard categories** Immediate Hazard - Yes  
Delayed Hazard - No  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No

### SARA 302 Extremely hazardous substance

Not listed.

**SARA 311/312 Hazardous chemical** Yes

### SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Aluminum oxide	1344-28-1	0-2

### Other federal regulations

#### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

#### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

**US state regulations** This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

#### US. Massachusetts RTK - Substance List

Aluminum oxide (CAS 1344-28-1)  
Calcium oxide (CAS 1305-78-8)  
Iron oxide (CAS 1309-37-1)  
Magnesium oxide (CAS 1309-48-4)  
Silicon dioxide (CAS 7631-86-9)

#### US. New Jersey Worker and Community Right-to-Know Act

Aluminum oxide (CAS 1344-28-1)  
Calcium oxide (CAS 1305-78-8)  
Iron oxide (CAS 1309-37-1)  
Magnesium oxide (CAS 1309-48-4)  
Silicon dioxide (CAS 7631-86-9)

#### US. Pennsylvania Worker and Community Right-to-Know Law

Aluminum oxide (CAS 1344-28-1)  
Calcium oxide (CAS 1305-78-8)  
Iron oxide (CAS 1309-37-1)  
Magnesium oxide (CAS 1309-48-4)  
Silicon dioxide (CAS 7631-86-9)

#### US. Rhode Island RTK

Aluminum oxide (CAS 1344-28-1)

#### US. California Proposition 65

Not Listed.

### International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information, including date of preparation or last revision

<b>Issue date</b>	01-June-2015
<b>Revision date</b>	-
<b>Version #</b>	01
<b>Further information</b>	HMIS® is a registered trade and service mark of the NPCA.
<b>HMIS® ratings</b>	Health: 3 Flammability: 0 Physical hazard: 0

### NFPA ratings



### Disclaimer

All information in this Material Safety Data Sheet is believed to be accurate and reliable. However, no guarantee or warranty of any kind is made with regard to the accuracy of information or the suitability of the recommendations contained herein. It is the user's responsibility to assess the safety and toxicity of this product under their own conditions of use and to comply with all applicable laws and regulations.