

Safety Data Sheet

Product Identifier: Iron Scrap

SDS ID : FE-0105

Section 1 - Identification

Product Identifier: Iron Scrap

Chemical Family: Mixture

Recommended Use: Scrap metal usage.

Manufacturer Information

The David J. Joseph Company
300 Pike Street
Cincinnati, OH 45202

Non-Emergency Contact: Safety Department
Non-Emergency Phone: 513-419-6200
Emergency Contact: DJJ
Emergency Phone: 513-562-1699

Section 2 - Hazard(s) Identification

Classification in accordance with 29 CFR 1910.1200.

Product is supplied as scrap metal consisting of iron. This alloy is a non-combustible, non-reactive solid material. Solid material, as supplied, is not hazardous. Processing of this material may produce hazardous vapors, fumes, mists and dusts which are considered hazardous under 29 CFR 1910.1200 (Hazard Communication). Dust, particles or powder generated during processing would have the following classification:

Acute Toxicity (Oral), Category 4

Skin Corrosion / Irritation, Category 2

GHS LABEL ELEMENTS

Symbol(s)



Signal Word

WARNING

Hazard Statement(s)

Harmful if swallowed

Causes skin irritation

Precautionary Statement(s)

Prevention

Do not eat, drink, or smoke when using this product. Wear appropriate protective gloves/clothing and eye/face protection if contact is possible. Wash thoroughly after handling.

Response

IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before re-use. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

Storage

None needed according to classification criteria.

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Disposal

Dispose of material in accordance with all local, regional, national and international regulations.

Hazard(s) Not Otherwise Classified

Dust may present an explosion hazard if allowed to accumulate in an industrial or manufacturing environment. Coatings and oils applied to the product may enhance flammability.

* * *Section 3 - Composition / Information on Ingredients* * *

CAS	Component	Percent
7439-89-6	Iron	>94
7440-44-0	Carbon	<5
7440-21-3	Silicon	<1

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Iron oxide (1309-37-1).

Component Information/Information on Non-Hazardous Components

Processing of this material may produce hazardous vapors, fumes, mists and dusts which are considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

May contain trace amounts of vanadium, zirconium, tin, calcium, boron, cobalt, aluminum, niobium, titanium, arsenic, lead, molybdenum, nickel, copper, and chromium.

This data sheet is prepared as a guideline for typical uses of scrap materials. The user should be aware that the composition of the scrap can vary based upon the raw materials, processes used, and protective coatings that may have been applied to the original materials. The list of ingredients above are typical ingredients thought to be present in the scrap material. This list includes contaminants that may or may not be present. The percentages given vary from shipment to shipment and may not be entirely accurate for a given shipment.

Protective coatings, including paints, lubricants, corrosion inhibitors, etc., may have been applied to the material before it came under the control of the recycler. These coatings may contain hazardous materials. Typical hazardous materials contained in these coatings include: lead, zinc, chromium, and cadmium. Some organic materials may also be present. The supplier (recycler) may have no specific knowledge of the particular contaminant. However, it is anticipated that the hazardous materials present in the coatings would generally represent less than 0.1% of the total material present. The health hazards presented by these contaminants would produce their greatest potential for exposure during processes such as melting, cutting, welding. These processes could generate metal fumes that might produce the health hazards identified in section 2 of this MSDS.

It is suggested that the user protect employees by utilizing engineering controls that reduce exposures to acceptable concentrations. Where engineering controls are not feasible, appropriate personal protective equipment should be utilized.

* * *Section 4 - First Aid Measures* * *

Description of Necessary Measures

Inhalation

If adverse effects occur during processing, remove to uncontaminated area. Get immediate medical attention.

Skin Contact

Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before re-use. Cuts or abrasions should be treated promptly with thorough cleansing of the affected area.

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Eye Contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention. In case of mechanical abrasions and cuts, seek medical attention immediately.

Ingestion

Due to the physical nature of this material, ingestion is unlikely to occur. If ingestion of a large amount does occur, seek immediate medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Most Important Symptoms/Effects

Acute

Processing by-products: Harmful if swallowed. Symptoms/effects may include skin irritation.

Delayed

No information on significant adverse effects.

Indication of immediate Medical Attention and Special Treatment Needed

Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

Extinguishing Media

Media to use includes regular dry chemical and dry sand.

Unsuitable Extinguishing Media

Molten metal may react violently with water.

Specific Hazards Arising from the Chemical

Coatings and oils applied to the product may enhance flammability. Dust or fine particles may present a flammability hazard if allowed to accumulate in an industrial or manufacturing environment.

Hazardous Combustion Products

This product may release metal oxide fumes by thermal decomposition.

Fire fighting measures

Fight fire with normal precautions from a reasonable distance. Cool materials with water spray until well after the fire is out.

Special Protective Equipment and Precautions for Firefighters

Fire fighters should wear full-face, self contained breathing apparatus and impervious protective clothing. Fire fighters should avoid inhaling any combustion products.

Section 6 - Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

If dusts or particulates are generated, eliminate sources of ignition. Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up

Containment of this material should not be necessary. If dusts or particulates are generated, eliminate sources of ignition. Small pieces of this product may be collected with a broom and shovel. Collect spilled material in appropriate container for reuse or disposal.

Section 7 - Handling and Storage

Precautions for Safe Handling

Observe good hygiene and safety practices when handling this product. Processing of this material may produce hazardous vapors, fumes, mists, and dusts. Avoid inhaling dusts or fumes produced during product processing. Handle with adequate ventilation during processing. Wash thoroughly after handling.

Condition for Safe storage, Including any incompatibilities

Store in a secure area.

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Incompatibility

Hot iron wire burns in chlorine gas, iron reacts with chlorine trifluoride and calcium hypochlorite, powdered iron reacts with fluorine below redness with incandescence, violent decomposition of hydrogen peroxide may be caused by contact with iron, reduced iron decomposes nitrogen dioxide at ordinary temperatures with incandescence.

Section 8 - Exposure Controls / Personal Protection
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Exposure Limits

Follow all applicable exposure limits. Keep formation of dusts, particulates and fumes to a minimum.

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Component Exposure Limits

Iron (7439-89-6)

ACGIH: 5 mg/m3 TWA (respirable fraction, related to Iron oxide)

OSHA: 10 mg/m3 TWA (fume); 15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction, related to Iron oxide)

NIOSH: 5 mg/m3 TWA (as Fe, dust and fume, related to Iron oxide)

Alberta: 5 mg/m3 TWA (respirable, related to Iron oxide)

British Columbia: 10 mg/m3 TWA (total particulate matter containing no Asbestos and <1% Crystalline silica, total particulate); 3 mg/m3 TWA (particulate matter containing no Asbestos and <1% Crystalline silica, respirable particulate); 5 mg/m3 TWA (as Fe, dust and fume, related to Iron oxide)

10 mg/m3 STEL (as Fe, fume, related to Iron oxide)

Manitoba: 5 mg/m3 TWA (respirable fraction, related to Iron oxide)

New Brunswick: 5 mg/m3 TWA (as Fe, particulate matter containing no Asbestos and <1% Crystalline silica, dust and fume); 10 mg/m3 TWA (regulated under Rouge, particulate matter containing no Asbestos and <1% Crystalline silica, related to Iron oxide)

NW Territories: 5 mg/m3 TWA (respirable mass); 10 mg/m3 TWA (total mass, related to Iron oxide)

Nova Scotia: 5 mg/m3 TWA (respirable fraction, related to Iron oxide)

Nunavut: 5 mg/m3 TWA (respirable mass); 10 mg/m3 TWA (total mass, related to Iron oxide)

Ontario: 5 mg/m3 TWA (respirable, related to Iron oxide)

Quebec: 5 mg/m3 TWAEV (as Fe, dust and fume); 10 mg/m3 TWAEV (containing no Asbestos and <1% Crystalline silica, regulated under Rouge, total dust, related to Iron oxide)

Saskatchewan: 5 mg/m3 TWA (as Fe, dust and fume); 10 mg/m3 TWA (regulated under Rouge, related to Iron oxide)

10 mg/m3 STEL (as Fe, dust and fume); 20 mg/m3 STEL (regulated under Rouge, related to Iron oxide)

Yukon: 5 mg/m3 TWA (as Fe₂O₃, fume); 30 mppcf TWA (regulated under Rouge); 10 mg/m3 TWA (regulated under Rouge, related to Iron oxide)

10 mg/m3 STEL (fume); 20 mg/m3 STEL (regulated under Rouge, related to Iron oxide)

Silicon (7440-21-3)

OSHA: 15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)

NIOSH: 10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable dust)

British Columbia: 10 mg/m3 TWA (total dust); 3 mg/m3 TWA (respirable fraction)

New Brunswick: 10 mg/m3 TWA

NW Territories: 5 mg/m3 TWA (respirable mass); 10 mg/m3 TWA (total mass)

Nunavut: 5 mg/m3 TWA (respirable mass); 10 mg/m3 TWA (total mass)

Ontario: 10 mg/m3 TWA (total dust)

Quebec: 10 mg/m3 TWAEV (containing no Asbestos and <1% Crystalline silica, total dust)

Saskatchewan: 10 mg/m3 TWA

20 mg/m3 STEL

Yukon: 30 mppcf TWA; 10 mg/m3 TWA

20 mg/m3 STEL

Appropriate Engineering Controls

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For outdoor applications, special ventilation is not required under normal conditions of use. Under normal conditions of use, no special ventilation equipment is needed. Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing.

Individual Protection Measures, such as Personal Protective Equipment

Eyes/Face Protection

Eye protection not required under normal conditions. Wear appropriate eye protection if eye contact is possible.

Skin Protection

Wear gloves and other clothing as required to avoid contact.

Respiratory Protection

Consult with a health and safety professional for specific respirators appropriate for your use. When dusts or thermal processing fumes are generated and ventilation is not sufficient to effectively remove them, appropriate NIOSH approved respiratory protection must be provided. Where concentrations exceed exposure limits or airborne exposure is likely, use NIOSH approved respiratory protection equipment appropriate for the material and its components.

General Information

Use good industrial hygiene practices in handling this material. Eye wash fountain and emergency showers are recommended.

* * *Section 9 - Physical and Chemical Properties* * *

Appearance: Depends upon scrap composition, most often appears as a silver-white metal.

Odor: Not available

Physical State: Solid

pH: Not applicable

Melting /Freezing Point: 2700 °F (1500 °C)

Boiling Point: 5400 °F (3000 °C)

Flash Point: Not applicable

Evaporation Rate: Not applicable

OSHA Flammability Class: Non-flammable

UFL: Not available

LFL: Not available

Vapor Pressure: Not applicable

Vapor Density: Not applicable

Specific Gravity: Not applicable

Bulk Density: Not available

Solubility (H₂O): Insoluble

Auto Ignition: Not applicable

Viscosity: Not available

* * *Section 10 - Chemical Stability & Reactivity Information* * *

Reactivity

No reactivity hazard is expected.

Chemical Stability

Stable under normal conditions.

Possibility of Hazardous reaction

Will not occur.

Conditions to Avoid

Molten metal may react violently with water. Fine particles, dust or fumes may be flammable or explosive.

Incompatible Materials

Hot iron wire burns in chlorine gas, iron reacts with chlorine trifluoride and calcium hypochlorite, powdered iron reacts with fluorine below redness with incandescence, violent decomposition of hydrogen peroxide may be caused by contact with iron, reduced iron decomposes nitrogen dioxide at ordinary temperatures with incandescence.

Hazardous Decomposition Products

Decomposition of this product may yield metallic oxides.

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* * *Section 11 - Toxicological Information* * *

Acute Dose Effects

No information available for the product. Operations which supply sufficient energy to the product (i.e. welding, high speed grinding or melting) can release dust or fumes which may make components of the product biologically available. Exposure to dusts or fumes from some metals including iron, chromium, cobalt and copper can produce a condition known as metal fume fever, a flu-like illness generally lasting 24 hours or less including symptoms of nausea, vomiting, chest tightness, muscle aches and weakness. Iron dust can irritate the eyes and respiratory tract by mechanical action. Acute iron poisoning may involve hemorrhagic vomiting and diarrhea, abdominal pain, acidosis, coagulaopathy, shock, coma and convulsions followed by hepatic and renal failure and perhaps cardiovascular collapse. Chronic inhalation of iron has resulted in mottling of the lungs, a condition referred to as siderosis. This is considered benign pneumoconiosis and does not ordinarily cause significant physiologic impairment.

Component Analysis - LD50/LC50

Iron (7439-89-6)

Oral LD50 Rat 984 mg/kg

Carbon (7440-44-0)

Oral LD50 Rat >10000 mg/kg

Information on Likely Routes of Exposure

Product contains trace levels (<0.1%) of components that may cause the following.

Inhalation

May cause allergic respiratory sensitization and cancer. Overexposure to processing fumes may cause metal fume fever which is an influenza like illness. Symptoms include headache, metallic taste in the mouth, cough, thirst, throat irritation, shortness of breath, fever, sweating and pain in the limbs. Severe acute overexposure or chronic overexposure to dusts or processing fumes may produce more serious toxicities including: siderosis, lung damage, weakness, anorexia, impairment of sleep and vision, personality changes, blood formation effects, nervous and circulatory system damage, kidney damage, and may pose a reproductive hazard.

Ingestion

Ingestion is not a likely route of exposure. Harmful if swallowed. May cause gastrointestinal disturbances, abdominal pain, fever, vomiting, and diarrhea. Ingestion of large amounts of product may produce more serious toxicities including: shock, metabolic acidosis, decreased white blood cell count, neurological damage, cardiovascular shock, anemia, liver damage, renal failure, lethargy and coma..

Skin

Causes skin irritation. May cause allergic skin reactions. Dust or powder may irritate the skin. This product may produce skin abrasions, lesions, or cuts.

Eye

Dust or powder may irritate eye tissue. Rubbing may cause abrasion of cornea.

Immediate Effects

Processing by-products: Symptoms/effects may include skin irritation.

Delayed Effects

No information on significant adverse effects.

Medical conditions Aggravated by Exposures

No data available.

Irritation/Corrosivity Data

Causes skin irritation.

Respiratory Sensitizer

No information available for the product.

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Dermal Sensitization

No information available for the product.

Carcinogenicity

No information available for the product.

Component Carcinogenicity

Iron (7439-89-6)

ACGIH: A4 - Not Classifiable as a Human Carcinogen (related to Iron oxide)

IARC: Supplement 7 [1987]; Monograph 1 [1972] (Group 3 (Not classifiable), related to Iron oxide)

Mutagenicity

No information available for the product.

Reproductive Toxicity

No information available for the product.

Specific Target Organ Toxicity - Single Exposure

No target organs identified.

Specific Target Organ Toxicity - Repeated Exposure

No target organs identified.

Aspiration Hazard

No data available.

Other Toxicological Information

Under normal conditions of handling, the likelihood of inhaling or ingesting amounts necessary for these effects to occur is very small.

* * *Section 12 - Ecological Information* * *

Ecotoxicity

Processing by-products: May be harmful to aquatic life.

Component Analysis - Ecotoxicity - Aquatic Toxicity

No ecotoxicity data are available for this product's components.

Environmental Fate

No information available for the product.

Persistence & Degradability

No information available for the product.

Bioaccumulation

No information available for the product.

Mobility

No information available for the product.

* * *Section 13 - Disposal Considerations* * *

Disposal Methods

Byproducts and residues from this product may be reprocessed or recycled. Recycle if possible. Upon disposal, collected dusts and other similar wastes could contain a constituent identified as a hazardous waste. Wastes must be tested using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes.

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

US EPA Waste Number & Descriptions

Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

Disposal of Contaminated Packaging

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

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Section 14 - Transportation Information

US DOT Information

Certain forms of this material (i.e. powders, borings, shavings, turnings, cuttings, dross, etc.) may be subject to U.S. DOT hazardous material shipping requirements. If the products are shipped in quantities which exceed the reportable quantity (RQ) for individual components, they may also meet the requirements of DOT hazardous materials.

TDG Information

Not regulated as a hazardous material.

Section 15 - Regulatory Information

U.S. Federal Regulations

Processing of this material may produce hazardous vapors, fumes, mists and dusts which are considered hazardous under 29 CFR 1910.1200 (Hazard Communication). The following component analysis applies only to those facilities that are required to report under applicable regulations.

U.S. Federal Regulations

None of this products components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

SARA 311/312 Hazardous Categories (40 CFR 370 Subparts B and C)

Acute Health Yes (dust/fumes) **Chronic Health** No **Fire** No **Pressure** No **Reactive** No

U.S. State Regulations

Other state regulations may apply. Check individual state requirements.

WARNING! This product may contain a chemical known to the state of California to cause cancer.

WARNING! This product may contain a chemical known to the state of California to cause reproductive/developmental effects.

Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS #	CA	FL	MA	MN	NJ	PA
Iron (related to: Iron oxide)	7439-89-6	Yes	No	Yes ¹	Yes ¹	Yes ¹	Yes ¹
Silicon	7440-21-3	No	No	Yes	Yes	Yes	Yes

No component(s) regulated under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65).

Canada Regulation

This product has been classified in accordance with the criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

Canadian WHMIS Information

Processing by-products: WHMIS CLASSIFICATION: D2B.

Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Iron (7439-89-6)

1 % (related to Iron oxide)

Additional Regulatory Information

All components are on the U.S. EPA TSCA Inventory List.

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Component Analysis - Inventory

Component	CAS #	TSCA	CAN
Iron	7439-89-6	Yes	DSL
Carbon	7440-44-0	Yes	DSL
Silicon	7440-21-3	Yes	DSL

* * *Section 16 - Other Information* * *

Summary of Changes

Updated: 5/12/2015

NFPA Ratings: Health: 1 Fire: 0 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; TLV = Threshold Limit Value; NFPA = National Fire Protection Association; HMIS = High Efficiency Particulate Air; CERCLA = Comprehensive Environmental Response, Compensation and Liability Act; SARA = Superfund Amendments and Reauthorization Act.

Other Information

Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use.

MSDS History:

New MSDS: 7/8/1998

Revision 2/Regulatory Update: 7/19/2002

Revision 3/Regulatory Update: 10/6/2005

Revision 4/Regulatory Update: 8/7/2008

Revision 5/Regulatory Update: 1/26/2010

Revision 6 / Regulatory Update: 11/4/11

End of Sheet FE-0105