The David J. Joseph Company

Metals Group

1. Identification

Product identifier **High Carbon Ferromanganese / Medium Carbon Ferromanganese**

Other means of identification

Synonyms HCFeMn • HCFeMn - Metalloys • MCFeMn - Metalloys

Recommended use Metal Alloys
Steel Manufacture

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Supplier

Company name David J Joseph Company

Address 300 Pike St, Cincinnati, OH 45202

Website www.DJJ.com

Non-Emergency Contact DJJ Safety Department

Non-Emergency Phone Number (513) 419-6200

Emergency Contact DJJ

Emergency Phone Number (513) 562-1699

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Hazard symbol None.

Signal word None.

Hazard statement The product does not meet the criteria for classification.

Precautionary Statement

Prevention Not applicable.

Response Not applicable.

Storage Not applicable.

Disposal Not applicable.

Hazard(s) not otherwise classified (HNOC) Mechanical processing may generate dust. Dust may irritate throat and respiratory system and cause coughing. Fine dust may form explosive mixtures with air but the powder is not combustible.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
High Carbon Ferromanganese / Medium Carbon Ferromanganese	Mixture	100

Constituents

Chemical name	CAS number	%
Manganese	7439-96-5	> 60
Iron	7439-89-6	< 20
Carbon	7440-44-0	< 10
Silicon	7440-21-3	< 3
Phosphorus	7723-14-0	< 1

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 Contact with dust: Move to fresh air. If not breathing, give artificial respiration. Get medical attention if discomfort persists.

Skin contact Contact with dust: Remove contaminated clothes and rinse skin thoroughly with water. Get medical attention if irritation develops or persists.

Eye contact Do not rub eyes. Remove any contact lenses. Flush eyes thoroughly with water, taking care to rinse under eyelids. If irritation persists, continue flushing for 15 minutes, rinsing from time to time under eyelids. If discomfort continues, consult a physician.

Ingestion Rinse mouth thoroughly if dust is ingested. Do not induce vomiting. Get medical attention if any discomfort continues.

Most important symptoms/effects, acute and delayed Irritation of nose and throat. Irritation of eyes and mucous membranes.

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

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Special powder against metal fires. Dry sand.

Unsuitable extinguishing media Do not use water or halogenated extinguishing media.

Specific hazards arising from the chemical Fire or high temperatures create: Manganese, carbon, silicon and iron oxides. If wet, could evolve flammable gas outside normal conditions of use.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions Move container from fire area if it can be done without risk. Cool containers with flooding quantities of water until well after fire is out.

General fire hazards Fine dust may form explosive mixtures with air but the powder is not combustible.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Ensure adequate ventilation. Avoid inhalation of dust and contact with skin and eyes. Wear protective clothing as described in Section 8 of this safety data sheet.
Methods and materials for containment and cleaning up	Avoid the generation of dusts during clean-up. Sweep up or vacuum up spillage and collect in suitable container for disposal. Containers must be labeled. Recover and recycle, if practical.
Environmental precautions	Avoid release to the environment. Do not allow to enter drains, sewers or watercourses.

7. Handling and storage

Precautions for safe handling	Avoid inhalation of dust and contact with skin and eyes. Avoid generation and spreading of dust. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Wash hands before eating. Do not eat, drink or smoke when using the product. Avoid feeding dusty or wet alloy to steelmaking / alloymaking furnaces. Prevent entry into waterways, sewer, basements or confined areas.
Conditions for safe storage, including any incompatibilities	Store away from incompatible materials (See Section 10). Store in a cool, dry, well-ventilated place. Do not store in open or unlabelled containers. Keep away from food, drink and animal feedingstuffs.

8. Exposure controls/personal protection

Occupational exposure limits

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

Constituents	Type	Value	Form
Silicon (CAS 7440-21-3)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
Manganese (CAS 7439-96-5)	Ceiling	5 mg/m3	Fume.

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

Constituents	Type	Value	Form
Carbon (CAS 7440-44-0)	TWA	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

US. ACGIH Threshold Limit Values

Constituents	Type	Value	Form
Manganese (CAS 7439-96-5)	TWA	0.1 mg/m3	Inhalable fraction.
		0.02 mg/m3	Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Constituents	Type	Value	Form
Silicon (CAS 7440-21-3)	TWA	5 mg/m3	Respirable.
		10 mg/m3	Total
Manganese (CAS 7439-96-5)	STEL	3 mg/m3	Fume.
	TWA	1 mg/m3	Fume.

Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment if high dust/air concentrations are possible.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear dust-resistant safety goggles where there is danger of eye contact.
Skin protection	
Hand protection	Wear suitable protective gloves to prevent cuts and abrasions. Suitable gloves can be recommended by the glove supplier.
Other	Wear suitable protective clothing.
Respiratory protection	No protection is ordinarily required under normal conditions of use. In case of inadequate ventilation or risk of inhalation of dust, use suitable respiratory equipment with particle filter.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations	Wash hands after handling. Routinely wash work clothing and protective equipment to remove contaminants. Handle in accordance with good industrial hygiene and safety practice. Observe any medical surveillance requirements.

9. Physical and chemical properties

Appearance	
Physical state	Solid.
Form	Solid.
Color	Not available.
Odor	Odorless.
Odor threshold	Not applicable.
pH	Not applicable.
Melting point/freezing point	> 842 °F (> 450 °C)
Initial boiling point and boiling range	Not applicable.
Flash point	Not applicable.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Non flammable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not applicable.
Flammability limit - upper (%)	Not applicable.
Vapor pressure	Not available.
Vapor density	Not applicable.
Relative density	5.87 (21 °C)
Solubility(ies)	
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water)	Not applicable for inorganic substances.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not applicable.
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Massive metal is stable and non reactive under normal conditions of use, storage and transport.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Dust generation. Avoid heat, sparks, open flames and other ignition sources.
Incompatible materials	Oxidizing agents. Peroxides. Hypochlorites. Acids. Nitric acid. Alkalis. Sodium hydroxide. Water. If wet, could evolve flammable gas outside normal conditions of use.
Hazardous decomposition products	During combustion: Manganese oxides. Carbon oxides. Silicon oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation	High concentrations of dust and fumes may irritate the throat and respiratory system and cause coughing.
Skin contact	Dust may irritate skin.
Eye contact	Dust may irritate the eyes.

Ingestion	May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.
Symptoms related to the physical, chemical and toxicological characteristics	Irritation of nose and throat. Irritation of eyes and mucous membranes.

Information on toxicological effects

Acute toxicity	Expected to be a low hazard for usual industrial or commercial handling by trained personnel.
Skin corrosion/irritation	May cause irritation through mechanical abrasion.
Serious eye damage/eye irritation	May cause irritation through mechanical abrasion.

Respiratory or skin sensitization

Respiratory sensitization	Due to lack of data the classification is not possible.
Skin sensitization	Due to lack of data the classification is not possible.
Germ cell mutagenicity	Due to lack of data the classification is not possible.
Carcinogenicity	Due to lack of data the classification is not possible.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Reproductive toxicity	Due to lack of data the classification is not possible.
Specific target organ toxicity - single exposure	Due to lack of data the classification is not possible.
Specific target organ toxicity - repeated exposure	Due to lack of data the classification is not possible.
Aspiration hazard	Due to the physical form of the product it is not an aspiration hazard.
Further information	Chronic exposure or exposure to high concentrations to some manganese compounds via inhalation has been reported to affect the central nervous system. Symptoms can include hand tremors, behavioral changes and slower reaction times.

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.
Persistence and degradability	Not relevant for inorganic substances.
Bioaccumulative potential	The product is not bioaccumulating.
Mobility in soil	This product has very low solubility in water and low mobility in the environment.
Mobility in general	This product has a very low solubility in water and will sediment in water systems.
Other adverse effects	None known.

13. Disposal considerations

Disposal instructions	Dispose of in accordance with all applicable regulations.
Hazardous waste code	Not regulated.
Waste from residues / unused products	Recover and recycle, if practical. Dispose of in accordance with local regulations.
Contaminated packaging	Dispose in accordance with all applicable regulations.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable. This product is a solid. Therefore, bulk transport is governed by IMSBC code.

The material is covered under the Appendix I as
Bulk Cargo Shipping Name: Ferromanganese.
IMSBC Class: Not applicable.
Group C.

MARPOL Annex V: This product is not considered harmful to the marine environment (HME).

15. Regulatory information

US federal regulations

This product is not known to be 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 regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Manganese compounds (CAS 1344-43-0)	LISTED
Phosphorus (CAS 7723-14-0)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity (pounds)	Threshold planning quantity (pounds)	Threshold planning quantity, lower value (pounds)	Threshold planning quantity, upper value (pounds)
Phosphorus	7723-14-0	1	100		

SARA 311/312 Hazardous chemical

No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Manganese	7439-96-5	> 60
Phosphorus	7723-14-0	< 1

Other federal regulations

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

Manganese (CAS 7439-96-5)
Phosphorus (CAS 7723-14-0)

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

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Phosphorus (CAS 7723-14-0)	80 %WT

DEA Exempt Chemical Mixtures Code Number

Phosphorus (CAS 7723-14-0)	6795

US state regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

US. Massachusetts RTK - Substance List

Manganese (CAS 7439-96-5)
Phosphorus (CAS 7723-14-0)
Silicon (CAS 7440-21-3)

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

Manganese (CAS 7439-96-5)
Phosphorus (CAS 7723-14-0)

Silicon (CAS 7440-21-3)

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

Manganese (CAS 7439-96-5)
Phosphorus (CAS 7723-14-0)
Silicon (CAS 7440-21-3)

US. Rhode Island RTK

Carbon (CAS 7440-44-0)
Manganese (CAS 7439-96-5)
Phosphorus (CAS 7723-14-0)
Silicon (CAS 7440-21-3)

16. Other information

NFPA ratings

List of abbreviations

NOAEL: No observed adverse effect level.
NOAEC: No Observed Adverse Effect Concentration.
LOAEC: Lowest observed adverse effect concentration.
mg/m³: Milligrams per Cubic Metre.
pH - relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
Ppm: Parts Per Million.
STEL: Short term exposure limit.
TWA: Time Weighted Average.
OEL: Occupational Exposure Limit.
EC50: Effective Concentration 50%.
LC50: Lethal Concentration, 50%.
LD50: Lethal Dose, 50%.
CEN: European Committee for Standardisation.
HEPA: High Efficiency Particulate Air.