

1. Product and Company Identification

Company

Chemical Store Inc.
1059 Main Avenue
Clifton, NJ 07011, USA

24 Hour Emergency Response Information CHEMTREC: 1-800-424-9300

Molecular formula: FE (TRACES OF C, N, AND O)
Chemical family: metal powder
Synonyms: CARBONYL IRON POWDER, Zero Valent Iron Microspheres
Also applies to iron powders finer than 325 mesh

2. Hazards Identification

Emergency overview

CAUTION:
INHALATION OF DUSTS MAY CAUSE PNEUMOCONIOSIS.
MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION.
INGESTION MAY CAUSE GASTRIC DISTURBANCES.
CAUSES SKIN URS. CAUSES EYE BURNS.
Use with local exhaust ventilation.
Wear a NIOSH-certified (or equivalent) particulate respirator. Wear NIOSH-certified chemical goggles.
Wear protective clothing.

Potential health effects**Primary routes of exposure:**

Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation.
Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Irritation / corrosion: Irritating to eyes and skin.

3. Composition / Information on Ingredients

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
7439-89-6	>= 97.8 %	Carbonyl iron powder
7782-44-7	<= 0.9 %	Oxygen
7631-86-9	0.1 %	Silicon dioxide
7727-37-9	<=0.9%	Nitrogen
7440-44-0	<=0.9%	Carbon

4. First-Aid Measures

If inhaled: Keep patient calm, remove to fresh air. Assist in breathing if necessary.
Consult a physician.

If on skin: Wash thoroughly with soap and water. If irritation develops, seek medical attention.

If in eyes: Wash affected eyes for at least 15 minutes under running water with eyelids held open.
If irritation develops, seek medical attention.

If swallowed: Rinse mouth and then drink plenty of water. Seek medical attention.

5. Fire-Fighting Measures

Flash point: not applicable
Autoignition: > 150 °C
Lower explosion limit: (20 °C, 1 bar)

Suitable extinguishing media: water spray

Unsuitable extinguishing media for safety reasons: carbon dioxide

Additional information:

Avoid whirling up the material/product because of the danger of dust explosion.

Protective equipment for fire-fighting:

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:

The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official regulations.

6. Accidental release measures

Personal precautions: Avoid dust formation. Use personal protective clothing.

Environmental precautions:

This product is not regulated by RCRA. This product is not regulated by CERCLA ('Superfund').

Cleanup:

Do not vacuum up powder.

For large amounts: Dampen, pick up mechanically and dispose of. For residues: Dampen, pick up mechanically and dispose of.

7. Handling and Storage**Handling****General advice:**

Handle in accordance with good industrial hygiene and safety practice. Wear suitable personal protective clothing and equipment.

Protection against fire and explosion:

Fine dust of the product is capable of dust explosion. Avoid all sources of ignition: heat, sparks, open flame. Electrostatic discharge may cause ignition. Ground all transfer equipment properly to prevent electrostatic discharge.

Storage**Storage incompatibility:**

General advice: Segregate from acids. Segregate from oxidants.

Storage stability:

Protect against moisture.

8. Exposure Controls and Personal Protection

Advice on system design: Provide local exhaust ventilation to maintain recommended P.E.L.

Personal protective equipment

Respiratory protection: Wear a NIOSH-certified (or equivalent) particulate respirator. Do not exceed the maximum use concentration for the respirator facepiece/cartridge combination.

Hand protection: Chemical resistant protective gloves

Eye protection: Tightly fitting safety goggles (chemical goggles).

General safety and hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is recommended.

9. Physical and Chemical Properties

Form: Powder	Density: 7.8 g/cm ³
Odor: Odorless	Bulk Density: 2,000 – 3,000 kg/m ³
Color: Gray	Solubility in water: insoluble
Vapor Pressure: N/A	Molar Mass: 55.85 g/mol

10. Stability and Reactivity

Minimum ignition energy:

1 - 3 mJ, 1 bar, 20 °C, Inductivity: 1 mH (VDI 2263, sheet 1, 2.5)

Conditions to avoid:

Avoid all sources of ignition: heat, sparks, open flame. Avoid electro-static charge. Avoid dust formation.

Substances to avoid: No data available.

Hazardous reactions: Dust explosion hazard. Contact with acids liberates hydrogen gas.

Decomposition products: No hazardous decomposition products known.

Thermal decomposition: No data available.

Corrosion to metals: No corrosive effect on metal.

11. Toxicological information

Acute toxicity	<i>Information on: Carbonyl iron powder Assessment of acute toxicity: Virtually nontoxic after a single ingestion.</i>
Oral:	<i>Information on: Carbonyl iron powder Type of value: LD50 Species: rat (male) Value: 9,860 mg/kg (OECD Guideline 401)</i>
Repeated dose toxicity	<i>Information on: Iron Information on: Iron Oxide</i>
Carcinogenicity	<i>Information on: Carbonyl iron powder No data available concerning carcinogenic effects.</i>

12. Ecological Information

Aquatic toxicity

Information on: Carbonyl iron powder

Assessment of aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Fish

Information on: Carbonyl iron powder

Acute:

Study scientifically not justified.

13. Disposal considerations

Waste disposal of substance:

Dispose of in a licensed facility. Dispose of in accordance with national, state and local regulations.

Container disposal:

Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

14. Transport Information

Land transport

USDOT

Not classified as a dangerous good under transport regulations

Sea transport

IMDG

Not classified as a dangerous good under transport regulations

Air transport

IATA/ICAO

Not classified as a dangerous good under transport regulations

15. Regulatory Information

Federal Regulations

Registration status:

Chemical TSCA, US released / listed

OSHA hazard category: Skin and/or eye irritant; Chronic target organ effects reported

EPCRA 311/312 (Hazard categories): Chronic; Acute

State regulations

<u>State RTK</u>	<u>CAS Number</u>	<u>Chemical name</u>
MA, NJ, PA	7782-44-7	Oxygen
MA, NJ, PA	7631-86-9	Silicon dioxide

16. Other Information**NFPA Hazard codes:**

Health:1 Fire: 2 Reactivity: 0 Special:

HMIS III rating

Health:1 Flammability: 2 Physical hazard: 0

NFPA and HMIS use a numbering scale ranging from 0 to 4 to indicate the degree of hazard. A value of zero means that the substance possesses essentially no hazard; a rating of four indicates extreme danger. Although similar, the two rating systems are intended for different purposes, and use different criteria. The NFPA system was developed to provide an on-the-spot alert to the hazards of a material, and their severity, to emergency responders. The HMIS system was designed to communicate workplace hazard information to employees who handle hazardous chemicals.

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

Creation Date:

10/14/2013

Disclaimer/ Additional information:

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