

Safety Data Sheet

Material Name: IRON POWDER

SDS ID: 00232058

*** Section 1 - PRODUCT AND COMPANY IDENTIFICATION ***

Material Name: IRON POWDER

Manufacturer Information

CMC Cometals
CONTACT:
2050 Center Avenue, Suite 250
Ft. Lee, NJ 07024
Mfg Contact: CMC Cometals

EMERGENCY

Chemical Family

metal

Synonyms

FERRIUM; IRON DUST; Fe; RTECS: NO4565500

*** Section 2 - HAZARDS IDENTIFICATION ***

EMERGENCY OVERVIEW

Color: gray
Physical Form: powder
Odor: odorless

POTENTIAL HEALTH EFFECTS

Inhalation

Short Term: irritation, metal fume fever
Long Term: difficulty breathing, lung damage

Skin

Short Term: irritation
Long Term: irritation

Eye

Short Term: irritation
Long Term: irritation

Ingestion

Short Term: bleeding, digestive disorders, changes in blood pressure, blood disorders, liver damage
Long Term: no information on significant adverse effects

*** Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS ***

CAS	Component	Percent	Symbol(s)	Risk Phrase(s)
7439-89-6	IRON POWDER 231-096-4	100	---	---

*** Section 4 - FIRST AID MEASURES ***

Inhalation

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

Safety Data Sheet

Material Name: IRON POWDER

SDS ID: 00232058

Skin

Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

Eyes

Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Ingestion

If a large amount is swallowed, get medical attention.

Antidote

deferoxamine, intravenous.

*** Section 5 - FIRE FIGHTING MEASURES ***

See Section 9 for Flammability Properties

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

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

Flammable Properties

Negligible fire hazard.

Extinguishing Media

dolomite, dry powder for metal fires, dry sand, graphite, soda ash, sodium chloride, Do not use water.

Fire Fighting Measures

Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Use extinguishing agents appropriate for surrounding fire. Avoid inhalation of material or combustion by-products.

*** Section 6 - ACCIDENTAL RELEASE MEASURES ***

Occupational spill/release

Collect spilled material in appropriate container for disposal.

*** Section 7 - HANDLING AND STORAGE ***

Handling Procedures

Wash thoroughly after handling. Use methods to minimize dust.

Storage Procedures

Store and handle in accordance with all current regulations and standards. Keep container tightly closed. Store in a cool, dry place. Store between 18 C and 38 C. Keep separated from incompatible substances.

*** Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION ***

Component Exposure Limits

ACGIH, NIOSH, EU, OSHA (US) and Mexico have not developed exposure limits for any of this product's components.

Ventilation

Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

Safety Data Sheet

Material Name: IRON POWDER

SDS ID: 00232058

PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face

Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Protective Clothing

Wear appropriate chemical resistant clothing.

Glove Recommendations

Wear appropriate chemical resistant gloves.

Respiratory Protection

Under conditions of frequent use or heavy exposure, respiratory protection may be needed.

Respiratory protection is ranked in order from minimum to maximum.

Consider warning properties before use.

Any particulate respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering facepieces) except quarter-mask respirators. The following filters may also be used: N99, R99, P99, N100, R100 or P100.

Any air-purifying full-facepiece respirator equipped with an N95, R95, or P95 filter. The following filters may also be used: N99, R99, P99, N100, R100 or P100.

Any powered, air-purifying respirator with a high-efficiency particulate filter.

Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter.

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode.

For Unknown Concentrations or Immediately Dangerous to Life or Health -

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

*** Section 9 - PHYSICAL AND CHEMICAL PROPERTIES ***

Physical State:	Solid	Appearance:	Not available
Color:	gray	Physical Form:	powder
Odor:	odorless	Odor Threshold:	Not available
Melting Point:	1535 °C	Boiling Point:	3000 °C
Flash Point:	not flammable	Vapor Pressure:	1 mmHg @ 1787 °C
Henry's Law Constant:	0.0245 (estimated)	Vapor Density (air = 1):	Not applicable
Density:	7.86 g/cc	Specific Gravity (water = 1):	Not available
Water Solubility:	insoluble	KOW:	0.1698 (estimated)
Coeff. Water/Oil Dist:	Not available	Auto Ignition:	>700 °C
Molecular Weight:	55.85	Molecular Formula:	Fe

*** Section 10 - STABILITY AND REACTIVITY ***

Chemical Stability

Stable at normal temperatures and pressure.

Conditions to Avoid

None reported.

Safety Data Sheet

Material Name: IRON POWDER

SDS ID: 00232058

Materials to Avoid

oxidizing materials, acids, halogens, halogenated compounds, peroxides, metal salts, combustible materials

IRON:

ACETALDEHYDE: Polymerizes readily.

AMMONIUM NITRATE: Violent or explosive reaction.

AMMONIUM PEROXODISULFATE: Violent reaction.

BROMINE PENTAFLUORIDE: Violent reaction and possible ignition.

CHLORIC ACID: Forms explosive compound.

CHLORINE (GAS): Ignites.

CHLORINE TRIFLUORIDE: Violent reaction and possible ignition.

CHLOROFORMAMIDINIUM NITRATE: Explosive ignition.

DINITROGEN TETRAOXIDE: Ignites.

FLUORINE: Ignites.

HYDROGEN PEROXIDE: Violent decomposition.

MINERAL ACIDS: Readily attacked.

NITROGEN DIOXIDE: Incandescent reaction.

NITRYL FLUORIDE: Incandesces when heated.

ORGANIC ACIDS: Attacked or dissolved.

PEROXYFORMIC ACID: Incompatible.

PHOSPHORUS: Incandesces when heated.

POLYSTYRENE BEADS: Possible static ignition.

POTASSIUM DICHROMATE: Ignites on contact.

POTASSIUM PERCHLORATE + MANGANESE DIOXIDE: Ignites.

SODIUM ACETYLIDE: Possible violent reaction.

SODIUM PEROXIDE: Ignites under friction @ 240 C.

SULFURIC ACID: Possible explosion hazard.

Decomposition Products

oxides of iron

Possibility of Hazardous Reactions

Will not polymerize.

* * * Section 11 - TOXICOLOGICAL INFORMATION * * *

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

IRON POWDER (7439-89-6)

Oral LD50 Rat: 984 mg/kg

RTECS Acute Toxicity (selected)

The components of this material have been reviewed, and RTECS publishes the following endpoints:

IRON POWDER (7439-89-6)

Oral: 30 gm/kg oral rat LD50

Acute Toxicity Level

IRON POWDER (7439-89-6)

Non Toxic: ingestion.

Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, NTP, DFG or OSHA.

Safety Data Sheet

Material Name: IRON POWDER

SDS ID: 00232058

RTECS Irritation

The components of this material have been reviewed and RTECS publishes no data as of the date on this document.

RTECS Tumorigenic

The components of this material have been reviewed, and RTECS publishes the following endpoints:

IRON POWDER (7439-89-6)

450 mg/kg intratracheal rat TDLo (15 week(s))

HEALTH EFFECTS

Inhalation - Acute Exposure

IRON: Dust may cause mucous membrane and respiratory irritation due to mechanical action. Metal fume fever, an influenza-like illness, may occur due to the inhalation of freshly formed iron oxide particles sized below 1.5 microns and usually between 0.02-0.05 microns. Symptoms may be delayed 4-12 hours and begin with a sudden onset of thirst, and a sweet, metallic or foul taste in the mouth. Other symptoms may include upper respiratory tract irritation accompanied by coughing and a dryness of the mucous membranes. Lassitude and a generalized feeling of malaise. Fever, chills, muscular pain, mild to severe headache, nausea, occasional vomiting, exaggerated mental activity, profuse sweating, excessive urination, diarrhea and prostration may also occur. Tolerance to fumes develops rapidly, but is quickly lost. All symptoms usually subside within 24-36 hours.

Inhalation - Chronic Exposure

IRON: Prolonged or repeated exposure may cause a mottling of the lungs, a condition called siderosis which is considered to be a benign pneumoconiosis that does not cause significant physiologic impairment. Symptoms may include chronic bronchitis, emphysema, and dyspnea on exertion.

Skin Contact - Acute Exposure

IRON: Dust may cause irritation. Penetration of iron particles in the skin may cause an exogenous siderosis which may be characterized by a red-brown pigmentation of the affected area.

Skin Contact - Chronic Exposure

IRON: May cause same effects as reported in acute exposure.

Eye Contact - Acute Exposure

IRON: May cause irritation due to mechanical action. Iron particles imbedded in the eye may cause ocular siderosis. Effects may include discoloration of the cornea and iris, and pupillary effects including poor reaction to light and accommodation. If a particle enters the lens there may be cataract formation. Glaucoma occurs rarely in some cases of ocular siderosis.

Eye Contact - Chronic Exposure

IRON: Repeated and prolonged contact may cause conjunctivitis and other effects reported in acute exposure.

Safety Data Sheet

Material Name: IRON POWDER

SDS ID: 00232058

Ingestion - Acute Exposure

IRON: Absorption of elemental iron in doses greater than 20 mg/kg may produce symptoms, greater than 60 mg/kg may cause significant toxicity, and greater than 180 mg/kg is often lethal. Iron poisoning may occur in four stages. Stage one is typified by intestinal corrosion, and tends to occur up to six hours post ingestion. Vomiting, diarrhea (often bloody), and abdominal pain may be the only signs of toxicity. If severe, patients may progress to hypotension and acidosis due to gastrointestinal losses of fluid and blood. Marked acidosis may progress to death. Lab results may reveal leukocytosis, hyperglycemia, or acidosis. Abdominal radiographs may reveal iron burden. Stage two may occur roughly six to twenty-four hours after ingestion. During this stage symptoms typically stabilize or improve. This is thought to be due to movement of free plasma iron into cells. Continued hypotension and acidosis may reflect onset of direct system toxicity. Stage three typically involves multiple system organ failure. Iron is directly toxic to the liver, myocardium, kidney, and central nervous system. Lab results may reflect specific organ dysfunction, such as hypoglycemia and coagulopathy associated with liver failure. Continued symptoms likely represent cellular toxicity and diminished myocardial function. In stage four patients who survive early stages may present weeks later with new onset of emesis. Often they have severe corrosion and scarring with luminal obstruction.

Ingestion - Chronic Exposure

IRON: Repeated or prolonged exposure may cause hemosiderosis or hemochromatosis.

* * * Section 12 - ECOLOGICAL INFORMATION * * *

Component Analysis - Aquatic Toxicity

IRON POWDER (7439-89-6)

Fish: 96 Hr LC50 Morone saxatilis: 13.6 mg/L [static]; 96 Hr LC50 Cyprinus carpio: 0.56 mg/L [semi-static]

* * * Section 13 - DISPOSAL CONSIDERATIONS * * *

Disposal Methods

Dispose in accordance with all applicable regulations.

Component Waste Numbers

The U.S. EPA has not published waste numbers for this product's components.

Safety Data Sheet

Material Name: IRON POWDER

SDS ID: 00232058

*** Section 14 - TRANSPORT INFORMATION ***

US DOT Information

No Classification assigned.

TDG Information

No Classification assigned.

ADR Information

No Classification assigned.

RID Information

No Classification assigned.

IATA Information

No Classification assigned.

ICAO Information

No Classification assigned.

IMDG Information

No Classification assigned.

*** Section 15 - REGULATORY INFORMATION ***

U.S. Federal Regulations

None of this products components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 311/312 (40 CFR 370.21), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

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

Acute Health: No Chronic Health: No Fire: No Pressure: No Reactive: No

U.S. State Regulations

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

Component	CAS	CA	MA	MN	NJ	PA	RI
IRON POWDER	7439-89-6	Yes	No	No	No	No	No

Not regulated under California Proposition 65

Canada

Germany Water Classification

IRON POWDER (7439-89-6)

Number 748, not considered hazardous to water

Component Analysis - Inventory

Component	CAS	US	CA	EU	AU	PH	JP	KR	CN	NZ
IRON POWDER	7439-89-6	Yes	DSL	EIN	Yes	Yes	No	Yes	Yes	Yes

Safety Data Sheet

Material Name: IRON POWDER

SDS ID: 00232058

*** Section 16 - OTHER INFORMATION ***

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RID - European Rail Transport; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States

Other Information

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