

# Safety Data Sheet

Material Name: Elemental Iron, NX-1000

## \*\*\* Section 1 - Product and Company Identification \*\*\*

### Manufacturer Information

Ametek Specialty Metal Products  
21 Toelles Road  
Wallingford, CT 06492

Phone: 203-265-6731

Emergency # 800-424-9300 Chemtrec

## \*\*\* Section 2 - Hazards Identification \*\*\*

### GHS Classification:

Flammable Solids - Category 1  
Acute Toxicity Oral - Category 4  
Skin Corrosion/Irritation - Category 2  
Eye Damage/Irritation - Category 2B  
Respiratory Sensitization - Category 1  
Specific Target Organ Toxicity (Single Exposure) - Category 3  
Specific Target Organ Toxicity (Repeated Exposure) - Category 1  
Hazardous to the Aquatic Environment Acute- Category 1

### GHS LABEL ELEMENTS

#### Symbol(s)



#### Signal Word

Danger

#### Hazard Statements

Flammable solid.  
Harmful if swallowed.  
Causes skin and eye irritation.  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
May cause respiratory irritation.  
Causes damage to lungs through prolonged or repeated exposure.  
Very toxic to aquatic life.

#### Precautionary Statements

##### Prevention

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
Ground/Bond container and receiving equipment.  
Use explosion-proof electrical/ventilating/lighting equipment.  
Wear protective gloves/protective clothing/eye protection/face protection.  
Wash thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Do not breathe dusts.  
Use only outdoors or in a well-ventilated area.

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In case of inadequate ventilation wear respiratory protection.  
Avoid release to the environment.

### Response

In case of fire: Use dry sand, dry dolomite, or dry graphite powder or other dry chemical extinguishing agent formulated for metal fires to extinguish.

IF SWALLOWED: Call a poison center/doctor if you feel unwell. Rinse mouth.

IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

IF IN EYES: 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.

IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms call a doctor/physician.

Get medical advice/attention if you feel unwell.

Collect spillage.

### Storage

Store locked up.

### Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

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

CAS #	Component	Percent
7439-89-6	Iron	100

## \*\*\* Section 4 - First Aid Measures \*\*\*

### First Aid: Eyes

First check the victim for contact lenses and remove if present. Lift eyelids and flush immediately with flooding amounts of water for at least 15 minutes. Do not allow the victim to rub his/her eyes or keep them shut. Consult a physician or ophthalmologist if all material cannot be removed or if there is continuing irritation.

### First Aid: Skin

Remove clothing around affected area. Rinse away loose material and wash affected area with soap and water. If there is a severe skin reaction or reddened or blistered skin, consult a physician and be prepared to transport the victim to a hospital for treatment.

### First Aid: Ingestion

Never give anything by mouth to an unconscious or convulsing person. Contact a poison control center with information from this SDS and the Technical Data Sheet on the composition of the material ingested. Unless the poison control center advises otherwise, give the person one or two glasses of water, then induce vomiting. After first aid, have the person see a physician for follow up care.

### First Aid: Inhalation

Move the person to fresh air and support breathing as required. If symptoms (wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop, call a physician and be prepared to transport the victim to a hospital for treatment.

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## \*\*\* Section 5 - Fire Fighting Measures \*\*\*

### General Fire Hazards

See Section 9 for Flammability Properties.

Powder may burn. Dust is an explosion hazard. Iron can have a violent or explosive reaction with ammonium nitrate + heat, ammonium peroxodisulfate, chloric acid, chlorine trifluoride, chloroformadanium nitrate. Iron may also react with water to produce explosive hydrogen gas.

### Hazardous Combustion Products

Not Determined.

### Extinguishing Media

Use dry sand, dry dolomite, or dry graphite powder or other dry chemical extinguishing agent formulated for metal fires.

### Unsuitable Extinguishing Media

None

### Fire Fighting Equipment/Instructions

Firefighters should wear full protective gear.

## \*\*\* Section 6 - Accidental Release Measures \*\*\*

### Recovery and Neutralization

Collect spilled material and place in sealed containers for reclamation or disposal.

### Materials and Methods for Clean-Up

Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter, or similar clean up measure that minimize dust, and place in a closed container for disposal. Avoid inhalation of dust. Remove sources of heat or ignition as dust clouds can burn or explode.

### Emergency Measures

Isolate area. Keep unnecessary personnel away.

### Personal Precautions and Protective Equipment

Wear appropriate protective clothing and respiratory protection for the situation.

### Environmental Precautions

None

### Prevention of Secondary Hazards

None

## \*\*\* Section 7 - Handling and Storage \*\*\*

### Handling Procedures

Use local exhaust ventilation to protect against dust and fume inhalation. If workers are exposed to dust provide appropriate respiratory, eye, and skin protection. An eye wash station should be readily available to areas of use.

### Storage Procedures

Store in a closed container when possible to prevent accidental dust generation and to prevent possible product contamination (due to dampness, dust, etc.). Protect containers from physical damage. Area should be well ventilated to guard against dust accumulation and dust becoming airborne. Avoid welding in storage area so as not to ignite flammable dusts.

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## Incompatibilities

Iron is incompatible with the following: ammonium nitrate, heat, ammonium, peroxydisulfate, chloric acid, chlorine, trifluoride, chloroformadanium, nitrate, sodium acetylide, chlorine, dinitrogen tetraoxide, liquid fluorine, nitryl fluoride + heat, peroxy formic and potassium dichromate, sodium peroxide (at 240 °C).

## \* \* \* Section 8 - Exposure Controls / Personal Protection \* \* \*

### Component Exposure Limits

ACGIH, OSHA, and NIOSH have not developed exposure limits for any of this product's components.

### Engineering Measures

Where feasible, enclose processes to prevent dust dispersion into the work area. Provide local exhaust when possible, and general ventilation as necessary, to keep airborne concentrations below exposure limits and as low as possible.

### Personal Protective Equipment: Respiratory

If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

### Personal Protective Equipment: Hands

Use impervious gloves such as neoprene, nitrile, or rubber for hand protection.

### Personal Protective Equipment: Eyes

Wear safety glasses with side shields and/or goggles as necessary to prevent dust from entering eyes.

### Personal Protective Equipment: Skin and Body

Chemical resistant apron or coveralls is recommended. These should be worn one day only if exposed to particulates, and washed before reuse.

## \* \* \* Section 9 - Physical & Chemical Properties \* \* \*

<b>Appearance:</b>	Silvery gray fine powder.	<b>Odor:</b>	None
<b>Physical State:</b>	Solid	<b>pH:</b>	NA
<b>Vapor Pressure:</b>	ND	<b>Vapor Density:</b>	ND
<b>Boiling Point:</b>	ND	<b>Melting Point:</b>	ND
<b>Solubility (H2O):</b>	Insoluble	<b>Specific Gravity:</b>	8.9
<b>Evaporation Rate:</b>	ND	<b>VOC:</b>	ND
<b>Octanol/H2O Coeff.:</b>	ND	<b>Flash Point:</b>	NA
<b>Flash Point Method:</b>	NA	<b>Upper Flammability Limit (UFL):</b>	NA
<b>Lower Flammability Limit (LFL):</b>	NA	<b>Burning Rate:</b>	NA
<b>Auto Ignition:</b>	NA		

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

### Chemical Stability

This is a stable material.

### Hazardous Reaction Potential

Will not occur.

### Conditions to Avoid

Contamination from other materials.

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## Incompatible Products

Iron is incompatible with the following: ammonium nitrate, heat, ammonium, peroxydisulfate, chloric acid, chlorine, trifluoride, chloroformadanium, nitrate, sodium acetylide, chlorine, dinitrogen tetraoxide, liquid fluorine, nitryl fluoride + heat, peroxy formic and potassium dichromate, sodium peroxide (at 240 °C).

## Hazardous Decomposition Products

Contact of iron with strong acids form flammable and explosive hydrogen gas.

* * * <b>Section 11 - Toxicological Information</b> * * *
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## Acute Toxicity

### Component Analysis - LD50/LC50

**Iron (7439-89-6)**

Oral LD50 Rat 984 mg/kg

### Potential Health Effects: Skin Corrosion Property/Stimulativeness

May cause skin irritation and dermatitis especially in creases of the skin where metal may accumulate and rub against skin.

### Potential Health Effects: Eye Critical Damage/ Stimulativeness

May cause eye irritation.

### Potential Health Effects: Ingestion

Harmful if swallowed.

### Potential Health Effects: Inhalation

Inhalation of metal powder may cause chills, fever, sweating, nausea, and cough (symptoms of metal fume fever). Metal fume fever symptoms typically begin within 4 to 12 hours after the initial exposure and lasts from approximately 24 hours without causing permanent damage. Other effects may include nose and throat irritation, metallic taste, difficulty breathing, wheezing, coughing, weight loss, pulmonary damage and chest pain. Inhalation of iron dust and/or powder may attribute to iron poisoning. Large amounts of iron may cause iron pneumoconiosis.

### Respiratory Organs Sensitization/Skin Sensitization

Effects of long term or repeated exposure to metal powders may include respiratory disease, pneumoconiosis, bronchial asthma, lung fibrosis, and obstructive airway syndrome. May cause chronic iron poisoning and pathological deposition of iron in the body tissue.

### Generative Cell Mutagenicity

This product is not reported to produce mutagenic effects in humans.

### Carcinogenicity

#### A: General Product Information

This product is not reported to have carcinogenic effects.

#### B: Component Carcinogenicity

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

### Reproductive Toxicity

This product is not reported to cause reproductive effects in humans.

### Specified Target Organ General Toxicity: Single Exposure

May cause respiratory irritation.

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## Specified Target Organ General Toxicity: Repeated Exposure

Causes damage to lungs through prolonged or repeated exposure.

## Aspiration Respiratory Organs Hazard

None

### \*\*\* Section 12 - Ecological Information \*\*\*

#### Ecotoxicity

##### A: General Product Information

Powders and dusts are very toxic to aquatic life.

##### B: Component Analysis - Ecotoxicity - Aquatic Toxicity

###### Iron (7439-89-6)

###### Test & Species

96 Hr LC50 *Morone saxatilis*

13.6 mg/L [static]

96 Hr LC50 *Cyprinus carpio*

0.56 mg/L [semi-static]

###### Conditions

#### Persistence/Degradability

Metal powders may cause ecological damage through silting or sedimentation effect in water depriving organisms of habitat and mobility, and/or fouling of gills, lungs and skin thus limiting oxygen uptake.

#### Bioaccumulation

Metal powders in water or soil may form metal oxides or other metal compounds that could become bioavailable and harm aquatic or terrestrial organisms.

#### Mobility in Soil

Metal powder would be relatively immobile in soils but some metal compounds may be transported with ground water.

### \*\*\* Section 13 - Disposal Considerations \*\*\*

#### Waste Disposal Instructions

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

#### Disposal of Contaminated Containers or Packaging

Dispose of contents/container in accordance with local/regional/national/international regulations.

### \*\*\* Section 14 - Transportation Information \*\*\*

#### DOT Information

**Shipping Name:** Metal Powders, flammable, n.o.s.

**UN #:** 3089 **Hazard Class:** 4.1 **Packing Group:** II

### \*\*\* Section 15 - Regulatory Information \*\*\*

#### Regulatory Information

##### Component Analysis

None of this products components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

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## State Regulations

### Component Analysis - State

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

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

### Component Analysis - WHMIS IDL

No components are listed in the WHMIS IDL.

## Additional Regulatory Information

### Component Analysis - Inventory

Component	CAS #	TSCA	CAN	EEC
Iron	7439-89-6	Yes	DSL	EINECS

## \* \* \* Section 16 - Other Information \* \* \*

### Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists; ADG = Australian Code for the Transport of Dangerous Goods by Road and Rail; ADR/RID = European Agreement of Dangerous Goods by Road/Rail; AS = Standards Australia; DFG = Deutsche Forschungsgemeinschaft; DOT = Department of Transportation; DSL = Domestic Substances List; EEC = European Economic Community; EINECS = European Inventory of Existing Commercial Chemical Substances; ELINCS = European List of Notified Chemical Substances; EU = European Union; HMIS = Hazardous Materials Identification System; IARC = International Agency for Research on Cancer; IMO = International Maritime Organization; IATA = International Air Transport Association; MAK = Maximum Concentration Value in the Workplace; NDSL = Non-Domestic Substances List; NFPA = National Fire Protection Association; NOHSC = National Occupational Health & Safety Commission; NTP = National Toxicology Program; STEL = Short-term Exposure Limit; TDG = Transportation of Dangerous Goods; TLV = Threshold Limit Value; TSCA = Toxic Substances Control Act; TWA = Time Weighted Average

### Literature References

Available on request.

End of Sheet