

SAFETY DATA SHEET

1. Identification

Product identifier: IRON REDUCED

Other means of identification

Product No.: 4348

Recommended use and restriction on use

Recommended use: Not available.

Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company Name: Avantor Performance Materials, Inc.
Address: 3477 Corporate Parkway, Suite 200
Center Valley, PA 18034

Telephone: Customer Service: 855-282-6867

Fax:
Contact Person: Environmental Health & Safety
e-mail: info@avantormaterials.com

Emergency telephone number:

24 Hour Emergency: 908-859-2151

Chemtrec: 800-424-9300

2. Hazard(s) identification

Hazard classification

Label elements

Hazard symbol: No symbol

Signal word: Warning

Hazard statement: May form combustible dust concentrations in air.

Precautionary statement

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

Substances

| Chemical identity | Common name and synonyms | CAS number | Content in percent (%)* |
|-------------------|--------------------------|------------|-------------------------|
| IRON REDUCED | | 7439-89-6 | 90 - 100% |

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

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| General information: | Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance. |
| Ingestion: | Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell. |
| Inhalation: | Move to fresh air. Get medical attention if symptoms persist. |
| Skin contact: | Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes. |
| Eye contact: | Flush thoroughly with water. If irritation occurs, get medical assistance. |

Most important symptoms/effects, acute and delayed

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| Symptoms: | May cause irritation to skin, eyes, and respiratory tract. |
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Indication of immediate medical attention and special treatment needed

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| Treatment: | Treat symptomatically. |
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5. Fire-fighting measures

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| General fire hazards: | Powdered material may form explosive dust-air mixtures. |
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Suitable (and unsuitable) extinguishing media

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| Suitable extinguishing media: | Use fire-extinguishing media appropriate for surrounding materials. |
| Unsuitable extinguishing media: | None known. |

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| Specific hazards arising from the chemical: | During fire, gases hazardous to health may be formed. Dust clouds may be explosive under certain conditions. |
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Special protective equipment and precautions for firefighters

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| Special fire fighting procedures: | Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out. |
| Special protective equipment for fire-fighters: | Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. |

6. Accidental release measures

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| Personal precautions, protective equipment and emergency procedures: | ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unauthorized personnel away. Use personal protective equipment. See Section 8 of the MSDS for Personal Protective Equipment. |
| Methods and material for containment and cleaning up: | Avoid dust formation. Sweep up and place in a clearly labeled container for chemical waste. Clean surface thoroughly to remove residual contamination. |

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| Notification Procedures: | Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved. |
| Environmental precautions: | Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. |

7. Handling and storage

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| Precautions for safe handling: | Avoid generation and spreading of dust. Ground/bond container and receiving equipment. Use personal protective equipment as required. Avoid contact with eyes, skin, and clothing. Avoid inhalation of dust. Wash thoroughly after handling. |
| Conditions for safe storage, including any incompatibilities: | Keep containers tightly closed. Store in cool, dry place. Store in a well-ventilated place. |

8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None of the components have assigned exposure limits.

Appropriate engineering controls

No data available.

Individual protection measures, such as personal protective equipment

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| General information: | Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area. |
| Eye/face protection: | Use tight fitting goggles if dust is generated. |
| Skin protection | |
| Hand protection: | Wear protective gloves. |
| Other: | Wear suitable protective clothing. |
| Respiratory protection: | In case of inadequate ventilation use suitable respirator. Air-purifying respirator with a high efficiency particulate filter. |
| Hygiene measures: | Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned. |

9. Physical and chemical properties

Appearance

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| Physical state: | Solid |
| Form: | Granules or shavings |
| Color: | White to grey |
| Odor: | Odorless |
| Odor threshold: | No data available. |
| pH: | Not applicable |

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| Melting point/freezing point: | 1,535 °C |
| Initial boiling point and boiling range: | 2,750 °C |
| Flash Point: | Not applicable |
| Evaporation rate: | No data available. |
| Flammability (solid, gas): | No data available. |
| Upper/lower limit on flammability or explosive limits | |
| Flammability limit - upper (%): | No data available. |
| Flammability limit - lower (%): | No data available. |
| Explosive limit - upper (%): | No data available. |
| Explosive limit - lower (%): | No data available. |
| Vapor pressure: | 0.13 kPa (1,787 °C) |
| Vapor density: | No data available. |
| Relative density: | 7.86 (20 °C) |
| Solubility(ies) | |
| Solubility in water: | Insoluble in water |
| Solubility (other): | No data available. |
| Partition coefficient (n-octanol/water): | No data available. |
| Auto-ignition temperature: | No data available. |
| Decomposition temperature: | No data available. |
| Viscosity: | No data available. |
| Other information | |
| Molecular weight: | 55.85 g/mol (Fe) |

10. Stability and reactivity

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| Reactivity: | No dangerous reaction known under conditions of normal use. |
| Chemical stability: | Stable in dry air but readily oxidizes in moist air forming rust. |
| Possibility of hazardous reactions: | Hazardous polymerization does not occur. |
| Conditions to avoid: | Contact with incompatible materials. Avoid conditions which create dust. |
| Incompatible materials: | Strong oxidizing agents. Acids. Water. Humid air. Hydrogen peroxide (H ₂ O ₂) |
| Hazardous decomposition products: | Toxic metal fumes may form when heated to decomposition. |

11. Toxicological information

Information on likely routes of exposure

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| Ingestion: | May cause irritation of the gastrointestinal tract. |
| Inhalation: | May cause irritation to the respiratory system. |
| Skin contact: | May cause irritation. |
| Eye contact: | May irritate and cause redness and pain. |

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

| | |
|-----------------|---------------------------|
| Oral | |
| Product: | LD 50 (Rat): 30,000 mg/kg |

Dermal**Product:**

No data available.

Inhalation**Product:**

No data available.

Repeated dose toxicity**Product:**

No data available.

Skin corrosion/irritation**Product:**

May cause skin irritation.

Serious eye damage/eye irritation**Product:**

May irritate and cause redness and pain.

Respiratory or skin sensitization**Product:**

Not a skin sensitizer.

Carcinogenicity**Product:**

This substance has no evidence of carcinogenic properties.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ cell mutagenicity**In vitro****Product:**

No mutagenic components identified

In vivo**Product:**

No mutagenic components identified

Reproductive toxicity**Product:**

No components toxic to reproduction

Specific target organ toxicity - single exposure**Product:**

None known.

Specific target organ toxicity - repeated exposure**Product:**

None known.

Aspiration hazard**Product:**

Not classified

Other effects:

None known.

12. Ecological information**Ecotoxicity:****Acute hazards to the aquatic environment:****Fish****Product:**

No data available.

Specified substance(s):

IRON REDUCED

LC 50 (Channel catfish (*Ictalurus punctatus*), 96 h): > 500 mg/l Mortality

Aquatic invertebrates
Product:

No data available.

Specified substance(s):

IRON REDUCED

LC 50 (Cockle (*Cerastoderma edule*), 48 h): 100 - 330 mg/l Mortality

LC 50 (Common shrimp, sand shrimp (*Crangon crangon*), 48 h): 33 - 100 mg/l Mortality

Chronic hazards to the aquatic environment:
Fish
Product:

No data available.

Aquatic invertebrates
Product:

No data available.

Toxicity to Aquatic Plants
Product:

No data available.

Persistence and degradability
Biodegradation
Product:

There are no data on the degradability of this product.

BOD/COD ratio
Product:

No data available.

Bioaccumulative potential
Bioconcentration factor (BCF)
Product:

No data available on bioaccumulation.

Partition coefficient n-octanol / water (log Kow)
Product:

No data available.

Mobility in soil:

The product is insoluble in water and will sediment in water systems.

Other adverse effects:

The product components are 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.

13. Disposal considerations
Disposal instructions:

Discharge, treatment, or disposal may be subject to national, state, or local laws.

Contaminated packaging:

Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information
DOT

Not regulated.

IMDG

Not regulated.

IATA

Not regulated.

15. Regulatory information

US federal regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

None present or none present in regulated quantities.

Superfund amendments and reauthorization act of 1986 (SARA)

Hazard categories

☒ Acute (Immediate) ☒ Chronic (Delayed) ☐ Fire ☐ Reactive ☐ Pressure Generating

SARA 302 Extremely hazardous substance

None present or none present in regulated quantities.

SARA 304 Emergency release notification

None present or none present in regulated quantities.

SARA 311/312 Hazardous chemical

| Chemical identity | Threshold Planning Quantity |
|-------------------|-----------------------------|
| IRON REDUCED | 500 lbs |

SARA 313 (TRI reporting)

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

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

None present or none present in regulated quantities.

US state regulations

US. California Proposition 65

No ingredient regulated by CA Prop 65 present.

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

No ingredient regulated by NJ Right-to-Know Law present.

US. Massachusetts RTK - Substance List

No ingredient regulated by MA Right-to-Know Law present.

US. Pennsylvania RTK - Hazardous Substances

No ingredient regulated by PA Right-to-Know Law present.

US. Rhode Island RTK

No ingredient regulated by RI Right-to-Know Law present.

Inventory Status:

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| Australia AICS: | On or in compliance with the inventory |
| Canada DSL Inventory List: | On or in compliance with the inventory |
| EINECS, ELINCS or NLP: | On or in compliance with the inventory |
| Japan (ENCS) List: | Not in compliance with the inventory. |
| China Inv. Existing Chemical Substances: | On or in compliance with the inventory |
| Korea Existing Chemicals Inv. (KECI): | On or in compliance with the inventory |
| Canada NDSL Inventory: | Not in compliance with the inventory. |
| Philippines PICCS: | On or in compliance with the inventory |
| US TSCA Inventory: | On or in compliance with the inventory |
| New Zealand Inventory of Chemicals: | On or in compliance with the inventory |
| Japan ISHL Listing: | Not in compliance with the inventory. |
| Japan Pharmacopoeia Listing: | Not in compliance with the inventory. |

16. Other information, including date of preparation or last revision

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

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| Issue date: | 05-30-2014 |
| Revision date: | No data available. |
| Version #: | 1.0 |
| Further information: | No data available. |

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