



# SAFETY DATA SHEET

Issue Date 29-May-2024

Revision Date 29-May-2024

Version 1

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

### Product identifier

**Product Name** Iron Low Alloy Powder

### Other means of identification

**Product Code** PM033

**Synonyms** Iron Low Alloy Powder: A508

### Recommended use of the chemical and restrictions on use

**Recommended Use** Alloy product manufacture.

**Uses advised against**

### Details of the supplier of the safety data sheet

#### **Manufacturer Address**

ATI Specialty Materials, 2020 Ashcraft  
Avenue, Monroe, NC 28110 USA

#### **Emergency telephone number**

**Company Phone Number**

ATI SDS Manager: 1-412-225-4911

**Emergency Telephone**

Chemtrec: 1-800-424-9300

## 2. HAZARDS IDENTIFICATION

### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin sensitization	Category 1
Carcinogenicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 2

### Label elements

#### Emergency Overview

#### **Warning**

#### **Hazard statements**

May cause an allergic skin reaction

Suspected of causing cancer

May cause damage to respiratory tract through prolonged or repeated exposure if inhaled



**Appearance** Powder

**Physical state** Solid

**Odor** Odorless

**Precautionary Statements - Prevention**

Do not handle until all safety precautions have been read and understood  
 Use personal protective equipment as required  
 Wear protective gloves  
 Avoid breathing dust/fume

**Precautionary Statements - Response**

IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing  
 IF ON SKIN: Wash with plenty of soap and water  
 Wash contaminated clothing before reuse  
 If skin irritation or rash occurs: Get medical advice/attention

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

Not applicable

**Other Information**

When product is subjected to welding, burning, melting, sawing, brazing, grinding, buffing, polishing, or other similar heat-generating processes, the following potentially hazardous airborne particles and/or fumes may be generated:  
 Hexavalent Chromium (Chromium VI) may cause lung, nasal, and/or sinus cancer.  
 Soluble molybdenum compounds such as molybdenum trioxide may cause lung irritation.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Synonyms** Iron Low Alloy Powder: A508.

Chemical Name	CAS No.	Weight-%
Iron	7439-89-6	80 - 98
Nickel	7440-02-0	1 - 4
Chromium	7440-47-3	1 - 3
Molybdenum	7439-98-7	0.2 - 1

### 4. FIRST AID MEASURES

**First aid measures**

**Eye contact** In the case of particles coming in contact with eyes during processing, treat as with any foreign object.

**Skin Contact** Wash off immediately with soap and plenty of water. In the case of skin allergic reactions see a physician.

**Inhalation** If excessive amounts of smoke, fume, or particulate are inhaled during processing, remove to fresh air and consult a qualified health professional.

**Ingestion** IF SWALLOWED. Call a POISON CENTER or doctor/physician if you feel unwell.

**Most important symptoms and effects, both acute and delayed**

**Symptoms** May cause allergic skin reaction.

**Indication of any immediate medical attention and special treatment needed**

**Note to physicians** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

### Suitable extinguishing media

Product not flammable in the form as distributed, flammable as finely divided particles or pieces resulting from processing of this product. Isolate large fires and allow to burn out. Smother small fires with salt (NaCl).

**Unsuitable extinguishing media** Do not spray water on burning metal as an explosion may occur. This explosive characteristic is caused by the hydrogen and steam generated by the reaction of water with the burning material.

### Specific hazards arising from the chemical

Intense heat. **WARNING:** Fine particles of this product may form combustible dust-air mixtures. Keep particles away from all ignition sources including heat, sparks, and flame. Prevent dust accumulations to minimize combustible dust hazard.

**Hazardous combustion products** Hexavalent Chromium (Chromium VI) may cause lung, nasal, and/or sinus cancer. Soluble molybdenum compounds such as molybdenum trioxide may cause lung irritation.

### Explosion data

**Sensitivity to Mechanical Impact** None.

**Sensitivity to Static Discharge** None.

### Protective equipment and precautions for firefighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal precautions** Use personal protective equipment as required.

**For emergency responders** Use personal protective equipment as required. Follow Emergency Response Guidebook, Guide No. 171, EXCEPT for FIRE follow Emergency Response Guidebook, Guide No. 170.

### Environmental precautions

**Environmental precautions** Collect spillage to prevent release to the environment.

### Methods and material for containment and cleaning up

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Sweep or shovel material into dry containers. Avoid creating uncontrolled dust.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Advice on safe handling** **WARNING:** Fine particles of this product may form combustible dust-air mixtures. Keep particles away from all ignition sources including heat, sparks, and flame. Prevent dust accumulations to minimize combustible dust hazard.

### Conditions for safe storage, including any incompatibilities

**Storage Conditions** Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity).

**Incompatible materials** Dissolves in hydrofluoric acid.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

Chemical Name	ACGIH TLV	OSHA PEL
Iron 7439-89-6	-	-
Nickel 7440-02-0	TWA: 1.5 mg/m <sup>3</sup> inhalable fraction	TWA: 1 mg/m <sup>3</sup>
Chromium 7440-47-3	TWA: 0.5 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>
Molybdenum 7439-98-7	TWA: 10 mg/m <sup>3</sup> inhalable fraction TWA: 3 mg/m <sup>3</sup> respirable fraction	-

**Appropriate engineering controls**

**Engineering Controls** Avoid generation of uncontrolled particles.

**Individual protection measures, such as personal protective equipment**

- Eye/face protection** When airborne particles may be present, appropriate eye protection is recommended. For example, tight-fitting goggles, foam-lined safety glasses or other protective equipment that shield the eyes from particles.
- Skin and body protection** Fire/flame resistant/retardant clothing may be appropriate during hot work with the product. Wear protective gloves.
- Respiratory protection** When particulates/fumes/gases are generated and if exposure limits are exceeded or irritation is experienced, proper approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**General Hygiene Considerations** Handle in accordance with good industrial hygiene and safety practice.

**9. PHYSICAL AND CHEMICAL PROPERTIES****Information on basic physical and chemical properties**

<b>Physical state</b>	Solid	<b>Odor</b>	Odorless
<b>Appearance</b>	Powder	<b>Odor threshold</b>	Not applicable
<b>Color</b>	Grey		
<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>	
<b>pH</b>	-	Not applicable	
<b>Melting point / freezing point</b>	1510 °C / 2750 °F		
<b>Boiling point / boiling range</b>	-		
<b>Flash point</b>	-		
<b>Evaporation rate</b>	-	Not applicable	
<b>Flammability (solid, gas)</b>	-	Product not flammable in the form as distributed, flammable as finely divided particles or pieces resulting from processing of this product	
<b>Flammability Limit in Air</b>			
<b>Upper flammability limit:</b>	-		
<b>Lower flammability limit:</b>	-		
<b>Vapor pressure</b>	-	Not applicable	
<b>Vapor density</b>	-	Not applicable	
<b>Specific Gravity</b>	-		
<b>Water solubility</b>	Insoluble		
<b>Solubility in other solvents</b>	-		
<b>Partition coefficient</b>	-	Not applicable	

Autoignition temperature	-	Not applicable
Decomposition temperature	-	Not applicable
Kinematic viscosity	-	Not applicable
Dynamic viscosity	-	Not applicable
Explosive properties	Not applicable	
Oxidizing properties	Not applicable	

**Other Information**

Softening point	-
Molecular weight	-
VOC Content (%)	Not applicable
Density	-
Bulk density	4.35 gm/cm <sup>3</sup>

## 10. STABILITY AND REACTIVITY

**Reactivity**

Not applicable

**Chemical stability**

Stable under normal conditions.

**Possibility of Hazardous Reactions**

None under normal processing.

**Hazardous polymerization**      Hazardous polymerization does not occur.

**Conditions to avoid**

Dust formation and dust accumulation.

**Incompatible materials**

Dissolves in hydrofluoric acid.

**Hazardous Decomposition Products**

When product is subjected to welding, burning, melting, sawing, brazing, grinding, buffing, polishing, or other similar heat-generating processes, the following potentially hazardous airborne particles and/or fumes may be generated: Hexavalent Chromium (Chromium VI) may cause lung, nasal, and/or sinus cancer. Soluble molybdenum compounds such as molybdenum trioxide may cause lung irritation.

## 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure****Product Information**

<b>Inhalation</b>	Suspected of causing cancer by inhalation. May cause damage to respiratory tract through prolonged or repeated exposure if inhaled.
<b>Eye contact</b>	Product not classified.
<b>Skin Contact</b>	May cause sensitization by skin contact.
<b>Ingestion</b>	Product not classified.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Iron 7439-89-6	98,600 mg/kg bw	-	> 0.25 mg/L
Nickel	> 9000 mg/kg bw	-	> 10.2 mg/L

7440-02-0			
Chromium 7440-47-3	> 3400 mg/kg bw	-	> 5.41 mg/L
Molybdenum 7439-98-7	> 2000 mg/kg bw	> 2000 mg/kg bw	> 5.10 mg/L

**Information on toxicological effects**

**Symptoms** May cause sensitization by skin contact.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Acute toxicity** Product not classified.  
**Skin corrosion/irritation** Product not classified.  
**Serious eye damage/eye irritation** Product not classified.  
**Sensitization** May cause sensitization by skin contact.  
**Germ cell mutagenicity** Product not classified.  
**Carcinogenicity** Suspected of causing cancer by inhalation.

Chemical Name	ACGIH	IARC	NTP	OSHA
Nickel 7440-02-0		Group 1 Group 2B	Known Reasonably Anticipated	X
Chromium 7440-47-3		Group 3		

**Reproductive toxicity** Product not classified.  
**STOT - single exposure** Product not classified.  
**STOT - repeated exposure** May cause disorder and damage to the: Respiratory System.  
**Aspiration hazard** Product not classified.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

This product as shipped is not classified for aquatic toxicity.

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Iron 7439-89-6	-	The 96 h LC50 of 50% iron oxide black in water to Danio rerio was greater than 10,000 mg/L.	The 3 h EC50 of iron oxide for activated sludge was greater than 10,000 mg/L.	The 48 h EC50 of iron oxide to Daphnia magna was greater than 100 mg/L.
Nickel 7440-02-0	NOEC/EC10 values range from 12.3 µg/l for Scenedesmus accuminatus to 425 µg/l for Pseudokirchneriella subcapitata.	The 96h LC50s values range from 0.4 mg Ni/L for Pimephales promelas to 320 mg Ni/L for Brachydanio rerio.	The 30 min EC50 of nickel for activated sludge was 33 mg Ni/L.	The 48h LC50s values range from 0.013 mg Ni/L for Ceriodaphnia dubia to 4970 mg Ni/L for Daphnia magna.
Chromium 7440-47-3	-	-	-	-
Molybdenum 7439-98-7	The 72 h EC50 of sodium molybdate dihydrate to Pseudokirchneriella subcapitata was 362.9 mg of Mo/L.	The 96 h LC50 of sodium molybdate dihydrate to Pimephales promelas was 644.2 mg/L	The 3 h EC50 of molybdenum trioxide for activated sludge was 820 mg/L.	The 48 h LC50 of sodium molybdate dihydrate to Ceriodaphnia dubia was 1,015 mg/L. The 48 h LC50 of sodium molybdate dihydrate to Daphnia magna was greater than 1,727.8 mg/L.

**Other adverse effects**

### 13. DISPOSAL CONSIDERATIONS

#### Waste treatment methods

**Disposal of wastes** Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations.

Chemical Name	RCRA - D Series Wastes
Chromium 7440-47-3	5.0 mg/L regulatory level

This product contains one or more substances that are listed with the State of California as a hazardous waste.

### 14. TRANSPORT INFORMATION

**DOT** Regulated per 49 CFR, if quantity with particles smaller than 100 micrometers (0.004 inches) in an individual package equals or exceeds the reportable quantity (RQ) of 5000 pounds of chromium, 5000 pounds of copper, or 100 pounds of nickel

**Proper shipping name** UN/ID No. 3077 Environmentally hazardous substance, solid, n.o.s. (nickel alloy powder), RQ

**Hazard Class** 9

**Packing Group** III

**Special Provisions** 8, 146, 335, A112, B54, B120, IB8, IP3, N20, N91, T1, TP33

**Emergency Response Guide Number** Guide No. 171, EXCEPT for FIRE follow Guide 170

### 15. REGULATORY INFORMATION

#### International Inventories

<b>TSCA</b>	Complies
<b>DSL/NDSL</b>	Complies
<b>EINECS/ELINCS</b>	Complies
<b>ENCS</b>	Complies
<b>IECSC</b>	Complies
<b>KECL</b>	Complies
<b>PICCS</b>	Complies
<b>AICS</b>	Complies

#### Legend:

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
**ENCS** - Japan Existing and New Chemical Substances  
**IECSC** - China Inventory of Existing Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**AICS** - Australian Inventory of Chemical Substances

#### US Federal Regulations

##### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No.	Weight-%	SARA 313 - Threshold Values %
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Nickel - 7440-02-0	7440-02-0	1 - 4	0.1
Chromium - 7440-47-3	7440-47-3	1 - 3	1.0

**SARA 311/312 Hazard Categories**

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

**CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Nickel 7440-02-0		X	X	
Chromium 7440-47-3		X	X	

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs
Nickel 7440-02-0	100 lb
Chromium 7440-47-3	5000 lb

**US State Regulations**

**California Proposition 65**

This product contains the Proposition 65 chemicals listed below. Proposition 65 warning label available at ATImaterials.com.

Chemical Name	California Proposition 65
Nickel - 7440-02-0	Carcinogen

**U.S. State Right-to-Know Regulations**

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Nickel 7440-02-0	X	X	X
Chromium 7440-47-3	X	X	X
Molybdenum 7439-98-7	X	X	X

**U.S. EPA Label Information**

EPA Pesticide Registration Number Not applicable

**16. OTHER INFORMATION**

<b>NFPA</b>	Health hazards 1	Flammability 0	Instability 0	Physical and Chemical Properties -
<b>HMIS</b>	Health hazards 2*	Flammability 1	Physical hazards 0	Personal protection X
Chronic Hazard Star Legend		* = Chronic Health Hazard		
<b>Issue Date</b>	29-May-2024			
<b>Revision Date</b>	29-May-2024			



**Revision Note**

New Safety Data Sheet

**Note:**

The information provided in this safety data sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**

**Additional information available from:** Safety data sheets and labels available at [ATImaterials.com](http://ATImaterials.com)