



SAFETY DATA SHEET

Issue Date 28-May-2015

Revision Date 07-Mar-2017

Version 5

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

Product identifier

Product Name Nickel-Base Alloys

Other means of identification

Product Code

SM001

Synonyms

Non-powder forms of A905L™ Alloy, ATI 10242™ Alloy, ATI 120™ Alloy, Rene 88DT, ATI 188™ Alloy, ATI 200™ Alloy, ATI 201™ Alloy, ATI 22™ Alloy, ATI 235™ Alloy, ATI 2535™ Alloy, ATI 2550™ Alloy, ATI 35N LoTi™ Alloy, ATI 35N™ Alloy, ATI 400™ Alloy, ATI 42™ Alloy, ATI 500 ZB™ Alloy, ATI 520™ Alloy, ATI 600™ Alloy, ATI 617™ Alloy, ATI 6230™ Alloy, ATI 625 Lo-Fe™ Alloy, ATI 625™ Alloy, ATI 690™ Alloy, ATI 700™ Alloy, ATI 706™ Alloy, ATI 718-OP® Alloy, ATI 718Plus® Alloy, ATI 718™ Alloy, ATI 720™ Alloy, ATI 800™ Alloy, ATI 80A™ Alloy, ATI 825™ Alloy, ATI 901™ Alloy, ATI 903™ Alloy, ATI 909™ Alloy, ATI 925™ Alloy, ATI A286™ Alloy, ATI ASTROLOY™ Alloy, ATI C-263™ Alloy, ATI C-276™ Alloy, ATI Gator Waspaloy* Alloy (* a Trademark of Pratt & Whitney), ATI GTD-222™ Alloy, ATI HB-2™ Alloy, ATI HG™ Alloy, ATI HN™ Alloy, ATI HS™ Alloy, ATI HX™ Alloy, ATI K-500™ Alloy, ATI L-605™ Alloy, ATI M-252™ Alloy, ATI MOLY PERMALLOY™ Alloy, ATI N-90™ Alloy, ATI P-31™ Alloy, ATI PE-16™ Alloy, ATI R26™ Alloy, ATI Super Waspaloy* Alloy (* a Trademark of Pratt & Whitney), ATI W-722™ Alloy, ATI X-750™ Alloy, ATI X-751™ Alloy, ATI X-849™ Alloy, Rene 41™ Alloy, Rene 65™ Alloy, RENE 88 DT Alloy, RR1000* (* a Trademark of Rolls-Royce plc), TJA-1537® Hi-Carb Alloy, TJA-1537® Lo-Carb Alloy, Waspaloy* Alloy (* a Trademark of Pratt & Whitney)

Recommended use of the chemical and restrictions on use

Recommended Use Nickel alloy product manufacture.

Uses advised against

Details of the supplier of the safety data sheet

Manufacturer Address

ATI, 1000 Six PPG Place, Pittsburgh, PA
15222 USA

Emergency telephone number

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). This product is an article and, as such, does not present a hazard to human health by inhalation or ingestion.

Acute toxicity - Oral	Category 4
Respiratory sensitization	Category 1B
Skin sensitization	Category 1
Carcinogenicity	Category 1B
Reproductive toxicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 1
Chronic aquatic toxicity	Category 4

Label elements

Emergency Overview

Danger**Hazard statements**

May cause long lasting harmful effects to aquatic life

Harmful if swallowed

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction

May cause cancer

Suspected of damaging fertility or the unborn child

Causes damage to the respiratory tract through prolonged or repeated exposure if inhaled



Appearance Various massive product forms

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

If skin irritation or rash occurs: Get medical advice/attention

If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

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: Titanium dioxide an IARC Group 2B carcinogen, Hexavalent Chromium (Chromium VI) may cause lung, nasal, and/or sinus cancer, Zinc, copper, magnesium, or cadmium fumes may cause metal fumes fever, Soluble molybdenum compounds such as molybdenum trioxide may cause lung irritation.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms

Non-powder forms of A905L™ Alloy, ATI 10242™ Alloy, ATI 120™ Alloy, Rene 88DT, ATI 188™ Alloy, ATI 200™ Alloy, ATI 201™ Alloy, ATI 22™ Alloy, ATI 235™ Alloy, ATI 2535™ Alloy, ATI 2550™ Alloy, ATI 35N LoTi™ Alloy, ATI 35N™ Alloy, ATI 400™ Alloy, ATI 42™ Alloy, ATI 500 ZB™ Alloy, ATI 520™ Alloy, ATI 600™ Alloy, ATI 617™ Alloy, ATI 6230™ Alloy, ATI 625 Lo-Fe™ Alloy, ATI 625™ Alloy, ATI 690™ Alloy, ATI 700™ Alloy, ATI 706™ Alloy, ATI 718-OP® Alloy, ATI 718Plus® Alloy, ATI 718™ Alloy, ATI 720™ Alloy, ATI 800™ Alloy, ATI 80A™ Alloy, ATI 825™ Alloy, ATI 901™ Alloy, ATI 903™ Alloy, ATI 909™ Alloy, ATI 925™ Alloy, ATI A286™ Alloy, ATI ASTROLOY™ Alloy, ATI C-263™ Alloy, ATI C-276™ Alloy, ATI Gator Waspaloy* Alloy (* a Trademark of Pratt & Whitney), ATI GTD-222™ Alloy, ATI HB-2™ Alloy, ATI HG™ Alloy, ATI HN™ Alloy, ATI HS™ Alloy, ATI HX™ Alloy, ATI K-500™ Alloy, ATI L-605™ Alloy, ATI M-252™ Alloy, ATI MOLY PERMALLOY™ Alloy, ATI N-90™ Alloy, ATI P-31™ Alloy, ATI PE-16™ Alloy, ATI R26™ Alloy, ATI Super Waspaloy* Alloy (* a Trademark of Pratt & Whitney), ATI W-722™ Alloy, ATI X-750™ Alloy, ATI X-751™ Alloy, ATI X-849™ Alloy, Rene 41™ Alloy, Rene 65™

Alloy, RENE 88 DT Alloy, RR1000* (* a Trademark of Rolls-Royce plc), TJA-1537® Hi-Carb Alloy, TJA-1537® Lo-Carb Alloy, Waspaloy* Alloy (* a Trademark of Pratt & Whitney).

Chemical Name	CAS No.	Weight-%
Nickel	7440-02-0	30 - 100
Iron	7439-89-6	0 - 42
Chromium	7440-47-3	0 - 35
Cobalt	7440-48-4	0 - 35
Copper	7440-50-8	0 - 35
Molybdenum	7439-98-7	0 - 26
Tungsten	7440-33-7	0 - 16
Niobium (Columbium)	7440-03-1	0 - 6
Tantalum	7440-25-7	0 - 5
Titanium	7440-32-6	0 - 5
Aluminum	7429-90-5	0 - 5
Manganese	7439-96-5	0 - 5

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	In the case of skin irritation or 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	Not an expected route of exposure.

Most important symptoms and effects, both acute and delayed

Symptoms	May cause allergic skin reaction. May cause acute gastrointestinal effects if swallowed.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.
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5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Not flammable in the form of this product as distributed, flammable as finely divided particles or pieces resulting from processing of this product.

Small Fire Smother with salt (NaCl) or class D dry powder fire extinguisher.

Large Fire Isolate fire and allow to burn out.

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. Very fine, high surface area material resulting from grinding, buffing, polishing, or similar processes of this product may ignite spontaneously at room temperature. WARNING: Fine particles resulting from grinding, buffing, polishing, or similar processes 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 Titanium dioxide an IARC Group 2B carcinogen, Hexavalent Chromium (Chromium VI) may cause lung, nasal, and/or sinus cancer, Zinc, copper, magnesium, or cadmium fumes may cause metal fumes fever, 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

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH approved (or equivalent) respirator and full protective 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.

Environmental precautions

Environmental precautions Not applicable to massive product.

Methods and material for containment and cleaning up

Methods for containment Not applicable to massive product.

Methods for cleaning up Not applicable to massive product.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Very fine, high surface area material resulting from grinding, buffing, polishing, or similar processes of this product may ignite spontaneously at room temperature. WARNING: Fine particles resulting from grinding, buffing, polishing, or similar processes 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 chips, turnings, dust, and other small particles 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. Ignites in the presence of fluorine. When heated above 200°C, reacts exothermically with the following: Chlorine, bromine, halocarbons, carbon tetrachloride, carbon tetrafluoride, and freon.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical Name	ACGIH TLV	OSHA PEL
Nickel 7440-02-0	TWA: 1.5 mg/m ³ inhalable fraction	TWA: 1 mg/m ³
Iron 7439-89-6	-	-
Copper 7440-50-8	TWA: 0.2 mg/m ³ fume TWA: 1 mg/m ³ Cu dust and mist	TWA: 0.1 mg/m ³ fume TWA: 1 mg/m ³ dust and mist
Cobalt 7440-48-4	TWA: 0.02 mg/m ³ TWA: 0.02 mg/m ³ Co	TWA: 0.1 mg/m ³ dust and fume

Chromium 7440-47-3	TWA: 0.5 mg/m ³	TWA: 1 mg/m ³
Molybdenum 7439-98-7	TWA: 10 mg/m ³ inhalable fraction TWA: 3 mg/m ³ respirable fraction	-
Tungsten 7440-33-7	STEL: 10 mg/m ³ STEL: 10 mg/m ³ W TWA: 5 mg/m ³ TWA: 5 mg/m ³ W	(vacated) STEL: 10 mg/m ³ (vacated) STEL: 10 mg/m ³ W
Niobium (Columbium) 7440-03-1	-	-
Titanium 7440-32-6	-	-
Tantalum 7440-25-7	-	TWA: 5 mg/m ³
Manganese 7439-96-5	TWA: 0.02 mg/m ³ respirable fraction TWA: 0.1 mg/m ³ inhalable fraction TWA: 0.02 mg/m ³ Mn TWA: 0.1 mg/m ³ Mn	(vacated) STEL: 3 mg/m ³ fume (vacated) Ceiling: 5 mg/m ³ Ceiling: 5 mg/m ³ fume Ceiling: 5 mg/m ³ Mn
Aluminum 7429-90-5	TWA: 1 mg/m ³ respirable fraction	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ 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. Cut-resistant gloves and/or protective clothing may be appropriate when sharp surfaces are present.
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

Physical state	Solid	Odor	Odorless
Appearance	Various massive product forms	Odor threshold	Not applicable
Color	metallic Grey silver		
Property	Values	Remarks • Method	
pH	-	Not applicable	
Melting point/freezing point	1420 - 1450 °C / 2590 - 2650 °F		
Boiling point / boiling range	-	Not applicable	
Flash point	-	Not applicable	
Evaporation rate	-	Not applicable	
Flammability (solid, gas)	-	Not flammable in the form of this product as distributed, flammable as finely divided particles or pieces resulting from processing of this product	
Flammability Limit in Air		Not applicable	
Upper flammability limit:	-		
Lower flammability limit:	-		
Vapor pressure	-	Not applicable	
Vapor density	-	Not applicable	
Specific Gravity	7-9 -		

Water solubility	Insoluble	Not applicable
Solubility in other solvents	-	Not applicable
Partition coefficient	-	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	-

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. Ignites in the presence of fluorine. When heated above 200°C, reacts exothermically with the following: Chlorine, bromine, halocarbons, carbon tetrachloride, carbon tetrafluoride, and freon.

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: Titanium dioxide an IARC Group 2B carcinogen, 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**

Inhalation	Not an expected route of exposure for product in massive form.
Eye contact	Not an expected route of exposure for product in massive form.
Skin Contact	May cause sensitization by skin contact.
Ingestion	Not an expected route of exposure for product in massive form.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Nickel 7440-02-0	> 9000 mg/kg bw	-	> 10.2 mg/L
Iron	98,600 mg/kg bw	-	> 0.25 mg/L

7439-89-6			
Copper 7440-50-8	481 mg/kg bw	>2000 mg/kg bw	>5.11 mg/L
Cobalt 7440-48-4	550 mg/kg bw	>2000 mg/kg bw	<0.05 mg/L
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
Tungsten 7440-33-7	> 2000 mg/kg bw	> 2000 mg/kg bw	> 5.4 mg/L
Niobium (Columbium) 7440-03-1	> 10,000 mg/kg bw	> 2000 mg/kg bw	-
Titanium 7440-32-6	> 5000 mg/kg bw	-	-
Tantalum 7440-25-7	> 2000 mg/kg bw	> 2000 mg/kg bw	> 5.18 mg/L
Manganese 7439-96-5	>2000 mg/kg bw	-	>5.14 mg/L
Aluminum 7429-90-5	15,900 mg/kg bw	-	> 1 mg/L

Information on toxicological effects**Symptoms**

May cause sensitization by skin contact. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause acute gastrointestinal effects if swallowed.

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

Harmful if swallowed. Cobalt-containing powders may be fatal if inhaled.

Skin corrosion/irritation

Product not classified.

Serious eye damage/eye irritation

Product not classified.

Sensitization

May cause sensitization by skin contact. Cobalt-containing alloys may cause sensitization by inhalation.

Germ cell mutagenicity

Product not classified.

Carcinogenicity

May cause cancer by inhalation.

Chemical Name	ACGIH	IARC	NTP	OSHA
Nickel 7440-02-0		Group 1 Group 2B	Known Reasonably Anticipated	X
Cobalt 7440-48-4	A3	Group 2A Group 2B	Known	X
Chromium 7440-47-3		Group 3		

Reproductive toxicity

Possible risk of impaired fertility.

STOT - single exposure

Product not classified.

STOT - repeated exposure

Causes disorder and damage to the: Respiratory System.

Aspiration hazard

Product not classified.

12. ECOLOGICAL INFORMATION**Ecotoxicity**

This product as shipped is classified for aquatic chronic toxicity. This product contains a chemical which is listed as a severe marine pollutant according to IMDG/IMO.

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Nickel 7440-02-0	NOEC/EC10 values range from 12.3 µg/l for <i>Scenedesmus accuminatus</i> to 425 µg/l for <i>Pseudokirchneriella</i>	The 96h LC50s values range from 0.4 mg Ni/L for <i>Pimephales promelas</i> to 320 mg Ni/L for <i>Brachydanio rerio</i> .	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 <i>Ceriodaphnia dubia</i> to 4970 mg Ni/L for <i>Daphnia magna</i> .

	subcapitata.			
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.
Copper 7440-50-8	The 72 h EC50 values of copper chloride to Pseudokirchneriella subcapitata ranged between 30 µg/L (pH 7.02, hardness 250 mg/L CaCO ₃ , DOC 1.95 mg/L) and 824 µg/L (pH 6.22, hardness 100 mg/L CaCO ₃ , DOC 15.8 mg/L).	The 96-hr LC50 for Pimephales promelas exposed to Copper sulfate ranged from 256.2 to 38.4 µg/L with water hardness increasing from 45 to 255.7 mg/L.	The 24 h NOEC of copper chloride for activated sludge ranged from 0.32 to 0.64 mg of Cu/L.	The 48 h LC50 values for Daphnia magna exposed to copper in natural water ranged between 33.8 µg/L (pH 6.1, hardness 12.4 mg/L CaCO ₃ , DOC 2.34 mg/L) and 792 µg/L (pH 7.35, hardness 139.7 mg/L CaCO ₃ , DOC 22.8 mg/L).
Cobalt 7440-48-4	The 72 h EC50 of cobalt dichloride to Pseudokirchneriella subcapitata was 144 µg of Co/L.	The 96h LC50 of cobalt dichloride ranged from 1.5 mg Co/L for Oncorhynchus mykiss to 85 mg Co/L for Danio rerio.	The 3 h EC50 of cobalt dichloride for activated sludge was 120 mg of Co/L.	The 48 h LC50 of cobalt dichloride ranged from 0.61 mg Co/L for Ceriodaphnia dubia tested in soft, DOM-free water to >1800mg Co/L for Tubifex tubifex in very hard water.
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.
Tungsten 7440-33-7	The 72 h EC50 of sodium tungstate to Pseudokirchnerella subcapitata was 31.0 mg of W/L.	The 96 h LC50 of sodium tungstate to Danio rerio was greater than 106 mg of W/L.	The 30 min EC50 of sodium tungstate for activated sludge were greater than 1000 mg/L.	The 48 h EC50 of sodium tungstate to Daphnia magna was greater than 96 mg of W/L.
Niobium (Columbium) 7440-03-1	-	-	-	-
Titanium 7440-32-6	The 72 h EC50 of titanium dioxide to Pseudokirchnerella subcapitata was 61 mg of TiO ₂ /L.	The 96 h LC50 of titanium dioxide to Cyprinodon variegatus was greater than 10,000 mg of TiO ₂ /L. The 96 h LC50 of titanium dioxide to Pimephales promelas was greater than 1,000 mg of TiO ₂ /L.	The 3 h EC50 of titanium dioxide for activated sludge were greater than 1000 mg/L.	The 48 h EC50 of titanium dioxide to Daphnia Magna was greater than 1000 mg of TiO ₂ /L.
Tantalum 7440-25-7	-	-	-	-
Manganese 7439-96-5	The 72 h EC50 of manganese to Desmodesmus subspicatus was 2.8 mg of Mn/L.	The 96 h LC50 of manganese to Oncorhynchus mykiss was greater than 3.6 mg of Mn/L	The 3 h EC50 of manganese for activated sludge was greater than 1000 mg/L.	The 48 h EC50 of manganese to Daphnia magna was greater than 1.6 mg/L.
Aluminum 7429-90-5	The 96-h EC50 values for reduction of biomass of Pseudokirchneriella subcapitata in AAP-Medium at pH 6, 7, and 8 were estimated as 20.1, 5.4, and 150.6 µg/L, respectively, for dissolved Al.	The 96 h LC50 of aluminum to Oncorhynchus mykiss was 7.4 mg of Al/L at pH 6.5 and 14.6 mg of Al/L at pH 7.5	-	The 48-hr LC50 for Ceriodaphnia dubia exposed to Aluminium chloride increased from 0.72 to greater than 99.6 mg/L with water hardness increasing from 25 to 200 mg/L.

Persistence and degradability

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Bioaccumulation

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Other adverse effects

This product as shipped is not classified for acute environmental endpoints. However,

when subjected to sawing or grinding, particles may be generated that are classified for aquatic acute toxicity.

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 None anticipated.

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 Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	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 does not contain any 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 %
Nickel - 7440-02-0	7440-02-0	30 - 100	0.1
Copper - 7440-50-8	7440-50-8	0 - 35	1.0
Cobalt - 7440-48-4	7440-48-4	0 - 35	0.1
Chromium - 7440-47-3	7440-47-3	0 - 35	1.0
Manganese - 7439-96-5	7439-96-5	0 - 5	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	
Copper 7440-50-8		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
Copper 7440-50-8	5000 lb
Chromium 7440-47-3	5000 lb

US State Regulations**California Proposition 65**

This product contains the following Proposition 65 chemicals

Chemical Name	California Proposition 65
Nickel - 7440-02-0	Carcinogen
Cobalt - 7440-48-4	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Nickel 7440-02-0	X	X	X
Copper 7440-50-8	X	X	X
Cobalt 7440-48-4	X	X	X
Chromium 7440-47-3	X	X	X
Molybdenum 7439-98-7	X	X	X
Tungsten 7440-33-7	X	X	X
Titanium 7440-32-6	X		
Tantalum 7440-25-7	X	X	X
Manganese 7439-96-5	X	X	X
Aluminum 7429-90-5	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

NFPA	Health hazards 1	Flammability 0	Instability 0	Physical and Chemical Properties -
HMIS	Health hazards 2*	Flammability 0	Physical hazards 0	Personal protection X

*Chronic Hazard Star Legend*** = Chronic Health Hazard*

Issue Date 28-May-2015

Revision Date 07-Mar-2017

Revision Note

Updated Section(s): 1, 3, 5

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 ATImetals.com