FRY REGLET

Safety Data Sheet

Section 1: Identification

Product identifier

Product Name • **Aluminum Billets, Extrusions, or Logs**

Synonyms • 6XXX Series Alloys including: 6005, 6005A, 6060, 6061, 6063, 6082, 6105, 6181, 6351, 6360, 6463; Aluminum; Wrought Aluminum Products

Relevant identified uses of the substance or mixture and uses advised against

Recommended use • Various extruded aluminum parts, products and cast billet

Details of the supplier of the safety data sheet

Manufacturer • Bon L Manufacturing Co.
25 Bonnell Street
Newnan, GA 30263
United States

Telephone (General) • (770) 253-2020

Emergency telephone number

Manufacturer • 1-800-424-9300 - Chemtrec - North America

Section 2: Hazard Identification

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

Classification of the substance or mixture

OSHA HCS 2012 • Not classified

Label elements

OSHA HCS 2012

Hazard statements • No label element(s) required

Other hazards

OSHA HCS 2012 • Product is solid metallic pieces, logs, or billets. Contact with hot metal may cause thermal burns. In solid state, this product is considered non-hazardous. Dust generated during fabrication, sawing, cutting, grinding, and/or welding of this product is considered hazardous. Under United States Regulations (29 CFR 1910.1200(c) - Hazard Communication Standard), the product(s) listed above are exempt as article(s) under stated normal conditions of use.

Section 3 - Composition/Information on Ingredients

Substances

• Material does not meet the criteria of a substance.

Mixtures

Composition		
Chemical Name	**Identifiers**	**%**
Aluminum	**CAS:**7429-90-5	94% TO 99%
Silicon	**CAS:**7440-21-3	0.2% TO 1.3%
Magnesium	**CAS:**7439-95-4	0.25% TO 1.2%
Manganese	**CAS:**7439-96-5	0.02% TO 1%
Iron	**CAS:**7439-89-6	0.1% TO 0.7%
Copper	**CAS:**7440-50-8	0.1% TO 0.4%
Chromium	**CAS:**7440-47-3	0.04% TO 0.35%
Zinc	**CAS:**7440-66-6	0.05% TO 0.25%
Titanium	**CAS:**7440-32-6	0.1% TO 0.2%

Section 4: First-Aid Measures

Description of first aid measures

Inhalation • It is unlikely that emergency treatment will be required. Move victim to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. If signs/symptoms continue, get medical attention.

Skin • If cut by metal, get medical attention, if needed.

Eye • If contact with material occurs flush eyes with water. Get medical attention immediately.

Ingestion • If a piece of metal is swallowed, get medical attention, if needed.

Most important symptoms and effects, both acute and delayed

• Under normal conditions of use, no health effects are expected.

Indication of any immediate medical attention and special treatment needed

Notes to Physician • No specific actions or treatments recommended related to exposure to this material.

Section 5: Fire-Fighting Measures

Extinguishing media

Suitable Extinguishing Media • In case of fire use media as appropriate for surrounding fire.

Unsuitable Extinguishing Media • No data available

Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards

• Material is non-combustible and is not expected to pose a fire or explosion hazard.

Hazardous Combustion Products

• Acid halides, oxides of carbon, hydrocarbons, hydrogen cyanide, oxides of nitrogen.

Advice for firefighters

• Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Personal Precautions

• No special precautions expected to be necessary if material is used under ordinary conditions and as recommended.

Emergency Procedures

• No emergency procedures are expected to be necessary if material is used under ordinary conditions as recommended. Use normal clean up procedures.

Environmental precautions

• Avoid run off to waterways and sewers.

Methods and material for containment and cleaning up Containment/Clean-up Measures

• Carefully shovel or sweep up spilled material and place in suitable container.

Section 7 - Handling and Storage

Precautions for safe handling

Handling

• Use good safety and industrial hygiene practices. Caution, the product may be hot and may have sharp edges. Machining or tooling aluminum extrusions may create sharp edges capable of cutting or penetrating flesh. Wear gloves, eye protection, and skin protection when working with aluminum extrusions. Stock piles, scrap extrusions and cuttings may create trip, slip, or fall hazards if allowed to accumulate. Keep work areas clear and orderly.

Conditions for safe storage, including any incompatibilities

Storage

• Store and handle in accordance with all current regulations and standards.

Section 8 - Exposure Controls/Personal Protection

Control parameters

Exposure Limits/Guidelines				
	Result	**ACGIH**	**NIOSH**	**OSHA**
Manganese	Ceilings	Not established	Not established	5 mg/m3 Ceiling (fume)
	TWAs	0.02 mg/m3 TWA (respirable fraction); 0.1 mg/m3 TWA (inhalable	1 mg/m3 TWA (fume)	Not established

		fraction)		
	STELs	Not established	3 mg/m3 STEL	Not established
Chromium (7440-47-3)	TWAs	0.5 mg/m3 TWA	0.5 mg/m3 TWA	1 mg/m3 TWA
Copper (7440-50-8)	TWAs	0.2 mg/m3 TWA (fume)	1 mg/m3 TWA (dust and mist); 0.1 mg/m3 TWA (fume)	0.1 mg/m3 TWA (fume); 1 mg/m3 TWA (dust and mist)
Silicon (7440-21-3)	TWAs	Not established	10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable dust)	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)
Aluminum (7429-90-5)	TWAs	1 mg/m3 TWA (respirable fraction)	10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable dust)	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)

Exposure Control Notations
ACGIH
•Aluminum (7429-90-5): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
•Aluminum as Aluminum insoluble compounds: **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
•Manganese (7439-96-5): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
•Chromium (7440-47-3): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)

Exposure Limits Supplemental
ACGIH
•Aluminum (7429-90-5): **TLV Basis - Critical Effects:** (pneumoconiosis; lower respiratory tract irritation; neurotoxicity)
•Aluminum as Aluminum insoluble compounds: **TLV Basis - Critical Effects:** (pneumoconiosis; lower respiratory tract irritation; neurotoxicity)
•Copper (7440-50-8): **TLV Basis - Critical Effects:** (metal fume fever (fume))
•Copper as Copper compounds: **TLV Basis - Critical Effects:** (gastrointestinal (dust and mist); irritation (dust and mist))
•Manganese (7439-96-5): **TLV Basis - Critical Effects:** (CNS impairment)
•Chromium (7440-47-3): **TLV Basis - Critical Effects:** (skin and upper respiratory tract irritation)

Exposure controls
Engineering Measures/Controls • Adequate ventilation systems as needed to control concentrations of airborne contaminants below applicable threshold limit values.

Personal Protective Equipment
Respiratory • In case of insufficient ventilation, wear suitable respiratory equipment.
Eye/Face • Wear safety glasses.

Skin/Body • Wear appropriate gloves.

Environmental Exposure Controls • Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene
STEL = Short Term Exposure Limits are based on 15-minute exposures
NIOSH = National Institute of Occupational Safety and Health
TLV = Threshold Limit Value determined by the American Conference of Governmental Industrial Hygienists (ACGIH)
OSHA = Occupational Safety and Health Administration
TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

Section 9 - Physical and Chemical Properties

Information on Physical and Chemical Properties

Material Description			
Physical Form	Solid	Appearance/Description	Solid silver-like metal with no odor.
Color	Silver	Odor	No odor.
Odor Threshold	Not relevant		
General Properties			
Boiling Point	Not relevant	Melting Point/Freezing Point	593 to 704 °C (1099.4 to 1299.2 °F)
Decomposition Temperature	No data available	pH	No data available
Specific Gravity/Relative Density	2.5 to 2.9 Water=1	Water Solubility	Not relevant
Viscosity	No data available		
Volatility			
Vapor Pressure	Not relevant	Vapor Density	Not relevant
Evaporation Rate	No data available		
Flammability			
Flash Point	Not relevant	UEL	Not relevant
LEL	Not relevant	Autoignition	Not relevant
Flammability (solid, gas)	Not flammable.		
Environmental			
Octanol/Water Partition coefficient	No data available		

Section 10: Stability and Reactivity

Reactivity • No dangerous reaction known under conditions of normal use.

Chemical stability • Stable under normal temperatures and pressures.

Possibility of hazardous reactions • Hazardous polymerization will not occur.

Conditions to avoid • Avoid generating dust or fumes.

Incompatible materials

• Acids, bases, oxidizing materials.

Hazardous decomposition products

• Combustion: acid halides, oxides of carbon, hydrocarbons, hydrogen cyanide, oxides of nitrogen Thermal decomposition products: hydrogen cyanide, hydrogen chloride,

Section 11 - Toxicological Information

Information on toxicological effects

Components		
Aluminum (94% TO 99%)	7429-90-5	**Multi-dose Toxicity:** Inhalation-Man TCLo • 4 mg/m³ 1 Year(s)-Intermittent; *Lungs, Thorax, or Respiration*: **Cough**; *Lungs, Thorax, or Respiration*: **Dyspnea**; *Nutritional and Gross Metabolic: Gross Metabolite Changes*: **Weight loss or decreased weight gain**; Inhalation-Rat TCLo • 206 mg/m³ 5 Hour(s) 30 Day(s)-Intermittent; *Lungs, Thorax, or Respiration*: **Fibrosis (interstitial)**; *Endocrine*: **Hypoglycemia**; *Blood*: **Changes in serum composition (e.g., TP, bilirubin cholesterol)**
Silicon (0.2% TO 1.3%)	7440-21-3	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 3160 mg/kg; **Irritation:** Eye-Rabbit • 3 mg • Mild irritation
Iron (0.1% TO 0.7%)	7439-89-6	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 750 mg/kg; *Blood*: **Changes in serum composition (e.g., TP, bilirubin cholesterol)**; *Biochemical :Enzyme inhibition, induction, or change in blood or tissue levels*: **Transaminases**; Ingestion/Oral-Child TDLo • 77 mg/kg; *behavioral*: **Irritability**; *Gastrointestinal*: **Nausea or vomiting**; *Blood*: **Normocytic anemia**; **Multi-dose Toxicity:** Ingestion/Oral-Rat TDLo • 105 mg/kg 5 Week(s)-Continuous; *Liver*: **Tumors**; *Tumorigenic*: **Active as anti-cancer agent**; *Tumorigenic*: **Protects against induction of experimental tumors**
Copper (0.1% TO 0.4%)	7440-50-8	**Acute Toxicity:** Ingestion/Oral-Mouse TDLo • 108 mg/kg; *Behavioral*: **Tremor**; *Gastrointestinal*: **Hypermotility, diarrhea**; *Gastrointestinal*: **Nausea or vomiting**; Ingestion/Oral-Mouse TDLo • 158 mg/kg; *Kidney, Ureter, and Bladder*:**Changes in tubules (including acute renal failure, acute tubular necrosis)**; Ingestion/Oral-Mouse TDLo • 232 mg/kg; *Kidney, Ureter, and Bladder*: **Changes primarily in glomeruli**; *Blood*: **Changes in spleen**; *Blood*: **Changes in serum composition (e.g., TP, bilirubin cholesterol)**; **Multi-dose Toxicity:** Ingestion/Oral-Rabbit TDLo • 3 g/kg 60 Day(s)-Continuous; *Cardiac*: **Other changes**; *Liver*: **Hepatitis (hepatocellular necrosis), zonal**; *Related to Chronic Data*:**Death in the Other Multiple Dose data type field**; **Reproductive:** Ingestion/Oral-Rat TDLo • 152 mg/kg (22W pre); *Reproductive Effects: Effects on Embryo or Fetus*: **Fetotoxicity (except death, e.g., stunted fetus)**; *Reproductive Effects: Specific Developmental Abnormalities*: **Central nervous system**; Ingestion/Oral-Rat TDLo • 1210 µg/kg (35W pre); *Reproductive Effects: Effects on Fertility*: **Pre-implantation mortality**; *Reproductive Effects: Effects on Fertility*: **Post-implantation mortality**; Ingestion/Oral-Rat TDLo • 1520 µg/kg (22W pre); *Reproductive Effects: Specific Developmental Abnormalities*: **Musculoskeletal system**; **Tumorigen / Carcinogen:** Ingestion/Oral-Mouse TDLo • 10.08 mg/kg 12 Week(s)-Continuous;
Manganese (0.02% TO 1%)	7439-96-5	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 9 g/kg; Inhalation-Man TCLo • 2300 µg/m³; *Brain and Coverings*: **Other degenerative changes**; *Behavioral*: **Changes in motor activity (specific assay)**; *Behavioral*: **Muscle weakness**;

		Irritation: Eye-Rabbit • 500 mg 24 Hour(s) • Mild irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Mild irritation; **Multi-dose Toxicity:** Inhalation-Human TCLo • 0.5 mg/m³ 39 Week(s)-Intermittent; *Brain and Coverings*: **Other degenerative changes**; *Peripheral Nerve and Sensation*: **Sensory change involving peripheral nerve**; *Behavioral*: **Irritability**; Inhalation-Mouse TCLo • 0.7 mg/m³ 24 Hour(s) 22 Week(s)-Continuous; *Lungs, Thorax, or Respiration*: **Fibrosis (interstitial)**; *Immunological Including Allergic*: **Decrease in cellular immune response**; Inhalation-Rat TCLo • 0.3 mg/m³ 5 Hour(s) 26 Week(s)-Intermittent; *Lungs, Thorax, or Respiration*: **Fibrosis (interstitial)**; *Immunological Including Allergic*: **Decrease in cellular immune response**; **Reproductive:** Ingestion/Oral-Mouse TDLo • 322.5 mg/kg (43D male); *Reproductive Effects: Paternal Effects*: **Spermatogenesis**; Ingestion/Oral-Rat TDLo • 50 mg/kg (20D post); *Reproductive Effects: Specific Developmental Abnormalities*: **Central nervous system**; *Reproductive Effects: Effects on Newborn*: **Biochemical and metabolic**; *Reproductive Effects: Effects on Newborn*: **Behavioral**
Zinc (0.05% TO 0.25%)	7440-66-6	**Irritation:** Skin-Human • 300 µg 3 Day(s)-Intermittent • Mild irritation; **Tumorigen / Carcinogen:** Ingestion/Oral-Mouse TDLo • 12.6 mg/kg 46 Week(s)-Continuous; *Tumorigenic*: **Carcinogenic by RTECS criteria**; *Gastrointestinal*: **Tumors**; *Tumorigenic*: **Facilitates action of known carcinogen**
Titanium (0.1% TO 0.2%)	7440-32-6	**Reproductive:** Ingestion/Oral-Rat TDLo • 158 mg/kg (multigeneration); *Reproductive Effects: Effects on Embryo or Fetus*: **Fetotoxicity (except death, e.g., stunted fetus)**; *Reproductive Effects: Effects on Embryo or Fetus*: **Fetal death**

GHS Properties	Classification
Acute toxicity	OSHA HCS 2012 • Not relevant
Skin corrosion/Irritation	OSHA HCS 2012 • Not relevant
Serious eye damage/Irritation	OSHA HCS 2012 • Not relevant
Skin sensitization	OSHA HCS 2012 • Not relevant
Respiratory sensitization	OSHA HCS 2012 • Not relevant
Aspiration Hazard	OSHA HCS 2012 • Not relevant
Carcinogenicity	OSHA HCS 2012 • Not relevant
Germ Cell Mutagenicity	OSHA HCS 2012 • Not relevant
Toxicity for Reproduction	OSHA HCS 2012 • Not relevant
STOT-SE	OSHA HCS 2012 • Not relevant
STOT-RE	OSHA HCS 2012 • Not relevant

Potential Health Effects

Inhalation

Acute (Immediate) • Under normal conditions of use, no health effects are expected.

Chronic (Delayed) • No data available

Skin

Acute (Immediate) • Under normal conditions of use, no health effects are expected.

Chronic (Delayed) • No data available

Eye

Acute (Immediate) • Under normal conditions of use, no health effects are expected.

Chronic (Delayed) • No data available

Ingestion

Acute (Immediate) • Under normal conditions of use, no health effects are expected.

Chronic (Delayed) • No data available

Key to abbreviations
LD = Lethal Dose
TC= Toxic Concentration
TD= Toxic Dose

Section 12 - Ecological Information

Toxicity

• Non-mandatory section - information not compiled for this reason.

Persistence and degradability

• Non-mandatory section - information not compiled for this reason.

Bio accumulative potential

• Non-mandatory section - information not compiled for this reason.

Mobility in Soil

• Non-mandatory section - information not compiled for this reason.

Other adverse effects

• Non-mandatory section - information not compiled for this reason.

Section 13 - Disposal Considerations

Waste treatment methods

Product waste • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	UN number	UN proper shipping name	Transport hazard class(es)	Packing group	Environmental hazards
DOT	Not Applicable	Not Regulated	Not Applicable	Not Applicable	NDA

Special precautions for user

• None known.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

• No data available

Section 15 - Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA Hazard Classifications • None

State Right To Know				
Component	**CAS**	**MA**	**NJ**	**PA**
Aluminum	7429-90-5	Yes	Yes	Yes
Chromium	7440-47-3	Yes	Yes	Yes
Copper	7440-50-8	Yes	Yes	Yes
Iron	7439-89-6	No	No	No
Magnesium	7439-95-4	Yes	Yes	Yes
Manganese	7439-96-5	Yes	Yes	Yes
Silicon	7440-21-3	Yes	Yes	Yes
Titanium	7440-32-6	No	Yes	No
Zinc	7440-66-6	Yes	Yes	Yes

Inventory		
Component	**CAS**	**TSCA**
Aluminum	7429-90-5	Yes
Chromium	7440-47-3	Yes
Copper	7440-50-8	Yes
Iron	7439-89-6	Yes
Magnesium	7439-95-4	Yes
Manganese	7439-96-5	Yes
Silicon	7440-21-3	Yes
Titanium	7440-32-6	Yes
Zinc	7440-66-6	Yes

United States

Labor

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed
• Titanium	7440-32-6	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed
• Titanium	7440-32-6	Not Listed

Environment

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed
• Titanium	7440-32-6	Not Listed

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

• Copper	7440-50-8	5000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm); 2270 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm)
• Chromium	7440-47-3	5000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm); 2270 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm)
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	454 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm); 1000 lb final RQ (no reporting of releases of this hazardous substance is

		required if the diameter of the pieces of the solid metal released is >100 µm)
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed
• Titanium	7440-32-6	Not Listed

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed
• Titanium	7440-32-6	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed
• Titanium	7440-32-6	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed
• Titanium	7440-32-6	Not Listed

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

• Copper	7440-50-8	1.0 % de minimis concentration
• Chromium	7440-47-3	1.0 % de minimis concentration
• Manganese	7439-96-5	1.0 % de minimis concentration

• Aluminum	7429-90-5	1.0% de minimis Concentration (dust or Fume only)
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	1.0 % de minimis concentration (dust or fume only)
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed
• Titanium	7440-32-6	Not Listed

U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed
• Titanium	7440-32-6	Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - Basis for Listing - Appendix VII

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Included in waste streams: F032, F034, F035, F037, F038, F039
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed
• Titanium	7440-32-6	Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - Constituents for Detection monitoring

• Copper	7440-50-8	(total)
• Chromium	7440-47-3	(total)
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	(total)
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed
• Titanium	7440-32-6	Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - D Series Wastes - Max Conc of Contaminants for the Tox Characteristic

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	5.0 mg/L regulatory level
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed
• Titanium	7440-32-6	Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - Hazardous Constituents - Appendix VIII to 40 CFR 261

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	hazardous constituent - no waste number
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed
• Titanium	7440-32-6	Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - List for Hazardous Constituents

• Copper	7440-50-8	(total)
• Chromium	7440-47-3	(total)
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	(total)
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed
• Titanium	7440-32-6	Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - Phase 4 LDR Rule - Universal Treatment Standards

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	2.77 mg/L (total, wastewater); 0.60 mg/L TCLP (total, non-wastewater)
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	2.61 mg/L (wastewater); 4.3 mg/L TCLP (non-wastewater)
• Iron	7439-89-6	Not Listed

• Magnesium	7439-95-4	Not Listed
• Titanium	7440-32-6	Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - TSD Facilities Ground Water Monitoring

• Copper	7440-50-8	(total)
• Chromium	7440-47-3	(total)
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	(total)
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed
• Titanium	7440-32-6	Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed
• Titanium	7440-32-6	Not Listed

U.S. - California - Proposition 65 - Developmental Toxicity

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed
• Titanium	7440-32-6	Not Listed

U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed

• Zinc 7440-66-6 Not Listed

• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed
• Titanium	7440-32-6	Not Listed

U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed
• Titanium	7440-32-6	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Female

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed
• Titanium	7440-32-6	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Male

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed
• Titanium	7440-32-6	Not Listed

United States – Pennsylvania

Labor

U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

• Copper	7440-50-8	(dust; fume; metal)
• Chromium	7440-47-3	
• Manganese	7439-96-5	
• Aluminum	7429-90-5	
• Silicon	7440-21-3	Not Listed

• Zinc	7440-66-6	
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed
• Titanium	7440-32-6	Not Listed

U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed
• Titanium	7440-32-6	Not Listed

Section 16 - Other Information

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Key to abbreviations
NDA = No Data Available