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K103669DCopper SB10527
Safety Data Sheet SB10529
Revision date: 05/13/2015

Supersedes: 01/21/2013

Version: 3.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Product form : Substance
Substance name : Copper
Chemical name : Copper
CAS No. : 7440-50-8
Synonyms : copper, copper anodes, copper cathodes, copper rod, copper wire, copper sheet, copper bar
Other means of identification : Copper-various forms (anodes, rod, bars, billets, cakes, cathodes, sheets, wire)

V# 007480

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

Use of the substance/mixture : Industrial

1.3. Details of the supplier of the safety data sheet

Freeport-McMoRan Copper and Gold
333 N. Central Ave
Phoenix AZ 85004
Phone: 602-366-8100

1.4. Emergency telephone number

Carechem 24 Emergency Numbers:

US/Canada +1 866 928 0789
Mexico +52 55 5004 8763
EU Regional +441235 239670
Africa/South Africa +44 1235 239671
Asia/Pacific Regional +65 3158 1074

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture**

GHS-US classification
Acute Tox. 4 (Oral) H302

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US)



GHS07

Signal word (GHS-US) : Warning
Hazard statements (GHS-US) : H302 - Harmful if swallowed
Precautionary statements (GHS-US) : P264 - Wash Skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P301+P312 - If swallowed, call a doctor if you feel unwell
P330 - If swallowed, rinse mouth
P501 - Dispose of contents/container to Comply with applicable local, national and international regulation.

2.3. Other hazards

Other hazards which do not result in classification : If user operations generate dust or fume, dust or fumes may cause irritation of the eyes, skin and respiratory tract. metal fume fever has been associated with metals such as zinc, magnesium, aluminum, antimony, iron, manganese, mercury, nickel and tin. however, there is insufficient evidence to conclude that exposures to copper dust and copper fume cause metal fume fever.

2.4. Unknown acute toxicity (GHS US)

No data available

SECTION 3: Composition/information on ingredients**3.1. Substances**

Copper

Safety Data Sheet

Name	Product Identifier	%	GHS-US classification
Copper (Main constituent)	(CAS No.) 7440-50-8	>= 99,6	Acute Tox. 4 (Oral), H302 Aquatic Acute 1, H400 Aquatic Chronic 3, H412

Full text of H-phrases: see section 16

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: If user operations generate dust or fume, . dust or fumes may cause irritation of the eyes, skin and respiratory tract. . ROUTE(S) OF ENTRY: INHALATION, EYE AND INGESTION OF DUST OR FUME.
First-aid measures after inhalation	: If exposed to excessive levels of dusts or fumes, remove to fresh air and get medical attention if cough or other symptoms develop.
First-aid measures after skin contact	: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. GET MEDICAL ATTENTION IF IRRITATION DEVELOPS OR PERSISTS.
First-aid measures after eye contact	: if dust or fume contacts the eyes,. Immediately flush eyes thoroughly with water for at least 15 minutes. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: if swallowed, induce vomiting as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical advice/ attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries	: Upper respiratory irritation accompanied by coughing, dryness of mucous membranes.
Symptoms/injuries after inhalation	: Dust or fume may cause. Irritating to the nose, throat, and respiratory tract. metal fume fever has been associated with metals such as zinc, magnesium, aluminum, antimony, iron, manganese, mercury, nickel and tin, however, there is insufficient evidence to conclude that exposures to copper dust and copper fume cause metal fume fever. symptoms of metal fume fever include muscular pains, sudden onset of chills, weakness, fatigue, nausea, vomiting, headache, diarrhea and onset may be delayed for several hours.
Symptoms/injuries after skin contact	: Dust from this product may cause skin irritation.
Symptoms/injuries after eye contact	: dust or fume may cause eye irritation.
Symptoms/injuries after ingestion	: Irritation of the stomach possible.
Chronic symptoms	: Effects from chronic exposure are rare except in individuals with Wilson's disease.

4.3. Indication of any immediate medical attention and special treatment needed

Wilson's disease or g6pd deficiency causes individuals to absorb, retain, and store copper excessively, leading to copper toxicosis.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:	: Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	: Do not use direct water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Heavy airborne concentrations of fine powder in enclosed spaces may ignite or explode in the presence of sources of ignition. Solid metal is not flammable; however, finely divided metallic dust or powder may form an explosive mixture with air.
Explosion hazard	: Heavy airborne concentrations of fine powder in enclosed spaces may ignite or explode in the presence of sources of ignition.

5.3. Advice for firefighters

Firefighting instructions	: Spray suitable extinguishing media directly at base of flame. Do not use a solid water stream as it may scatter and spread fire. Evacuate area.
Protective equipment for firefighters	: As in any fire, wear self-contained breathing apparatus pressure-demand, NIOSH (approved or equivalent) and full protective gear.
Other information	: The substance can readily form explosive peroxides. In the presence of wet acetylene and ammonia, copper forms explosive acetylides.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Do not allow the product to be released into the environment. Avoid generation of dust, toxic and corrosive vapours are released.
6.1.1. For non-emergency personnel	
Protective equipment	: Wear protective clothing as described in Section 8 of this safety data sheet.
Emergency procedures	: Avoid contact with skin and eyes. Wear suitable protective clothing. Eliminate all ignition sources if safe to do so. Evacuate unnecessary personnel.

Copper
Safety Data Sheet

6.1.2. For emergency responders
Protective equipment : Wear protective clothing as described in Section 8 of this safety data sheet.
Emergency procedures : Evacuate unnecessary personnel. Eliminate all sources of ignition, avoid sparks, flames and do not smoke in risk area. Avoid contact with skin and eyes. Avoid generation of dust, avoid breathing dust.

6.2. Environmental precautions
Avoid release to the environment. Comply with all laws and regulations. Prevent runoff from entering drains, sewers or waterways.

6.3. Methods and material for containment and cleaning up
For containment : Contain the discharged material.
Methods for cleaning up : Avoid generation of dust. (VACUUM, WET). Avoid repeated or prolonged contact with the skin. Any waste must be disposed of in accordance with federal, state, and local environmental regulations.

6.4. Reference to other sections
Refer to sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling : Avoid generation of dust. Avoid contact with eyes, skin, and clothing. Avoid repeated or prolonged skin contact. Avoid contact with strong acids, strong oxidizing agents, chlorine, fused ammonium nitrate, nitrosyl fluoride, iodine pentafluoride. Do not breathe dust. do not handle or store near heat, sparks, or any other potential ignition sources. Do not handle until all safety precautions have been read and understood. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose containers to flames, sparks, heat, or other potential ignition sources.
Hygiene measures : Contaminated work clothing should not be allowed out of the workplace. Do no eat, drink or smoke when using this product. Separate working clothes from town clothes. Launder separately. Take care for general good hygiene and housekeeping. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities
Technical measures: : Avoid static electricity discharges. Comply with applicable regulations. Control airborne concentrations below the exposure limits. Ensure adequate ventilation of the storage area.
Storage condition(s) : Store in a clean, dry, fire resistant area. Keep cool. Protect from sunlight.
Incompatible materials : Acids. Oxidizing agent.
Storage area : Store in a well-ventilated place.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Copper (7440-50-8)		
USA OSHA	OSHA PEL (TWA) (mg/m3) (Dust)	1 mg/m³

Copper (7440-50-8)		
USA OSHA	OSHA PEL (TWA) (mg/m3) (Fume)	0.1 mg/m³

8.2. Exposure controls
Appropriate engineering controls : If user operations generate dust or fume, . Use ventilation to keep exposure to airborne contaminants below the exposure limits.
Personal protective equipment : Gloves. Protective clothing. Safety glasses. Wear suitable protective clothing.
Hand protection : In case of repeated or prolonged contact wear gloves. Avoid contact with skin.
Eye protection : Use safety glasses with side-shields or goggles.
Skin and body protection : Wear protective shoes. Wear long sleeves. Wear suitable protective clothing.
Respiratory protection : A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant respirator use. For concentrations up to 10 times the exposure limit, use NIOSH approved half- or full-face, air-purifying respirator with acid gas cartridges in combination with particulate filter. For higher concentrations, consult a professional industrial hygienist.



Copper

Safety Data Sheet

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Various shapes.
Molecular mass	: 63.54 g/mol
Colour	: Reddish-yellow. copper.
odour	: Odorless.
Odour threshold	: No data available
pH	: Not applicable
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: 1083 °C 1981.4 °F (Fahrenheit)
Freezing point	: No data available
Boiling point	: 2595 °C 4703 °F
Flash point	: Not applicable
Self ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: 1 mm Hg at 1628°C = 2962.4°F (20 mm Hg at 1970°C = 3578.0°F)
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: Water: Insoluble
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

copper is potentially explosive with: acetylinic compounds, 3-bromopropene, ethylene oxide, lead azide, and ammonium nitrate. ignites on contact with chlorine, fluorine, and hydrazinemononitrate, reacts violently with sodium azide, halogenates, peroxides, hydrogen sulfide, hydrozoic acid, bromates, chlorates, iodates, chloride and potassium oxide. avoid contact with strong acids.

10.6. Hazardous decomposition products

HIGH TEMPERATURES ASSOCIATED WITH SMELTING OR WELDING RELEASES METAL OXIDE FUMES.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Harmful if swallowed.
Skin corrosion/irritation	: Not classified pH: Not applicable
Serious eye damage/irritation	: Not classified pH: Not applicable
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified

Copper
Safety Data Sheet

Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Symptoms/injuries after inhalation	: Dust or fume may cause. Irritating to the nose, throat, and respiratory tract. metal fume fever has been associated with metals such as zinc, magnesium, aluminum, antimony, iron, manganese, mercury, nickel and tin. however, there is insufficient evidence to conclude that exposures to copper dust and copper fume cause metal fume fever. symptoms of metal fume fever include muscular pains, sudden onset of chills, weakness, fatigue, nausea, vomiting, headache, diarrhea and onset may be delayed for several hours.
Symptoms/injuries after skin contact	: Dust from this product may cause skin irritation.
Symptoms/injuries after eye contact	: dust or fume may cause eye irritation.
Symptoms/injuries after ingestion	: Irritation of the stomach possible.
Chronic symptoms	: Effects from chronic exposure are rare except in individuals with Wilson's disease.

SECTION 12: Ecological information

12.1. Toxicity	
Copper (7440-50-8)	
LC50 fishes 1	0.0068 - 0.0156 mg/l (Exposure time: 96 h - Species: Pimephales promelas)
EC50 Daphnia 1	0.03 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 other aquatic organisms 1	0.0426 - 0.0535 mg/l (Exposure time: 72 h - Species: Pseudokirchneriella subcapitata [static])
LC50 fish 2	< 0.3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 other aquatic organisms 2	0.031 - 0.054 mg/l (Exposure time: 96 h - Species: Pseudokirchneriella subcapitata [static])
12.2. Persistence and degradability	
No additional information available	
12.3. Bioaccumulative potential	
No additional information available	
12.4. Mobility in soil	
No additional information available	
12.5. Other adverse effects	
No additional information available	

SECTION 13: Disposal considerations

13.1. Waste treatment methods	
Waste disposal recommendations	: Waste must be disposed of in accordance with federal, state, and local environmental regulations.

SECTION 14: Transport information

In accordance with DOT/ ADR / RID / ADN / IMDG / ICAO / IATA	
14.1. UN number	
Not applicable	
14.2. UN proper shipping name	
Not applicable	
14.3. Additional information	
Other information	: No supplementary information available.
Overland transport	
No additional information available	
Transport by sea	
No additional information available	
Air transport	
No additional information available	

Copper
Safety Data Sheet

SECTION 15: Regulatory information

Table with 2 columns: Regulation, Details. Row 1: 15.1. US Federal regulations. Row 2: Copper (7440-50-8). Row 3: CERCLA RQ, 5000 lb SUBJECT TO SIZE LIMITATIONS (SEE 40 CFR 302.4). Row 4: Listed on the United States TSCA (Toxic Substances Control Act) inventory. Row 5: Listed on SARA Section 313 (TRI).

Table with 2 columns: Regulation, Details. Row 1: 15.2. International regulations. Row 2: CANADA. Row 3: Copper (7440-50-8). Row 4: Listed on the Canadian DSL (Domestic Substances List) inventory. Row 5: WHMIS Classification, Uncontrolled product according to WHMIS classification criteria.

Table with 2 columns: Regulation, Details. Row 1: EU-Regulations. Row 2: Copper (7440-50-8). Row 3: Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances) substances.

Classification according to Regulation (EC) No. 1272/2008 [CLP]
Aquatic Acute 1 H400
Aquatic Chronic 3 H412
Full text of H-phrases: see section 16

Classification according to Directive 67/548/EEC or 1999/45/EC
Not classified

Table with 2 columns: Regulation, Details. Row 1: 15.2.2. National regulations. Row 2: Copper (7440-50-8). Row 3: Listed on the AICS (the Australian Inventory of Chemical Substances). Row 4: Listed on Inventory of Existing Chemical Substances (IECSC). Row 5: Listed on the Korean ECL (Existing Chemical List) inventory. Row 6: Listed on New Zealand - Inventory of Chemicals (NZIoC). Row 7: Listed on Inventory of Chemicals and Chemical Substances (PICCS). Row 8: Listed on the Canadian Ingredient Disclosure List.

Table with 2 columns: Regulation, Details. Row 1: 15.3. US State regulations. Row 2: Copper (7440-50-8). Row 3: U.S. - California - Priority Toxic Pollutants - Freshwater Criteria. Row 4: U.S. - California - Priority Toxic Pollutants - Human Health Criteria. Row 5: U.S. - California - Priority Toxic Pollutants - Saltwater Criteria. Row 6: U.S. - California - SCAQMD - Toxic Air Contaminants - Non-Cancer Acute. Row 7: U.S. - California - Toxic Air Contaminant List (AB 1807, AB 2728). Row 8: U.S. - Colorado - Primary Drinking Water Regulations - Maximum Contaminant Level Goals (MCLGs). Row 9: U.S. - Colorado - Primary Drinking Water Regulations - Secondary Maximum Contaminant Levels (SMCLs). Row 10: U.S. - Connecticut - Drinking Water Quality Standards - Groundwater Sources. Row 11: U.S. - Connecticut - Drinking Water Quality Standards - Maximum Contaminant Levels. Row 12: U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min). Row 13: U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr). Row 14: U.S. - Connecticut - Water Quality Standards - Acute Freshwater Aquatic Life Criteria. Row 15: U.S. - Connecticut - Water Quality Standards - Acute Saltwater Aquatic Life Criteria. Row 16: U.S. - Connecticut - Water Quality Standards - Chronic Freshwater Aquatic Life Criteria. Row 17: U.S. - Connecticut - Water Quality Standards - Chronic Saltwater Aquatic Life Criteria. Row 18: U.S. - Connecticut - Water Quality Standards - Consumption of Water and Organisms. Row 19: U.S. - Connecticut - Water Quality Standards - Health Designations. Row 20: U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities. Row 21: U.S. - Florida - Drinking Water Standards - Secondary Maximum Contaminant Levels (SMCLs). Row 22: U.S. - Georgia - Drinking Water - Secondary Maximum Contaminant Levels (SMCLs). Row 23: U.S. - Hawaii - Occupational Exposure Limits - STELs. Row 24: U.S. - Hawaii - Occupational Exposure Limits - TWAs. Row 25: U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations. Row 26: U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Emission Levels (ELs). Row 27: U.S. - Idaho - Occupational Exposure Limits - TWAs. Row 28: U.S. - Illinois - Toxic Air Contaminants.

Copper

Safety Data Sheet

Copper (7440-50-8)

U.S. - Louisiana - Reportable Quantity List for Pollutants
 U.S. - Maryland - Surface Water Quality Standards - Acute Freshwater Aquatic Life
 U.S. - Maryland - Surface Water Quality Standards - Acute Saltwater Aquatic Life Criteria
 U.S. - Maryland - Surface Water Quality Standards - Chronic Freshwater Aquatic Life
 U.S. - Maryland - Surface Water Quality Standards - Chronic Saltwater Aquatic Life Criteria
 U.S. - Maryland - Surface Water Quality Standards - Consumption of Water and Organisms
 U.S. - Massachusetts - Allowable Ambient Limits (AALs)
 U.S. - Massachusetts - Allowable Threshold Concentrations (ATCs)
 U.S. - Massachusetts - Drinking Water - Maximum Contaminant Levels (MCLs)
 U.S. - Massachusetts - Drinking Water - Secondary Maximum Contaminant Levels (SMCLs)
 U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1
 U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2
 U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity
 U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1
 U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2
 U.S. - Massachusetts - Right To Know List
 U.S. - Massachusetts - Threshold Effects Exposure Limits (TELs)
 U.S. - Massachusetts - Toxics Use Reduction Act
 U.S. - Michigan - Occupational Exposure Limits - TWAs
 U.S. - Michigan - Polluting Materials List
 U.S. - Minnesota - Hazardous Substance List
 U.S. - Minnesota - Permissible Exposure Limits - TWAs
 U.S. - Missouri - Drinking Water - Maximum Contaminant Levels (MCLs)
 U.S. - Missouri - Drinking Water - Secondary Maximum Contaminant Levels (SMCLs)
 U.S. - Nevada - Drinking Water - Secondary Maximum Contaminant Levels (SMCLs)
 U.S. - New Hampshire - Drinking Water - Secondary Maximum Contaminant Levels (SMCLs)
 U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour
 U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - Annual
 U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances
 U.S. - New Jersey - Environmental Hazardous Substances List
 U.S. - New Jersey - Primary Drinking Water Standards - Action Levels - ALs
 U.S. - New Jersey - Right to Know Hazardous Substance List
 U.S. - New Jersey - Water Quality - Ground Water Quality Criteria
 U.S. - New Jersey - Water Quality - Practical Quantitation Levels (PQLs)
 U.S. - New Mexico - Water Quality - Standards for Ground Water of 10,000 mg/L TDS Concentration or Less
 U.S. - New York - Occupational Exposure Limits - TWAs
 U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances
 U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 8-Hour
 U.S. - North Dakota - Water Quality Standards - Aquatic Life Acute Value for Classes I, IA, II, III
 U.S. - North Dakota - Water Quality Standards - Aquatic Life Chronic Value for Classes I, IA, II, III
 U.S. - North Dakota - Water Quality Standards - Human Health Value for Classes I, IA, II
 U.S. - Oregon - Permissible Exposure Limits - TWAs
 U.S. - Pennsylvania - Beneficial Use of Sewage Sludge by Land Application - Pollutant Ceiling Limits
 U.S. - Pennsylvania - Drinking Water - Maximum Contaminant Levels (MCLs)
 U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
 U.S. - Pennsylvania - RTK (Right to Know) List
 U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - 1-Hour
 U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - Annual
 U.S. - Rhode Island - Water Quality Standards - Acute Freshwater Aquatic Life Criteria
 U.S. - Rhode Island - Water Quality Standards - Acute Saltwater Aquatic Life Criteria
 U.S. - Rhode Island - Water Quality Standards - Chronic Freshwater Aquatic Life Criteria
 U.S. - Rhode Island - Water Quality Standards - Chronic Saltwater Aquatic Life Criteria
 U.S. - Rhode Island - Water Quality Standards - Human Health Criteria for Consumption of Water and Aquatic Organisms
 U.S. - South Carolina - Secondary Maximum Contaminant Levels (SMCLs)
 U.S. - Tennessee - Occupational Exposure Limits - TWAs
 U.S. - Texas - Drinking Water Standards - Secondary Constituent Levels (SCLs)
 U.S. - Texas - Effects Screening Levels - Long Term
 U.S. - Texas - Effects Screening Levels - Short Term
 U.S. - Utah - Drinking Water - Secondary Maximum Contaminant Levels (SMCLs)
 U.S. - Vermont - Permissible Exposure Limits - TWAs
 U.S. - Virginia - Water Quality Standards - Acute Freshwater Aquatic Life
 U.S. - Virginia - Water Quality Standards - Acute Saltwater Aquatic Life
 U.S. - Virginia - Water Quality Standards - Chronic Freshwater Aquatic Life
 U.S. - Virginia - Water Quality Standards - Chronic Saltwater Aquatic Life
 U.S. - Virginia - Water Quality Standards - Public Water Supply Effluent Limits
 U.S. - Washington - Permissible Exposure Limits - STELs
 U.S. - Washington - Permissible Exposure Limits - TWAs
 U.S. - West Virginia - Water Quality - Groundwater Standards - Ceiling Concentrations
 U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 25 Feet to Less Than 40 Feet
 U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 40 Feet to Less Than 75 Feet
 U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 75 Feet or Greater
 U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights Less Than 25 Feet
 U.S. - Alaska - Water Quality Standards - Acute Aquatic Life Criteria for Fresh Water
 U.S. - Alaska - Water Quality Standards - Chronic Aquatic Life Criteria for Fresh Water
 U.S. - Alaska - Water Quality Standards - Acute Aquatic Life Criteria for Marine Water
 U.S. - Alaska - Water Quality Standards - Chronic Aquatic Life Criteria for Marine Water

Copper
Safety Data Sheet

Table with 2 columns: Regulatory Information. Rows include Copper (7440-50-8), U.S. - Arkansas - Surface Water Quality Standards - Chronic Aquatic Life Criteria, and U.S. - Arkansas - Surface Water Quality Standards - Acute Aquatic Life Criteria.

SECTION 16: Other information

Full text of H-phrases: see section 16:

Table with 2 columns: Hazard/Label and Description. Rows include Acute Tox. 4 (Oral), Aquatic Acute 1, Aquatic Chronic 3, H302, H400, and H412.

- NFPA health hazard : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.
- NFPA fire hazard : 0 - Materials that will not burn.
- NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



- HMIS III Rating
- Health : 1 Slight Hazard - Irritation or minor reversible injury possible
- Flammability : 0 Minimal Hazard
- Physical : 0 Minimal Hazard

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Southwire®

Aluminum Alloy 900/1000/8000 Series

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 01/30/2015

Revision date: 03/14/2014

Supersedes: 04/10/1996

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : Aluminum Alloy 900/1000/8000 Series
990A, 1050, 1060, 1070, 1080, 1100, 1111, 1180, 1188, 1235, 1350, 1350Z, 8176, 8030, 8889
Formula : GROUP III A-METALS

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

1.3. Details of the supplier of the safety data sheet

Southwire Company
One Southwire Drive
Carrollton, 30117
T 270-927-6971
www.Southwire.com

1.4. Emergency telephone number

Emergency number : (770) 832-4242

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification
Carc. 1A H350

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US)



GHS08

Signal word (GHS-US) : Danger
Hazard statements (GHS-US) : H350 - May cause cancer (Inhalation)
Precautionary statements (GHS-US) : P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P308+P313 - IF exposed or concerned: Get medical advice/attention
P405 - Store locked up

2.3. Other hazards

Other hazards not contributing to the classification : Under normal use, no hazards are associated with use of this product.

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

Full text of H-phrases: see section 16

Aluminum Alloy 900/1000/8000 Series

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

3.2. Mixture

Name	Product Identifier	%	GHS-US classification
Aluminum	(CAS No) 7429-90-5	98 - 99.8	Flam. Sol. 1, H228 Water-react. 2, H261
Iron	(CAS No) 7439-89-6	0.655	Not classified
Magnesium	(CAS No) 7439-95-4	0.6	Water-react. 1, H260 Pyr. Sol. 1, H250
Zinc	(CAS No) 7440-66-6	0.255	Not classified
Copper	(CAS No) 7440-50-8	0.25	Not classified
Manganese	(CAS No) 7439-96-5	0.205	Not classified
Hexavalent Chromium	(CAS No) 18540-29-9	0.105	Skin Sens. 1, H317 Carc. 1A, H350 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Nickel	(CAS No) 7440-02-0	0.055	Skin Sens. 1, H317 Carc. 2, H351 STOT RE 1, H372
Titanium	(CAS No) 7440-32-6	0.055	Not classified

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: Assure fresh air breathing. Allow the victim to rest. If breathing has stopped, perform CPR. Get medical attention.
First-aid measures after skin contact	: Remove dust particles. Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries	: Not expected to present a significant hazard under anticipated conditions of normal use.
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4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Foam. Dry powder. Carbon dioxide. Sand.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Explosion hazard	: High concentrations of finely divided Aluminum Dust (40-80 m ³) can explode in air when exposed to heat or by chemical reactions.
Reactivity	: Stable under normal conditions.

5.3. Advice for firefighters

Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures	: Evacuate unnecessary personnel.
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6.1.2. For emergency responders

Protective equipment	: Equip cleanup crew with proper protection.
Emergency procedures	: Ventilate area.

Aluminum Alloy 900/1000/8000 Series

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : If fumes or dust are generated as a result of burning, welding, cutting or grinding, hazardous conditions could exist, thus appropriate industrial hygiene protection including personal protection equipment and ventilation should be used.

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Heat sources. Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids.

Incompatible products : Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Aluminum (7429-90-5)		
USA ACGIH	ACGIH TWA (mg/m³)	1 mg/m³ (respirable fraction)
USA ACGIH	Remark (ACGIH)	Pneumoconiosis; LRT irr
USA OSHA	OSHA PEL (TWA) (mg/m³)	5 mg/m³ (respirable particulate)
USA OSHA	Remark (US OSHA)	15 mg/m³ (total dust)
Iron (7439-89-6)		
USA OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (total dust)
USA OSHA	Remark (US OSHA)	5 mg/m³ (respirable particulate)
Zinc (7440-66-6)		
USA OSHA	Remark (US OSHA)	The OSHA PELs (TWA) for zinc oxide are 5 mg/m³ (fume), 15 mg/m³ (total dust), and 5 mg/m³ (respirable dust)
Copper (7440-50-8)		
USA OSHA	OSHA PEL (TWA) (mg/m³)	0.1 mg/m³
USA OSHA	Remark (US OSHA)	Copper fume PEL: 0.1 mg/m³
Manganese (7439-96-5)		
USA ACGIH	ACGIH TWA (mg/m³)	0.02 mg/m³ (respirable particulate) 0.1 mg/m³ (total dust)
USA ACGIH	Remark (ACGIH)	CNS impair; A4
USA OSHA	OSHA PEL (Ceiling) (mg/m³)	5 mg/m³
Hexavalent Chromium (18540-29-9)		
USA ACGIH	ACGIH TWA (mg/m³)	0.01 mg/m³ (as Cr)
USA OSHA	OSHA PEL (TWA) (mg/m³)	0.005 mg/m³ (See Appendix C of the NIOSH Pocket Guide to Chemical Hazards)

Aluminum Alloy 900/1000/8000 Series

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Titanium (7440-32-6)		
USA ACGIH	Remark (ACGIH)	Titanium Dioxide TWA: 10 mg/m³
USA OSHA	Remark (US OSHA)	Titanium Dioxide OSHA PEL: 15 mg/m³ (total dust)
Nickel (7440-02-0)		
USA OSHA	OSHA PEL (TWA) (mg/m³)	1 mg/m³

8.2. Exposure controls

- Appropriate engineering controls
- Personal protective equipment
- : Local exhaust recommended if PEL's are exceeded.
- : Avoid all unnecessary exposure: Face shield, Gloves, Heatproof clothing, Protective goggles, and Respiratory protection of the dependent type when exposures are at or exceed the OSHA PEL during welding, cutting, or grinding.



- Hand protection
- Eye protection
- Respiratory protection
- Other information
- : Wear protective gloves.
- : Face shield/ Safety glasses when welding, cutting, or grinding.
- : Wear appropriate mask when welding, cutting, or grinding.
- : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state
- Appearance
- Colour
- Odour
- Odour threshold
- pH
- Relative evaporation rate (butylacetate=1)
- Relative evaporation rate (ether=1)
- Melting point
- Freezing point
- Boiling point
- Flash point
- Auto-ignition temperature
- Decomposition temperature
- Flammability (solid, gas)
- Vapour pressure
- Relative vapour density at 20 °C
- Relative density
- Solubility
- Log Pow
- Log Kow
- Viscosity, kinematic
- Viscosity, dynamic
- Explosive properties
- Oxidising properties
- Explosive limits
- : Solid
- : Solid - Metallic Silver Color.
- : Silver.
- : Odorless.
- : No data available
- : NA
- : NA
- : No data available
- : No data available
- : 2450 °C (4442 °F)
- : NA
- : NA
- : No data available
- : No data available
- : Solid
- : NA
- : No data available
- : NIL.
- : No data available
- : No data available
- : No data available
- : No data available
- : No data available
- : High concentrations of finely divided Aluminum Dust (40-50 m³) can explode in air when exposed to heat or by chemical reaction.
- : No data available
- : High concentrations of finely divided Aluminum Dust (40-50 m³) can explode in air when exposed to heat or by chemical reaction.

9.2. Other information

No additional information available

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EN (English)

4/8

Aluminum Alloy 900/1000/8000 Series

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 10: Stability and reactivity

10.1.	Reactivity
Stable.	
10.2.	Chemical stability
Not established.	
10.3.	Possibility of hazardous reactions
If fumes or dust are generated as a result of burning, welding, cutting or grinding: Magnesium powder reacts violently in water. Aluminum dust can explode in air when exposed to heat or by chemical reaction. Aluminum powder reacts violently with water.	
10.4.	Conditions to avoid
Extremely high or low temperatures.	
10.5.	Incompatible materials
Strong Oxidizers, i.e. chlorates, bromates, peroxides, nitrates, halons. Strong acids. Strong bases.	
10.6.	Hazardous decomposition products
When heated (molten form) or welded, oxides of metals may be produced. fume. Carbon monoxide. Carbon dioxide.	

SECTION 11: Toxicological information

11.1.	Information on toxicological effects
Acute toxicity	: Not classified
Skin corrosion/irritation	: Not classified pH: NA
Serious eye damage/irritation	: Not classified pH: NA
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Aluminum Alloy 1000 Series	
Additional information	Hexavalent Chromium and Nickel are potential human carcinogens.
Nickel (7440-02-0)	
IARC group	2B - Possibly carcinogenic to humans
National Toxicity Program (NTP) Status	3 - Reasonably anticipated to be Human Carcinogen
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1.	Toxicity
No additional information available	
12.2.	Persistence and degradability
Aluminum Alloy 1000 Series	
Persistence and degradability	Not established.
12.3.	Bioaccumulative potential
Aluminum Alloy 1000 Series	
Bioaccumulative potential	Not established.
12.4.	Mobility in soil
No additional information available	

Aluminum Alloy 900/1000/8000 Series

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Recycle.
Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT
No dangerous good in sense of transport regulations

Additional information

Other information : No supplementary information available.

ADR

Transport document description :

Transport by sea
No additional information available
Air transport
No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Aluminum Alloy 1000 Series

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

Aluminum (7429-90-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on SARA Section 313 (Specific toxic chemical listings)

Iron (7439-89-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Zinc (7440-66-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on SARA Section 313 (Specific toxic chemical listings)

RQ (Reportable quantity, section 304 of EPA's List of Lists) :	1000 lb
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Copper (7440-50-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on SARA Section 313 (Specific toxic chemical listings)

RQ (Reportable quantity, section 304 of EPA's List of Lists) :	5000 lb
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Manganese (7439-96-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on SARA Section 313 (Specific toxic chemical listings)

Hexavalent Chromium (18540-29-9)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

Titanium (7440-32-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Nickel (7440-02-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on SARA Section 313 (Specific toxic chemical listings)

RQ (Reportable quantity, section 304 of EPA's List of Lists) :	100 lb
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Aluminum Alloy 900/1000/8000 Series

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Magnesium (7439-95-4)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA
No additional information available

EU-Regulations
No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]
Classification according to Directive 67/548/EEC or 1999/45/EC
Not classified
15.2.2. National regulations

Nickel (7440-02-0)
Listed on IARC (International Agency for Research on Cancer)
Listed as carcinogen on NTP (National Toxicology Program)

15.3. US State regulations

Nickel (7440-02-0)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
Yes				

Aluminum (7429-90-5)	
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances	

Iron (7439-89-6)	
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations	

Zinc (7440-66-6)	
U.S. - Massachusetts - Right To Know List	
U.S. - Michigan - Critical Materials List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances	
U.S. - Pennsylvania - RTK (Right to Know) List	

Copper (7440-50-6)	
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations	
U.S. - Massachusetts - Right To Know List	
U.S. - Michigan - Critical Materials List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances	
U.S. - Pennsylvania - RTK (Right to Know) List	

Manganese (7439-96-5)	
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations	
U.S. - Maine - Air Pollutants - Hazardous Air Pollutants	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances	

Titanium (7440-32-6)	
U.S. - New Jersey - Right to Know Hazardous Substance List	

Aluminum Alloy 900/1000/8000 Series

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Titanium (7440-32-6)
U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances
Nickel (7440-02-0)
U.S. - Idaho - Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations U.S. - Massachusetts - Right To Know List U.S. - Michigan - Critical Materials List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances U.S. - Pennsylvania - RTK (Right to Know) List
Magnesium (7439-95-4)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances

SECTION 16: Other information

Other information : None.

Full text of H-phrases: see section 16:

Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Carc. 2	Carcinogenicity, Category 2
Flam. Sol. 1	Flammable solids, Category 1
Pyr. Sol. 1	Pyrophoric Solids, Category 1
Skin Sens. 1	Sensitisation — Skin, category 1
STOT RE 1	Specific target organ toxicity — Repeated exposure, Category 1
Water-react. 1	Substances and Mixtures which, in contact with water, emit flammable gases, Category 1
Water-react. 2	Substances and Mixtures which, in contact with water, emit flammable gases, Category 2
H228	Flammable solid
H250	Catches fire spontaneously if exposed to air
H260	In contact with water releases flammable gases which may ignite spontaneously
H261	In contact with water releases flammable gases
H317	May cause an allergic skin reaction
H350	May cause cancer
H351	Suspected of causing cancer
H372	Causes damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

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