COPPER

Alpha Resources LLC

Safety Data Sheet

Issue Date: 02/19/2021

SECTION 1 Identification

Product Identifier

Product Name	COPPER – Sticks, Wires, Pins, Accelerant, Coils, Plugs
Chemical Name	Copper
Part Numbers	AEB1013, AEB1035, AEB1091M, AEB1177, AR006, AR031, AR129, AR145, AR146, AR147, AR149, AR189, AR189ER, AR189ER-500, AR263, AR264, AR366, AR571, AR621, AR643, AR2304, AR2304-500, AR140007, AR140226, AR140246
Chemical Formula	Cu
CAS Number	7440-50-8

Company Information

Registered Company Name	Alpha Resources LLC
Address	3090 Johnson Road, Stevensville, MI 49127 United States
Telephone	(800) 833-3083
Fax	(269) 465-3629
Website	https://www.alpharesources.com
Email	sales@alpharesources.com

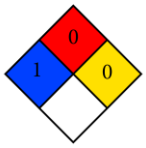
Emergency Phone Number

Association / Organization	CHEMTREC
Emergency Telephone No.	(800) 424-9300

SECTION 2 Hazard(s) Identification

Classification of the Substance or Mixture

NFPA 704 Diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health, Red = Fire, Yellow = Reactivity, White = Special (Oxidizer or water reactive substances)

Classification	Acute Aquatic Hazard Category 3, Eye Irritation Category 2B

Label Elements

Hazard Pictogram(s)	Not Applicable
Signal Word	Warning

Hazard Statement(s)

H402	Harmful to aquatic life
H320	Causes eye irritation.

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Hazard(s) not Otherwise Classified

Not applicable

Precautionary Statement(s) Prevention

P273	Avoid release to the environment
P264	Wash all exposed external body areas thoroughly after handling.

Precautionary Statement(s) Response

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.

Precautionary Statement(s) Storage

Not Applicable

Precautionary Statement(s) Disposal

P501	Dispose of contents/container to authorized hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / Information on Ingredients

Substances

CAS No	%[weight]	Name
7440-50-8	>99	copper

SECTION 4 First-Aid Measures

Description of First Aid Measures

Eye Contact	If this product comes in contact with the eyes: ➢ Wash out immediately with fresh running water. ➢ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ➢ Seek medical attention without delay; if pain persists or recurs seek medical attention.
Skin Contact	If skin or hair contact occurs: ➢ Flush skin and hair with running water (and soap if available). ➢ Seek medical attention in event of irritation.
Inhalation	➢ If fumes or combustion products are inhaled remove from contaminated area. ➢ Lay patient down. Keep warm and rested. ➢ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ➢ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ➢ Transport to hospital, or doctor, without delay.
Ingestion	➢ Immediately give a glass of water. ➢ First aid is not generally required. If in doubt, contact a Poisons Information Center or a doctor.

Most important symptoms and effects, both acute and delayed

See Section 11

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Indication of any immediate medical attention and special treatment needed

For copper intoxication: unless extensive vomiting has occurred, empty the stomach by lavage with water, milk, sodium bicarbonate solution or a 0.1% solution of potassium ferrocyanide (the resulting copper ferrocyanide is insoluble). Administer egg white and other demulcents. Maintain electrolyte and fluid balances.

SECTION 5 Fire-Fighting Measures

Extinguishing Media

- Do NOT direct a solid stream of water or foam into burning molten material; this may cause spattering and spread the fire.
- Metal dust fires need to be smothered with sand, inert dry powders.
- DO NOT USE WATER, CO2 or FOAM.
- Use DRY sand, graphite powder, dry sodium chloride based extinguishers, G-1 or Met L-X to smother fire.

Special hazards arising from the substrate or mixture

Fire Incompatibility	Reacts with acids producing flammable / explosive hydrogen (H2) gas

Special protective equipment and precautions for fire-fighters

Fire Fighting	➢ Alert fire department and tell them location and nature of hazard. ➢ Wear breathing apparatus plus protective gloves in the event of a fire. ➢ Prevent, by any means available, spillage from entering drains or water courses. ➢ Cool fire exposed containers with water spray from a protected location.
Fire / Explosion Hazard	➢ Does not represent unusual fire risk because the metal can conduct heat away from hot spots so efficiently that the heat of combustion cannot be maintained. Generally, metal fire risks exist when sawdust, machine shavings and other metal 'fines' are present. ➢ May emit poisonous fumes. ➢ May emit corrosive fumes.

SECTION 6 Accidental Release Measures

Personal precautions, protective equipment, and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	➢ Clean up all spills immediately. ➢ Avoid contact with skin and eyes. ➢ Use dry clean up procedures and avoid generating dust. ➢ Place in suitable containers for disposal.
Major Spills	➢ Control personal contact by wearing protective clothing. ➢ Prevent, by any means available, spillage from entering drains or water courses. ➢ Recover product wherever possible. ➢ IF DRY: Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or other containers for disposal. IF MOLTEN: Control flow using dry sand or salt flux. Allow the spill to cool before remelting scrap. ➢ ALWAYS: Wash area down with large amounts of water and prevent runoff into drains.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

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SECTION 7 Handling and Storage

Precautions for safe handling

Safe Handling	➢ Avoid all personal contact, including inhalation. ➢ Wear protective clothing when risk of exposure occurs. ➢ Store in a dry, cool environment that is well ventilated. ➢ Do not expose to air. ➢ Avoid contact with incompatible materials. ➢ When handling, DO NOT eat, drink or smoke. ➢ Keep containers securely sealed when not in use. ➢ Always wash hands with soap and water after handling.

Conditions for safe storage, including any incompatibilities

Suitable Container	❖ Polyethylene or polypropylene container.
Storage Incompatibility	❖ Reacts with acids to produce hydrogen

SECTION 8 Exposure Controls / Personal Protection

Control parameters

❖ **Occupational Exposure Limits (OEL)**

❖ **INGREDIENT DATA**

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US NIOSH Recommended Exposure Limits (RELs)	Copper	Copper metal dusts, Copper metal fumes	1 mg/m3	Not Available	Not Available	The REL also applies to other copper compounds (as Cu) except copper fume.
US OSHA Permissible Exposure Levels (PELs) – Table Z1	Copper	Copper: Dusts and mists (as Cu)	1 mg/m3	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Levels (PELs) – Table Z1	Copper	Copper: Fume (as Cu)	0.1 mg/m3	Not Available	Not Available	Not Available
US ACGIH Threshold Limit Values (TLV)	Copper	Copper Dusts and mists, as Cu	1 mg/m3	Not Available	Not Available	Irr; GI; metal fume fever
US ACGIH Threshold Limit Values (TLV)	Copper	Copper Fume, as Cu	0.2 mg/m3	Not Available	Not Available	Irr; GI; metal fume fever

❖ **Emergency Limits**

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
Copper	Copper	3 mg/m3	33 mg/m3	200 mg/m3

Ingredient	Original IDLH	Revised IDLH
Copper	100 mg/m3	Not Available

Exposure Controls

Engineering Controls	➢ Exhaust ventilation should be designed to prevent accumulation and recirculation in the workplace and safely remove dust from the air.
Eye and Face Protection	➢ Safety glasses with side shields. ➢ Chemical goggles. ➢ Eye wash unit.
Skin and Body Protection	➢ Protective over-garments or work clothing when machining.

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Hand Protection	➢ Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. ➢ Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include frequency and duration of contact, chemical resistance of glove material, glove thickness, and dexterity. ➢ Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present: polychloroprene, nitrile rubber, butyl rubber, fluorocaoutchouc, and polyvinyl chloride. ➢ Gloves should be examined for wear and/or degradation constantly.
Respiratory Protection	➢ Particulate – P1 (AS/NZS 1716 & 1715, EN 143:2000 & 149:001, ANSI Z88 or national equivalent)

SECTION 9 Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance	Reddish metallic solid with high electrical conductivity.
Physical State	Divided solid
Odor	Odorless
Melting Point / Freezing Point (°C)	1083
Initial Boiling Point and Boiling Range (°C)	2324
Vapor Pressure	0.13 @ 1628 C
Solubility in Water	Immiscible
Relative Density (Water = 1)	8.94
Molecular Weight	63.5
Volatile Component (%vol)	Negligible

SECTION 10 Stability and Reactivity

Reactivity	See section 7
Chemical Stability	➢ Unstable in the presence of incompatible materials. ➢ Product is considered stable. ➢ Hazardous polymerization will not occur.
Possibility of Hazardous Reactions	See section 7
Conditions to Avoid	See section 7
Incompatible Materials	See section 7
Hazardous Decomposition Products	➢ Decomposition may produce toxic fumes of metal oxides.

SECTION 11 Toxicological Information

Information on toxicological effects

Inhaled	The material can cause respiratory irritation in some persons. Nasal ulcerations with resultant nose-bleed may occur following inhalation of fine dusts.
Ingestion	Symptoms of systemic copper poisoning include headache, cold sweat, weak pulse, kidney/liver damage, jaundice, paralysis, and coma. Death may occur from renal failure or shock.

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Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives). Open cuts, abraded or irritated skin should not be exposed to this material.
Eye	This material can cause eye irritation and damage in some persons. Contact with the eye by metal dusts may cause scratching on the cornea and other injuries, which are usually minor.
Chronic	Chronic exposure to copper dusts may result in runny nose, irritation of mucous membranes and atrophic changes with resultant dementia.

Copper	Toxicity –Dermal (Rat) LD50; >2000 mg/kg[1] Toxicity – Oral (Mouse) LD50; =0.7 mg/kg[1] Irritation – Eye: no adverse effect observed (not irritating)[1] Irritation – Skin: no adverse effect observed (not irritating)[1]

[1] Value obtained from Europe ECHA Registered Substances – Acute toxicity

Acute Toxicity	X	Carcinogenicity	X
Skin Irritation/Corrosion	X	Reproductivity	X
Serious Eye Damage/Irritation	√	STOT – Single Exposure	X
Respiratory or Skin Sensitization	X	STOT – Repeated Exposure	X
Mutagenicity	X	Aspiration Hazard	X

Legend: X *– Data either not available or does not fill the criteria for classification*
√ *- Data available to make classification.*

SECTION 12 Ecological Information

Toxicity

Endpoint	Test Duration (hr)	Species	Value	Source
LC50	96	Fish	0.0028mg/L	1
EC50	48	Crustacea	0.001mg/L	1
EC50	72	Algae or other aquatic plants	-0.0108035-0.0171585mg/L	2
BCFD	1344	Not Available	7402.32mg/L	2
EC25	6	Algae or other aquatic plants	0.001506135 mg/L	2
NOEL	1440	Not Available	-0.0004-0.00122mg/L	2

[1] Values obtained from Europe ECHA Registered Substances – Ecotoxicological Information – Aquatic Toxicity
[2] Values obtained from US EPA, Ecotox database – Aquatic Toxicity Data

DO NOT discharge into sewer or waterways

Persistence and Degradability – No data available

Bioaccumulative Potential – No data available

Mobility in Soil – No data available

SECTION 13 Disposal Considerations

Waste Treatment Methods

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Product / Packaging Disposal	➢ Legislation addressing waste disposal requirements may differ by country, state and/or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. ➢ This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. ➢ DO NOT allow wash water from cleaning or process equipment to enter drains. ➢ It may be necessary to collect all wash water for treatment before disposal. ➢ In all cases, disposal to sewer may be subject to local laws and regulations and these should be considered first.

SECTION 14 Transport Information

Labels Required

Marine Pollutant	NO

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product Name	Group
Copper	Not Available

Transport in bulk in accordance with the ICG Code

Product Name	Ship Type
Copper	Not Available

SECTION 15 Regulatory Information

Safety, Health, and Environmental Regulations / Legislation Specific for the Substance or Mixture

❖ **Copper is found on the following regulatory lists**

US ACGIH Threshold Limit Values (TLV)
US – California Hazardous Air Pollutants Identified as Toxic Air Contaminants
US AIHA Workplace Environmental Exposure Levels (WEELs)
US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)
US CWA (Clean Water Act) – Priority Pollutants
US CWA (Clean Water Act) – Toxic Pollutants
US DOE Temporary Emergency Exposure Limits (TEELs)
US EPA Integrated Risk Information System (IRIS)
US EPCRA Section 313 Chemical List
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Levels (PELs) – Table Z1
US OSHA Permissible Exposure Limits – Annotated Table Z-1
US Toxic Substances Control Act (TSCA) – Chemical Substance Inventory
US TSCA Chemical Substance Inventory – Interim List of Active Substances

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Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

❖ **Section 311/312 hazard categories**

Flammable (Gases, Aerosols, Liquids, or Solids)	No
Gas under pressure	No
Explosive	No
Self-heating	No
Pyrophoric (Liquid or Solid)	No
Pyrophoric Gas	No
Corrosive to metal	No
Oxidizer (Liquid, Solid, or Gas)	No
Organic Peroxide	No
Self-reactive	No
In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	No
Acute toxicity (any route of exposure)	No
Reproductive toxicity	No
Skin Corrosion or Irritation	No
Respiratory or Skin Sensitization	No
Serious eye damage or eye irritation	No
Specific target organ toxicity (single or repeated exposure)	No
Aspiration Hazard	No
Germ cell mutagenicity	No
Simple Asphyxiant	No
Hazards Not Otherwise Classified	No

❖ **US EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)**

Name	Reportable Quantity in Pounds (lb)	Reportable Quantity in kg
Copper	5000	2270

State Regulations

❖ **US California Proposition 65**

None Reported

National Inventory Status

National Inventory	Status
Australia – AIIC / Australia Non-Industrial Use	Yes
Canada – DSL	Yes
Canada – NDSL	No (copper)
China – IECSC	Yes
Europe – EINEC / ELINCS / NLP	Yes
Japan – ENCS	No (copper)
Korea – KECI	Yes
New Zealand – NZIoC	Yes
Philippines – PICCS	Yes
USA – TSCA	Yes

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Taiwan – TCSI	Yes
Mexico – INSQ	Yes
Vietnam – NCI	Yes
Russia – ARIPS	Yes
Legend:	*Yes = All CAS declared ingredients are on the inventory* *No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)*

SECTION 16 Other Information

Revision Date	02/19/2021
Initial Date	07/07/2016

The data and information as stated was furnished by the manufacturer/vendor/supplier of this product. Alpha Resources LLC cannot warrant the accuracy of this information and shall not be responsible or liable for any damage that may result, should any of the information be erroneous.