

Material Safety Data Sheet

Copper

Document # - MSDS-05
Issue No. - 2.3
Issue Date: 01/01/04
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A. GENERAL INFORMATION

Trade Name (Common Name) COPPER ROD - ELECTRICAL	☒ C.A.S. No. ☐ General Product Code# 7440-50-8
Chemical Name and/or Synonym Copper 99.9+%	
Formula Cu	Molecular Weight 63.55
Address (No., Street, City, State and Zip Code) Southwire Company 372 Central High Road Carrollton, Georgia 30117	
Contact - David Hutcheson	Phone Number - (770) 832-4242

B. FIRST AID MEASURES

Eyes: Flush eyes immediately with water for at least 15 minutes. Get medical attention.
Skin: Promptly wash with plenty of soap and water.
Inhalation: Remove to fresh air. Get medical assistance for irritation or any other symptoms.
Ingestion: If conscious, give plenty of water or milk. Induce vomiting by touching finger to back of throat. Get immediate medical attention.

C. HAZARDS INFORMATION HEALTH

Inhalation Dust or fume inhalation can cause "metal Fume Fever", Headaches, cramps, pain in extremities in addition to respiratory irritation.
Ingestion Ingestion of copper will irritate the gastrointestinal tract producing salivation, nausea, vomiting and gastric pain.
Skin Although not commonly associated with industrial dermatitis, mechanical irritation is possible along with skin discoloration.
Eyes Mechanical irritation, potentially severe, can result from eye contact with this material.
Permissible Concentration: Air TWA = 1 mg/m ³ (dust); TWA = 0.2 mg/m ³ (fume); PEL = 1 mg/m ³ (dust).
Unusual Chronic Toxicity Wilson's disease may be affected by copper exposure.

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C. HAZARDS INFORMATION (Cont.) FIRE AND EXPLOSION

Flash Point	°C	Auto Ignition Temperature	°C	Flammable limits in Air (% by Vol.)
None				Not applicable
☐ Open Cup	☐ Closed Cup	Not Applicable		LOWER UPPER
Unusual Fire and Explosion Hazards				
None Known				

D. PRECAUTIONS/PROCEDURES

Fire Extinguishing Agents RECOMMENDED
Use any agent suitable for surrounding fire.
Fire Extinguishing Agents to AVOID
None known.
Special Fire Fighting Precautions
Avoid breathing dusts and fumes from burning material. Use NIOSH approved breathing apparatus and full protective clothing.
Ventilation
Local exhaust: In packaging and unloading areas, over open processing equipment, and any other places where dusty or misty condition prevails.
Natural ventilation: Adequate for other areas.
Normal Handling
Avoid contact with eyes, skin, or clothing. Avoid breathing dust or fume. Use good personal hygiene and housekeeping.
Storage
Avoid storage near acetylene, chlorine, oxidizers, magnesium, and halogenates.
Spill or Leak (Always Wear Personal Protective Equipment - Section E)
Promptly sweep up with minimum dusting. Collect for reuse.
Special: Precautions/Procedures/Label Instructions
None
SIGNAL WORD - N/A

E. PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection
None needed under most conditions. If dust or fume is expected, use a NIOSH approved HEPA or fume respirator.
Eyes and Face
Safety glasses or goggles.
Hands, Arms and Body
None normally needed. Impervious gloves may be used to prevent mechanical irritation.
Other Clothing and Equipment
Eye-wash is recommended.

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F. PHYSICAL DATA

Material is (at Normal Conditions): ☐ Gas ☐ Liquid ☒ Solid ☐ _____		Appearance and Odor Yellow-red metal, odorless, various shapes	
Boiling Point	2595°C	Specific Gravity (H ₂ O = 1)	Vapor Density (Air = 1)
Melting Point	1083°C	8.94	Not applicable
Solubility in Water (% by weight) Low in metallic form		Ph	Vapor Pressure (mmHg at 20°C) ☐ (PSIG) ☐
Evaporation Rate (Butyl Acetate = 1) ☐ (Ether = 1) ☐ Not applicable		% Volatiles by Volume (at 20°C)	Not applicable

G. REACTIVITY DATA

Stability ☐ Unstable ☒ Stable	Conditions to Avoid None Known
Incompatibility (Materials to Avoid) Acetylene, chlorine, oxidizers, magnesium and halogenate.	
Hazardous Decomposition Products Extreme temperatures can generate metal fume.	
Hazardous Polymerization ☐ May Occur ☒ Will Not Occur	Conditions to Avoid Not applicable

H. HAZARDOUS INGREDIENTS (Mixtures Only)

Material or Component/C.A.S. #	WT %	Hazard Data (See Sect. J)
Not Applicable	N/A	N/A

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I. ENVIRONMENTAL

Degradability/Aquatic Toxicity Not Determined	Octanol/Water Partition Coefficient Not determined
EPA Hazardous Substance? (Clean Water Act Sect. 307) ☒ Yes ☐ No If so, Reportable Quantity: <u>5000# (less than 100 micron diameter)</u>	
Waste Disposal Methods (Disposer must comply with Federal, State and Local Disposal or Discharge Laws) Users should review their operations in terms of any applicable federal, state and local laws and regulations, then consult with appropriate regulatory agencies before discharging or disposing of waste materials. If regulations permit, waste may be disposed of by burial in an approved chemical wastes landfill or removed by a licensed waste disposal contractor.	
RCRA Status of <u>Unused</u> Material if Discarded: Follow EPA & local regulations to determine	Hazardous Waste Number: (If Applicable) N/A

J. REFERENCES

Permissible Concentration References 29 CFR 1910.1000 (1989) ACGIH 1991-92-List: "Threshold Limit Values for Chemical Substances".
D.O.T. Classification - Not regulated
General Lucky, T.D., "Metal Toxicity In Mammals", 1977, Plenum Press, N.Y. Sax, E.I., "Dangerous Properties of Industrial Materials", 7th edition Sittig, M. "Handbook of Toxic and Hazardous Chemicals", 1985, Noyes, Park Ridge, N.J.

K. ADDITIONAL INFORMATION

NOTICE: This material contains the following toxic chemical subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To Know Act of 1986 and of 40 CFR 372:		
CAS# 7440-50-8	Chemical Name Copper	% By Weight 99.9+
This information must be included in all MSDS's that are copied and distributed for this material.		

THIS PRODUCT SAFETY DATA SHEET IS OFFERED SOLELY FOR YOUR INFORMATION, CONSIDERATION AND INVESTIGATION.

THE SOUTHWIRE COMPANY PROVIDES NO WARRANTIES, EITHER EXPRESS OR IMPLIED, AND ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE DATA CONTAINED HEREIN.

Safety data sheet

Ultramid® B3 NATURAL, NYLON 6 RESIN

Revision date : 2009/05/07

Version: 1.0

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1. Substance/preparation and company identification

Company

BASF CORPORATION
100 Campus Drive
Florham Park, NJ 07932, USA

24 Hour Emergency Response Information

CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP

Chemical family: polyamide
Synonyms: Nylon 6

2. Composition/information on ingredients

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
25038-54-4	>= 95.0 %	polyamide (PA 6)
105-60-2	>= 0.1 - <= 1.0 %	caprolactam

3. Hazard identification

Emergency overview

CAUTION: MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION.

Use with local exhaust ventilation.

Wear safety glasses with side-shields.

Wear protective clothing.

Eye wash fountains and safety showers must be easily accessible.

Potential health effects**Primary routes of exposure**

Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquified gases.

Acute toxicity:

Contact with molten product may cause thermal burns. The resin in pelleted form poses a low hazard.

Information on: Caprolactam

No adverse effects have been reported in the processing and use of polycaprolactam.

Caprolactam monomer may be released during processing.

Irritation:

Thermal decomposition products of the substance can irritate the eyes, skin, and respiratory tract.

Sensitization:

The substance is inert.

Repeated dose toxicity:

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Information on: Caprolactam

May affect the liver and kidneys as indicated in animal studies.

Medical conditions aggravated by overexposure:

Data available do not indicate that there are medical conditions that are generally recognized as being aggravated by exposure to this substance/product.

See MSDS section 11 - Toxicological information.

Potential environmental effects

Aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic organisms.

The product has not been tested. The statement has been derived from the structure of the product.

4. First-aid measures

General advice:

Remove contaminated clothing.

If inhaled:

Assist in breathing if necessary. Keep patient calm, remove to fresh air. Consult a physician.

If on skin:

Burns caused by molten material require hospital treatment. Wash affected areas thoroughly with soap and water. If irritation develops, seek medical attention.

If in eyes:

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. If irritation develops, seek medical attention.

5. Fire-fighting measures

Autoignition: > 400 °C

(ASTM D1929)

Self-ignition temperature:

not self-igniting

Suitable extinguishing media:

water, foam, dry extinguishing media, carbon dioxide

Hazards during fire-fighting:

carbon monoxide, hydrogen cyanide, can be emitted at > 300 °C

Under special fire conditions traces of other toxic substances are possible. Formation of further decomposition and oxidation products depends upon the fire conditions.

Protective equipment for fire-fighting:

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:

Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental release measures

Environmental precautions:

This product is not regulated by RCRA. This product is not regulated by CERCLA ('Superfund').

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Cleanup:

For small amounts: Pick up with suitable appliance and dispose of.

For large amounts: Pick up with suitable appliance and dispose of.

Further information:

High risk of slipping due to leakage/spillage of product.

7. Handling and storage

Handling

Protection against fire and explosion:

Take precautionary measures against static discharges.

Storage

Storage stability:

Protect against moisture.

8. Exposure controls and personal protection

Components with workplace control parameters

caprolactam

ACGIH TWA value 5 mg/m3 Inhalable fraction and vapor ;

Advice on system design:

Provide local exhaust ventilation to control dusts/vapours.

Personal protective equipment

Respiratory protection:

Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) particulate respirator. Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator.

Hand protection:

Wear gloves to prevent contact during mechanical processing and/or hot melt conditions.

Eye protection:

Safety glasses with side-shields.

Body protection:

Body protection must be chosen based on level of activity and exposure.

General safety and hygiene measures:

Wear protective clothing to prevent contact during mechanical processing and/or hot melt conditions. Avoid inhalation of dust. Wash soiled clothing immediately.

9. Physical and chemical properties

Form:	pellets	
Odour:	odourless	
Colour:	colourless	
pH value:		not soluble
Melting temperature:	approx. 220 °C	(DIN 53765)
Density:	1.12 - 1.15 g/cm3	(20 °C)
Bulk density:	640 - 740 kg/m3	
Solubility in water:		insoluble

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10. Stability and reactivity

Conditions to avoid:

Temperature: > 300 degrees Celsius

Avoid prolonged exposure to extreme heat.

Hazardous reactions:

The product is chemically stable.

No hazardous reactions known.

Decomposition products:

Hazardous decomposition products: carbon monoxide, hydrogen cyanide, caprolactam

Thermal decomposition products: caprolactam, The substances/groups of substances mentioned may be released during processing.

Thermal decomposition:

> 300 °C

May decompose if overheated and/or subjected to prolonged heating.

Corrosion to metals:

No corrosive effect on metal.

Oxidizing properties:

not fire-propagating

11. Toxicological information

Chronic toxicity

Genetic toxicity:

The substance is inert.

Other information:

Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

12. Ecological information

Environmental fate and transport

Bioaccumulation:

The product will not be readily bioavailable due to its consistency and insolubility in water.

Due to the consistency of the product, dispersion into the environment is impossible. Therefore no negative effects on the environment may be anticipated based on the present state of knowledge.

13. Disposal considerations

Waste disposal of substance:

Check for possible recycling.

Dispose of in accordance with national, state and local regulations.

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Container disposal:

Dispose of in accordance with national, state and local regulations. Packs must be completely emptied. Completely emptied packagings can be given for recycling.

14. Transport information

Land transport

USDOT

Not classified as a dangerous good under transport regulations

Sea transport

IMDG

Not classified as a dangerous good under transport regulations

Air transport

IATA/ICAO

Not classified as a dangerous good under transport regulations

15. Regulatory information

Federal Regulations

Registration status:

TSCA, US

released / listed

SARA hazard categories (EPCRA 311/312): Not hazardous

State regulations

State RTK

CAS Number

105-60-2

Chemical name

caprolactam

State RTK

MA, NJ, PA

16. Other information

HMIS III rating

Health: 1

Flammability: 1

Physical hazard: 0

HMIS uses a numbering scale ranging from 0 to 4 to indicate the degree of hazard. A value of zero means that the substance possesses essentially no hazard; a rating of four indicates high hazard.

Local contact information

Tech Desk

1-800-527-8324

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PRODUCT INFORMATION SHEET
SOUTHWIRE COMPANY
1 SOUTHWIRE DRIVE, CARROLLTON, GEORGIA 30119

Page: 1
Date Prepared: 8/31/2010

NOTICE: The products described herein are considered articles. As such, provision of a Material Safety Data Sheet (MSDS) is not required by regulation. Under normal use, no significant risk of hazardous exposure is associated with these articles. The information contained in this document is provided for reference only, and includes information from the MSD sheets for individual components.

SECTION 1: CHEMICAL AND COMPANY IDENTIFICATION

PRODUCT NAME: Building Wire Products
CHEMICAL NAME: None
PRODUCT DESCRIPTION: Wire and cable products for operation at low voltage (2000 V or less) utilizing thermoplastic or crosslinked insulation. See Section 2 for individual wire and cable types.

CONTACT ADDRESS:
Southwire Company
1 Southwire Drive, Carrollton, Georgia 30119

EMERGENCY TELEPHONE NUMBER: (24 Hours) (770) 832-4242

NON EMERGENCY TELEPHONE NUMBERS: (8 am - 5 pm M-F) FOR
HEALTH AND SAFETY INFORMATION CALL: (770) 832-4725 FOR
GENERAL PRODUCT INFORMATION: www.Southwire.com

SECTION 2: COMPOSITION / INFORMATION ON INGREDIENT

The product categories below contain some combination of the following components:

Poly(vinyl chloride) compounds (PVC)
Polyamide compounds (nylon)
Polyethylene compounds (PE)
Chlorinated polyethylene compounds (CPE)
Copper
Electrical-grade Aluminum alloy

This document addresses the following product categories:

<u>Wire/Cable Type</u>	<u>Components (may contain some or all)</u>
Thermoplastic Insulated Conductors THHN/TFFN/T90/AWM/MTW and similar	PVC, Nylon, Copper, Aluminum
Thermoset Insulated Conductors XHHW/RW90/USE and similar	PE, Copper, Aluminum
Service Entrance Cable SE/SER/SEU/USE and similar	PE, PVC, Nylon, Copper, Aluminum
Tray Cable Type TC	PE, PVC, Nylon, CPE, Copper, Aluminum
Pump Cable	PVC
NM-B, NMD	PVC, Nylon, Copper

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Composition of Components:

PVC Compounds may contain: PVC Resin

Hydrocarbon Plasticizer(s)
Alumina Trihydrate Antimony
Trioxide Proprietary
Stabilizer Proprietary
Lubricant

Nylon Compounds may contain: Nylon

6 (polycaprolactam)
Caprolactam Proprietary
Lubricant

PE Compounds may contain:

Antioxidant Dicumyl
Peroxide Dibutyl Tin
Dilaurate Magnesium
Hydroxide Alumina
Trihydrate

CPE Compounds may contain:

Chlorinated polyethylene
Antimony Trioxide Lead
Phthalate Chlorinated
Paraffin Magnesium Oxide

SECTION 3: HAZARDS IDENTIFICATION

Under normal use, no hazards are associated with use of these articles.

POTENTIAL HEALTH EFFECTS: Exposure does not cause significant irritation or toxicity.

EYE CONTACT: None

SKIN CONTACT: Minor skin irritation possible.

INHALATION: None

INGESTION: None

SECTION 4: FIRST AID MEASURES

EYE CONTACT: Treat as any foreign particulate matter.

SKIN CONTACT: If minor skin irritation occurs, wash affected area with soap and water. If irritation persists, seek medical attention. If molten polymer is contacted, cool the affected area with water and seek medical attention.

INHALATION: No effects known in normal use. Inhalation of combustion products could cause damage to the respiratory tissues. Seek medical attention.

INGESTION: No ingestion effects known.

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SECTION 5: FIRE - FIGHTING MEASURES

FLASHPOINT: N/A

FLAMMABLE LIMITS: N/A

AUTOIGNITION TEMP: N/A

GENERAL HAZARDS: Article contains combustible substances which may decompose upon burning to produce irritating, hazardous fumes.

FIRE FIGHTING: Use dry chemical or foam type extinguishing media. Avoid breathing fumes, use self contained breathing apparatus.

DECOMPOSITION PRODUCT UNDER FIRE CONDITIONS: Carbon Dioxide, Carbon Monoxide, Hydrogen Chloride and irritants.

SECTION 6: ACCIDENTAL RELEASE MEASURES

LAND SPILL: N/A **WATER SPILL:** N/A

SECTION 7: STORAGE AND HANDLING

No special handling and storage requirements.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Gloves and eye protection recommended during installation of articles.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Article is solid at room temperature and pressure.

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID INSTABILITY: Fire

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID HAZARDOUS POLYMERIZATION: N/A

HAZARDOUS DECOMPOSITION PRODUCTS: See Section 5.

SECTION 11: TOXICOLOGICAL INFORMATION

Reported human effects: Product/similar product – no human data available

Reported animal effects: Product/similar product – no animal data available

SECTION 12: ECOLOGICAL INFORMATION

No ecological information available

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SECTION 13: DISPOSAL CONSIDERATIONS

Recycling of metal conductor is encouraged. Dispose of cable residues in accordance with all applicable local, state and federal environmental regulations.

SECTION 14: TRANSPORT INFORMATION

DEPARTMENT OF TRANSPORTATION (DOT): No transportation restrictions.

SECTION 15: REGULATORY INFORMATION

Wire and cable products have been determined to be exempt from Proposition 65 by a California judicial decision.

SECTION 16: OTHER INFORMATION

RATING SYSTEMS: NFPA rating: Health 0 Flammability 1
Reactivity 0

This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.