

MSDS 009
Revised 01/2014

MATERIAL SAFETY DATA SHEET

MWS Wire Industries
31200 Cedar Valley Drive
Westlake Village, CA 91362
(818) 991-8553

Trade Name: Insulated Phosphor Bronze Alloy (CDA Alloy 51000)

Chemical Family: Copper-Tin alloy

Chemical Formula: NA

HAZARDOUS INGREDIENTS

<u>Ingredient</u>	<u>CAS No.</u>	<u>TLV</u>	<u>PEL</u>	<u>STEL</u>
Copper	7440-50-8	1 (D) / 0.2 (F)	1 (D) / 0.1 (F)	2
Tin	7440-31-5	2	2	
Phosphorus	7723-14-0	0.02	0.1	
Enamel coating	N/A	(see Health Hazard Data and Insulation Guide)		

Product composition: 88.8-91.3% Copper; 3.9-4.8% Tin; 3.7-6.3% insulation; 0.03-0.34% Phosphorus

Note: TLV - American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (ppm)

PEL - OSHA Permissible Exposure Level (mg/m³), 8 hour time weighted average

STEL - ACHIH Short Term Exposure Limit (mg/m³), 15 minutes maximum

* Ceiling Level (Not to be exceeded) D = Dust F = Fume NS = Not Specified

PHYSICAL DATA

Boiling Point °C: NA

Vapor Pressure: NA

Vapor Density: NA

% Volatile: NA

Evaporation Rate: NA

Solubility in H₂O: Insoluble

Specific Gravity: 8.86

Melting Temperature: 1050°C

Appearance & Odor: Solid with no odor. Color varies with coating type. Basic colors are red, green and amber (natural).

FIRE & EXPLOSION HAZARD DATA

HMIS Flammability Rating: 0 Phosphor bronze alloy is non-combustible. Use extinguishing media appropriate for the surrounding fire. Self-contained breathing apparatus must be worn if there is any risk of exposure to metal fumes or dust released during or after a fire.

HEALTH HAZARD DATA

HMIS Health Hazard Rating: 3 (This rating is based on heating or burning the film insulation which may generate combustion by-products that are toxic. Refer to the information in this section).

Fine powders, granules and fumes from welding or abrasive operations are a health hazard. When burned, soldered or hot-staked, insulation coatings may give off hazardous decomposition products that may include isocyanates such as Toluene Diisocyanate. Some individuals can develop sensitivity to isocyanates. Use with adequate local exhaust to prevent irritation and maintain isocyanates concentration below the OSHA ceiling limit of 20 parts per billion (20 ppb).

Short Term Exposure: Dust and fumes irritate the eyes, nose and throat. Symptoms may include cough, metallic taste in mouth, fever, fatigue and nausea.

. Emergency First Aid Procedure:

- In case of fume inhalation, remove from exposure and consult a physician.
- In case of eye contact, flush with large amounts of water for at least fifteen minutes. Seek medical attention.
- In case of ingestion, seek immediate medical attention.

REACTIVITY DATA

HMIS Reactivity Rating: 0

Stability: Stable. Hazardous decomposition products: When subjected to temperature in excess of 200°C toxic fumes may be evolved from insulation coatings. Refer to Health Hazard Data.

Hazardous Polymerization: Will not occur.

SPILL, LEAK, DISPOSAL PROCEDURES

Scrap metal may have reclamation value. Where this is not practical, it may be disposed in accordance with state and federal regulations. In solid wire form, phosphor bronze alloys pose no special clean up problems. If material is in powder or dust form, clean up should be conducted to minimize generation of airborne powder and dust and to avoid contamination of air and water.

SARA TITLE III SECTION 313

Copper, tin and phosphorus are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR Part 372 of the Federal Register. Additional information can be obtained from the Emergency Planning and Community Right-To-Know Information Hot Line, US EPA, at (800) 535-0202.

EC RoHS DIRECTIVE COMPLIANCE

Insulated phosphor bronze wire complies with Directive 2011/65/EU [recast of RoHS Directive 2002/95/EC] of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

ECHA REACH COMPLIANCE

Insulated phosphor bronze wire meets the definition of an article under REACH and does not contain SVHC listed as of the revision date of this MSDS. For more information about MWS Wire products and REACH, see http://www.mwswire.com/pdf_files/reach.pdf

SPECIAL PROTECTION

Wear safety glasses when risk of eye injury is present, particularly during machining, grinding, welding, powder handling, etc. Gloves and other protective equipment may be required during handling operations as appropriate to the circumstances of exposure.

Use with adequate ventilation to meet the exposure limits, to prevent irritation and to maintain isocyanates exposure below 20 ppb. If these limits are exceeded use NIOSH approved respiratory protection based on airborne contaminants present.

Burning, soldering or hot-staking should be done under a fume hood with adequate exhaust that pulls fumes away from the individual.

SPECIAL PRECAUTIONS

When welding, melting, casting, grinding, sanding, polishing or otherwise abrading the surface of phosphor bronze in a manner which generates finely divided particles, an exposure to metallic copper, tin and phosphorus in excess of the occupational standard can occur. Use with adequate ventilation to meet listed exposure limits. Processes generating airborne phosphor bronze alloy must be air sampled to determine exposure levels. Where exposure data indicate, medical surveillance should be conducted.

PACKAGING & LABELING REQUIREMENTS

D.O.T. Shipping Name: Not regulated

Hazard Class: NA

MWS Wire Industries (MWS) has attempted to provide current and accurate information in this data sheet, however MWS makes no representations regarding the accuracy or completeness of the information. Information is supplied upon the condition that the persons receiving it will make their own determinations as to its suitability prior to use. MWS assumes no liability for any loss, damage or injury of any kind which may arise out of the use or reliance on the information by any person. No warranties, either express or implied, of merchantability, fitness for a particular purpose or of any other nature are made with respect to the foregoing information or the product to which the information refers. Contact person: Ken Goss at (818) 991-8553.

INSULATION GUIDE

Name	NEMA Temperature Class	Description
Formvar ¹	105 C	Polyvinyl Formal
Polyurethane	155 / 180 C	Modified Polyurethane
Polyurethane Nylon	155 / 180 C	Modified Polyurethane with Polyamide overcoat
Solderable Polyesterimide	180 C	Polyesterimide
Polyester 200	200 C	Modified Polyester
Armored Polyester	200 C	Modified Polyester or Polyesterimide with Amide- Imide overcoat
ML ¹	240 C	Polyimide
All insulations may be supplied with a bondable overcoat.		
Butvar Bond		Polyvinyl Butyral
Polyester Bond		Polyester
Epoxy Bond		Epoxy
Polyamide Bond		Aromatic Polyamide

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