MATERIAL SAFETY DATA SHEET

MSDS NO. 113

SECTION I - IDENTIFICATION

Helwig Carbon Products, Inc.

Telephone: (414) 354-2411
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8900 West Tower Ave
Milwaukee WI 54224

Product Name:
Graphite with Copper & Tin

Chemical Name:
Mixture

Hazard Rating		
Least 0	Slight 1	
Moderate 2	High 3	
Extreme 4		
Health		2
Fire		0
Reactivity		0

SECTION II - HAZARDOUS INGREDIENTS

INGREDIENT	PERCENT	C.A.S. NO.
Copper*	60-90	7440-50-8
Tin	3-20	7440-31-5

*Copper is the critical component of this mixture for hazard assessment.

SECTION III - OCCUPATIONAL EXPOSURE LIMITS

	Copper (metal)	Tin
OSHA PEL:	1.0 mg/m^3 Dust & mist 0.1 mg/m^3 Fume	2.0 mg/m^3 Respirable Dust
ACGIH TLV:	1.0 mg/m^3 Dust & mist 0.2 mg/m^3 Fume	2.0 mg/m^3 Respirable Dust
NIOSH:	**N/A**	
CARCINOGEN:	**NTP** No	**IARC** No **OSHA** No

SECTION IV - HEALTH HAZARDS

Effects of exposure:

Primary Route(s) of Entry: Inhalation of dust

Effects of Overexposure:

Eyes: At high dust level, mechanical irritation.

Skin: Possible temporary skin discoloration from copper.

Breathing & Swallowing: Copper fume may cause metal fume fever and a metallic taste.

Medical conditions recognized as possibly aggravated by exposure:

Individuals with pre-existing chronic respiratory impairments or with serum antitrypsin deficiency may be at increased risk of disabling pneumoconiosis. Individuals with Wilson's disease (hepatolenticular degeneration) should not be exposed to copper fume, mist or dust.

SECTION V - EMPLOYEE PROTECTION

Respiratory Protection: Use approved dust respirator if exposure exceeds PEL limits.

Eye Protection: If airborne particles are produced.

Protective Gloves: None required

Other Protective Equipment: None required

Ventilation: Local ventilation recommended if dust level exceeds PEL.

SECTION VI - FIRST AID

Skin Contact: Wash off.

Eye Contact: Flush with water if irritation occurs.

Inhalation: None necessary.

Ingestion: None necessary.

SECTION VII - FIRE AND EXPLOSION DATA

Flash Point: None

Flammable Limits: N/A **LEL** _____ **UEL** _____

Extinguishing Media: Water, CO_2, Sand.

Special Fire Fighting Procedures: Self-contained breathing apparatus, as normal.

Unusual Fire and Explosion Hazards: Contact of chlorine with metallic tin may cause ignition of other combustibles due to heat evolved. Contact of metallic tin with turpentine may cause fires and explosions, Dust from this mixture is normally not explosive, but it may weakly contribute if the event is initiated by another explosive dust or gas. Graphite/metal dust is electrically conductive; dust accumulations may cause electrical short circuits or other electrical malfunctions.

SECTION VIII - SPECIAL PRECAUTIONS

Precautions for Handling and Storing:

Other Precautions:

In animals inhalation of copper dust has caused hemolysis of red blood cells, deposition of hemofuscin in liver and pancreas and injury to lung cells. Ingestion has caused other damage in test animals.

SECTION IX - ENVIRONMENTAL PROTECTION

Spill or Leak Procedures:

Use normal housekeeping procedures.

Waste Disposal Method:

Bury in an approved landfill. Dispose of according to local, state, and federal regulations.

SECTION X - PHYSICAL DATA

Boiling Point: Tin 2270°C Copper 2300°C **Melting Point:** Tin 232°C Copper 1083°C	**Vapor Pressure:** Negligible at room temperature	**Spec. Gravity:** 8.9, Copper
Vapor Density: Negligible at room temperature	**Evaporation Rate:** **(_____ = 1)** 0	**Solubility in Water:** Insoluble
Percent Volatile by Weight: <0.1, mixture	**Appearance:** Gray-copper colored solid	**Odor:** None

SECTION XI - REACTIVITY DATA

☐ **Unstable**	☒ **Stable**	**Hazardous Polymerization**	☐ **May Occur**	☒ **Will not occur**

Conditions and Materials to Avoid:

Strong oxidizing agents, chlorine and turpentine.

Hazardous Decomposition Products:

In normal combustion, CO_2 and CO can be formed in conjunction with copper fume, copper oxide, tin fume and tin oxide.

SECTION XII - REFERENCES

OSHA:	29 CFR 1910.1000
ACGIH:	Threshold Limit Values for Chemical Substances, current edition
ACGIH:	Documentation of Threshold Limit Values
SAX:	Dangerous Properties of Industrial Materials
MSDS:	SGL MSDS 113

DATE: 1/4/05
(Replaces 6/1/89)