

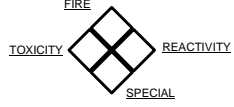
MATERIAL SAFETY DATA SHEET

ISSUED DATE 11-19-85 REVISED DATE 9-30-09

I. IDENTIFICATION

MANUFACTURER'S NAME		Mi-Tech Metals, Inc.		EMERGENCY TELEPHONE NO.		(317) 549-4290	
ADDRESS		4701 Massachusetts Avenue - Indianapolis, IN 46218					
CHEMICAL NAME AND SYNONYMS		Tungsten, Copper, Nickel		TRADE NAME AND SYNONYMS		HD 17	
C.A.S. NO.	NIF	T.S.C.A. NO.	NIF	FORMULA	W-Cu-Ni		
DEPARTMENT OF TRANSPORTATION	HAZARD CLASSIFICATION	NIF		U.N. NO.	NIF		
	SHIPPING NAME	HD17 Tungsten Alloy					

II. INGREDIENTS

MATERIAL	%	TLV (Units)	C.A.S. NO.	NFPA RATING  4 = EXTREME 3 = HIGH 2 = MODERATE 1 = SLIGHT 0 = INSIGNIFICANT
Tungsten	90	5 MG/M ³	7440-33-7	
Copper	4	1.0 MG/M ³	7440-50-8	
Nickel	6	1.0 MG/M ³	7440-02-0	

REPORT ALL INGREDIENTS ≥3%; IF HAZARDOUS, REPORT ≥1%; SPECIAL HAZARDOUS SUBSTANCE ≥0.01%

III. PHYSICAL DATA

BOILING POINT, 760mm Hg 101.325 kPa	W - 5660°C, Cu - 2567°C Ni - 2732°C	FREEZING POINT	N/A
SPECIFIC GRAVITY (H ₂ O=1)	17.0 g/cc	VAPOR PRESSURE AT 20°C	N/A
VAPOR DENSITY (AIR=1)	N/A	SOLUBILITY IN WATER, % BY WT.	Insoluble
APPEARANCE AND ODOR	Gray Metallic - No odor		

IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method Used)	NIF	FLAMMABLE LIMITS LEL	NIF	UEL	NIF
EXTINGUISHING MEDIA	Class D Dry Type				
SPECIAL FIRE FIGHTING PROCEDURES					
UNUSUAL FIRE AND EXPLOSION HAZARDS	Will oxidize at/or about 1300°F.				

V. REACTIVITY DATA

STABILITY		CONDITIONS TO AVOID	There is some evidence that Nickel and certain Nickel Compounds are carcinogenic to humans. Metallic Nickel seems to be less likely than Nickel Sulfide or Nickel Oxides.
UNSTABLE	STABLE		
	X		
INCOMPATIBILITY (Materials to Avoid)			

HAZARDOUS DECOMPOSITION PRODUCTS	Keep away from strong acids.
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VI. HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE	OSHA	Tungsten Copper Nickel	5 MG/M ³ 1.0 MG/M ³ 1.0 MG/M ³	ACGIH	Tungsten Copper Nickel	5 MG/M ³ 1.0 MG/M ³ 1.0 MG/M ³
ROUTES OF EXPOSURE (Check Those Which Apply)	EYE CONTACT	No	INHALATION	No	SKIN ABSORPTION	No
	SKIN CONTACT	No	INGESTION	No		
SIGNS AND SYMPTOMS OF OVEREXPOSURE	NIF (No information found)					
EFFECTS OF OVEREXPOSURE						
ACCUTE	NIF					
CHRONIC	NIF					
HAS IOSHA FOUND THIS MATERIAL TO BE A POTENTIAL CARCINOGEN?	YES		NO	X		
EMERGENCY FIRST AID PROCEDURES						

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELATED OR SPILLED	
WASTE DISPOSAL METHOD	Re-cycle scrap and machine turnings.
	DISPOSER MUCH COMPLY WITH FEDERAL, STATE AND LOCAL DISPOSAL OR DISCHARGE LAWS.

VIII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify Type)	Use NIOSHA/MSHA approved type respirator for dusting conditions.			
VENTILATION	LOCAL EXHAUST	Recommended	SPECIAL	NIF
	MECHANICAL (General)	NIF	OTHER	NIF
PROTECTIVE GLOVES	NIF		EYE PROTECTION	Use safety eyewear
OTHER PROTECTIVE EQUIPMENT	NIF			

IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING	Store in dry, well ventilated area. Separate from acids and alkalis.
OTHER PRECAUTIONS	

DISCLAIMER OF LIABILITY

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