

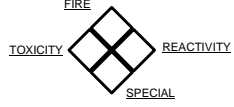
MATERIAL SAFETY DATA SHEET

ISSUED DATE 12-02-85 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 18	
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	HD 18 Tungsten Alloy					

II. INGREDIENTS

MATERIAL	%	TLV (Units)	C.A.S. NO.	NFPA RATING  4 = EXTREME 3 = HIGH 2 = MODERATE 1 = SLIGHT 0 = INSIGNIFICANT
Tungsten	95	5 Mg/M ³	7440-33-7	
Copper	1.5	1.0 MG/M ³	7440-50-8	
Nickel	3.5	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)	18.0 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 5 MG/M ³ Copper 1.0 MG/M ³ Nickel 1.0 MG/M ³	ACGIH Tungsten 5 MG/M ³ Copper 1.0 MG/M ³ Nickel 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 cool, dry, well ventilated area. Separate from acids and alkalis.
OTHER PRECAUTIONS	

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