



HOGEN INDUSTRIES, INC.
OF INDIANA
4655 Massachusetts Avenue
Indianapolis, IN 46218
800-912-4123
Fax: 317-591-5071

MATERIAL SAFETY DATA SHEET

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

I. IDENTIFICATION

MANUFACTURER'S NAME		Hogen Industries, Inc.		EMERGENCY TELEPHONE NO.		(317) 591-5070	
ADDRESS		4655 Massachusetts Avenue - Indianapolis, IN 46218					
CHEMICAL NAME AND SYNONYMS		Tungsten, Copper, Nickel Iron, Molybdenum, Cobalt		TRADE NAME AND SYNONYMS		HM1000BB	
C.A.S. NO.		NIF		T.S.C.A. NO.		NIF	
				FORMULA		W-Cu-Ni-Fe-Mo-Co	
DEPARTMENT OF		HAZARD CLASSIFICATION		U.N. NO.		NIF	
TRANSPORTATION		SHIPPING NAME		HM1000BB Tungsten Alloy			

II. INGREDIENTS

MATERIAL	%	TLV (Units)	C.A.S. NO.	NFPA RATING
Tungsten	90	5 MG/M ³	7440-33-7	
Nickel	6	1.0 MG/M ³	7440-02-0	
Copper	0-2	1.0 MG/M ³	7440-50-8	
Iron	0-2	1.0 MG/M ³	7439-89-6	
Molybdenum	0 - 0.5	1.0 MG/M ³	7439-98-7	
Cobalt	0- 1.0	0.02 MG/M ³	7440-48-4	

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

III. PHYSICAL DATA

BOILING POINT, 760mm Hg 101.325 kPa	W-5660°C, Ni - 2732°C Cu-2567°C, Fe-3000°C Mo - 4825°C, Co - 1495°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 1300°F.				

V. REACTIVITY DATA

STABILITY			
UNSTABLE	STABLE	CONDITIONS	There is some evidence that Nickel and Cobalt and certain Nickel and Cobalt Compounds are carcinogenic to humans. Metallic Nickel seems to be less likely than Nickel Subsulfide or Nickel Oxides.
	X	TO AVOID	
INCOMPATIBILITY (Materials to Avoid)			
HAZARDOUS DECOMPOSITION PRODUCTS		Keep away from strong acids.	

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 Iron 1.0 MG/M ³ Molybdenum 1.0 MG/M ³ Cobalt 0.02 MG/M ³	ACGIH	Tungsten 5 MG/M ³ Copper 1.0 MG/M ³ Nickel 1.0 MG/M ³ Iron 1.0 MG/M ³ Molybdenum 1.0 MG/M ³ Cobalt 0.02 MG/M ³
ROUTES OF EXPOSURE (Check Those Which Apply)	EYE CONTACT	No	INHALATION	Yes
	SKIN CONTACT	No	INGESTION	No
SIGN AND SYMPTOMS OF OVEREXPOSURE NIF (No information found)				
EFFECTS OF OVEREXPOSURE Prolonged inhalation of cobalt dust, or metal dust, fume or mist containing cobalt may cause serious respiratory illness. There are references in the literature associating cobalt with interstitial fibrosis a disease which can be fatal. Inhalation may cause an irritation of respiratory organs of sensitive persons resulting in obstruction of airways with shortness of breathe.				
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.
---	--

DISCLAIMER OF LIABILITY

As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of the material. Information contained herein is believed to be true and accurate but all statements or suggestions are made without any warranty, express or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof.

DISCLAIMER OF LIABILITY

As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of the material. Information contained herein is believed to be true and accurate but all statements or suggestions are made without any warranty, express or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof.