



HIGH PERFORMANCE ALLOYS, INC.

Distributor of Corrosion, Heat, and Wear Resistant Alloys

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MATERIAL SAFETY DATA SHEET

SECTION I - MATERIAL IDENTITY

ALLOY 6B / 6BH

NOTE: Under normal conditions this product DOES NOT present an inhalation, ingestion, or contact hazard.

This MSDS applies to all forms of the above listed alloy manufactured by others and supplied by High Performance Alloys, Inc. The percentages listed below are approximate values and are for reference only. MSDS prepared 15 March 2001.

SECTION II - HAZARDOUS INGREDIENTS

INGREDIENT		%	PEL MG/M3	TLV MG/M3	NOTES
CARBON	7440-44-0	1.1	3.5	3.5	BLACK DUST
COBALT	7440-48-4	55	0.1	0.02	METALLIC DUST
CHROMIUM	7440-47-3	30	0.5	0.5	METALLIC DUST
IRON	7439-89-6	3	10	5	OXIDE FUME/DUST
MOLYBDENUM	7439-98-7	1.5	5/15	5/10	SOLUBLE/INSOLUBLE
NICKEL	7440-02-0	3	1	1	COMPOUNDS
SILICON	7440-21-3	2	15	10	INSOLUBLE COMPOUNDS
TUNGSTEN	7440-33-7	4.5		1	METALLIC DUST
				5	SOLUBLE
				3	INSOLUBLE
				10	STEL: SOLUBLE
					STEL: INSOLUBLE

SECTION III - PHYSICAL DATA

BOILING POINT: N/A	APPEARANCE AND ODOR: ODORLESS SOLID
VAPOR PRESSURE: N/A	GREY METAL
VAPOR DENSITY: N/A	DENSITY LB/CU.IN.: .314-.316
SOLUBILITY IN WATER: INSOLUBLE	MELTING POINT: 2100-2600 F
EVAPORATION RATE: N/A	

SECTION IV - FIRE AND EXPLOSION HAZARD

NONE - MATERIAL IS A SOLID METAL

SECTION V - HEALTH HAZARD DATA

Alloy 6B in its usual physical form does not pose any health hazards. However, during operations including welding, cutting, sawing, brazing, grinding etc. potentially hazardous fumes or dust may be generated. Since the primary route of exposure is from the inhalation of fumes and dusts, the above operations should be performed in a well ventilated area.

PRIMARY ROUTES OF EXPOSURE:

INHALATION: Inhalation of metal particulates may result from welding, grinding or similar operations which generate airborne material.

SECTION V - HEALTH HAZARD DATA (CONTINUED)

INGESTION: This is not a normal route of entry. Hand, clothing and food or drink contaminated with metal dust or particulate can cause metal ingestion during hand-to-mouth activities such as eating, drinking smoking and nail biting.

SKIN: Irritation, allergic dermatitis or sensitization may occur from some components.

EYE: Contamination by airborne particulates or soiled fingers may result in abrasion or irritation.

HEALTH HAZARDS:

ACUTE:

INHALATION: Short, intensive exposure to copper, chromium and manganese may cause metal fume fever - a flu-like illness. Some forms of chromium, nickel, cobalt and tungsten carbides may cause asthma. Cobalt, chromium, boron, copper, vanadium, molybdenum, nickel and manganese are respiratory irritants.

INGESTION: Although an unlikely route of over-exposure, ingestion of cobalt, copper and vanadium may cause nausea, vomiting, diarrhea and abdominal pain.

SKIN: Contact with copper, vanadium and nickel may cause dermatitis. Exposure to cobalt may cause dermatitis and other allergic skin reactions. Dermal exposure to manganese may result in increased sweating. Boron and vanadium exposure may cause irritation.

EYE: Particulates may cause irritation due to mechanical abrasion. Severe irritation or allergic conjunctivitis may result from contact with cobalt. Exposure to copper may irritate the eyes.

INHALATION OF HIGH CONCENTRATIONS OF METALLIC FUMES AND DUSTS MAY CAUSE THE FOLLOWING CHRONIC CONDITIONS:

BORON: Is considered to be an industrial poison. ingestion may affect the central nervous system and skin contact may cause dermatitis.

CARBON: Inhaling carbon dust may result in respiratory tract irritation, pneumoconiosis (dust congested lungs), pneumonitis (lung inflammation), coughing and shortness of breath. Symptoms of chronic exposure may also include headaches, runny nose, vomiting, diarrhea, abdominal pain, and chest pain.

CHROMIUM: Depends on oxidation state. The metal form is considered non-toxic. Hexavalent chromium in welding fumes are water soluble, toxic, and carcinogenic. Exposure to fumes may cause skin and Respiratory tract ulceration, dermatitis, allergic skin reactions, irritation of the pharynx and larynx, asthmatic bronchitis, eye irritation or inflammation.

COBALT: Inhaling cobalt metal fumes and dust causes irritation of the nose and throat and may result in an asthma-like disease with symptoms ranging from cough, chronic bronchitis, shortness of breath and labored breathing, to decreased pulmonary function, nodular scarring of the lung tissue, permanent disability and death. Cobalt exposure may cause weight loss, dermatitis, and Respiratory hypersensitivity.

COPPER: Exposure to copper fumes, dusts and/or mists results in metal fume fever, nausea, irritation of upper respiratory tract, and irritation of nasal mucous membranes.

IRON: Inhalation of excessive concentrations of Iron oxide fumes generated during arc welding or dusts may result in development of a benign pneumoconiosis called siderosis.

MANGANESE: Long term exposure to high concentrations of manganese fumes and dusts may increase the risk of pneumonia and lung damage and may lead to central nervous system effects that may include sleepiness, weakness, emotional disturbances, headaches, and changes in motor activity.

MOLYBDENUM: Dust causes irritation to the lungs and eyes, difficulty breathing, general weakness dizziness, chest pain, fatigue, headache, and joint and muscle pain.

NICKEL: Fumes are a respiratory irritant and have caused asthma pneumonia, Pulmonary edema and pulmonary fibrosis in welders using nickel alloys. Airborne nickel dusts are capable of producing lung cancer. Skin contact may cause an allergic rash.

SILICON: Repeated overexposure may cause chronic respiratory effects.

TITANIUM: Titanium dioxide fumes and dust are a mild Pulmonary, eye and skin Irritant.

TUNGSTEN: Chronic exposure to tungsten dust has caused dermatitis and pulmonary fibrosis characterized by cough, labored breathing, and wheezing.

CARCINOGENICITY: Chromium, Cobalt, and Nickel have been identified by the International Agency For Research on Cancer, the National Toxicology Program, or by OSHA as potential cancer causing agents.

SECTION VI - REACTIVITY

STABILITY: chemically stable

INCOMPATIBLE MATERIALS: reacts with strong acids forming Hydrogen gas

HAZARDOUS DECOMPOSITION PRODUCTS: metallic oxides, dust, fumes

HAZARDOUS POLYMERIZATION: will not occur

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: NA

WASTE DISPOSAL METHOD: Recycle metal chips or solid pieces and grinding dust, etc. - according to Federal, State, and Local disposal regulations.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Maintain good housekeeping practices to reduce the accumulation of dust and to minimize airborne dust concentrations.

SECTION VIII - SPECIAL PROTECTION INFORMATION

VENTILATION: use a general or local exhaust system to keep airborne concentration of dust and fumes below the TLV.

RESPIRATORY PROTECTION: if in processing, fumes or dust are released in concentrations that exceed permissible limits, provide NIOSH approved respirators. (reference 29CFR 1910.134)

GLOVES: may be necessary to prevent skin sensitization and dermatitis.

EYE PROTECTION: safety glasses or goggles should be worn when grinding or cutting.

SECTION IX - SARA TITLE III REQUIREMENTS

The following chemicals contained in these products are subject to reporting as required by Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40 CFR 372:

Chromium 7440-47-3 Cobalt 7440-48-4 Copper 7440-50-8 Manganese 7439-96-5 Nickel 7440-02-0

Please note that if you repackage or otherwise redistribute these products to industrial customers, a notice similar to this one must be sent to those customers.

DISCLAIMER

The information contained in this Material Safety Data Sheet was obtained from reliable sources and is believed to be accurate, however, it is provided without any express or implied warranty.