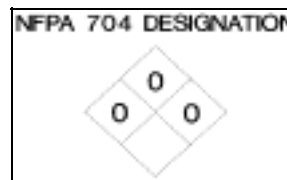


# MATERIAL SAFETY DATA SHEET      MSDS 9.111



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## SECTION I

CHEMICAL FAMILY: Metal alloy  
 CHEMICAL NAME: Copper - Cobalt - Cadmium  
 TRADE NAME: CMW® 8cc

## SECTION II - INGREDIENTS AND HAZARDS

INGREDIENT		CAS REGISTRY #	%	ACGIH TLV/TWA mg/m <sup>3</sup>	OSHA PEL/TWA mg/m <sup>3</sup>
Copper	(Cu)	7440-50-8	96	1	1
Cobalt	(Co)	7440-48-4	2.4	0.05	0.05
				(dust & fume)	
Cadmium	(Cd)	7440-43-9	1.1	0.01	0.2
				Ceiling limit = 0.6	
Silicon	(Si)	7440-21-3	0.5	10	10

Copper cobalt and cadmium are subject to the reporting requirements of Section 313 or SARA Title III.

## SECTION III - PHYSICAL DATA

MELTING POINT °C: 1050-1125  
 VAPOR PRESSURE AT ROOM TEMPERATURE: N/A  
 VAPOR DENSITY: N/A  
 SOLUBILITY IN WATER: Insoluble  
 PERCENT VOLATIVE (BY VOLUME %): N/A  
 SPECIFIC GRAVITY (g/cc): 8.8  
 APPEARANCE: Copper colored metal

## SECTION IV - FIRE AND EXPLOSIVE DATA

FLASH POINT AND METHOD: N/A  
 AUTOIGNITION TEMPERATURE °C: N/A  
 FLAMMABILITY LIMITS IN AIR: UPPER: N/A      LOWER: N/A  
 EXTINGUISHING MEDIA: Type C or type ABC extinguisher  
 FIRE FIGHTING PROCEDURES: Use self contained breathing apparatus with a full face piece operated in a pressure demand or positive pressure mode.  
 UNUSUAL FIRE AND EXPLOSION HAZARDS: If this material is reduced to powder form, caution must be used to prevent fire or explosion. To extinguish a metal powder fire use dry sand, dry graphite or other class "D" fire extinguishing powder.

References: *Threshold Limit Values and Biological Exposure Indices*, ACGIH, 1991-1992  
*Code of Federal Regulations - Labor #29*, Rev. July 1, 1990  
*Pocket Guide to Chemical Hazards*, NIOSH, 1990  
*Chemical Regulatory Cross Reference*, 3<sup>rd</sup> Edition, J. J. Keller, 1990  
 "NFPA Hazard Rating Index Chart", Labor Safety Supply Co., 1987  
*Fire Protection Guide on Hazardous Materials*, 9<sup>th</sup> Edition, Quincy, MA, 1986  
*Registry of Toxic Effects of Chemical Substances*, NIOSH, 1985-1986  
*Occupational Health Guidelines for Chemical Hazards*, NIOSH/OSHA, 1981  
*Dangerous Properties of Industrial Materials*, 5<sup>th</sup> Edition, Van Nostrand Reinhold Co., 1979

## SECTION V - REACTIVITY DATA

STABILITY: Stable HAZARDOUS POLYMERIZATION: Will not occur  
 HAZARDOUS DECOMPOSITION PRODUCTS: Melting may generate harmful fumes.  
 INCOMPATIBILITY AND CONDITIONS TO AVOID: Stable in normal environments.  
 Reacts with oxidizers, alkalis, sodium azide, acetylene.

## SECTION VI - HEALTH HAZARD INFORMATION

## EFFECTS OF OVEREXPOSURE:

Copper: Inhalation - cough, chills, general malaise, kidney disfunction. Ingestion - liver disfunction. Eyes and skin - irritant and/or discoloring.  
 Health hazards: Chronic lung, liver or kidney damage. May aggravate or intensify symptoms or pre-existing anemia or pulmonary disease.

Cobalt: Inhalation - irritation of nose and throat, produces shortness of breath. Skin - allergic dermatitis - red rash with itching. Health hazards - chronic respiratory disease - allergic dermatitis.

Cadmium: Inhalation - dryness of throat, cough, headache, chest pain, shortness of breath, kidney disfunction. Ingestion - vomiting. Health hazards - chronic lung and kidney disfunction.

Silicon: Low toxicity. Health hazards - none reported.

## CARCINOGENICITY:

	NTP	IARC	OSHA
Copper	No	No	No
Cobalt	No	No	No
Cadmium	Yes	Yes	Yes
Silicon	No	No	No

## EMERGENCY AND FIRST AID PROCEDURES:

Remove victim to fresh air. Flush skin and eyes with water. For inhalation or ingestion, seek immediate medical assistance.

## SECTION VII - SPILL OR LEAK PROCEDURES

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

Scoop up large quantities. Use sweeping compound to remove the rest. Avoid creating airborne particles.

WASTE DISPOSAL METHOD: Copper alloys can be recycled.

STORING AND HANDLING: N/A

OTHER PRECAUTIONS: Avoid generating dust or fumes.

## SECTION VIII - SPECIAL PROTECTIVE INFORMATION

RESPIRATORY PROTECTION: NIOSH approved cartridge respirator

VENTILATION: Ventilate operations when producing dust or fumes.

PROTECTIVE GLOVES: Recommend hand protection when handling metals for prevention of cuts from slivers and edges.

EYE PROTECTION: Wear safety glasses or goggles, if fumes, chips or dust are generated.

The information contained herein is believed to be correct, but no guarantee or warranty with respect to accuracy, completeness, or results is implied and no liability is assumed. Rev. November 2, 1992