CONCAST METAL PRODUCTS COMPANY
P.O. BOX 816
MARS, Pa. 16046
(412) 538-4000

14 DECEMBER 2006

MATERIAL SAFETY DATA SHEET (MSDS)

Notice: The elements listed are subject to the reporting requirements of Section 313, Title III of SARA in 40CFR Part 372.

ISSUE DATE: REVISION NO. 5 14 DECEMBER 2006	Trade Name: **ALUMINUM BRONZE & MANGANESE BRONZE** Chemical Name: **COPPER ALLOYS**

UNS ALLOY DESIGNATIONS: C62400, C62500, C63000, C63200, C67300, C85700, C86200, C86300, C86400, C86500, C87500, C95200, C95300, C95400, C95500, C95510, C95600, C95700, C95800, C95900, RCB 954, CONCAST 380

SECTION I. ALLOYING ELEMENTS

Continuous cast Copper Alloyed Bar Stock containing the following elements Copper, Tin, Lead, Zinc, Antimony, Nickel, Iron.

Element	CAS Number	% Weight	Exposure Limits		
			OSHA PEL (mg/m^3)*	OSHA SKIN PROTECTION*	ACGIH TLV (mg/m^3)
Base Element:					
Copper	7440-50-8	50 - 90	0.1 (Fume) : 1 (Dust)	None	0.2 (Fume) . 1 (Dust)
Principle Alloying Elements:					
Iron	7439-89-6	0.005 - 5.0	10 (Total Dust & Fume)	None	5 (Fume)
Lead	7439-92-1	0.005 - 1.5	0.5	None	0.15
Nickel	7440-02-0	0.005 - 6.0	1 (insoluble) 1(soluble)	None	1
Tin	7440-31-5	0.005 - 1.5	2	None	2
Zinc	7440-66-6	0.005 - 42.0	15 (Total dust) : 5 (Respirable Fraction)	None	5 (Fume)
Aluminum	7429-90-5	0.005 - 13.5	15 (Total dust) : 5 (Respirable Fraction)	None	10
Manganese	7439-96-5	0.005 - 14.0	5 (Ceiling/Dust) : 5(Ceiling/Fume)	None	1
Silicon	7440-21-3	0.005 - 5.0	15 (Total dust) : 5 5 (Ceiling/Dust) : 5(Ceiling/Fume)	None	5 (Dust)
Cobalt	7440-48-4	0.000 – 3.0	0.1 (insoluble) 0.1 (soluble)	None	0.05

The Elements listed above will vary in concentrations in many different Alloys. Other elements maybe present in low residual concentrations.
*Transitional limits, promulgated January 19, 1989.

SECTION II. PHYSICAL DATA

Physical Form: Solid
Color: Yellow to Red
Odor: None
Vapor Pressure/Vapor Density: N/A
Evaporation Rate: N/A

Freeze-Melt Point: Approximately 1500°F-2150°F (Cu 1980°F)
Density: 0.270-0.323 PSI
Specific Gravity: 7.50-9.00 (Copper 8.94)
Solubility in Water: N/A
Boiling Point: N/A

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SECTION III. FIRE AND EXPLOSION DATA

Flashpoint: N/A	**Auto-Ignition Temperature:** N/A	**Flammability Limits in Air:** N/A

Castings in the solid form will not burn or explode. Fine turnings or dust may ignite and should be stored in a well-ventilated area. In case of fire, use class "D" fire extinguishing agents, sand may also be used. Do not use water. Fire fighters should wear full protective clothing and where conditions warrant NIOSH-approved self-contained breathing apparatus, see sections IV and V.

SECTION IV. REACTIVITY DATA

Stability: Stable
Copper Alloys are stable under normal conditions of transport, use and storage.

SECTION V. HEALTH AND SAFETY DATA

The primary hazards associated with handling of these Copper based Alloys are exposure to Copper, Lead, Tin and Zinc compounds when: thermal cutting, saw cutting, melting, machining, grinding and handling these alloys. The work area should be carefully monitored to evaluate potential exposures to airborne elements contained in the alloys when they are handled. Castings from these Copper based Alloys in their natural state do not propose ingestion, contact and inhalation hazards. Primary routes of entry are inhalation of dust and fumes.

Copper:	Fumes may cause metal fume fever, with flu like symptoms and may also cause hair and skin discoloration. Dust and fumes may also cause upper respiratory irritation and a metal like taste, and maybe accompanied by nausea.
Lead Short-Term exposure:	Lead is an accumulative poison. Inhalation effects of exposure to fumes or dust of Lead may not develop quickly. Symptoms may include decreased physical fitness, fatigue, sleep disturbance, headache, aching bones and muscles, constipation, abdominal pains and decreasing appetite. The affects are reversible and complete recovery is possible. Inhalation of large amounts of lead may cause seizures, coma and death.
Lead Long-Term exposure:	Long-term exposure to lower levels can result in behavioral changes, kidney damage, central nervous system damage and reproductive system damage.
Iron:	Chronic overexposure to iron oxidefumes may cause an apparent benign pneumoconiosis, for iron it is called siderosis.
Tin:	Chronic overexposure to tin oxidefumes may cause an apparent benign pneumoconiosis, for tin it is called stannosis.
Zinc:	Overexposure to zinc oxide fumes can cause metal fume fever.
Nickel:	Contact with nickel may cause an allergic dermatitis known as "nickel itch" usually occurring when the skin is moist. No other symptoms or ailments are associated with nickel, though nickel and some nickel compounds have been identified as possible carcinogens
Cobalt:	Has a low toxicity by ingestion. Ingestion of soluble salts produces nausea and vomiting by local irritation. Locally, cobalt has been shown to produce dermatitis and investigators have been able to demonstrate a hypersensitivity of the skin to cobalt. There have been reports of hematologic, and pulmonary changes in humans.

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SECTION V. HEALTH AND SAFETY DATA (Continued)

Aluminum:	Inhalation of welding fumes may produce systemic toxicity.
Manganese:	Manganese fumes may cause metal fume fever with flu like symptoms. Over exposure to manganese fumes can cause chronic manganese poisoning, for which the central nervous system is the primary site affected.
Silicon:	Accumulation in the lungs can cause benign pneumoconiosis, but is not considered responsible for pulmonary functional impairment respiratory symptoms.

SECTION VI. EMERGENCY MEDICAL PROCEDURES

Inhalation:	Remove individual to fresh air and seek medical attention.
Eye contact:	Immediately flush affected eye with water to remove particles, seek medical attention.
Skin contact:	If irritation to the skin occurs wash affected area with soap and water, if irritation persists seek medical attention.
Ingestion:	If large amounts of metal are ingested, seek medical attention.

SECTION VII. PERSONAL PROTECTIVE INFORMATION AND CONTROL MEASURES

Use general and local exhaust ventilation to keep airborne concentrations of dust and fumes below TLV. Consult with local and state environmental agencies for air pollution control requirements.

Respiratory Protection:	Employees should wear MSHA or NIOSH approved respirators for protection against airborne dust or fumes.
Eye and Face Protection:	Approved safety glasses with side shields or goggles should be worn during cutting or grinding. Approved tinted face shield should be worn during welding or burning.
Other Clothing or Protection:	This will depend on the type of work being performed. Consult your shop safety regulations.
Hygiene:	Employees should vacuum clothing to remove any metal dust from clothing, wash hands and face prior to consuming any food or drink. Employees should not consume food or drink in the work areas. Consult the requirements of all applicable OSHA and environmental standards.

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SECTION VIII. SPILL OR LEAK PROCEDURE

No special precautions are necessary for spills of bulk material in the solid casting form. If large quantities of dust are spilled, consult with federal, state and local agencies for proper removal and disposal.

SECTION VIV. COMMENTS

Notice: This product contains a toxic chemical or chemicals, subject to the reporting requirements of section 313, Title III of SARA and of 40 CFR part 372.

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