

# MATERIAL SAFETY DATA SHEET

Hazardous Material as Defined in 29 CFR 1910.1200 OSHA Limit

## SECTION 1: COPPER ALLOY

CA-959 Aluminum Bronze

## SECTION 2: ELEMENTS

Chemical Exposure Limits

Alloying Elements 1% or Greater

Element	CAS Number	(1984-1985) OSHA Limit 8-hr TWA	ACGIH 8-hr TWA
Copper	(7440-50-8)	(Dust) 1.0 mg/m <sup>3</sup>	1.0 mg/m <sup>3</sup>
		(Fume) 0.1 mg/m <sup>3</sup>	0.2 mg/m <sup>3</sup>
Aluminum	(7429-90-5)		(Dust) 10.0 mg/m <sup>3</sup>
			(Fume) 5.0 mg/m <sup>3</sup>
Iron	(1309-37-1)		5.0 mg/m <sup>3</sup> (As iron oxide fume)
Nickel	(7440-02-0)	1.0 mg/m <sup>3</sup>	1.0 mg/m <sup>3</sup>

## SECTION 3: PHYSICAL DATA

Physical Form:	Solid
Boiling Point:	N/A
Freeze Melt Temperature:	1880° - 1900° F
Vapor Pressure:	N/A
Evaporation Rate:	N/A
Specific Gravity:	7.45
Density:	.269 lb/in <sup>3</sup>
Solubility in Water:	N/A
Color:	Yellow
Odor:	None

## SECTION 4: FIRE AND EXPLOSION DATA

Flashpoint: N/A Auto Ignition Temp: N/A  
Flammability Limits: N/A

In the solid form, there are no fire or explosion hazards with this alloy. Fine chips or dust may ignite and should be stored in a well-ventilated area. In case of fire, use extinguishing agents appropriate for the surroundings or materials. Dry chemicals or sand should be used to extinguish fires. Fire fighters should wear full protective clothing and where conditions warrant NIOSH-approved, self-contained breathing apparatus, see sections 6 and 7.

## SECTION 5: REACTIVITY DATA

Copper alloys are stable under normal conditions of transport, use, and storage.

## SECTION 6: HEALTH HAZARD DATA

Primary Routes of Entry: Inhalation of dust or fumes.

Under normal handling and use, exposure to the solid form of copper alloys presents few health hazards. Thermal cutting, melting, machining/grinding may produce fumes or dust containing the component elements, and breathing

these fumes or dust may present significant health hazards. The exposure limits in Section 2 are relevant to fumes and dust.

**COPPER:** Fumes of copper may cause metal fume fever with flu-like symptoms, and may cause skin and hair discoloration.

**IRON OXIDE:** Chronic overexposure to iron oxide fumes may cause an apparent benign pneumoconiosis. This is called siderosis.

**NICKEL:** Nickel dust and fumes can cause lung irritation, shortness of breath, coughing and wheezing.

## SECTION 7: SPILL OR LEAK PROCEDURES

No special precautions are necessary for spills of bulk material. If large quantities of dust are spilled, remove by vacuuming or wet-sweeping to prevent heavy concentrations of airborne dust. Cleanup personnel should wear respirators and protective clothing. Scrap metal can be reclaimed for reuse. Follow Federal, State, and Local regulations regarding disposal.

## SECTION 8: SPECIAL PROTECTION INFORMATION

Use general and local exhaust ventilation to keep airborne concentrations of dust and fumes below the TLV. When required, employees should wear OSHA- or NIOSH-approved respirators for protection against airborne dust or fumes. Approved safety glasses and/or goggles should be worn during any machining, grinding, cutting or other operation from which airborne particles may be emitted. Food or drink should not be consumed in the work area.

## SECTION 9: SPECIAL PRECAUTIONS

Use good housekeeping practices to prevent accumulations of dust and to keep airborne dust concentrations at a minimum. Avoid breathing dust or fumes. Store dust away from source of ignition.

**PLEASE FORWARD THIS DATA SHEET  
TO THE APPROPRIATE COMPANY  
SAFETY OFFICIALS!**