

Material Safety Data Sheet

Hazardous Material as Defined in 29 CFR 1910, 1200 OSHA Limit

I: Material Identification

Manufacturer: Maranatha Now, Inc. (d.b.a.: Atlas Bronze) **Date:** 10/06/2008
Address: 445 Bunting Ave.
Trenton, NJ 08611
Telephone: (609) 599-1402 / (800) 478-0887
Material Name: Copper base alloys, solid lubricant, Graphited bearings & wear plates
CDA Alloys: 360, 464, 614, 675, 863, 865, 903, 905, 923, 926, 927, 932, 937, & 954
Phenolic NEMA " C "

II: Hazardous Ingredients

Material	CAS #	%	OSHA 8 HR TWA	ACGIH 8 HR TWA
Aluminum	7429-90-5	0-11.5	None	10mg/ m3
Carbon-Graphite	7782-42-5	0-12	15mp/ ft3	2.5mg/ m3
Copper	7440-50-8	55-89	Dust-1mg/ m3	1 mg/ m3
Iron	1309-37-1	0-4.5	Fume=03 1mg/ m3 10mg/ m3 as Oxide Fume	0.2mg/ m3 5mg/ m3 as Oxide Fume
Lead	7439-92-1	0-24	0.050mg/ m3	0.15mg/ m3
Manganese	7439-96-5	0-5	Dust-5mg/ m3 Fume-none	Dust 5mg/ m3 Fume-1mg/ m3
Nickel	7440-02-0	0-2.5	1mg/ m3	1mg/ m3
Tin	7440-31-5	0-11	2mg/m3	2mg/ m3
Zinc	7440-66-6	0-40	Inorganic except as Oxides 5mg/ m3	5mg/ m3 fume

Phenolic NEMA " C ": this is a thermoset laminate consisting of a cured phenol-formaldehyde resin on a cellulose substrate. TLV has not been established by the ACGIH.

III: Physical Data

Melting Point (F): Not Applicable **Specific Gravity:** Not Applicable **Vapor Density:** Not Applicable
Vapor Pressure: Not Applicable **Solubility in Water:** Insoluble
% Volatile by Volume: Not Applicable **Evaporation Rate:** Not Applicable

Appearance: Copper Alloys- Gold, yellow, or reddish with black plugs and no odor.
Phenolic- Light tan to black color with a faint characteristic phenolic odor.

IV: Fire and Explosion Hazard Data

Flash Point: Not Applicable **Method Used:** Not Applicable **Extinguishing Media:** See Below
Flammable Limits: LEL-NA UEL-NA

Special Fire Fighting Procedures: Solid massive form is not combustible under normal conditions. Small chips, fine turnings, and dust may ignite readily. Use Class D extinguishing agents or dry sand on fires. DO NOT use halogenated agents on small chips or dust. Dust clouds may be explosive. Molten metal may explode on contact with water and may react violently with rust and certain metal oxides. Smoke and toxic fumes may be released from burning phenolic. Firefighters should wear self-contained breathing apparatus and protective clothing.

V: Health Hazard Data

Permissible exposure limits and threshold limit values: See Section II
Routes of Entry: Inhalation, Ingestion; skin-possible allergic reaction from phenolic.

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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.

Effects of Overexposure:

Aluminum: Dust and fumes are a low health risk and are normally treated as a nuisance dust. The AIHA Hygiene guide lists toxicity by ingestion as “ None Expected ”.

Carbon-Graphite: Prolonged inhalation of graphite dust may cause pulmonary fibrosis, emphysema, and corpulmonale.

Copper: Overexposure to fumes may cause metal fume fever with influenza like symptoms and discoloration of the hair and skin. (See Zinc)

Iron: Overexposure to iron oxide fumes may cause an apparent benign pneumoconiosis, which is called siderosis. This disease is reported not to be disabling.

Lead-Short Term Exposure: Lead is an accumulative poison. Inhalation or ingestion effects of fumes or dust of inorganic 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 effects are reversible and complete recovery is possible. Inhalation or ingestion of large amounts of lead may lead to seizures, coma and death.

Lead-Long Term Exposure: Long-term exposure can result in a build up of lead in the body and more severe symptoms. These may include; anemia, pale skin, a blue line at the gum margin, decreased handgrip strength, paralysis of the wrist joint, abdominal pain, severe constipation, nausea and vomiting. Prolonged exposure may also result in kidney damage. Continued exposure may result in decreased fertility and/ or increased chances of miscarriage or birth defects.

Manganese: Chronic manganese poisoning may result from inhalation or ingestion of dust or fumes. The Central Nervous System is the chief site of the injury. Chronic manganese poisoning is not a fatal disease, but can be disabling. Freshly formed manganese fumes can cause symptoms similar to metal fume fever. (See Copper, Zinc)

Nickel: The most common ailment arising from the contact with nickel or its compounds is an allergic dermatitis called “ Nickel Itch ” which usually occurs when the skin is moist. Generally, nickel and most salts of nickel do not cause systemic poisoning. IARC has determined that there is at least limited evidence that nickel and certain nickel compounds may be human carcinogens.

Tin: Overexposure to inorganic tin fumes or dust may cause an apparent benign pneumoconiosis called stannosis, which is reported not to be disabling.

Zinc: Zinc is relatively low it toxicity but inhalation of fumes may cause “ Metal Fume Fever ”. Onset of symptoms maybe delayed 4 – 12 hours and include irritation of the nose, mouth and throat, cough, stomach pain, headache, nausea, vomiting, metallic taste, chills, fever, pains in the muscles and joints, thirst, bronchitis or pneumonia and a bluish tint to the skin. These symptoms go away in 24 – 48 hours and leave no trace.

Emergency and First Aid Procedures:

Eye Contact: Flush well with running water to remove particulate. Get medical attention.

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Skin Contact: Vacuum off excess dust. Wash well with soap and water. Avoid blowing particulate into the atmosphere.

Inhalation: Remove to fresh air. Get medical attention.

Ingestion: Seek medical attention if material has been ingested.

VI: Reactivity Data

Stability: Stable under normal conditions of use, storage and transportation.

Conditions to Avoid: Molten metal may react violently with water. Avoid contact with finely divided material with heat, oxidizers, acids, alkalis, molten lithium, and halogenated compounds. Contact of dust or fumes with these substances may form explosive hydrogen gas.

Hazardous Decomposition or Byproducts:

Copper Alloys: Metal Fume

Phenolic: Carbon Dioxide (CO₂), carbon monoxide (CO), phenols, methane, aromatic hydrocarbons & formaldehyde.

Hazardous Polymerization: Will not occur.

VII: Precautions for Safe Handling and Use

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. Store material away from incompatible materials and keep dust from sources of ignition. Wash hands after handling. Practice good housekeeping procedures. Activities that generate dust or fume should be avoided. Do not permit smoking, eating or drinking while handling material. Practice good personal hygiene procedures.

VIII: Control Measures

Respiratory protection, ventilation, and local exhaust are required if dust or fumes are created in handling or working on this material. Protective gloves and eye protection are required for melt, grind, cut, or welding operations. Use ear protection if noise level is above 90 dBA. Always evaluate any alterations made on these products in accordance with OSHA or relevant state, federal, or local standards.

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