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1 of 2

WA ALLOY CO

MATERIAL SAFETY DATA SHEET (MSDS)
For Welding Consumables and related Products
Conforms to OSHA Hazard Communication Standard 29CFR 1910.1200
Standard Must Be consulted for Specific Requirements

SECTION 1 - IDENTIFICATION

Manufacturer/Supplier Name: Washington Alloy Company Telephone No. : 206-848-2230
Address: 9809 the Street East, Puyallup, WA 98373 Emergency No. : 206-848-2230
Trade Name: Silicon Bronze, Aluminum Bronze A1, A2, A3, Copper-Nickel-Aluminum Bronze, Deoxidized Copper, Nickel Silver(Bare & Flux Coated) Low Fuming Bronze (Bare & Flux coated).

SECTION II - HAZARDOUS MATERIALS

IMPORTANT: This Section covers the materials form which the product is manufactured. The fumes and gases produced during welding with the normal use of this product are covered under Section V.
*The term "HAZARDOUS MATERIALS" should be interpreted as a term required and defined in OSHA HAZARD COMMUNICATIONS STANDARD 29CFR 1910.1200 however the use of this term does not necessarily imply the existence of any hazard.

MATERIAL	CAS #	WEIGHT %	LD50	LC50
1 Copper	7440-40-8	44-97%	NA	NA
2 Zinc	7440-66-6	0-45	NA	NA
3 Iron	7439-86-6	0-1.5	NA	NA
4 MN	7439-95-5	0-1.5	NA	NA
5 Nickel	7440-02-6	0-13	NA	NA
6 Silicon	7440-21-3	0-3.5	NA	NA
9 Boric Acid	FC only	0-7	3450 mil/kg	NA
10 Borax Glass, Anhydrous	FC only	1303-96-4	2	
11 Acrylic copolymer (non-haz)	FC only	0-1		
12 Residual monomer (non regst)	FC only			
13 Tin	7440-31-5	0-1		

SECTION 111 - PHYSICAL/CHEMICAL CHARACTERISTIC

Boiling point: 760 MM HG: N.A. Specific Gravity @ 20 c/20: 8.3-8.5 g/cc Melting Point: 1600-1900
Appearance and Odor: The Product is silver or yellow to red solid at room temperature and exhibits no odor. The metallic rod is insoluble in water. Flux coating is white of pink or green. Slightly soluble in water.

SECTION IV - FIRE & EXPLOSION HAZARD DATA

Non-flammable. Welding arc and sparks can ignite combustible and flammable products. See ansiz 49.1 "Safety in welding & cutting" (referenced in section VII) for fire prevention and protection information. Media, never use water as an extinguishing agent around molten metal.
Unusual fire and explosion hazards: none but material may react with acids, bases, or oxidizers, material does not present a significant health hazard under normal handling and storage conditions.

SECTION V - REACTIVITY DATA

Hazardous decomposition products. Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded. The process, procedures, and electrodes used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being welded (such as paint, plating, of galvanizing) the number of welders and the volume of the work area, the quality and amount of ventilation, the position to the welder's head with resect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing activities) When the electrode is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in section II. Decomposition products of normal operation include those originating from the volatilization, reaction, of oxidation of the materials shown in section II, plus those from the base metal and coating, etc., as noted above. Primary routes of exposure are inhalation of fumes, gases of particulate and ingestion of particulate. Absorption through the skin in not likely. Chronic exposure to copper, zinc and manganese may cause metal fume fever. Symptoms of metal fume fever include fever, dryness of throat, head and body ache, and chill. Chronic exposure may affect central nervous system leading to emotional disturbances, gait and balance difficulties and paralysis. overexposure to copper may result in skin and hair discoloration. Nickel has been identified as a potential cancer causing agent. Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen may be formed by radiation from the arc. One recommended way to determine the quality and qualinty of fumes and gases to which the welder is exposed to take a sample inside the welder's helmet if worn or in the worker's breathing zone. See and/aws fl.I "method of sampling airborne particles." available from the American welding society, p.o. box 351040, Miami, FL 33135.

SECTION VI - HEALTH HAZARD DATA AND TOXICOLOGICAL PROPERTIES

Threshold limit value: The acgih 1984-85 recommended permissible limit for welding fume, not otherwise classified, is 5 mg/cubic meter. TLV-TWA. Fumes and gases can be dangerous to your health. Primary route of entry is by inhalation. Per-existing medical conditions: individuals with impaired respiratory function may symptoms worsened by exposure to welding fumes. Short term (acute) over-exposure to zinc vapors when heated form zinc oxide when inhaled can cause habituation which you become immune to. Long term (chronic) overexposure to welding fumes can lead to siderosis (iron deposits in lung) and affect pulmonary function. Arc rays can injure eyes and burn skin. Heat rays (infrared radiating from flame of hot metal) can injure eyes. Electric shock can kill. Noise can damage hearing. carcinogenic assessment: chromium and nickel must be considered a possible carcinogen under OSHA 29cfr1910.1200. Iarc has indicated that chromium and nickel & certain of its compounds are probably carcinogenic for humans, but the compounds cannot be specified precisely. these conclusions were drawn from operations different from welding. Regardless, exposure level must be kept below those levels specified in section II.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Read and understands the manufacturer's instructions and the precautionary label on the product. See American National Standard Z49.I. Safety in welding and cutting, published by the American welding society, p.o. box 351040, Miami, FL 33135; OSHA publication 2206 (29CFR1910), U.S. government printing office, Washington, D.C. 20402; for more details on many of the following:
VENTILATION: Use enough ventilation, local exhaust at the arc, or both, to keep the fumes and gases below TLV's in the worker's breathing zone and the general area. Train the welder to keep his head out of the fumes. Use respirable fume respirator or air supplied respirator when welding in confined space of where local exhaust of ventilation does not keep exposure below TLV. Select as per OSHA 29 CFR 1910.134.
EYE PROTECTION: Wear helmet of use face shield with filter lens. As a rule of thumb, start with a shade that is too dark to see the weld zone and then go the next lighter shade (see ansiz49.1). Provide protective screens and flash goggles, if necssary, to shield others.
PROTECTIVE CLOTHING: Wear hand, head and body protection which help to prevent injury from radiation, sparks, and electric shock. see ansiz49.1. At minimum this includes welder's glove and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. train the welder not to touch live electrical parts and to insulate himself from work and ground.

88970-88973

WASTE DISPOSAL: Discard may product, residue, disposable container or liner in an environmentally acceptable manner, in full compliance with Federal, State and Local regulations.

SECTION VIII - FIRST AID MEASURES

Call for medical aid. Employ first aid techniques recommended by the American Red Cross. If breathing is difficult, give oxygen. Call a physician. In case of electric shock, disconnect and turn off power. If not breathing, give artificial respiration, preferably mouth - to - mouth. If detectable pulse, begin external heart massage. immediately call a physician. In case of arc of flame burn, call a physician.

SECTION IX - PREPARATION INFORMATION

Prepared by integrity dept. , U.S. Alloy, Telephone 206-848-2230

U.S. Alloy requests the users of this product to study this material safety data sheet (MSDS) and become aware of product hazards and safety information. To promote safe use of this product a user should: 1) Notify its employees, agents, and contractors of the information on the MSDS and any product on this MSDS and any product hazards and safety information, 2) Furnish this same information to each of its customers for the product, and 3) Request such customers to notify their employees and customers for the product of the information presented here. The information in the MSDS was obtained from sources which we believe to be reliable. However, the information is provided without any representation or warranty, express of implied regarding the accuracy of correctness. The conditions of methods of handling, storage or use of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility for loss, damage or expense arising out of or in and way connected with the handling, storage, use of disposal of the product.