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 I - IDENTIFICATION

Manufacturer/Supplier: Washington Alloy Company	Telephone No: 704-598-1325
Address: 7010-G Reames Road, Charlotte, NC 28216	Emergency No: 704-598-1325
Trade Name: **Superflow**	Specification:
USA 0 (BCuP-2), USA 2 (BCuP-6), USA 5 (BCuP-3), USA 6 (BCuP-4), USA 15 (BCuP-5)	AWS A5.8
USA 2HP	Internal

SECTION II - HAZARDOUS MATERIALS

IMPORTANT: This section covers the materials from which the product is manufactured. The fumes and gases produced during welding/brazing 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 COMMUNICATION STANDARD 29 CFR 1910.1200 however the use of this term does not necessarily imply the existence of any hazard.

Ingredients	CAS No.	% Weight	Exposure Limit (mg/m^3)	
			OSHA PEL	ACGIH TLV
Copper(4)	7440-50-8	Bal.	0.1(fume) , 1 (dust)	0.2(fume) , 1 (dust)
Silver(4)	7440-22-4	0 - 15	0.01	0.1
Phosphourus(4)	7723-14-0	5 - 8	0.1	0.1

Single values shown are maximum (1) Flux coating on the flux coated rods, (1) Ceiling Limit, (Resp) = Respiratory/ Respiration. (4) Subject to reporting requirements of Section 304, 313 (302 Phosphorus only) of the Emergency Planning and Community Right-To-Know Act of 1986 and 40CFR 370 and 372
Short Term Exposure Limit (STEL) Values proposed by OSHA in 1989 **Short Term Exposure Limit

- NFPA HAZARD CLASSIFICATION
Health: 2* Flammable: 0 Reactivity: 0

- HMIS HAZARD CLASSIFICATION
Health: 2* Flammable: 0 Reactivity: 0

* Indicates the possibility of chronic health effects. See Chronic Health Hazards in Section VI.

SECTION III - PHYSICAL DATA

As shipped these are odorless, solid copper colored rods that are nonflammable, non-explosive, non-reactive and non –hazardous
Specific Gravity (H2O=1): 7.75
Melting Point: 636.9 ?C
% Solubility in Water: Insoluble
Odor: Odorless
Stability: Generally considered stable

SECTION IV – FIRE AND EXPLOSION HAZARD DATA

Non-Flammable: Welding arc and sparks can ignite combustibles. See Z-49.1 referenced in Section VI.

SECTION V – REACTIVITY DATA

Hazardous Decomposition Products

Welding/Brazing fumes and gases cannot be classified simply. The composition and quantity of these fumes and gases are dependent upon the metal being welded or brazed, the procedures followed and the product used. Workers should be aware that the composition and quantity of fumes and gases to which they may be exposed, are influenced by: coatings which may be present on the base metal (such as paint, plating, or galvanizing), the number of operators and the volume of the work area, the quality and amount of ventilation, the position of the workers head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing procedure). When the product is consumed, the fumes and gas decomposition products generated are different in percent and form from the ingredients listed in Section II. The composition of these fumes and gases are the concerning matter and not the composition of the electrode itself. Decomposition products include those originating from the volatilization, reaction, or oxidation of the ingredients shown in Section II, plus those from the base metal, coating and the other factors noted above.
Gaseous reaction products may include carbon monoxide and carbon dioxide. Reasonable expected fume constituents of this product would include: Complex oxides of copper, Silver, and Phosphorus
Ozone and nitrogen oxides may be formed by the radiation from the arc or flame.
One method of determining the composition and quantity of the fumes and gases to which the workers are exposed is to take an air sample from inside the welder's helmet while worn or within the worker's breathing zone. See ANSI/AWS F1.1 publication available from the American Welding Society 550 N.W. LeJeune Road, Miami, Florida 33126.

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SECTION VI– HEALTH HAZARD DATA

Threshold Limit Value: The ACGIH recommended general limit for welding fume NOC (Not otherwise classified) is 5 mg/m3. ACGIH-1985 preface states: "The TLC-TWA should be used as guides in the control of health hazards and should not be used as fine lines between safe and dangerous concentrations." See section V for specific fume constituents, which may modify this TLV.

Common Entry Is by Inhalation or Through the Eyes and Skin.

Effects of Overexposure: Inhalation of fumes and gases can be dangerous to your health. Short-term (acute) overexposure to fumes may result in discomfort such as dizziness, nausea, or dryness or irritation of nose, throat, or eyes. Inhalation of extremely high levels of fluorides may cause abdominal pain diarrhea, muscular weakness and convulsions. Continued inhalation could cause loss of consciousness and death. Evolved may cause skin and eye burns: pulmonary edema bronchitis. Prolonged overexposure to Phosphorus can cause gastrointestinal distress, garlic breath, necrosis and deformity of the jaw. Systemic effects such as cardiac, liver and kidney dysfunction may result due to prolonged inhalation of fumes. Prolonged or excessive exposure may result in argyria, a permanent localized blue-gray discoloration of the eyes, skin or mucous membranes. Arc Rays can injure eyes and burn skin. Electric shock can kill. See Section VII.

Emergency and First Aid Procedures: Call for medical assistance. Use first aid procedures recommended by the American Red Cross. If breathing is difficult – give oxygen. If not breathing-use CPR (cardiopulmonary resuscitation). Consult a physician if irritation of the eyes and skin or flash burns develops after exposure.

Carcinogenicity

OSHA (29 CFR 1910.1200) lists any possible carcinogen. NIOSH classifies brazing fumes as carcinogens.

California Proposition 65

These products may contain or produces chemicals known to the State of California to cause cancer, and/or birth defects (or other reproductive harm). (Health and Safety Code section 25249.5 et seq.)

SECTION VII – CONTROL MEASURES AND PRECAUTIONS FOR SAFE HANDLING AND USE

Read and understand the manufacturer's instructions and precautionary label on this product and your employer's safety practices. See American National Standard ANSI Z49.1 *Safety in Welding, Cutting and Allied Processes*, published by the AMERICAN WELDING SOCIETY, 550 N.W. LeJeune Road, Miami, Florida 33126;OSHA *Safety and Health Standards* are published by the U.S. Government Printing Office, 732 North Capitol Street NW, Washington, DC 20401 for more details on the following topics.

Ventilation: Use plenty of ventilation and/or local exhaust at the arc or work area, to keep the fumes and gases below the threshold limit value within the worker's breathing zone and the general work area. Welders and braziers should be advised to keep their head out of the fumes.

Respiratory Protection: Use respirable fume respirator or air supplied respirator when welding in a confined space or general work area where local exhaust and/or ventilation does not keep exposure below the threshold limit value.

Eye Protection: Wear a helmet or face shield with a filter lens appropriate for task. Shield other workers by providing screens and flash goggles.

Protective Clothing: Wear approved head, hand and body protection, which help to prevent injury from radiation, sparks and electrical shock. See ANSI Z-49.1. This would include wearing welder's gloves and a protective face shield and may include arm protectors, apron, hats, shoulder protection, as well as dark substantial clothing. Welders or operators should be trained not to allow electrically live parts to contract the skin or wet clothing and gloves. The operators should insulate themselves from the work and ground.

Waste Disposal Method: Discard any product, residue, disposal container, or liner in an environmentally acceptable manner approved by Federal, State and Local regulations.

Washington Alloy Co. believes that the information contained in this Material Safety Data Sheet (MSDS) is accurate. However, Washington Alloy Co. does not express or imply any warranty with respect to this information.

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