RMO®

Material Safety Data Sheet Date: May 18, 2005

I – Identification of the Substance and of the Company

SUPPLIER: RMO, Inc.
650 W. Colfax Ave.
Denver, CO 80204
303-592-8200

Trade Name and Synonyms – Cadmium Free Silver Solder
Description: Rectangular, Bar Strip, and Wire Silver Solder

Product Grade / Name:
CADMIUM FREE SILVER BRAZING ALLOY

II – Composition / Information on Ingredients

Product name	AWS A5.8	AMS	AG	CU	ZN	NI	SN	MN
SILVERBRAZ 56	BAg-7	4763	56	22	17		5	

III – Hazards Identification

Important: This section covers the materials from which the product is manufactured. The fumes and gases produced during brazing with normal use of this product are covered in Section X. Section I lists nominal composition of the brazing filler metals. The table below lists the exposure limits for hazardous decomposition products that may be present in fume generated during brazing. Actual exposure should be determined by monitoring fume in the operator's breathing zone.

Ingredient	CAS No.	PEL mg/m^3	TLV mg/m^3
Silver (Metal)	7440-22-4	0.01	0.1
Silver (Soluble)	7440-22-4	0.01	0.01
Copper (Dust)	7440-50-8	1.0	1.0
Zinc (Oxide)	1314-13-2	5.0	5.0 (Fume)
Tin (Oxide)	7440-31-5	2.0	2.0
Nickel	7440-02-0	1.0	1.0
Manganese (Fume asM)	7439-96-5	10	1.0

SARA Sections 313 Supplier Notification: Individual filler metals covered by this MSDS may contain the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and 40 CFR 372. Copper, Manganese, Nickel, Silver and Zinc. Refer to Section I of this MSDS for the filler metal name and the percent by weight, and the above table for the CAS number for each chemical.

One way to determine the composition and quantity of fumes and gases to which workers are exposed is to take an air sample in the workers breathing zone. See ANSI/AWS F1.1 available from the American Welding Society, 550 Laguna Rd. Miami FL, 33126.

Primary Route of Exposure: Inhalation of fume.

Pre-Existing Medical Conditions: Individuals with impaired pulmonary functions or illness my have symptoms exacerbated by fume irritants.

Possible Effects of Exposure: Copper and Zinc fume may cause fume fever. Short term symptoms may include a metallic taste in the mouth, dryness of irritation of the throat, followed by coughing, shortness of breath, nausea, fever, body ache, and chills. Long-term exposure to brazing fume, gasses, or dust may contribute to pulmonary irritation or pneumoconiosis. Nickel should be considered a possible carcinogen per OSHA 29 CFR 1910.1200. Certain nickel compounds have been implicated based on experience in some nickel refining operations. The specific compounds, however, have not been determined and direct association between nickel in welding fume and cancer has not been demonstrated.
Other Health Considerations: Brazing alloys are frequently used with a fluoride type flux. If applicable, flux fume should be considered in evaluation of hazards.
Without Nickel –Carcinogenicity NTP No / IARC Monographs No / OSHA Regulated No
With Nickel – Carcinogenicity NTP Yes / IARC Monographs No / OSHA Regulated No
The State of California requires the following information for products containing Nickel.
WARNING: This product contains a chemical known to the State of California that may cause cancer.

IV – First Aid Measures

Remove from dust or fume exposure. If breathing has stopped, perform artificial respiration. Summon medical aid immediately.

V – Fire Fighting Measures

(Nonflammable) Open flame and sparks can ignite combustibles. See ANSI/ASC 249.1 1983 Section 6.

VI – Accidental Release Measures

Spill or Leak Procedures: Remove by mechanical means.

VII – Handling and Storage

Use good housekeeping procedures to prevent accumulation of fumes, and dusts.

VIII – Exposure Controls / Personal Protection

Ventilation Requirements:

Use enough ventilation, local exhaust at the flame to keep the fumes and gases below TLV's in the worker's breathing zone and the general area. Train the employee to keep his/her head out of the fumes. See ANSI/ASC Z49.1 Section 5.

Personal Protective Equipment:

Respiratory Protection:

Use respirable fume respirator or air-supplied respirator when brazing in confined space or where local exhaust or ventilation does not keep exposure below TLV.

Eye Protection:

Wear safety glasses, goggles, or use face shield with filter lens of appropriate shade number (see ANSI/ASC Z49.1 Section 4.2). Provide protection screens and flash goggles, it necessary, to shield others.

Protective Clothing:

Wear head and body protection, which helps to prevent injury from heat radiation, sparks, and flame. See ANSI Z49.1. At a minimum this includes gloves and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing.

IX – Physical and Chemical Properties

The products are shipped as non-flammable, non-explosive and non-reactive solid metal materials.

X – Stability and Reactivity

Stability:

Unstable ( ) Stable (X)

Conditions to Avoid: Open flame and sparks.

Hazardous Decomposition Products:

Brazing fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being brazed, the process, procedures, and filler metals 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 brazed (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 operator's 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 activities). When the filler metal is consumed, the fume and gas decomposition products generated are different in percent and form from the solid wire or rod ingredients listed in Section I. Fume and gas decomposition products, and not the ingredients in the rod or wire are important. The concentration of a given fume or gas component may decrease or increase by many times the original concentration in the rod or wire. Also, new compounds not in the rod or wire may form. Decomposition products of normal operation include those originating from the volatilization reaction, or oxidation of the wire or rod plus those from the base metal and coating, etc., as noted.

NFPA HAZARD SIGNAL: Health: 1 / Stability: 0 / Flammability: 0 / Special: 0

XI – Toxicological Information

Copper and Zinc fume may cause fume fever. Short term symptoms may include a metallic taste in the mouth, dryness of irritation of the throat, followed by coughing, shortness of breath, nausea, fever, body ache, and chills. Long-term exposure to brazing fume, gasses, or dust may contribute to pulmonary irritation or pneumoconiosis. Nickel should be considered a possible carcinogen per OSHA 29 CFR 1910.1200. Certain nickel compounds have been implicated based on experience in some nickel refining operations. The specific compounds, however, have not been determined and direct association between nickel in welding fume and cancer has not been demonstrated.

Without Nickel –Carcinogenicity NTP No / IARC Monographs No / OSHA Regulated No

With Nickel – Carcinogenicity NTP Yes / IARC Monographs No / OSHA Regulated No

XII – Ecological Information

No ecological effects known.

XIII – Disposal Considerations

Follow Federal, State and Local Regulations regarding disposal.

XIV – Transportation Information

Technical Shipping Name: Not regulated
Freight Class Bulk: N/A
Freight Class Package: N/A
Product Label: N/A
Hazard Class or Division: Non-Hazardous
Hazard Class Division Number: Not Hazardous by D.O.T. Regulations

XV – Regulatory Information

These products are manufactured using Good Manufacturing Practices and are regulated as Class I Medical Devices by the U.S. Food and Drug Administration, Class II by the Canada CMDR, and Class IIa by the Medical Device Directive 93/42 EEC for the European Community.

XVI – Other Information

Note: While the information and recommendations set forth on this data sheet are believed to be accurate as received from our suppliers, RMO, Inc. makes no warranty with respect thereto and disclaims all liability from reliance thereon.