Paint RM

F:\QUALITY\DOCUMENT\TECHDATA\MSDS\MSDSCADB.DOC

Prince & Izant Co.

FOR CHEMICAL EMERGENCY CALL CHEMTREC (24 HRS):
1-800-424-9300 (U.S., Canada, Puerto Rico, Virgin Islands)
1-202-483-7616 (Outside Above Area)

Revision Date: 8/2000

Supplier: Prince & Izant Co.
Metal Joining Products
12999 Plaza Drive
Cleveland, OH 44130

MATERIAL SAFETY DATA SHEET SILVER BRAZING ALLOYS CONTAINING CADMIUM

CODE EI-1735

SECTION 1 – MATERIAL COMPOSITION

The following chart displays the product name and composition of Brazing Alloys covered by this Material Safety Sheet.

SILVER BRAZING ALLOYS WITH CADMIUM

			Nominal Composition %				
PRODUCT NAME	**AWS A5.8**	**AMS**	**AG**	**CU**	**ZN**	**CD**	**NI**
SILVERALOY 45	BAG-1	4769	45	15	16	24	
SILVERALOY 50	BAG-1a	4770	50	15.5	16.5	18	
SILVERALOY 35	BAG-2	4768	35	26	21	18	
SILVERALOY 30	BAG-2a		30	27	23	20	
SILVERALOY 25	BAG-27		25	35	26.5	13.5	
SILVERALOY 25 HC	BAG-33		25	30	29.5	17.5	
SILVERALOY 50 NI3 TRIMETAL 50 NI3	BAG-3	4771	50	15.5	15.5	16	3

SECTION 2- COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT	CAS NO.	% WT.
Cadmium	7440-43-9	16.0
Copper	7440-50-8	15.5
Silver	7440-22-4	50.0
Nickel	7440-02-0	3.0
Zinc (as oxide)	7440-66-6	15.5

INGREDIENT NOTES

F:\QUALITY\DOCUMENT\TECHDATA\MSDS\MSDSCADB.DOC

NOTE: The percentage by weight values reported for the ingredients in this product represents approximate formulation values.

NOTE: See section VIII for exposure limits and section XI for toxicological information.

SECTION 3 – HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Metallic wire, rod or strip
Odorless
Flash Point: Not Applicable

SUSPECT CANCER HAZARD
- Risk of cancer depends on route, duration and level of exposure.
- Harmful if inhaled or swallowed.
- May cause eye and skin irritation.
- Prolonged or repeated contact may result in argyria (discoloration) of the eyes, skin, respiratory tract or other mucous membranes.
- Prolonged or repeated exposure may cause liver and kidney damage.
- May cause eye and skin irritation.
- Not a fire or explosion hazard in solid form. Finely divided dust may ignite and burn rapidly when mixed with air in the proper proportions.
- Toxic metal fumes may be released in a fire situation.

ROUTES OF ENTRY

Eyes? YES Skin? YES Inhalation? YES Ingestion? YES

POTENTIAL HEALTH EFFECTS

EYE CONTACT may cause irritation.

SKIN CONTACT may cause irritation.

INHALATION may cause upper respiratory irritation. Individuals hypersensitive to NICKEL may develop asthma, bronchitis, and shortness of breath or wheezing.

INGESTION may cause COPPER poisoning.

NOTE : Inhalation of fumes may cause a flu-like illness called metal fume fever. Typically metal fume fever begins four to twelve hours after sufficient exposure to freshly formed fumes. The first symptoms are a metallic taste, dryness and irritation of the throat. Cough and shortness of breath may occur along with headache, fatigue, nausea, vomiting, muscle and joint pain, fever and chills. The syndrome runs its course in 24-48 hours.

NOTE: Health effects only apply if dust or fume is formed

CARCINOGENICITY

NTP? YES IARC? YES OSHA? YES

In evaluating CADMIUM and CADMIUM COMPOUNDS, the International Agency for Research on Cancer (IARC) has determined that there is sufficient evidence of carcinogenicity to experimental animals and limited evidence of carcinogenicity to humans (Group 2A). The Occupational Safety and Health Administration (OSHA) and the American Conference of Governmental Industrial Hygienists (ACGIH) considers all cadmium and cadmium compounds to be a suspect human cancer hazard (A2). The National Toxicology Program (NTP) lists only cadmium and certain cadmium carcinogenic. This product contains one of those cadmium compounds specifically identified by NTP.

NICKEL has been classified by both the International Agency for Research on Cancer (IARC) and the National Toxicology Program (NTP) as having sufficient evidence of carcinogenicity in experimental animals. In addition, IARC has determined that there is inadequate evidence of carcinogenicity in humans (Class 2B).

CHRONIC HEALTH HAZARDS

Refer to Potential Health Effects and Carcinogenicity.

Prolonged or excessive exposures may result in argyria, a permanent localized blue-grey discoloration of the eyes, skin or mucous membranes.

Repeated or long-term exposure to CADMIUM, even at relatively low concentrations, may result in kidney damage and increased risk of lung cancer.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

May adversely affect existing medical conditions, such as eye, skin, respiratory and blood disorders.

Individuals with Wilson's Disease are at increased risk of COPPER poisoning.

NOTE: See Section VIII for Exposure Limits, Section XI for Toxicological Information and Section XII for Ecological Information.

SECTION 4- FIRST AID MEASURES

EYE CONTACT: Flush eyes with plenty of water. If irritation develops, call a physician.

SKIN CONTACT: Flush with plenty of water. If irritation persists, call a physician.

INHALATION: If exposed to excessive levels of metal fumes, remove to fresh air and seek medical attention.

INGESTION: Procedures normally not needed. If large quantities are ingested, seek medical advice

SECTION 5 – FIRE-FIGHTING MEASURES

Flash Point: Not Applicable

Auto-Ignition: Not Applicable

LEL: Not Applicable
UEL: Not Applicable

NFPA HAZARD CLASSIFICATION

Health: 3 Flammable: 0 Reactivity: 0

HMIS HAZARD CLASSIFICATION

Health: 3* Flammable: 0 Reactivity: 0

*Indicates the possibility of chronic health effects. See Chronic Health Hazards in Section III for more information.

EXTINGUISHING MEDIA

Use carbon dioxide, chemical foam or dry chemical. Use any means for extinguishing surrounding fire.

SPECIAL FIRE FIGHTING PROCEDURES

Wear positive-pressure self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Not a fire or explosion hazard in solid form. Finely divided dust may ignite and burn rapidly when mixed with air in the proper proportions. toxic metal fumes may be released in a fire situation.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Contain spillage and scoop up or vacuum. Notification of the National Response Center (800-424-8802) may be required. Refer to EPA, DOT and applicable state and local regulations for current response information.

It is recommended that each user establish a spill prevention, control and countermeasure plan (SPCC). Such plan should include procedures applicable to proper storage, control and cleanup of spills, including reuse or disposal as appropriate (see section XI: Disposal Considerations).

**"NOTE" In the event of an accidental release of this material, the above procedures should be followed.

Additionally, proper exposure controls and personal protection equipment should be used (see Section VIII – Exposure Control/Personal Protection) and disposal of the material should be in accordance with section XI – Disposal Considerations.

SECTION 7- HANDLING AND STORAGE

Wash thoroughly after handling.
Store in a cool, dry location away from incompatible materials.
Avoid contact with and dusts, mists or fumes resulting from the use of this product..
Do not eat, drink, or smoke in work area.
Use only with adequate ventilation.

NOTE : Consult the most recent OSHA CADMIUM Standard (1910.1027) and its attachments, appendices, etc., for full requirements, some of which are not covered in this Material Safety Data Sheet.

SECTION 8- EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMITS

INGREDIENT	PEL-OSHA	TLV-ACGIH
CADMIUM CAS NO.: 7440-43-9	0.005 mg/m3 0.0025 mg/m3 ACTION LEVEL	0.01 mg/m3 (as Cd, total dust) 0.002 mg/m3 (as Cd, respirable Fraction)
COPPER CAS NO.: 7440-50-8	0.1 mg/m3 (Fume) 1 mg/m3 (Dust)	0.2 mg/m3 (Fume) 1 mg/m3 (Dust)
SILVER CAS NO.: 7440-22-4	0.01 mg/m3	0.1 mg/m3
NICKEL CAS NO.: 7440-02-0	1 mg/m3	1 mg/m3

INGREDIENT	PEL-OSHA	TLV-ACGIH
ZINC (AS OXIDE) CAS NO.: 7440-66-6	10 mg/m3 (Total dust) 5 mg/m3 (Respirable fraction) 5 mg/m3 (Fume) 10 mg/m3 (Fume) STEL	5 mg/m3 (Fume) 10 mg/m3 (Fume) STEL 10 mg/m3 (Total dust)

Unless otherwise noted, all values are reported as 8-hour Time-Weighted Averages (TWAs) and total dust (particulates only). All ACGIH TLVs refer to the 1992-1993 Standards. All OSHA PELs refer to 29 CFR Part 1910 Air Contaminants: Final Rule, January 19, 1989.

NOTE: As a result of the July 7, 1992 decision by the U.S. Circuit Court of Appeals (AFL-CIO v. OSHA) to vacate the 1989 PELs, OSHA will no longer enforce these new limits and will return to the pre-1989 PELs.

NOTE: The hazards of all ingredients of this product are not known, however exposure is not expected as the product is in solid form. The threshold limit values (TLVs) and potential health effects statements are listed for ingredients of the product for which data is available. However, these statements may not be applicable as the ingredients are in solid form. If dust, powder, or fume is generated then TLVs and effects of overexposure statements will be applicable.

RESPIRATORY PROTECTION

A NIOSH/MSHA approved respirator is recommended if dust is generated.

VENTILATION

General; local exhaust ventilation as necessary to control any air contaminants to within their PELs or TLVs during the use of this product.

PROTECTIVE EQUIPMENT

Refer to ANSI/ASC Z49.1-88 (Safety in Welding and Cutting) published by the American Welding Society for further information of the selection of personal protective equipment.
Safety glasses (with side shields). Body protection as necessary to prevent skin contact.

PERSONNEL SAMPLING PROCEDURE

For METALLIC COMPONENTS: Refer to NIOSH Manual of Analytical Methods, 3rd Edition, Volume 1, Method 7300.

SECTION 9- PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: Not determined
Specific Gravity (H2O=1): 9.49
Melting Point: 625.9 C
Vapor Pressure (mm Hg): Not applicable
Vapor Density (Air=1): Not applicable
Evaporation Rate (Butyl Acetate=1): Not applicable
% Solubility in Water: Insoluble
Appearance: Metallic wire, rod or strip
Odor: Odorless
PH: Not applicable

SECTION 10- STABILITY AND REACTIVITY

Stability: Generally considered stable.
Avoid: None expected.

INCOMPATIBILITY (Materials to Avoid)

Strong acids and bases, strong oxidizers, acetylene, ammonia, hydrogen peroxide, magnesium metal, halogens, ammonium nitrate, hydrogen sulfide, elemental sulfur, selenium, tellurium, chlorinated rubber, fluorine, performic acid, phosphorus.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS

Toxic metal oxides are emitted when heated above the melting point. The amount of fume evolved increases as the temperature rises.

Polymerization: Polymerization is not expected to occur.

Avoid: Not applicable.

F:\QUALITY\DOCUMENT\TECHDATA\MSDS\MSDSCADB.DOC

SECTION 11- TOXICOLOGICAL INFORMATION

CHEMICAL NAME	% Wt.	LD50	LC50
CADMIUM CAS NO.: 7440-43-9	16.0	225 mg/kg RAT, oral	Not available
COPPER CAS NO.: 7440-50-8	15.5	3.5 mg/kg MOUSE, Intraperitoneal	Not available
SILVER CAS NO.: 7440-22-4	50.5	Not available	Not available
NICKEL CAS NO.: 7440-02-0	3.0	Not available	Not available

CHEMICAL NAME	% Wt.	LD50	LC50
ZINC (AS OXIDE) CAS NO.: 7440-66-6	15.5	7,950 mg/kg MOUSE, oral	2,500 mg/kg MOUSE

NOTE: See Sections III, VIII and XII for additional information.

SECTION 12- ECOLOGICAL INFORMATION

ECOTOXICITY

No data available.

ENVIRONMENTAL FATE

No data available.

SECTION 13- DISPOSAL CONSIDERATIONS

US EPA Waste Number: D006/D011

This product may be a hazardous waste under EPA waste regulations (see EPA WASTE above). Before disposal, this product or mixture containing this product should be tested for toxicity characteristics (TC) under the current EPA Hazardous Waste Regulations TCLP testing procedures, 40 CFR Part 261 et seq. Disposal/recycling/reclamation requirements will vary by location and type of disposal selected. Consult with state and local regulatory authorities.

NOTE Chemical additions, processing or otherwise altering this material may make the waste management information presented above incomplete, inaccurate or otherwise inappropriate.

As local regulations may vary; all waste must be disposed/recycled/reclaimed in accordance with federal, state, and local environmental control regulations.

F:\QUALITY\DOCUMENT\TECHDATA\MSDS\MSDSCADB.DOC

SECTION 14- TRANSPORT INFORMATION

INTERNATIONAL
UN Number: Not regulated

UNITED STATES
EPA Waste number: D008/D011
DOT Classification: Not regulated

CANADA
PIN Number: Not regulated
TDG Class: Not regulated

EC
DGL: Not determined

SECTION 15- REGULATORY INFORMATION

US FEDERAL REGULATIONS

TSCA: IN TSCA

SARA 311 AND 312 HAZARD CATEGORIES

IMMEDIATE (Acute) Health Hazard: YES
DELAYED (Chronic) Health Hazard: YES
FIRE Hazard: NO
REACTIVITY Hazard: NO
Sudden release of PRESSURE: NO

SARA SECTION 313 NOTIFICATION

This product contains a toxic chemical (or chemicals) subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

CHEMICAL NAME	CAS NUMBER	%Wt.
CADMIUM	7440-43	16.0
COPPER	7440-50-8	15.5
SILVER	7440-22-4	50.0
NICKEL	7440-02-0	3.0
ZINC (AS OXIDE)	7440-66-6	15.5

OZONE DEPLETING SUBSTANCES (ODS)

F:\QUALITY\DOCUMENT\TECHDATA\MSDS\MSDSCADB.DOC

This product neither contains nor is manufactured with an ozone depleting substance subject to the labeling requirements of the Clean Air Act Amendments 1990 and 40 CFR Part 82.

VOLATILE ORGANIC COMPOUNDS (VOC)

None

US STATE REGULATIONS

CALIFORNIA: The State of California has a regulation (Proposition 65) which identifies specific chemicals known to the State of California to cause cancer or birth defects. Proposition 65 requires a disclosure for products sold within the State of California containing an identified chemical. The following information is required by the State of California for this product:

*This product contains chemicals known to the State of California to cause cancer.

VOLATILE ORGANIC COMPOUND (CARB): Not determined

CANADIAN REGULATIONS

DSL/NDSL: Not determined
WHMIS Classification: Not determined

EUROPEAN REGULATIONS

EINECS: Not determined

OTHER REGULATIONS

MITI: Not determined

AICS: Not determined

SECTION 16- OTHER INFORMATION

REVISIONS

Revision Number: 4
This MSDS has been revised in the following section (s):

SECTION VIII: EXPOSURE CONTROLS/PERSONAL PROTECTION
SECTION XV: REGULATORY INFORMATION

PREPARATION INFORMATION

Prepared By: Corporate Environment, Health & Safety Group
Phone Number: See Section I

The information in this Material Safety Data Sheet should be provided to all that will use, handle, store, transport, or otherwise be exposed to this product. This information has been prepared for the guidance of plant engineering, operations, and management and for persons working with or handling this product. The

F:\QUALITY\DOCUMENT\TECHDATA\MSDS\MSDSCADB.DOC

Information presented in the MSDS is material without chemical additions/alterations. We believe this information to be reliable and up-to-date as of the date of publication, but make no warranty that it is. Additionally, if this Material Safety Data Sheet is more than three years old, please contact The Prince & Izant Company for the latest revision at (216) 362-7000.

The information and recommendations contained in this publication have been compiled from sources believed to be reliable and to represent the best information on the subject at the time of issue. No warranty, guarantee, or representation is made by the Prince & Izant Company, Inc. as to the absolute correctness or sufficiency of any representation contained in this and other publications; Prince & Izant Company, Inc. assumes no responsibility in connection therewith; nor can it be assumed that all acceptable safety measures are contained in this (and other publications), or that other or additional measures may not be required under particular or exceptional conditions or circumstances.