MATERIAL SAFETY DATA SHEET

Aladdin #255 Soldering Paste

DATE REVISED: June 1, 2011

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Product name: BURNLEY SOLDERING PASTE
Product use: Solder paste flux
Chemical family: Mixture

WHMIS CLASS: D1B, E

HMIS Rating:
* - Chronic hazard 0 – Minimal 1 – Slight 2 – Moderate 3 – Serious 4 - Severe
Health: *3 Flammability: 1 Reactivity: 1

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SECTION II - INGREDIENTS

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Ingredients	CAS#	wt.%	LC_{50} / 4hrs (Rat, ihl.)	LD_{50} mg/kg (Rat,oral)	LD_{50} mg/kg (Rabbit,dermal)
Petrolatum	8009-03-8	60-100	N/Av	N/Av	3600
Zinc chloride	7646-85-7	15-40	N/Av	350	N/Av

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SECTION III - PHYSICAL DATA

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Odor and appearance: Light brownish to white paste, with a slight petroleum odor
Odor threshold: N/Av
Specific gravity: 0.87 @ 15.6°C / 60°F
Freezing / melting point: 35°C / 95°F
Vapor pressure (mm Hg): N/Av
Evaporation rate (n-Butyl acetate = 1): N/Av
Coefficient of water/oil distribution: N/Av
Solubility in water: Insoluble.
pH: N/Av
Boiling point: N/Av
Vapor density (Air = 1): N/Av
Volatiles, %**:** N/Av
Viscosity: N/Av

SECTION IV - FIRE AND EXPLOSION DATA

Conditions of flammability: Not considered flammable, however may be ignited by extreme heat and flame.
Flash point (Method): 182 – 221°C / 360 – 430°F (TCC)
Auto-ignition temperature: N/Av
Upper flammable limit %: N/Av
Lower flammable limit %: N/Av
Means of extinction: Dry chemical, alcohol foam, carbon dioxide. Do not use water jet, as this may spread burning material.
Sensitivity to mechanical impact/static discharge : Not expected to be sensitive.
Special Fire Fighting Procedures: Fire fighters should wear proper full protective equipment and self-contained breathing apparatus. Move containers from fire area if it can be done without risk. Water spray may be ineffective. Water spray may only be useful in cooling equipment and containers exposed to heat and flame.
Unusual fire and explosion hazards: Product will float and can be re-ignited at the water's surface. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.
Hazardous Combustion Products: Carbon oxides, hydrogen chloride gas and other irritating fumes and smoke.

SECTION V - REACTIVITY DATA

Stability: Stable under the recommended storage and handling conditions prescribed. Hazardous polymerization will not occur.
Incompatible materials: Strong oxidizers (e.g. Chlorine, Peroxides, etc.), potassium, turpentine, cyanide, sulfides, powdered zinc.
Conditions of reactivity: Stable under ambient pressure and temperature. Avoid extreme heat and direct flame.
Hazardous decomposition products: None known. Refer to Section IV for "Hazardous combustion products".

SECTION VI - TOXICOLOGICAL PROPERTIES

**** Routes of exposure and acute effects ****

Exposure limit: ACGIH-TLV: Zinc chloride - 1 mg/m^3 (fume)(TWA); 2 mg/m^3 (fume)(STEL).
OSHA-PEL: Zinc chloride - 1 mg/m^3 (fume).
Routes of exposure: Skin contact, eye contact, inhalation and ingestion.
Irritancy of Product: Severe to corrosive.
Inhalation: Breathing dusts or fumes may be harmful or fatal. Inhalation fumes may results in metal fume fever, a flu-like illness. Symptoms of metal fume fever may include headache, chills, fever, sweating and pain in the legs and chest. Inhalation of dusts may cause severe irritation and possibly lung injury (pneumonitis, pulmonary edema).
Skin: May cause redness, severe irritation and corrosive burns.
Eyes: May cause immediate pain and corrosive damage.
Ingestion: Harmful or fatal if swallowed. May cause severe irritation to mouth, throat and stomach. Symptoms may include nausea, vomiting, a burning sensation, pain, convulsions, coma and possibly death.
Chronic effects : Prolonged or repeated skin contact may cause severe drying and cracking of the skin (dermatitis).
Carcinogenicity : None of the ingredients are classified as carcinogenic by IARC or ACGIH.
Reproductive effects, Teratogenicity, Mutagenicity : None known.
Sensitization to Product : None known.
Synergistic Materials: N/Av
Conditions aggravated by exposure: Pre-existing skin and respiratory disorders
Additional Information : Pre-employment medical evaluations are recommended for large users of this product. Attention should be directed to skin, eyes, respiratory tract and pulmonary function. Periodic medical examinations should be repeated on an annual basis for those employees exposed to potentially hazardous levels of this product.

SECTION VII FIRST AID

Inhalation: Immediately remove victim to fresh air. Obtain medical attention immediately .
Skin: Immediately remove contaminated clothing and shoes. Flush skin with gently flowing water, for at least 20 minutes. Obtain medical attention immediately. Launder clothing before re-use.
Eyes: Immediately flush eyes thoroughly with water for at least 20 minutes. Obtain medical attention immediately.
Ingestion: Do NOT induce vomiting. Have victim rinse mouth with water, then give one to two glasses water to drink. Obtain medical attention immediately. Never give anything by mouth to an unconscious person.

SECTION VIII - PREVENTIVE MEASURES

Spill, leak or release: Clean-up personnel should wear appropriate chemically protective equipment and respiratory protection. Eliminate all sources of heat and flame. Ventilate area of release. If material is in paste form, scrape up into suitable containers. If material is in dust form, clean up using dustless methods (for example, HEPA vacuum). Do not use compressed air. Place any recovered material in closed, labeled containers for recycling or disposal (see below). Keep out of waterways. Notify the appropriate authorities as required.
Other procedures : For large product users or spills involving large quantities, it is recommend that the purchaser establish a spill prevention, control and countermeasure plan. This plan should include procedures for proper storage, as well as clean-up of spills or leaks. The procedure should conform to safe practices and provide for proper recovery and/or disposal.
Waste disposal: Handle according to recommendations listed below. Review federal, provincial and local government requirements prior to disposal. May have value on a recycled basis. Dispose in accordance with all applicable government regulations.

*** PROTECTIVE EQUIPMENT ***

Respiratory protection: For prolonged exposure or if the TLV is exceeded, wear NIOSH-approved respirators.
Ventilation: Use in well ventilated area. Use general ventilation (refer to "Industrial Ventilation, a Manual of Recommended Practice", by ACGIH) for prolonged exposures or if the TLV is not known.
Protective gloves: Gloves impervious to the material must be worn. Advice should be sought from glove suppliers.
Eye protection: Safety goggles, to prevent product from entering the eyes. Safety glasses or goggles AND a full face shield are recommended around molten metal.
Other protective equipment: An eye wash station and safety shower should be made available in the immediate working area. Other equipment, including chemically resistant apron, may be required according to workplace standards.

*** STORAGE & HANDLING ***

Storage and handling conditions:
Handling: Wear appropriate chemically protective equipment. Use in a well ventilated area. Avoid inhalation and ingestion of product, and activities that generate dust or fume. Avoid contact with skin, eyes, and clothing. Keep melting temperatures as low as possible to minimize the generation of fumes. NOTE : Inadvertent contaminants to product, such as moisture, ice, snow, grease or oil can cause an explosion when charged to a molten metal bath or melting furnace. (Preheating metal will remove moisture from product). Keep away from oxidizing materials and incompatibles. Use caution when opening cap. Keep container closed when not in use. Wash thoroughly after handling.
General hygiene considerations: Avoid inhalation of vapours, fumes, and dusts. Avoid contact with eyes, skin and clothing. Do not permit eating, drinking or the use of cosmetics or tobacco products while handling or processing material, or in product work areas. Practice good personal hygiene procedures. Wash hands and face thoroughly before eating, drinking, applying cosmetics or using tobacco products. Remove soiled clothing and wash it thoroughly before reuse.
Storage: Store in a cool, dry, well-ventilated area away from incompatibles (see Section V), heat and flame. Practice good housekeeping procedures to prevent accumulation of dust or refuse. Keep material dry.

Special Shipping Information – Transportation of Dangerous Goods Regulations (TDGR):

Proper Shipping Name: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Zinc chloride)
Un No.: UN3260
Primary Class(es): 8
Subsidiary Class(es): None
Packing Group: III

Other Shipping Information: Within Canada, the "Limited Quantity Exemption" may apply for containers which hold 5 kilograms or less of the product. Under the TDGR, refer to Section 1.17 for additional "Limited Quantity Exemption" requirements, if shipping under this exemption.

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SECTION IX - ADDITIONAL INFORMATION

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Additional notes or references:

Legend:

ACGIH: American Conference of Governmental Industrial Hygienists
NIOSH: National Institute of Occupational Safety and Health
IARC: International Agency for Research on Cancer
OSHA: Occupational Safety and Health Administration
RTECs: Registry of Toxic Effects of Chemical Substances
PEL: Permissible Exposure Limit
WHMIS: Workplace Hazardous Materials Information System
HMIS: Hazardous Materials Identification System
CAS: Chemical Abstract Service
N/Av: not available
N/Ap: not applicable
STEL: Short Term Exposure Limit
TLV: Threshold Limit Values
TCC: Tag Closed Cup

References:

1. ACGIH, Threshold Limit Values and Biological Exposure Indices for 2005.
2. International Agency for Research on Cancer Monographs, 2005.
3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2005 (Chempendium and RTECs).
4. Material Safety Data Sheet from Manufacturer.