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## Material Safety Data Sheets For Multi Walled Heat Shrink Tubing - Colors

DOCUMENT: 58238 (Rev. 2)

ISSUED: January 6, 2011

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1. INGREDIENT	C.A.S. NUMBER	PERCENT
Adhesive Lined Polyolefin Tubing	Unknown	100

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### 2. PHYSICAL DATA

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BOILING POINT:	N/A
VAPOR PRESSURE:	N/A
VAPOR DENSITY:	N/A
EVAPORATION RATE:	N/A
SOLUBILITY IN WATER:	N/A
SP. GRAVITY:	1:0
PERCENT VOLATILE:	N/A
PH:	N/A
VISCOSITY:	N/A
MELTING POINT:	N/D
APPEARANCE AND ODOR:	Tubing, various sizes, colors

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### 3. FIRE AND EXPLOSION HAZARD DATA

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FLASH POINT:	N/A
FLAMMABLE LIMITS – LEL:	N/A
FLAMMABLE LIMITS – UEL:	N/A
AUTOIGNITION TEMPERATURE:	N/D

#### EXTINGUISHING MEDIA:

Carbon dioxide, dry chemical, foam

#### SPECIAL FIRE FIGHTING PROCEDURES:

Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

#### UNUSUAL FIRE AND EXPLOSION HAZARDS:

None known.

#### NFPA HAZARD CODES:

Health: 0 Fire: 0 Reactivity: 0

#### UNUSUAL REACTION HAZARD:

None.

#### OSHA FIRE HAZARD CLASS:

Not applicable.

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**4. REACTIVITY DATA**

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**STABILITY:**

Stable.

**INCOMPATIBILITY – MATERIALS TO AVOID:**

None known.

**HAZARDOUS POLYMERIZATION:**

Will not occur.

**HAZARDOUS DECOMPOSITION PRODUCTS:**

Carbon Monoxide and Carbon Dioxide, Oxides of Sulfur, Aldehydes, Toxic Vapors, Gases or Particulates.

Heating product beyond temperature recommended by instruction sheet may cause release of the following compounds: Benzene, Toluene, Formaldehyde, Acetaldehyde, Acetic Acid and Vinyl Acetate.

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**5. ENVIRONMENTAL INFORMATION**

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**SPILL RESPONSE:**

Not applicable.

**RECOMMENDED DISPOSAL:**

Dispose of waste product in a sanitary landfill.

**ENVIRONMENTAL DATA:**

No data available.

**REGULATORY INFORMATION:**

Volatile Organic Compounds: N/A  
VOC less H<sub>2</sub>O & Exempt Solvents: N/A

Since regulations vary, consult applicable regulations or authorities before disposal.

**EPCRA HAZARD CLASS:**

**FIRE HAZARD:** No  
**PRESSURE:** No  
**REACTIVITY:** No  
**ACUTE:** No  
**CHRONIC:** No

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### 6. SUGGESTED FIRST AID

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**EYE CONTACT:**

Immediately flush eyes with large amounts of water. Get immediate medical attention.

**SKIN CONTACT:**

Immediately flush affected area with plenty of cold water and cover with a clean dressing. DO NOT ATTEMPT TO REMOVE MOLTEN MATERIAL. Have burn treated by a physician.

**INHALATION:**

If signs/symptoms occur, remove person to fresh air. If signs/symptoms continue, call a physician.

**IF SWALLOWED:**

Drink two glasses of water. Call a physician.

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### 7. PRECAUTIONARY INFORMATION

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**EYE PROTECTION:**

AVOID EYE CONTACT WITH VAPORS OR SMOKE RESULTING FROM OVERHEATING OR WHEN USED IN CONFINED AREAS.

**SKIN PROTECTION:**

Avoid skin contact with hot material. Wear appropriate gloves, such as Nomex, when handling this material to prevent thermal burns.

**VENTILATION PROTECTION:**

Local exhaust is required for operations using large amounts of material. Conduct air monitoring to determine adequacy of ventilation. Use in a well-ventilated area. Provide sufficient ventilation to maintain emissions below recommended exposure limits. If exhaust ventilation is not adequate, use appropriate respiratory protection.

WHEN USING THIS PRODUCT IN A CONFINED SPACE OR WHERE VENTILATION MAY BE INADEQUATE THEN RESPIRATORY PROTECTION MAY BE WORN. INADEQUATE VENTILATION OR CONFINED SPACES WOULD CAUSE VAPORS FROM HEATING OF THIS PRODUCT TO BE PRESENT IN THE USER'S BREATHING ZONE AND MAY CAUSE RESPIRATORY IRRITATION. EXCESSIVE HEATING OF THIS PRODUCT BEYOND THE RECOMMENDED APPLICATION TEMPERATURE OF 275 DEGREES FAHREHEIT IS NOT RECOMMENDED AND MAY RESULT IN THERMAL DEGRADATION AND DECOMPOSITION PRODUCTS WHICH MAY RESULT IN ADVERSE HEALTH EFFECTS.

**RESPIRATORY PROTECTION:**

Avoid breathing of fumes. Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: Half-mask organic vapor respirator with dust/mist prefilter.

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**7. PRECAUTIONARY INFORMATION (continued)**

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**PREVENTION OF ACCIDENTAL INGESTION:**

Wash hands after handling and before eating.

**RECOMMENDED STORAGE:**

Store at room temperature. Keep out of reach of children.

**FIRE AND EXPLOSION AVOIDANCE:**

Not applicable.

**EXPOSURE LIMITS:**

<b>INGREDIENTS:</b>	Adhesive Lined Polyolefin Tubing	<b>TYPE:</b>	None
<b>VALUE:</b>	None	<b>AUTH:</b>	None
<b>UNIT:</b>	None	<b>SKIN:</b>	*

\* **SKIN NOTATION:** Listed substances indicated with "Y" under SKIN refer to the potential contribution to the overall exposure by the cutaneous route including mucous membrane and eye, either by airbourne or more particularly, by direct contact with the substance. Vehicles can alter skin absorption.

**SOURCE OF EXPOSURE LIMIT DATA:**

AIHA: American Industrial Hygiene Assoc. Workplace Environmental Exposure  
Level  
None: None established.

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**8. HEALTH HAZARD DATA**

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**EYE CONTACT:**

Vapors from heated material may cause eye irritation.

**SKIN CONTACT:**

Skin burns (thermal, from contact with hot material): signs/symptoms can include burning pain, red and swollen skin and blisters.

**INHALATION:**

Vapors of heated material may cause respiratory system irritation.

RESPIRATORY IRRITATION WOULD NOT BE EXPECTED IN APPLICATIONS WHERE ADEQUATE VENTILATION AND PROPER APPLICATION (AT DESIGNATED TEMPERATURES) IS UTILIZED. EXCESSIVE HEATING AND INADEQUATE VENTILATION MAY RESULT IN EXPOSURE TO THERMAL DEGRADATION AND DECOMPOSITION PRODUCTS AS INDICATED IN SECTION 4 OF THIS MSDS UNDER "REACTIVITY DATA-HAZARDOUS DECOMPOSITION PRODUCTS".

**IF SWALLOWED:** Ingestion is not a likely route of exposure to this product.

## Material Safety Data Sheets For Solder

DOCUMENT: 58311

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### SECTION I. GENERAL INFORMATION

PRODUCT NAME (NUMBER)	Flux-Coated and Flux Filled Solder Preforms (Types R, RMA, RA) Wire Core Solder
CHEMICAL FAMILY	Solder
D.O.T. HAZARD CLASS	Not regulated

### SECTION II. HAZARDOUS INGREDIENTS

INGREDIENTS		GAS NUMBER	WEIGHT PERCENT	OSHA PEL	ACGIH TLV
Lead	} Product contains	7439-92-1	*	0.05 mg / cum	0.05 mg / cum
Tin	} one or more of	7440-31-5	*	2.0 mg / cum	2.0 mg / cum
Silver	} these metallic	7440-22-4	*	0.01 mg / cum	0.1 mg / cum
Bismuth	} elements in varying	7440-69-9	*	NE	NE
Antimony	} percentages.	7440-36-0	*	0.5 mg / cum	0.5 mg / cum
Indium	}	7440-74-6	*	NE	0.1 mg / cum
Rosin		8050-09-7	0.5 - 4.0	NL	0.10 mg / cum

\* WEIGHT PERCENT Composition of solder alloys vary widely therefore no weight percent or specific gravity is given. (See product label for alloy composition.) (96 – 99.5% alloy).

### SECTION III. PHYSICAL DATA

(PUBLISHED OR ESTIMATED VALUES)

BOILING POINT Deg. F. (760 mm Hg)	N/A	SPECIFIC GRAVITY (H <sub>2</sub> O=1)	See Sec. X
VAPOR PRESSURE (mm Hg at 20 Deg. C.)	N/A	%VOLATILE BY WEIGHT EVAPORATION RATE	N/A N/A
VAPOR DENSITY (AIR=1)	N/A		
SOLUBILITY IN WATER	Insoluble	pH	N/A
APPEARANCE AND ODOR	Silver-gray metal, odorless, various shapes and sizes		

### SECTION IV. FIRE AND EXPLOSION HAZARD DATA

ESTIMATED FLAMMABLE LIMITS (% By Volume in Air)	LEL: N/A	UEL: N/A
FLASH POINT Deg. F	None	
EXTINGUISHING MEDIA	N/A	
SPECIAL FIRE FIGHTING PROCEDURES	Use NIOSH approved self-contained breathing apparatus and full protective clothing if involved in a fire.	
UNUSUAL FIRE AND EXPLOSION HAZARD	When heated to high temperatures lead emits highly toxic fumes.	

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**FLUX COATED AND FLUX-FILLED SOLDER (TYPES R, RMA, RA) WIRE CORE SOLDER**

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**SECTION V. (A) HEALTH HAZARD DATA (Symptoms/Effects of Overexposure)**

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**INHALATION** When heated to molten state rosin fume can cause respiratory irritation, dizziness, headache. For overexposure to lead, tin, silver, bismuth, antimony and indium fume at soldering temperature see Sec. X.

**INGESTION** Essentially non-hazardous at room temperature. (NOT likely to occur).

**SKIN** Molten preform solder can cause burns. Repeated exposure to rosin fume may cause a skin rash.

**EYES** Molten flux can cause eye burn. Fume can cause eye irritation.

**LISTED CARCINOGENS** None of the metal elements of this product are confirmed as human carcinogens at this time by NTP, IARC, or OSHA. IARC classifies lead and some lead compounds as 2B carcinogens (possibly carcinogenic to humans).

**TOXICITY** See Section X.

**MEDICAL CONDITIONS POSSIBLY AGGRAVATED** See Section X.

**TARGET ORGAN EFFECTS** See Section X.

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**SECTION V. (B) HEALTH HAZARD DATA (Emergency and First Aid Procedures)**

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**INHALATION** If rosin fume is inhaled when heated to soldering temperatures, remove individual to fresh air. If breathing is difficult administer oxygen and consult a physician.

**INGESTION** Call a physician or Poison Control Center at once. Never give anything by mouth to an unconscious person.

**SKIN CONTACT** For burns cool with water and obtain medical aid. For rash remove from exposure and consult a physician.

**EYE CONTACT** For burns flush immediately with cool water and obtain medical air. For fume irritation remove from exposure.

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**SECTION VI. REACTIVITY DATA**

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**STABILITY** Stable: X Unstable:

**CONDITIONS TO AVOID** None.

**INCOMPATIBILITY (Materials to avoid)** Oxidizing materials, and acids

**HAZARDOUS DECOMPOSITION PRODUCTS** See Section X

**HAZARDOUS POLYMERIZATION** Will Occur: Will Not Occur: X

**CONDITIONS TO AVOID** N/A

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**FLUX COATED AND FLUX-FILLED SOLDER (TYPES R, RMA, RA) WIRE CORE SOLDER**  
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## **SECTION VII. SPILL OR LEAK PROCEDURES**

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### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Solid at room temperature. If in molten state allow to cool and solidify and then scrap up.

WASTE DISPOSAL      The alloy portion is reclaimable.

Must be in accordance with Federal, State and Local Laws and Regulations.

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## **SECTION VIII. SPECIAL PROTECTION**

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REPSIRATORY      A NIOSH approved respirator for organic vapors if TLVs are exceeded.

EYEWEAR      When soldering use face shield or eye goggles.

CLOTHING/GLOVES      Not usually necessary.

VENTILATION      Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure levels below TLVs.

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## **SECTION IX. SPECIAL PRECAUTIONS**

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### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

No special requirements for storage. Read all container labeling. Food and drink should not be consumed or tobacco products used, nor cosmetics applied in areas where solders may be used. Always wash hands after handling solder and before eating drinking or smoking.

### OTHER PRECAUTIONS

Containers: Since empty containers may retain product residues (vapors, liquid, or solid) all labeled hazard precautions must be observed. **FOR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN. DO NOT TAKE INTERNALLY.**

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**FLUX COATED AND FLUX-FILLED SOLDER (TYPES R, RMA, RA) WIRE CORE SOLDER**  
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**SECTION X. ADDITIONAL INFORMATION**

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HEALTH HAZARD DATA (continued)

**LEAD TOXICITY** Molten solder alloys do not produce significant lead fume below 900 deg. F. Exposure to high levels of airborne or ingested lead may produce symptoms of anemia, insomnia, weakness, constipation, nausea and abdominal pain. Prolonged exposure may result in kidney and nervous system involvement. Women of childbearing age should avoid exposure to lead and its inorganic compounds due to post-natal effects. Lead can cause potential injury to a developing fetus and possible effects on reproduction.

**OVEREXPOSURE TO**

**TIN** Dust or fume may cause irritation of the skin, mucous membranes, and may result in a benign Pneumoconiosis (stannosis).  
**SILVER** May cause discoloration of eyes and skin, (argyria).  
**BISMUTH** May cause foul breath, a blue-black line on the gums, and stomatitis.  
**ANTIMONY** May cause gastrointestinal upset, sleeplessness, irritability and muscular pain. May also cause respiratory tract irritation, metallic taste or damage to kidney, liver, or nervous system.  
**INDIUM** May cause weight loss, pulmonary edema, blood damage and degenerative changes in liver and kidneys.

**MEDICAL CONDITIONS POSSIBLY AGGRAVATED** Diseases of the blood and blood forming organs, kidneys, nervous and possibly reproductive systems.

**TARGET ORGAN EFFECTS** (Lead) GI tract, CNS, Kidneys, blood and gingival tissue

**REACTIVITY DATA (continued)**

**HAZARDOUS DECOMPOSITION PRODUCTS** The smoke from a soldering operation using rosin flux may include such compounds as carbon monoxide, abietic acid, aliphatic aldehydes, and diterpene acids.

**REGULATORY INFORMATION**

**CALIFORNIA STATE PROPOSITION 65** "WARNING! This product may contain LEAD known to the State of California to cause cancer, birth defects or other reproductive harm." (See product label.)

**TOXIC SUBSTANCE CONTROL ACT (TSCA) Status** All ingredients of this product are listed on the TSCA inventory.

**SARA TITLE III (Section 313)** Components present in this product at a level which could require reporting under this statute are: Lead – Antimony – Silver (See product label.)

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**EMERGENCY TELEPHONE NUMBER**

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INFOTRAC 1-800-535-5053

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