MATERIAL SAFETY DATA SHEET

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: M-Line 361A-20R Solder

November 22, 2005

Vishay Micro-Measurements
Post Office Box 27777
Raleigh, NC 27611

919-365-3800

MSDS # MGM039I

CHEMTREC 1-800-424-9300 (U.S.)
703-527-3887 (Outside U.S.)

NOTE: CHEMTREC numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

SECTION 2: HAZARDOUS INGREDIENTS / IDENTITY INFORMATION

CAS NUMBER	CHEMICAL IDENTITY	%
7440-31-5	Tin	63.00
7439-92-1	Lead	36.65
7440-36-0	Antimony	0.35
8050-09-7	Rosin	<3.0

SECTION 3: HEALTH HAZARD DATA

Routes of Entry:

Inhalation: YES **Skin**: YES **Ingestion**: Accidental

Health Hazards (Acute and Chronic): Breathing fumes during soldering may cause respiratory system irritation, headache, and irritation of mucous membranes. Smoke during soldering will contain resin which is an allergen and can cause respiratory system irritation and damage. Repeated ingestion of lead can result in systemic poisoning.

Carcinogenicity:	NTP:	See Note
	IARC Monographs:	See Note
	OSHA Regulated:	See Note

NOTE: Lead and its components have been placed in Class B2, probably carcinogenic to humans, by USEPA. IARC has placed lead and its compounds in Class 2B, possibly carcinogenic.

Signs and Symptoms of Exposure:

INHALATION: Breathing flux fumes during soldering may cause irritation and damage to mucous membranes and respiratory system. Prolonged breathing of fumes during soldering may cause respiratory system irritation, headache and irritation of mucous membranes. Smoke during soldering will contain rosin which is an allergen and can cause respiratory system irritation and damage.

EYE CONTACT: Contact with smoke from soldering may cause irritation.

SKIN CONTACT: Contact with flux or fumes may cause local irritation.

INGESTION: Not likely to occur. Repeated ingestion of lead can lead to systemic poisoning.

Conditions Generally Aggravated by Exposure: Pre-existing conditions or diseases of the lungs, blood and blood forming organs, kidneys, nerves and possibly reproductive system.

SECTION 4: EMERGENCY AND FIRST AID PROCEDURES

INHALATION: Remove victim from exposure to fumes. Get medical attention if needed.

EYE CONTACT: For burns, flush immediately with cool water. For fume irritation, use eye drops and remove from exposure.

SKIN CONTACT: For burns, flush immediately with cool water. If rash develops from flux fumes, remove person from exposure and wash skin with soap and water.

INGESTION: If thought to be overexposed, the person should have a blood-lead analysis done.

SECTION 5: FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used): N/A

Flammable limits: **LEL**: N/A **UEL**: N/A

Extinguishing Media: Appropriate for surrounding fire.

Special Firefighting Procedures: Use NIOSH approved self-contained breathing apparatus in case of toxic lead fumes.

Unusual Fire and Explosion Hazards: Flux in cored solder may ignite when the solder melts in a fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Steps to be taken if material is released or spilled: Melted solder will solidify on cooling and can be scraped up. Use caution to avoid breathing fumes if a gas torch is used to cut up large pieces.

SECTION 7: EXPOSURE CONTROLS -- PERSONAL PROTECTION

Respiratory Protection: Usually not required. When ventilation is not sufficient to remove fumes from the breathing zone, a cartridge type respirator should be worn.

Ventilation: Provide adequate exhaust ventilation (general and/or local) if necessary to meet exposure requirements. Local exhaust ventilation is preferred to minimize dispersion of smoke and fumes into the work area.

Protective Gloves: Not usually required.

Eye Protection: When soldering, use goggles or face shield.

Other Protective Clothing or Equipment: None

Work / Hygienic Practices: Wash hands thoroughly after handling solder containing lead and before eating, drinking or smoking.

SECTION 8: HANDLING AND STORAGE

Precautions to be taken in handling and storing: Store away from sources of sulfur. Wash hands after handling solder containing lead. Avoid breathing smoke or fumes generated during soldering. Do not place flux cored solder into a hot solder pot since flux may ignite.

Other Precautions: None known.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	N/A
Vapor Pressure (mmHg):	N/A
Vapor Density (Air = 1):	N/A
Specific Gravity (H_2O = 1):	>1
Melting Point:	N/A
Evaporation Rate (BuAc = 1):	N/A
Volatile Organic Compounds:	N/A
Solubility in Water:	Insoluble

Appearance and Odor: Silver-gray metal in wire form.

SECTION 10: STABILITY AND REACTIVITY DATA

Stability: Stable.

Conditions to Avoid: None.

Incompatibility (Materials to Avoid): Strong acid, strong oxidizers.

Hazardous Decomposition or By-products: When heated to soldering temperatures, the solvent in the flux will boil away and carry up droplets of rosin and thermal degradation products such as aliphatic aldehydes, acids and terpenes. No lead or antimony are detected in fumes from soldering below 1000°F (537°C). Melted solder may liberate carbon monoxide, carbon dioxide, lead oxide fumes.

Hazardous Polymerization: Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

Tin

OSHA PEL:	2.0 mg/m^3
ACGIH TLV:	2.0 mg/m^3
OTHER:	N/E

Lead

OSHA PEL:	0.05 mg/m^3
ACGIH TLV:	0.05 mg/m^3
OTHER:	N/E

Antimony

OSHA PEL:	0.5 mg/m^3
ACGIH TLV:	0.5 mg/m^3
OTHER:	INGESTION (Rat) LD_{50} 7.0 g/kg

Rosin

OSHA PEL:	N/E
ACGIH TLV:	N/E
OTHER:	N/E

SECTION 12: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Solder can be reclaimed. Disposal should be in accordance with local, state, and federal regulations.

SECTION 13: TRANSPORTATION INFORMATION

SHIPPING NAME	CLASS	UN NUMBER

Not required -- Shipped as non-hazardous article.

SECTION 14: REGULATORY INFORMATION

SECTION 313 SUPPLIER NOTIFICATION:

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

CAS NUMBER	CHEMICAL NAME	% BY WEIGHT
7439-92-1	Lead	36.65
7440-36-0	Antimony	0.35

TSCA NOTIFICATION:

All components of this product are listed in the Toxic Substance Control Act Chemical Substance Inventory (TSCA).

SECTION 15: OTHER INFORMATION

To the best of our knowledge, the information provided above meets the requirements of the United States Occupational Safety and Health Act and regulations established under 29 CFR 1910.1200 (g)(2)(c)(1)-(4) for a mixture of hazardous chemicals which has not been tested as a whole. The data provided on this Material Safety Data Sheet is from manufacturers of the original components. Vishay Micro-Measurements specifically disclaims any and all form of liability and/or responsibility for the application of this product.