



MATERIAL SAFETY DATA SHEET



SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: M-Flux AR (Lot # 056 and higher)

May 15, 2013

Vishay Measurements Group, Inc.
Post Office Box 27777
Raleigh, NC 27611

919-365-3800

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	%
64-17-5	Ethanol	10-25
78-92-2	2-Butanol	10-25
8050-09-7	Rosin	25-50
67-63-0	2-Propanol	≤ 2.5
67-56-1	Methanol	≤ 2.5
506-59-2	Dimethylammonium Chloride	≤ 2.5

SECTION 3: HEALTH HAZARD DATA

Routes of Entry:

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

Health Hazards (Acute and Chronic): Prolonged or repeated skin contact can result in a rash. Breathing vapors can result in headache, dizziness, narcosis and irritation of mucous membranes. Smoke produced during soldering will contain rosin which is an allergen and can cause pulmonary irritation and damage.

Carcinogenicity:	NTP:	Not listed
	IARC Monographs:	Not listed
	OSHA Regulated:	Not listed

Signs and Symptoms of Exposure:

INHALATION: Flux fumes during soldering may cause irritation and damage of mucous membranes and respiratory system. Vapors may cause drowsiness and dizziness.

EYE CONTACT: Contact with liquid material and/or smoke produced during soldering, may cause irritation.

SKIN CONTACT: May cause local irritation by contact with flux or fumes. May cause skin sensitization.

INGESTION: May cause burning sensation in the digestive tract.

Conditions Generally Aggravated by Exposure: None listed.

SECTION 4: EMERGENCY AND FIRST AID PROCEDURES
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INHALATION: Supply fresh air; consult physician in case of complaints.

EYE CONTACT: Flush eyes with plenty of water for at least 15 minutes. If symptoms persist, consult a physician.

SKIN CONTACT: Wash thoroughly with soap and water. Rinse thoroughly.

INGESTION: If swallowed, seek medical advice immediately. Provide physician with copy of Material Safety Data Sheet.

SECTION 5: FIRE AND EXPLOSION HAZARD DATA
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Flash Point (Method Used): 64°F (18°C) TOC

Flammable limits: LEL: 1.7 UEL: 15.0

Autoignition Temperature: Product is not self-igniting.

Extinguishing Media: Carbon dioxide, sand, or dry chemical. Do not use water.

Special Firefighting Procedures: Wear self-contained respiratory protective device.

Unusual Fire and Explosion Hazards: Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Steps to be taken if material is released or spilled: Remove all ignition sources. Use caution to avoid breathing fumes. Prevent run off into storm sewers and natural waterways. Absorb with clay, dry sand or other inert material. Do not use combustible material such as saw dust. Place in a chemical waste container.

SECTION 7: EXPOSURE CONTROLS -- PERSONAL PROTECTION

Respiratory Protection: Not usually required. When ventilation is not sufficient to remove fumes from the breathing zone, a NIOSH approved respirator or self-contained breathing apparatus 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: Neoprene or rubber gloves where necessary to avoid skin contact.

Eye Protection: Safety glasses or goggles should be used.

Other Protective Clothing or Equipment: An impermeable apron is advised to avoid contact through clothing.

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

SECTION 8: HANDLING AND STORAGE

Precautions to be taken in handling and storing: Store in cool, dry place in tightly closed containers. Keep ignition sources away. Do not smoke. Protect against electrostatic charges. Store away from oxidizing agents.

Other Precautions: Avoid breathing smoke or fumes generated during soldering. Avoid contact with eyes and skin.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	172°F (78°C)
Vapor Pressure (mmHg):	40 @ 68°F (20°C)
Vapor Density@ 68°F (20°C):	0.926 g/cm ³
Specific Gravity (H₂O = 1):	0.89
Melting Point:	N/A
Evaporation Rate (BuAc = 1):	1.9
Volatile Organic Compounds:	567 g/liter (70%)
Solubility in Water:	Partly soluble

Appearance and Odor: Dark amber liquid with alcohol odor.

SECTION 10: STABILITY AND REACTIVITY DATA
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Stability: Stable.

Conditions to Avoid: Heat or flame.

Incompatibility (Materials to Avoid): Strong oxidizing materials. Strong acids.

Hazardous Decomposition or By-products: When heated to soldering temperatures, the solvents are evaporated and rosin may be thermally degraded to liberate aliphatic aldehydes and acids. Decomposition by-products include carbon monoxide and carbon dioxide.

Hazardous Polymerization: Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION
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Ethanol

OSHA PEL:	1000 ppm
ACGIH TLV:	1000 ppm
OTHER:	LD ₅₀ INGESTION (RAT) 7.1 g/kg LC ₅₀ INHALATION (RAT) 20.0 g/m ³

2-Butanol

OSHA PEL:	150 ppm
ACGIH TLV:	100 ppm
OTHER:	LD ₅₀ INGESTION (RAT) 6.5 g/kg

Rosin

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

2-Propanol

OSHA PEL:	400 ppm
ACGIH TLV:	400 ppm
OTHER:	500 ppm STEL

Methanol

OSHA PEL:	200 ppm
ACGIH TLV:	200 ppm
OTHER:	250 ppm STEL

Dimethylammonium Chloride

OSHA PEL: Not Known
ACGIH TLV: Not Known
OTHER: Not Known

SECTION 12: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Dispose of in accordance with local, state and federal regulations.

SECTION 13: TRANSPORTATION INFORMATION

SHIPPING NAME	CLASS	PACKING GROUP	UN NUMBER
Flammable Liquids, N.O.S. (2-Butanol, Ethanol) Flammable Liquid	3	II	1993

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
78-92-2	2-Butanol	25-50
67-63-0	2-Propanol	≤ 2.5

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. Micro-Measurements specifically disclaims any and all form of liability and/or responsibility for the application of this product.