

# SAFETY DATA SHEET

Version: 2.0  
Date of Issue: 24-Apr-2017  
Date of First Issue: 07-Aug-2012


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ACCORDING TO OSHA HCS (29 CFR 1910.1200)

## SECTION 1: IDENTIFICATION

<b>Product identifier used on the label</b>	M-Line 450-20R Solder
<b>Other means of identification</b>	
Chemical Name	Mixture
CAS No.	Mixture
EINECS No.	Mixture
<b>Recommended use of the chemical and restrictions on use</b>	
Recommended use	PC38 Welding and soldering products (with flux coatings or flux cores.), flux products
Restrictions on use	None known.
<b>Details of the supplier of the safety data sheet</b>	
Supplier	VISHAY MEASUREMENTS GROUP, INC.
Address of Supplier	Post Office Box 27777 Raleigh, NC 27611 USA
Telephone	+1 919-365-3800
Fax	+1 919-365-3945
E-Mail (competent person)	<a href="mailto:mm.us@vishaypg.com">mm.us@vishaypg.com</a>
<b>Emergency telephone number</b>	1-800-424-9300 CHEMTREC (24 hours)

## SECTION 2: HAZARD(S) IDENTIFICATION

<b>Classification of the substance or mixture in accordance with paragraph (d) of 29 CFR 1910.1200</b>	
Physical hazards	Not classified
Health hazards	Skin Sensitisation, Category 1
Environmental hazards	Not classified
<b>Hazard Symbol</b>	
<b>Signal Word(s)</b>	Warning
<b>Hazard Statement(s)</b>	May cause an allergic skin reaction.
<b>Precautionary Statement(s)</b>	Avoid breathing fumes. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. Dispose of contents in accordance with local, state or national legislation.
<b>Other hazards</b>	None known.
<b>Percent of the mixture consists of ingredient(s) of unknown acute toxicity:</b>	0%

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## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

**Substances** Not applicable

**Mixtures** Substances in preparations / mixtures

Chemical identity of the substance	%W/W	CAS No.	EC No.	Hazard classification
Tin	92 - 98	7440-31-5	231-141-8	Not classified
Antimony	< 10	7440-36-0	231-146-5	Not classified
Rosin	1-3	8050-09-7	232-475-7	Skin Sensitisation, Category 1

## SECTION 4: FIRST AID MEASURES



### Description of first aid measures

Self-protection of the first aider

Inhalation

Skin Contact

Eye Contact

Ingestion

**Most important symptoms and effects, both acute and delayed**

**Indication of any immediate medical attention and special treatment needed**

Wear suitable protective clothing, gloves and eye/face protection.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical advice/attention if you feel unwell.

IF ON SKIN: Remove contaminated clothing and wash all affected areas with plenty of water. Contaminated clothing should be thoroughly cleaned. If skin irritation or rash occurs: Get medical advice/attention.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if eye irritation develops or persists.

If swallowed, rinse mouth with water (only if the person is conscious). Do not induce vomiting. Get medical advice/attention if you feel unwell.

May cause an allergic skin reaction. Flux fumes during soldering may cause irritation and damage of mucous membranes and respiratory system. Smoke produced during soldering will contain rosin which is an allergen and can cause pulmonary irritation and damage.

Treat symptomatically. In case of burns immediately cool affected skin as long as possible with cold water.

## SECTION 5: FIRE-FIGHTING MEASURES

### Extinguishing media

Suitable Extinguishing Media

Unsuitable extinguishing Media

**Special hazards arising from the substance or mixture**

**Special protective equipment and precautions for fire fighters**

As appropriate for surrounding fire.

Do not use water on fires when molten metal is present.

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. Flux in cored solder may ignite when the solder melts in a fire. Oxides of carbon.

Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Do not breathe fumes. Keep containers cool by spraying with water if exposed to fire. Avoid run off to waterways and sewers.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

**Methods and material for containment and cleaning**

Ensure adequate ventilation. Use personal protective equipment as required. See Section: 8. Melted solder will solidify on cooling and can be scraped up. Avoid breathing smoke fumes during soldering. Use caution to avoid breathing fumes if a gas torch is used to cut up large pieces.

Allow product to cool/solidify and pick up as a solid. Transfer to a container for

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www.vishaypg.com

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disposal. Recover or recycle if possible.

## SECTION 7: HANDLING AND STORAGE

### Precautions for safe handling

Avoid contact with skin, eyes or clothing. Avoid breathing smoke fumes during soldering. Use caution to avoid breathing fumes if a gas torch is used to cut up large pieces. When molten: Keep from any possible contact with water. Ensure adequate ventilation. Use personal protective equipment as required. See Section: 8. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work.

### Conditions for safe storage, including any incompatibilities

Store in a well-ventilated place.

Storage temperature  
Incompatible materials

Ambient.  
Store away from sources of sulfur. Keep away from: Strong Acids, Alkalis, Chlorine and Strong oxidising agents.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Occupational Exposure Limits

SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m <sup>3</sup> )	STEL (ppm)	STEL (mg/m <sup>3</sup> )	Note
Tin and inorganic compounds (as Sn) except tin oxides	7440-31-5	-	2	-	-	NIOSH, OSHA, ACGIH
Antimony	7440-36-0	-	0.5	-	-	NIOSH, OSHA, ACGIH

Note: OSHA PELs 1910.1000 TABLE Z-1 / NIOSH RELs / ACGIH TLVs  
The other components listed in Section 3 do not have occupational exposure limits.

### Biological Exposure Indices

Not established

### Appropriate engineering controls

Ensure adequate ventilation or use appropriate containment. Atmospheric levels should be controlled in compliance with the occupational exposure limit.

### Individual protection measures, such as personal protective equipment (PPE)

General hygiene measures for the handling of chemicals are applicable. Avoid all contact. Avoid breathing smoke fumes during soldering. Use caution to avoid breathing fumes if a gas torch is used to cut up large pieces. Wash hands before breaks and after work. Keep work clothes separately. Contaminated clothing should be thoroughly cleaned. Do not eat, drink or smoke at the work place.

Eye/face protection



When molten: Goggles or full face shield.

Skin protection



Hand protection: (When molten) Wear impervious gloves (EN374). The gloves type used must be chosen based on the work activity and duration as well as concentration/quantity of material being handled. Breakthrough time of the glove material: refer to the information provided by the gloves' producer.

Body protection: (When molten) Wear impervious protective clothing, including boots, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Open system(s): Wear suitable respiratory protective equipment.

# SAFETY DATA SHEET

Version: 2.0  
Date of Issue: 24-Apr-2017  
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www.vishaypg.com

ACCORDING TO OSHA HCS (29 CFR 1910.1200)



## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

Appearance	Silver - Grey metal in wire form
Odor	Not available.
Odor Threshold	Not available.
pH	Not available.
Melting Point/Freezing Point	Not available.
Initial boiling point and boiling range	Not available.
Flash Point	Not applicable.
Evaporation rate (Butyl acetate = 1)	Not applicable.
Flammability (solid, gas)	Non-flammable.
Upper/lower flammability or explosive limits	Not applicable.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	>1 (H <sub>2</sub> O = 1)
Solubility(ies)	Insoluble in water.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	Not available.

## SECTION 10: STABILITY AND REACTIVITY

<b>Reactivity</b>	Stable under normal conditions.
<b>Chemical stability</b>	Stable under normal conditions.
<b>Possibility of hazardous reactions</b>	Flux in cored solder may ignite when the solder melts in a fire. Reacts vigorously with chlorine and oxidising agents.
<b>Conditions to avoid</b>	When molten: Keep from any possible contact with water.
<b>Incompatible materials</b>	Keep away from: Strong Acids, Alkalis, Chlorine and Strong oxidising agents. Store away from sources of sulfur.
<b>Hazardous decomposition product(s)</b>	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.

## SECTION 11: TOXICOLOGICAL INFORMATION

### Information on toxicological effects (Substances in preparations / mixtures)

<b>Acute toxicity - Ingestion</b>	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.
<b>Acute toxicity - Inhalation</b>	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 20.0 mg/l.
<b>Acute toxicity - Skin Contact</b>	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.
<b>Skin corrosion/irritation</b>	Based upon the available data, the classification criteria are not met.
<b>Serious eye damage/irritation</b>	Based upon the available data, the classification criteria are not met.
<b>Respiratory or skin sensitization</b>	Skin Sensitisation, Category 1: May cause an allergic skin reaction.
<b>Germ cell mutagenicity</b>	Based upon the available data, the classification criteria are not met.
<b>Carcinogenicity</b>	Based upon the available data, the classification criteria are not met.
<b>Reproductive toxicity</b>	Based upon the available data, the classification criteria are not met.
<b>STOT - single exposure</b>	Based upon the available data, the classification criteria are not met.

# SAFETY DATA SHEET



Version: 2.0  
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Date of First Issue: 07-Aug-2012

www.vishaypg.com

## ACCORDING TO OSHA HCS (29 CFR 1910.1200)

<b>STOT - repeated exposure</b>	Based upon the available data, the classification criteria are not met.
<b>Aspiration hazard</b>	Based upon the available data, the classification criteria are not met.
<b>Information on likely routes of exposure</b>	
Inhalation	Possible – accidental exposure
Ingestion	Unlikely – accidental exposure
Skin Contact	Possible – accidental exposure
Eye Contact	Unlikely – accidental exposure
<b>Early onset symptoms related to exposure</b>	Heated product may cause burns. May cause an allergic skin reaction. Flux fumes during soldering may cause irritation and damage of mucous membranes and respiratory system. Smoke produced during soldering will contain rosin which is an allergen and can cause pulmonary irritation and damage.
<b>Delayed health effects from exposure</b>	None known
<b>Other information</b>	
NTP Report on Carcinogens	Not Listed
IARC Monographs	Not Listed
OSHA Designated Carcinogen	Not Listed

## SECTION 12: ECOLOGICAL INFORMATION

<b>Ecotoxicity</b>	Based upon the available data, the classification criteria are not met. Estimated Mixture LC50 >100 mg/l (Fish)
<b>Persistence and degradability</b>	The organic part of the product is biodegradable.
<b>Bioaccumulative potential</b>	The product has low potential for bioaccumulation (metal in wire form).
<b>Mobility in soil</b>	The product is predicted to have low mobility in soil (metal in wire form).
<b>Other adverse effects</b>	None known.

## SECTION 13: DISPOSAL CONSIDERATIONS

<b>Waste treatment methods</b>	Solder can be reclaimed. Dispose of contents in accordance with local, state or national legislation.
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## SECTION 14: TRANSPORT INFORMATION

Not classified according to the United Nations 'Recommendations on the Transport of Dangerous Goods'

	<b>ADR/RID / IMDG / IATA</b>
<b>UN number</b>	Not classified as dangerous for transport.
<b>UN proper shipping name</b>	Not classified
<b>Transport hazard class(es)</b>	Not classified
<b>Packing group</b>	Not classified
<b>Environmental hazards</b>	Not classified as a Marine Pollutant.
<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	Not applicable.
<b>Special precautions for user</b>	See Section: 2

## SECTION 15: REGULATORY INFORMATION

<b>Safety, health and environmental regulations/legislation specific for the substance or mixture</b>	
<b>US Federal Regulations</b>	
TSCA (Toxic Substance Control Act)	Tin: Subject to 25,000 lb reporting threshold Antimony: Subject to 25,000 lb reporting threshold Rosin: Subject to 25,000 lb reporting threshold
EPCRA/SARA Section 302 Extremely Hazardous Substances	Not Listed
EPCRA Section 313 Toxics Release Inventory (TRI)	Antimony: De Minimis limit: 1%

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## ACCORDING TO OSHA HCS (29 CFR 1910.1200)

Program	
NIOSH Occupational Carcinogen List	Not Listed
OSHA List of highly hazardous chemicals, toxics and reactives	Not Listed
NTP Report on Carcinogens (RoC) List	Not Listed
Poison Prevention Packaging Act	Not Listed
<b>US State Regulations</b>	
California State, Proposition 65 List	Not Listed
California State, Safer Consumer Products Regulations	Tin: Initial Candidate Chemicals List Antimony: Candidate Chemicals List, Group Member List: Antimony and Antimony Compounds
Maine State, Toxic Chemicals in Children's Products Act	Not Listed
New Jersey State Worker and Community RTK Act	Tin: RTKHSL. SHHSL Antimony: RTKHSL
Pennsylvania State, Worker and Community RTK Act	Tin: Hazardous Substance List Antimony: Hazardous Substance List. Environmental Hazard List
Rhode Island State, Hazardous Substances RTK Act	Tin: Hazardous Substance List Antimony: Hazardous Substance List
<b>Non-Regional</b>	
IARC Monographs, List of Classifications	Not Listed

## SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: New SDS Regulation compliant with HazCom 2012 format, all sections have been updated to include new information. Please review SDS with care.

Version 2.0  
Revision Date 24-Apr-2017  
Date of First Issue 07-Aug-2012

### References:

Existing Safety Data Sheet (SDS).

EU Data: Existing ECHA registration(s) for Tin (CAS# 7440-31-5), and Antimony (CAS# 7440-36-0). Existing ECHA registration(s) for and Harmonised Classification(s) for Rosin (CAS# 8050-09-7)

GHS Classification of the substance or mixture	Classification Procedure
Skin Sensitisation, Category 1	Threshold Calculation

### LEGEND

ACGIH: American Conference of Governmental Industrial Hygienists  
BEI: Biological Exposure Indices (ACGIH)  
IARC: International Agency for Research on Cancer  
Irr: Irritation  
NIOSH: National Institute of Occupational Safety and Health  
NTP: National Toxicology Program  
OSHA: The Occupational Safety & Health Administration  
PBT: Persistent, Bioaccumulative and Toxic  
PEL: Permissible exposure limit

REL: Recommended exposure limit  
SCL: Specific Concentration Limit  
Skin<sup>o</sup>: Risk of overexposure via dermal contact  
STEL: Short Term Exposure Limit  
TLV: Threshold Limit value  
TSCA: Toxic Substance Control Act  
TWA: Time Weighted Average  
URT: Upper respiratory tract  
vPvB: very Persistent and very Bioaccumulative

Training advice: Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

### Disclaimers

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