

# SAFETY DATA SHEET

Version: 2.0  
Date of Issue: 03 May 2017  
Date of First Issue: 07 August 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 430-20S Solder	
<b>Other means of identification</b>	Not applicable	
<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	Anything other than the above.	
<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	Not classified
Environmental hazards	Hazardous to the aquatic environment, Acute, Category 1 Hazardous to the aquatic environment, Chronic , Category 1
<b>Hazard Symbol</b>	
<b>Signal Word(s)</b>	WARNING
<b>Hazard Statement(s)</b>	Very toxic to aquatic life with long lasting effects.
<b>Precautionary Statement(s)</b>	Avoid release to the environment. Collect spillage. 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	95 - 100	7440-31-5	231-141-8	Not classified
Silver	< 5	7440-22-4	231-131-3	Hazardous to the aquatic environment, Acute, Category 1 Hazardous to the aquatic environment, Chronic , 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

Notes to a physician:

Do not breathe fumes. Wear suitable protective clothing. Wear suitable respiratory protective equipment if exposure to high levels of material are likely. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

Wash with plenty of water. If irritation (redness, rash, blistering) develops, get medical attention.

Molten material can cause severe burns. Do NOT try to peel molten material from the skin. Cool rapidly with water.

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.

Wash out mouth with water and give 200-300 ml (half a pint) of water to drink. Do not induce vomiting. If symptoms develop, obtain medical attention.

Molten material can cause severe burns.

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.

None.

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

### Environmental precautions

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.

Avoid release to the environment. Do not allow to enter drains, sewers or

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## Methods and material for containment and cleaning up

watercourses.  
Allow product to cool/solidify and pick up as a solid. Transfer to a container for disposal. Recover or recycle if possible.

## SECTION 7: HANDLING AND STORAGE

### Precautions for safe handling

Avoid breathing smoke fumes during soldering. Use caution to avoid breathing fumes if a gas torch is used to cut up large pieces. 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. When molten: Keep from any possible contact with water.  
Store in a well-ventilated place.

### Conditions for safe storage, including any incompatibilities

Storage temperature  
Storage life  
Incompatible materials

Ambient.  
Stable under normal conditions.  
Store away from sources of sulfur. Keep away from: Acids, 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, metal	7440-31-5	-	2	-	-	NIOSH, OSHA, ACGIH
Silver (metal dust and soluble compounds, as Ag)	7440-22-4	-	0.01	-	-	NIOSH, OSHA
Silver, metal dust and fume	7440-22-4	-	0.1	-	-	ACGIH

Note: OSHA PELs 1910.1000 TABLE Z-1/ NIOSH RELs / ACGIH TLVs

### Biological Exposure Indices

Not established

### Appropriate engineering controls

Ensure adequate ventilation or use appropriate containment. Atmospheric levels should be controlled using the principles of good occupational hygiene practice.

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

General hygiene measures for the handling of chemicals are applicable. 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. 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.

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Version: 2.0  
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## 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>	Reacts vigorously with chlorine and oxidising agents.
<b>Conditions to avoid</b>	None known.
<b>Incompatible materials</b>	Store away from sources of sulfur. Keep away from: Acids, Chlorine and Strong oxidising agents.
	When molten: Keep from any possible contact with water.
<b>Hazardous decomposition product(s)</b>	None known.

## 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 >5.0 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>	Based upon the available data, the classification criteria are not met.
<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.
<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.

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## Information on likely routes of exposure

Inhalation	Possible – accidental exposure
Ingestion	Unlikely – accidental exposure
Skin Contact	Possible – accidental exposure
Eye Contact	Unlikely – accidental exposure

## Early onset symptoms related to exposure

Molten material can cause severe burns.

## Delayed health effects from exposure

None known

## Other information

NTP Report on Carcinogens	All chemicals are not listed
IARC Monographs	All chemicals are not listed
OSHA Designated Carcinogen	All chemicals are not listed

## SECTION 12: ECOLOGICAL INFORMATION

### Ecotoxicity

Hazardous to the aquatic environment, Acute, Category 1; Very toxic to aquatic life.

Estimated Mixture LC50 <1 mg/l (Fish)

Hazardous to the aquatic environment, Chronic, Category 1; Very toxic to aquatic life with long lasting effects.

Estimated Mixture LC50 <1 mg/l (Fish)

### Persistence and degradability

The product is not biodegradable (metals).

### Bioaccumulative potential

The product has low potential for bioaccumulation (metal in wire form).

### Mobility in soil

The product is predicted to have low mobility in soil (metal in wire form).

### Other adverse effects

None known.

## SECTION 13: DISPOSAL CONSIDERATIONS

### Waste treatment methods

Solder can be reclaimed. Dispose of contents in accordance with local, state or national legislation.

## SECTION 14: TRANSPORT INFORMATION

	ADR/RID	IMDG	IATA
UN number	UN 3077	UN 3077	UN 3077
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Silver)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Silver)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Silver)
Transport hazard class(es)	9	9	9
Packing group	III	III	III
Environmental hazards	Environmentally hazardous substance	Classified as a Marine Pollutant.	Environmentally hazardous substance
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable		
Special precautions for user	See Section: 2		

## SECTION 15: REGULATORY INFORMATION

### Safety, health and environmental regulations/legislation specific for the substance or mixture

#### US Federal Regulations

TSCA (Toxic Substance Control Act)

Tin: Subject to 25,000 lb reporting threshold

Silver: Subject to 25,000 lb reporting threshold

EPCRA/SARA Section 302 Extremely Hazardous Substances

All chemicals are not listed

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EPCRA Section 313 Toxics Release Inventory (TRI) Program	Silver: De Minimis limit: 1%
NIOSH Occupational Carcinogen List	All chemicals are not listed
OSHA List of highly hazardous chemicals, toxics and reactives	All chemicals are not listed
NTP Report on Carcinogens (RoC) List	All chemicals are not listed
Poison Prevention Packaging Act	All chemicals are not listed
<b>US State Regulations</b>	
California State, Proposition 65 List	All chemicals are not listed
California State, Safer Consumer Products Regulations	Tin: Initial Candidate Chemicals List Silver: Candidate Chemicals List
Maine State, Toxic Chemicals in Children's Products Act	All chemicals are not listed
New Jersey State Worker and Community RTK Act	Tin: RTKHSL. SHHSL Silver: RTKHSL. SHHSL
Pennsylvania State, Worker and Community RTK Act	Tin: Hazardous Substance List Silver: Hazardous Substance List. Environmental Hazard List
Rhode Island State, Hazardous Substances RTK Act	Tin: Hazardous Substance List Silver: Hazardous Substance List
<b>Non-Regional</b>	
IARC Monographs, List of Classifications	All chemicals are not listed

## SECTION 16: OTHER INFORMATION

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

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### References:

Existing Safety Data Sheet (SDS), and EU Data: Existing ECHA registration(s) for Tin (CAS# 7440-31-5) and Silver (CAS# 7440-22-4).

GHS Classification of the substance or mixture	Classification Procedure
Hazardous to the aquatic environment, Acute, Category 1	Summation Calculation
Hazardous to the aquatic environment, Chronic, Category 1	Summation 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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