

# SAFETY DATA SHEET

Revision: 2.0 Date: 14.04.2015


ACCORDING TO EC-REGULATIONS 1907/2006 (REACH),  
1272/2008 (CLP) & 453/2010

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## 1. SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

<b>1.1 Product identifier</b>	
Product Name	M-Line 361A-20R Solder
Chemical Name	Mixture
CAS No.	Mixture
EINECS No.	Mixture
REACH Registration No.	None assigned.
<b>1.2 Recommended use of the chemical and restrictions on use</b>	
Identified Use(s)	PC38 Welding and soldering products (with flux coatings or flux cores.), flux products
Uses Advised Against	For professional users only.
<b>1.3 Supplier's details</b>	
Company Identification	VISHAY MEASUREMENTS GROUP, INC. Post Office Box 27777 Raleigh, NC 27611 USA
Telephone	919-365-3800
Fax	919-365-3945
E-Mail (competent person)	mm.us@vishaypg.com
<b>1.4 Emergency Phone No.</b>	1-800-424-9300 CHEMTREC

## 2. SECTION 2: HAZARDS IDENTIFICATION

<b>2.1 GHS Classification</b>	Skin Sens. 1; H317 Repr. 1A; H360DF Lact.; H362
<b>2.2 Label elements</b>	
Product Name	According to Regulation (EC) No. 1272/2008 (CLP) M-Line 361A-20R Solder
Hazard Pictogram(s)	
Signal Word(s)	Danger
Contains:	Lead and Rosin
Hazard Statement(s)	H317: May cause an allergic skin reaction. H360FD: May damage fertility. May damage the unborn child. H362: May cause harm to breast-fed children.
Precautionary Statement(s)	P201: Obtain special instructions before use. P280: Wear protective gloves/protective clothing/eye protection/face protection. P302+P352: IF ON SKIN: Wash with plenty of water. P333+P313: If skin irritation or rash occurs: Get medical advice/attention. P363: Wash contaminated clothing before reuse. P308+P313: IF exposed or concerned: Get medical advice/attention.
<b>Additional Information</b>	None.
<b>2.3 Other hazards</b>	Smoke produced during soldering will contain rosin which is an allergen and can

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cause pulmonary irritation and damage. Smoke produced during soldering will contain rosin which is an allergen and can cause pulmonary irritation and damage.

## 3. SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.2 Mixtures GHS Classification

Chemical identity of the substance	%W/W	CAS No.	EC No.	REACH Registration No.	Hazard Statement(s)
Lead	35-40	7439-92-1	231-100-4	None assigned	Repr. 1A; H360DF Lact.; H362
Rosin	1-5	8050-09-7	232-475-7	None assigned	Skin Sens. 1; H317

H317: May cause an allergic skin reaction. H360FD: May damage fertility. May damage the unborn child. H362: May cause harm to breast-fed children.

## 4. SECTION 4: FIRST AID MEASURES



### 4.1 Description of first aid measures

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF exposed or concerned: Get medical advice/attention.

Skin Contact

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 exposed or concerned: Get medical advice/attention.

Eye Contact

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.

Ingestion

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

### 4.2 Most important symptoms and effects, both acute and delayed

May cause an allergic skin reaction. May damage fertility. May damage the unborn child. May cause harm to breastfed babies. 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.

### 4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. In case of burns immediately cool affected skin as long as possible with cold water. If thought to be overexposed, the person should have a blood-lead analysis done. Patient should be kept under medical observation for at least 48 hours.

## 5. SECTION 5: FIREFIGHTING MEASURES

### 5.1 Extinguishing media

Suitable Extinguishing media

As appropriate for surrounding fire.

Unsuitable extinguishing media

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

### 5.2 Special hazards arising from the substance or mixture

Flux in cored solder may ignite when the solder melts in a fire. 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 537°C. Melted solder may liberate carbon monoxide, carbon dioxide, lead oxide fumes.

### 5.3 Advice for fire-fighters

Fire fighters should wear complete protective clothing including self-contained

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breathing apparatus. Do not breathe fumes. Keep containers cool by spraying with water if exposed to fire. Avoid run off to waterways and sewers.

## 6. SECTION 6: ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions, protective equipment and emergency procedures** 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.
- 6.2 Environmental precautions** Avoid release to the environment. Do not allow to enter drains, sewers or watercourses. Spillages or uncontrolled discharges into watercourses must be alerted to the Environment Agency or other appropriate regulatory body.
- 6.3 Methods and material for containment and cleaning up** Allow product to cool/solidify and pick up as a solid. Transfer to a container for disposal. Recover or recycle if possible. Dispose of this material and its container as hazardous waste.
- 6.4 Reference to other sections** See Section: 8, 13

## 7. SECTION 7: HANDLING AND STORAGE

- 7.1 Precautions for safe handling** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. 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. 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.
- 7.2 Conditions for safe storage, including any incompatibilities**  
Storage temperature: Ambient.  
Storage life: Stable under normal conditions.  
Incompatible materials: Store away from sources of sulfur. Keep away from: Strong Acids, Alkalis, Chlorine and Strong oxidising agents. Use of strong acid fluxes may result in liberation of toxic lead chloride fumes.
- 7.3 Specific end use(s)** PC38 Welding and soldering products (with flux coatings or flux cores.), flux products. See Section: 1.2

## 8. SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

- 8.1 Control parameters**  
**8.1.1 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
Lead and inorganic compounds (as Pb)	7439-92-1	-	0.05*	-	-	NIOSH
Lead and inorganic compounds (as Pb)	7439-92-1	-	0.05*	-	-	OSHA

Note: OSHA 1910.1000 TABLE Z-1 / NIOSH

\*: Total dust

- 8.1.2 Biological limit value** Not established.
- 8.1.3 PNECs and DNELs** Not established.
- 8.2 Exposure controls**
- 8.2.1 Appropriate engineering controls** Ensure adequate ventilation. or Use appropriate containment. Atmospheric levels should be controlled in compliance with the occupational exposure limit.
- 8.2.2 Individual protection measures, such as personal** General hygiene measures for the handling of chemicals are applicable. Avoid

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## protective equipment (PPE)

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: Wear impervious gloves (EN374). Gloves should be changed regularly to avoid permeation problems. Breakthrough time of the glove material: refer to the information provided by the gloves' producer.



Respiratory protection

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



Thermal hazards

Not applicable.

## 8.2.3 Environmental Exposure Controls

Avoid release to the environment.

## 9. SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Appearance	Silver - Grey metal in wire form
Odour	Not available.
Odour 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	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.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

### 9.2 Other information

None.

## 10. SECTION 10: STABILITY AND REACTIVITY

10.1 Stability and reactivity	Stable under normal conditions.
10.2 Chemical stability	Stable under normal conditions.
10.3 Possibility of hazardous reactions	Flux in cored solder may ignite when the solder melts in a fire. Reacts vigorously with chlorine and oxidising agents. Use of strong acid fluxes may result in liberation of toxic lead chloride fumes.
10.4 Conditions to avoid	When molten: Keep from any possible contact with water.
10.5 Incompatible materials	Keep away from: Strong Acids, Alkalis, Chlorine and Strong oxidising agents.

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- 10.6 Hazardous decomposition product(s)** Store away from sources of sulfur.  
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 537°C. Melted solder may liberate carbon monoxide, carbon dioxide, lead oxide fumes.

## 11. SECTION 11: TOXICOLOGICAL INFORMATION

- 11.1 Information on toxicological effects (Substances in preparations / mixtures)**
- Acute toxicity**
- Ingestion Based upon the available data, the classification criteria are not met.  
Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.
- Inhalation Based upon the available data, the classification criteria are not met.  
Acute Toxicity Estimate Mixture Calculation: Estimated LC50 >20.0 mg/l.
- Skin Contact Based upon the available data, the classification criteria are not met.  
Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.
- Skin corrosion/irritation** Based upon the available data, the classification criteria are not met.
- Serious eye damage/irritation** Based upon the available data, the classification criteria are not met.
- Respiratory or skin sensitization** Skin Sens. 1: May cause an allergic skin reaction.
- Germ cell mutagenicity** Based upon the available data, the classification criteria are not met.
- Carcinogenicity** Based upon the available data, the classification criteria are not met.
- Reproductive toxicity** Repr. 1A: May damage fertility. May damage the unborn child.  
Lact.: May cause harm to breastfed babies.
- STOT - single exposure** Based upon the available data, the classification criteria are not met.
- STOT - repeated exposure** Based upon the available data, the classification criteria are not met.
- Aspiration hazard** Based upon the available data, the classification criteria are not met.
- 11.2 Other information** 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.

## 12. SECTION 12: ECOLOGICAL INFORMATION

- 12.1 Toxicity** Based upon the available data, the classification criteria are not met.  
Estimated Mixture LC50 >100 mg/l (Fish)
- 12.2 Persistence and degradability** The organic part of the product is biodegradable.
- 12.3 Bioaccumulative potential** The product has low potential for bioaccumulation. (metal in wire form)
- 12.4 Mobility in soil** The product is predicted to have low mobility in soil. (metal in wire form)
- 12.5 Results of PBT and vPvB assessment** Not classified as PBT or vPvB.
- 12.6 Other adverse effects** None known.

## 13. SECTION 13: DISPOSAL CONSIDERATIONS

- 13.1 Waste treatment methods** Solder can be reclaimed. Dispose of this material and its container as hazardous waste.
- 13.2 Additional Information** Dispose of contents in accordance with local, state or national legislation.

## 14. SECTION 14: TRANSPORT INFORMATION

- ADR/RID / IMDG / IATA**
- 14.1 UN number** Not classified as dangerous for transport.
- 14.2 Proper Shipping Name** Not classified
- 14.3 Transport hazard class(es)** Not classified
- 14.4 Packing group** Not classified
- 14.5 Environmental hazards** Not classified as a Marine Pollutant.

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- 14.6 Special precautions for user See Section: 2  
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.  
14.8 Additional Information None.

## 15. SECTION 15: REGULATORY INFORMATION

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

#### 15.1.1 National regulations USA

NTP: Lead (CAS# 7439-92-1): Reasonably anticipated to be a human carcinogen .  
IARC Monographs: Lead (CAS# 7439-92-1): Group 2B (Possibly carcinogen to humans).  
OSHA Regulated: Not listed

#### 15.1.2 EU regulations

Authorisations and/or Restrictions On Use

Lead concentrations in electrical equipment are controlled by Directive 2002/95/EC (commonly referred to as the Restriction of Hazardous Substances Directive or RoHS) and recast Directive 2011/65/EU.

SVHCs

None

Germany

Water hazard class: 1

#### 15.2 Chemical Safety Assessment

Not available.

## 16. SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: 1-16.

**References:** Existing Safety Data Sheet (SDS), Harmonised Classification(s) for Rosin (CAS# 8050-09-7), Existing ECHA registration(s) for Rosin (CAS# 8050-09-7) and the Committee for Risk Assessment (RAC) Opinion (05.12.13) for Lead (CAS# 7439-92-1):

<http://echa.europa.eu/documents/10162/57ceb1ac-aa5-4852-9aa5-db81bcb04da3>

GHS Classification	Classification Procedure
Skin Sens. 1; H317	Threshold Calculation
Repr. 1A; H360DF	Threshold Calculation
Lact.; H362	Threshold Calculation

### LEGEND

LTEL	Long Term Exposure Limit
STEL	Short Term Exposure Limit
DNEL	Derived No Effect Level
PNEC	Predicted No Effect Concentration
PBT	PBT: Persistent, Bioaccumulative and Toxic
vPvB	very Persistent and very Bioaccumulative
NTP	National Toxicology Program
IARC	International Agency for Research on Cancer
OSHA	The Occupational Safety & Health Administration
NIOSH	National Institute for Occupational Safety and Health

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.

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## Annex to the extended Safety Data Sheet (eSDS)

No information available.