

SAFETY DATA SHEET

Revision: 1.0 Date: 01.05.2018

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) & 2015/830

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

- 1.1 Product identifier**
Product Name M-Line 361A-20R Solder
- 1.2 Relevant identified uses of the substance or mixture and uses advised against**
Identified Use(s) Welding and soldering products (with flux coatings or flux cores.), flux products.
Uses Advised Against For professional users only.
- 1.3 Details of the supplier of the safety data sheet**
Company Identification VISHAY MEASUREMENTS GROUP UK LTD
Stroudley Road
Basingstoke
Hampshire
United Kingdom
RG24 8FW
Telephone +44 (0) 1256 462131
Fax +44 (0) 1256 471441
E-Mail (competent person) mm.uk@vishaypg.com
- 1.4 Emergency telephone number**
Emergency Phone No. (00-1) 703-527-3887 CHEMTREC (24 hours)
Languages spoken All official European languages.

2. SECTION 2: HAZARDS IDENTIFICATION

- 2.1 Classification of the substance or mixture**
2.1.1 Regulation (EC) No. 1272/2008 (CLP) Skin Sens. 1; H317
Repr. 1A; H360DF
Lact.; H362
STOT RE 1; H372
- 2.2 Label elements**
Product Name Solder (63/37 Tin/Lead) 361A-20R-25 MFG KESTER
Contains: Lead and Rosin
- Hazard Pictogram(s)

- Signal Word(s) Danger
- 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.
H372: Causes damage to organs through prolonged or repeated exposure.
- 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.

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Additional Information

None.

2.3 Other hazards

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

3.1 Substances Not applicable.

3.2 Mixtures

EC Classification Regulation (EC) No. 1272/2008 (CLP)

Chemical identity of the substance	%W/W	CAS No.	EC No.	REACH Registration No.	Hazard classification
Lead	<100	7439-92-1	231-100-4	Not yet assigned in the supply chain	Lact.; H362 Repr. 1A; H360FD STOT RE 1; H372
Rosin	1 - 5	8050-09-7	232-475-7	None assigned	Skin Sens. 1; H317

For full text of H/P Statements see section 16.

4. SECTION 4: FIRST AID MEASURES



4.1 Description of first aid measures

Self-protection of the first aider

Use personal protective equipment as required. Wear appropriate personal protective equipment, avoid direct contact. Ensure adequate ventilation. Do not breathe fumes. Wear suitable protective clothing. Wear suitable respiratory protective equipment if exposure to high levels of material are likely. Avoid contact during pregnancy and while nursing.

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Apply artificial respiration if breathing has ceased or shows signs of failing. 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

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

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

Inhalation (Fume)

May cause an allergic skin reaction. May damage fertility. May damage the unborn child. May cause harm to breastfed babies. Causes damage to organs through prolonged or repeated exposure. Flux fumes during soldering may cause irritation and damage of mucous membranes and respiratory system.

Lead

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. High atmospheric concentrations may lead to adverse effects on the central nervous system and anaesthetic effects, including drowsiness, giddiness, headache, nausea and unconsciousness. Lead is a cumulative poison and continuous exposure to small amounts over time can raise the body's content to

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	Hot/molten product	toxic levels. Symptoms of lead poisoning include abdominal pain, nausea, vomiting and headache. May cause gastrointestinal tract irritation if swallowed. Lead poisoning may cause lassitude, weight loss, anemia, nausea, vomiting, central nervous system damage.
4.3	Indication of any immediate medical attention and special treatment needed	Molten material can cause severe burns. Treat symptomatically.
	Notes to a physician:	
	prolonged exposure:	IF ON SKIN: Hot/molten product: In the event of burns from the molten liquid, do not attempt to remove adhering material. 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	As appropriate for surrounding fire.
	Suitable Extinguishing media	Do not use water on fires when molten metal is present.
	Unsuitable extinguishing media	
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 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. Avoid contact during pregnancy and while nursing.
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	Ensure suitable personal protection during removal of spillages. 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. Ensure adequate ventilation. Avoid all contact. Avoid contact during pregnancy and while nursing. Avoid breathing smoke fumes during soldering. Use caution to avoid breathing fumes if a gas torch is used to cut up large pieces. 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.
7.2	Conditions for safe storage, including any incompatibilities	Store in a well-ventilated place.
	Storage temperature	Ambient.
	Storage life	Stable under normal conditions.

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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)

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 ³)	STEL (ppm)	STEL (mg/m ³)	Note
Inorganic lead and its compounds	-	-	0.15	-	-	BOELV
Lead	7439-92-1	-	0.15	-	-	WEL
Rosin-based solder flux fume	8050-09-7	-	0.05	-	0.15	WEL

Note: WEL: Workplace Exposure Limit (UK HSE EH40). BOELV: Binding Occupational Exposure Limit Values (EU) Directive 98/24/EC.

8.1.2 Biological limit value

United Kingdom: The Control of Lead at Work Regulations SI 2002/2676

In accordance with SI 2002/2676: 2. (1) In these Regulations: "action level" means a blood-lead concentration of:

- (a) in respect of a woman of reproductive capacity, 25 µg/dl;
- (b) in respect of a young person, 40 µg/dl; or
- (c) in respect of any other employee, 50 µg/dl

SUBSTANCE	CAS No.	Biological limit value	Biological Guidance Value	Note
Lead	7439-92-1	30 µg / 100 ml	-	SCOEL

Source: SCOEL - Scientific Committee on Occupational Exposure Limits (2014) EU Commission Decision 2014/113/EU.

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. Local exhaust recommended.

8.2.2 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. Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Eye/ face protection



Wear eye protection with side protection (EN166).
Hot/molten product: 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.
Hot/molten product: Use gloves with insulation for thermal protection, when needed.

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

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Respiratory protection



Hot/molten product: Wear flameproof clothing.

In case of inadequate ventilation wear respiratory protection. Open system(s): Wear suitable respiratory protective equipment. Recommended: Dust mask/ Half-face mask (DIN EN 140), Filter type: P2.

Thermal hazards

Hot/molten product: Wear appropriate personal protective equipment, avoid direct contact.

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 ₂ 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. Store away from sources of sulfur.
10.6 Hazardous decomposition product(s)	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)

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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 (Dusts) > 5 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.

Rosin:

Skin Sens. 1; H317 Harmonised Classification

Sensitisation (mouse) - Positive (OECD 429)

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.

Lead:

Repr. 1A; H360FD Harmonised Classification

NOAEL: 250 ml/l Drinking water (Unnamed, 1984)

Lact. Harmonised Classification

STOT - single exposure

Based upon the available data, the classification criteria are not met.

STOT - repeated exposure

STOT RE 1; Causes damage to organs through prolonged or repeated exposure.

Lead:

STOT RE 1; H372

Oral: LOAEL 200ppm (rat)

Aspiration hazard

Based upon the available data, the classification criteria are not met.

11.2

Other information

None known.

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.

Rosin:

Readily biodegradable (according to OECD criteria).

Lead:

Not applicable for inorganic substances

12.3 Bioaccumulative potential

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

Rosin:

The substance has low potential for bioaccumulation. BCF <25 - 130

Lead:

The substance has high potential for bioaccumulation. BCF 40000 (dry wt)

12.4 Mobility in soil

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

Rosin:

The substance is predicted to have moderate mobility in soil. Slightly soluble.

Lead:

The substance is predicted to have moderate mobility in soil. Partially soluble

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. Dispose of wastes in an approved waste disposal facility. Disposal of electrical waste must be in accordance with the Waste Electrical and Electronic Equipment Directive (WEEE Directive, 2012/19/EU).

13.2 Additional Information

Dispose of contents in accordance with local, state or national legislation.

14. SECTION 14: TRANSPORT INFORMATION

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

ADR/RID / IMDG / IATA

14.1 UN number

Not classified as dangerous for transport.

14.2 Proper Shipping Name

Not classified

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14.3	Transport hazard class(es)	Not classified
14.4	Packing group	Not classified
14.5	Environmental hazards	Not classified as a Marine Pollutant/Environmentally hazardous substance.
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 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.

For professional users only.

Lead: Entry 30: Restriction on supply of substances and mixtures to the general public, if classified as Repr. 1A or 1B

Entry number: 63. REACH: ANNEX XVII restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles.

15.1.2 National regulations

United Kingdom

Wassergefährdungsklasse (Germany)

The Control of Lead at Work Regulations (2002)

Water hazard class: 1

15.2 Chemical Safety Assessment

A chemical safety assessment is not required under REACH.

16. SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: Not applicable – V1.0

References: Existing Safety Data Sheet (SDS), Harmonised Classification and Existing ECHA registration(s) for Rosin (CAS No.8050-09-7), Lead (CAS No. 7439-92-1)

EU Classification: This Safety Data Sheet was prepared in accordance with EC Regulation (EC) 1907/2006 (REACH), 1272/2008 (CLP) & 2015/830.

Classification of the substance or mixture According to Regulation (EC) No. 1272/2008 (CLP)	Classification Procedure
Skin Sens. 1; H317	Threshold Calculation
Repr. 1A; H360FD	Threshold Calculation
Lact.; H362	Threshold Calculation
STOT RE 1; H372	Threshold Calculation

LEGEND

LTEL: Long Term Exposure Limit

STEL: Short Term Exposure Limit

DNEL: Derived No Effect Level

SCL: Specific Concentration Limit

LOAEL: Lowest observed adverse effect level

PNEC: Predicted No Effect Concentration

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NOAEL: No Observed Adverse Effect Level

Hazard classification / Classification code:

Skin Sens. 1; Skin Sensitisation, Category 1

Repr. 1A; Reproductive toxicity, Category 1A

Lact.; Effects on or via lactation

STOT RE 1; Specific target organ toxicity — repeated exposure, Category

1

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.

H372: Causes damage to organs through prolonged or repeated exposure.

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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