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

1.1 Product identifier

Product Name	M-Line 450-20S Solder
Chemical Name	Mixture
CAS No.	Mixture
EINECS No.	Mixture
REACH Registration No.	None assigned.

1.2 Recommended use of the chemical and restrictions on use

Identified Use(s)	PC38 Welding and soldering products (with flux coatings or flux cores.), flux products
Uses Advised Against	None known.

1.3 Supplier's details

Company Identification	VISHAY MEASUREMENTS GROUP UK LTD Stroudley Road Basingstoke Hampshire RG24 8FW United Kingdom
Telephone	+44 (0) 1256 462131
Fax	+44 (0) 1256 471441
E-Mail (competent person)	mm.uk@vishaypg.com

1.4 Emergency Phone No. (00-1) 703-527-3887
CHEMTREC

2. SECTION 2: HAZARDS IDENTIFICATION

2.1 Directive 67/548/EEC & Directive 1999/45/EC Not classified as dangerous for supply/use.

2.2 Label elements According to Regulation (EC) No. 1272/2008 (CLP)

Product Name	M-Line 450-20S Solder
Hazard Pictogram(s)	None assigned.
Signal Word(s)	None assigned.
Hazard Statement(s)	None assigned.
Precautionary Statement(s)	None assigned.
Additional Information	None.

2.3 Other hazards None.

3. SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

No classifiable hazardous ingredient(s).

4. SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation	If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
Skin Contact	Wash with plenty of water. If irritation (redness, rash, blistering) develops, get medical attention.
Eye Contact	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.
Ingestion	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.

4.2 Most important symptoms and effects, both acute and delayed — None anticipated.

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.

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 — Solder containing antimony may liberate antimony oxide if heated above 537°C.

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.

6.2 Environmental precautions — Avoid release to the environment. Do not allow to enter drains, sewers or watercourses.

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.

6.4 Reference to other sections — See Section: 8, 13

7. SECTION 7: HANDLING AND STORAGE

7.1 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.

7.2 Conditions for safe storage, including any incompatibilities — Store in a well-ventilated place.

Storage temperature	Ambient.
Storage life	Stable under normal conditions.
Incompatible materials	Store away from sources of sulfur. Keep away from: Acids, Chlorine and Strong oxidising agents.

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 — Not applicable.

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 using the principles of good occupational hygiene practice.

8.2.2 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: Wear impervious gloves (EN374).

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 (H2O = 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**	Reacts vigorously with chlorine and oxidising agents.
10.4	**Conditions to avoid**	None known.
10.5	**Incompatible materials**	Store away from sources of sulfur. Keep away from: Acids, Chlorine and Strong oxidising agents. When molten: Keep from any possible contact with water.
10.6	**Hazardous decomposition product(s)**	Solder containing antimony may liberate antimony oxide if heated above 537°C.

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

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 product is not biodegradable. (metals).
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 contents in accordance with local, state or national legislation.
13.2	**Additional Information**	Disposal of electrical waste must be in accordance with the Waste Electrical and Electronic Equipment Directive (WEEE Directive, 2012/19/EU).

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.
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**	
	SVHCs	None
15.1.2	**National regulations**	
	Germany	Water hazard class: Not classified
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), Existing ECHA registration(s) for Tin (CAS# 7440-31-5) and Antimony (CAS# 7440-36-0).

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

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.

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