

SAFETY DATA SHEET

Revision: 1.0 Date: 24.08.2015


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 1240 FPA Silver Solder
Chemical Name Mixture
CAS No. Mixture
EINECS No. Mixture
REACH Registration No. None assigned.
- 1.2 Relevant identified uses of the substance or mixture and uses advised against**
Identified Use(s) Welding and soldering products.
Uses Advised Against None known.
- 1.3 Details of the supplier of the safety data sheet**
Company Identification VISHAY MEASUREMENTS GROUP UK LTD
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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 telephone number** (00-1) 703-527-3887
CHEMTREC

2. SECTION 2: HAZARDS IDENTIFICATION

- 2.1 Classification of the substance or mixture**
2.1.1 Regulation (EC) No. 1272/2008 (CLP) Acute Tox. 4; H302
Skin Sens. 1; H317
Carc. 2; H351
Repr. 2; H361d
STOT RE 2; H373
Aquatic Acute 1; H400
Aquatic Chronic 1; H410
- 2.2 Label elements** Regulation (EC) No. 1272/2008 (CLP)
Product Name 1240 FPA Silver Solder
- Hazard Pictogram(s)

- Signal Word(s) Warning
- Contains: Potassium difluorodihydroxyborate(1-) and Nickel
- Hazard Statement(s)
H302: Harmful if swallowed.
H317: May cause an allergic skin reaction.
H351: Suspected of causing cancer.
H361d: Suspected of damaging the unborn child.
H373: May cause damage to organs through prolonged or repeated exposure.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.

SAFETY DATA SHEET

Revision: 1.0 Date: 24.08.2015

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH),
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Precautionary Statement(s)

P201: Obtain special instructions before use.
P260: Do not breathe dust/fume/gas/mist/vapours/spray.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352: IF ON SKIN: Wash with plenty of water.
P308+P313: IF exposed or concerned: Get medical advice/attention.
P273: Avoid release to the environment.

Additional Information

None.

2.3 Other hazards

Thermal decomposition will evolve toxic and corrosive vapours.
Contact with reducing agents may form explosive gases.

3. SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances Not applicable.

3.2 Mixtures

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

Chemical identity of the substance	%W/W	CAS No.	EC No.	REACH Registration No.	Hazard Statement(s)
Silver	< 50	7440-22-4	231-131-3	None assigned.	Aquatic Acute 1; H400 (M-factor – 10) Aquatic Chronic 1; H410 (M-factor – 10)
Potassium difluorodihydroxyborate(1-)	< 35	85392-66-1	286-925-2	None assigned.	Acute Tox. 4; H302 Repr. 2; H361d (SCL: $\geq 7.1\%$)
Copper	25 - 35	7440-50-8	231-159-6	None assigned.	Aquatic Acute 1; H400 Aquatic Chronic 3; H412
Zinc	25 - 30	7440-66-6	231-175-3	None assigned.	Aquatic Acute 1; H400 Aquatic Chronic 1; H410
Nickel	< 5	7440-02-0	231-111-4	None assigned.	Skin Sens. 1; H317 Carc. 2; H351 STOT RE 1; H372 Aquatic Chronic 3; H412

H302: Harmful if swallowed. H317: May cause an allergic skin reaction. H351: Suspected of causing cancer. H361d: Suspected of damaging the unborn child. H372: Causes damage to organs through prolonged or repeated exposure. H400: Very toxic to aquatic life. H410: Very toxic to aquatic life with long lasting effects. H412: Harmful to aquatic life with long lasting effects. M-factor: multiplying factor. SCL: Specific Concentration Limit.

4. SECTION 4: FIRST AID MEASURES



4.1 Description of first aid measures

Self-protection of the first aider

Do not breathe vapour. Wear suitable protective clothing. Wear suitable respiratory protective equipment if exposure to high levels of material are likely. Do not use mouth-to-mouth resuscitation.

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. If breathing is laboured, oxygen should be administered by qualified personnel. IF exposed or concerned: Call a POISON CENTER/doctor.

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: Call a POISON CENTER/doctor.

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.

SAFETY DATA SHEET

Revision: 1.0 Date: 24.08.2015

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

www.vishaypg.com

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. Do NOT induce vomiting. Do not give anything by mouth to an unconscious person. IF exposed or concerned: Call a POISON CENTER/doctor.
4.2 Most important symptoms and effects, both acute and delayed	May cause an allergic skin reaction. Repeated and/or prolonged contact may cause dermatitis. Suspected of causing cancer. Suspected of damaging the unborn child. May cause damage to organs through prolonged or repeated exposure. Harmful if swallowed. Molten material can cause severe burns. Flux fumes during soldering may cause irritation and damage of mucous membranes and respiratory system.
4.3 Indication of any immediate medical attention and special treatment needed	Treat symptomatically. Molten material can cause severe burns. Do NOT try to peel molten material from the skin. Cool rapidly with water.
Notes to a physician:	Fluorides can reduce serum calcium levels resulting in potentially fatal hypocalcemia. Focus medical efforts on combating shock and reducing systemic toxicity of fluoride ion.

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	Thermal decomposition will evolve toxic and corrosive vapours. Acrid smoke, Carbon monoxide, carbon dioxide, halogenated compounds and hydrofluoric acid. High temperatures may produce heavy metal fumes, dust and/or vapor. Contact with reducing agents may form explosive gases.
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	Eliminate all ignition sources if safe to do so. Ensure adequate ventilation. Avoid all contact. Do not breathe vapour. Do not breathe fumes/vapour from heated product. Wear suitable respiratory protection. Use personal protective equipment as required. See Section: 8.
6.2 Environmental precautions	Avoid release to the environment. Do NOT wash away into sewer. 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 (including respiratory protection) during removal of spillages. Transfer to a container for disposal. Ventilate the area and wash spill site after material pick-up is complete. Recover or recycle if possible. Dispose of this material and its container as hazardous waste (2008/98/EEC).
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. Do not breathe vapour. Do not breathe fumes/vapour from heated product. Avoid all contact. Wear suitable respiratory protection. 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	Keep container tightly closed, in a cool, well ventilated place. Avoid contact with moist air.

SAFETY DATA SHEET

Revision: 1.0 Date: 24.08.2015

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

www.vishaypg.com

Storage temperature 5°C - 25°C
Storage life Stable under normal conditions.
Incompatible materials Keep away from reducing agents. Keep away from: Acids, Alkalis, Strong oxidising agents, ammonia, peroxides, halogens, halogenated compounds and strong bases. Protect from moisture.
7.3 Specific end use(s) PC38 Welding and soldering products (with flux coatings or flux cores.), flux products.

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
Silver	7440-22-4	-	0.1 (1) 0.01 (2)	-	-	WEL
Copper	7440-50-8	-	1 (3) 0.2 (4)	-	2 (3)	WEL
Nickel	7440-02-0	-	1 (5) (6)	-	3 (5)	WEL

Note: WEL: Workplace Exposure Limit (UK HSE EH40)

(1): Silver, metallic

(2): Silver, soluble compounds (as Ag)

(3): Copper, dusts and mists (as Cu)

(4): Copper, fume, respirable dust

(5): Nickel, organic compounds (as Ni)

(6): The UK Advisory Committee on Toxic Substances has expressed concern that, for the OELs shown in parentheses, health may not be adequately protected because of doubts that the limit was not soundly-based. These OELs were included in the published UK 2002 list and its 2003 supplement, but are omitted from the published 2005 list.

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. Local exhaust ventilation is required. Guarantee that the eye flushing systems and safety showers are located close to the working place.

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. Do not breathe vapour. Do not breathe fumes/vapour from heated product. 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



Wear eye protection with side protection (EN166). When molten: Goggles or Full face shield.

Skin protection



Hand protection: Wear impervious gloves (EN374). Gloves should be changed regularly to avoid permeation problems. The gloves type used must be chosen based on the work activity and duration as well as concentration/quantity of material being handled.

When molten: 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. Recommended:

Wear work clothes with long sleeves.

When molten: Wear flameproof clothing.

SAFETY DATA SHEET

Revision: 1.0 Date: 24.08.2015

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

www.vishaypg.com

Respiratory protection



In case of inadequate ventilation wear respiratory protection. Open system(s):
Wear suitable respiratory protective equipment. Recommended: EN149.

Thermal hazards

None.

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	Tan coloured viscous paste
Odour	Characteristic
Odour threshold	Not available.
pH	Not available.
Melting point/freezing point	>538 °C
Initial boiling point and boiling range	277- 328 °C
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable - Liquid
Upper/lower flammability or explosive limits	Not available.
Vapour pressure	0.093 mm Hg @ 20 °C
Vapour density	>1 (Air = 1)
Relative density	>2 (Water = 1)
Solubility(ies)	Water: Negligible
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	Reactivity	Stable under normal conditions.
10.2	Chemical stability	Stable under normal conditions.
10.3	Possibility of hazardous reactions	Contact with reducing agents may form explosive gases. In reduced atmospheres nickel can react with carbon monoxide to form Ni(CO) ₄ , which is an extremely toxic gas.
10.4	Conditions to avoid	Keep away from heat and sources of ignition. Protect from moisture.
10.5	Incompatible materials	Keep away from reducing agents. Keep away from: Acids, Alkalis, Strong oxidising agents, ammonia, peroxides, halogens, halogenated compounds and strong bases.
10.6	Hazardous decomposition product(s)	Thermal decomposition will evolve toxic and corrosive vapours. Acrid smoke, Carbon monoxide, carbon dioxide, halogenated compounds and hydrofluoric acid. High temperatures may produce heavy metal fumes, dust and/or vapor.

11. SECTION 11: TOXICOLOGICAL INFORMATION

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

Acute toxicity

Ingestion

Acute Tox. 4; Harmful if swallowed.

Acute Toxicity Estimate Mixture Calculation: Estimated LC50 1429 mg/kg bw/day.

Inhalation

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

SAFETY DATA SHEET

Revision: 1.0 Date: 24.08.2015

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH),
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Skin Contact	Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 20.0 mg/l. 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	Carc. 2: Suspected of causing cancer.
Reproductive toxicity	Repr. 2: Suspected of damaging the unborn child.
STOT - single exposure	Based upon the available data, the classification criteria are not met.
STOT - repeated exposure	STOT RE 2: May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	Based upon the available data, the classification criteria are not met.
11.2 Other information	None.

12. SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity	Aquatic Acute 1: Very toxic to aquatic life. Aquatic Chronic 1: Very toxic to aquatic life with long lasting effects. Estimated Mixture LC50 < 1 mg/l (Fish)
12.2 Persistence and degradability	The methods for determining the biological degradability are not applicable to inorganic substances.
12.3 Bioaccumulative potential	No data for the mixture as a whole.
12.4 Mobility in soil	The product is predicted to have low mobility in soil.
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	Recover or recycle if possible. Dispose of this material and its container as hazardous waste (2008/98/EEC). Send after pre-treatment to a appropriate hazardous waste incinerator facility according to legislation.
13.2 Additional Information	Dispose of contents in accordance with local, state or national legislation. Containers of this material may be hazardous when empty since they retain product residue.

14. SECTION 14: TRANSPORT INFORMATION

	ADR/RID / IMDG / IATA
14.1 UN number	UN 3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Silver and Copper)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Environmental hazards	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	
Substance(s) of Very High Concern (SVHCs)	None

SAFETY DATA SHEET

Revision: 1.0 Date: 24.08.2015

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1272/2008 (CLP) & 2015/830

www.vishaypg.com

Authorisations and/or Restrictions On Use	None
15.1.2 National regulations	
Wassergefährdungsklasse (Germany)	Water hazard class: 3
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 Zinc (CAS No. 7440-66-6) and Nickel (7440-02-0). Existing ECHA registration(s) for Silver (CAS No. 7440-22-4), Copper (CAS No. 7440-50-8), Potassium difluorodihydroxyborate(1-) (CAS No. 85392-66-1), Zinc (CAS No. 7440-66-6) and Nickel (CAS No. 7440-02-0).

Classification of the substance or mixture According to Regulation (EC) No. 1272/2008 (CLP)	Classification Procedure
Acute Tox. 4; H302	Acute Toxicity Estimate Mixture Calculation
Skin Sens. 1; H317	Threshold Calculation
Carc. 2; H351	Threshold Calculation
Repr. 2; H361d	Threshold Calculation
STOT RE 2; H373	Threshold Calculation
Aquatic Acute 1; H400	Summation Calculation
Aquatic Chronic 1; H410	Summation 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

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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