

SECTION 1: Identification of the substance/mixture and of the company/undertaking
Trade name: 245 Flux-Cored Lead (Pb) Solder
Relevant identified uses of the substance or mixture and uses advised against

Solder

Professional use of lead solder

1.3 Details of the supplier of the safety data sheet

This Safety Data Sheet has been updated in accordance with the Globally Harmonized System (GHS).

Manufacturer/Supplier:

Kester Inc.

800 West Thorndale Avenue

Itasca, IL 60143

Tel 00+1 + 630 616 4000

ITW Specialty Materials (Suzhou) Co., Ltd.

Hengqiao Road, Wujiang Economic Development Zone

Suzhou, Jiangsu Province, China 215200

Tel +86 512 82060807

Further information obtainable from: Product Compliance: EHS_Kester@kester.com

1.4 Emergency telephone number:

TRANSPORT EMERGENCY Phone: CHEMTREC (800) 424-9300 (Outside US & Canada): 00+1 +703 527 3887

SECTION 2: Hazards identification
2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008


GHS08 health hazard

Carc. 2 H351 Suspected of causing cancer.

Repr. 1B H360 May damage fertility or the unborn child.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H312 Harmful in contact with skin.

Acute Tox. 4 H332 Harmful if inhaled.

2.2 Label elements
Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

Hazard pictograms


GHS07 GHS08

Signal word Danger

Hazard-determining components of labelling:

LEAD (Pb)

Hazard statements

H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.

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H351 Suspected of causing cancer.
 H360 May damage fertility or the unborn child.
 H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P280 Wear protective gloves / eye protection.
 P270 Do not eat, drink or smoke when using this product.
 P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
 P302+P352 IF ON SKIN: Wash with plenty of soap and water.
 P402 Store in a dry place.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Additional information:

Warning! Contains lead.
 For use in industrial installations only.
 Restricted to professional users.

2.3 Other hazards
Results of PBT and vPvB assessment

PBT: Not applicable.
vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

Description: Mixture of substances listed below with nonhazardous additions.

Chemical components:

CAS: 7440-31-5 EINECS: 231-141-8	TIN (Sn)	30-65%
CAS: 7439-92-1 EINECS: 231-100-4	LEAD (Pb) ⚠ Carc. 2, H351; Repr. 1B, H360; STOT RE 2, H373 ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332	30-65%
	Rosin ⚠ Skin Sens. 1, H317	3.0-5.0%
CAS: 7440-22-4 EINECS: 231-131-3	SILVER (Ag)	^^
CAS: 7440-50-8 EINECS: 231-159-6	COPPER (Cu)	^^
CAS: 7440-36-0 EINECS: 231-146-5	ANTIMONY (Sb)	^^
CAS: 7440-69-9 EINECS: 231-177-4	BISMUTH (Bi)	^^

Additional information:

Composition and weight percent of solder alloys varies widely and can be determined by product label. ^{^^ See Product Alloy Table}
 This solder product does not contain any Substance of Very High Concern (SVHC) on the European Chemicals Agency (ECHA) candidate list.

SECTION 4: First aid measures
4.1 Description of first aid measures

General information: Follow general first aid procedures.

After inhalation:

In case of unconsciousness place patient stably in side position for transportation.
 Supply fresh air; consult doctor in case of complaints.

After skin contact: Immediately wash with water and soap and rinse thoroughly.

After eye contact: Rinse opened eye for several minutes under running water.

After swallowing: Seek immediate medical advice.

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4.2 Most important symptoms and effects, both acute and delayed No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed
 No further relevant information available.

SECTION 5: Firefighting measures
5.1 Extinguishing media
Suitable extinguishing agents: CO₂. Do not use water.

For safety reasons unsuitable extinguishing agents: Water

5.2 Special hazards arising from the substance or mixture

In case of fire, the following can be released:

Carbon monoxide (CO)

Nitrogen oxides (NO_x)
Carbon dioxide (CO₂)

5.3 Advice for firefighters
Protective equipment: Wear self-contained respiratory protective device.

SECTION 6: Accidental release measures
6.1 Personal precautions, protective equipment and emergency procedures Ensure adequate ventilation

6.2 Environmental precautions: Do not allow to enter sewers/ surface or ground water.

6.3 Methods and material for containment and cleaning up:

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage
7.1 Precautions for safe handling

Thorough dedusting.

Ensure good ventilation/exhaustion at the workplace.

Information about fire - and explosion protection: No special measures required.

7.2 Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles: Store in a cool location.

Information about storage in one common storage facility: Not required.

Further information about storage conditions: Keep container tightly sealed.

7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection
Additional information about design of technical facilities: No further data; see item 7.

8.1 Control parameters
Ingredients with limit values that require monitoring at the workplace:
7439-92-1 LEAD (Pb)

 PEL Long-term value 0.05* mg/m³

 REL Long-term value 0.05* mg/m³

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according to 1907/2006/EC, Article 31

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*8-hr TWA, excl. lead arsenate; See PocketGuideApp.C

TLV Long-term value 0.05* mg/m³

*and inorganic compounds, as Pb; BEI

7440-31-5 TIN (Sn)PEL Long-term value 2 mg/m³ metalREL Long-term value 2 mg/m³TLV Long-term value 2 mg/m³ metal**8.2 Exposure controls****Personal protective equipment:****General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Respiratory protection:

When ventilation is not sufficient to remove fumes from the breathing zone, a safety approved respirator or self-contained breathing apparatus should be worn.

Protection of hands:

Protective gloves

Material of gloves

Nitrile rubber, NBR

Natural rubber, NR

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection: Safety Glasses with Side Shields Required**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****General Information****Appearance:****Form:** Solid**Colour:** Silver grey**Odour:** Odourless**pH-value:** Not applicable.**Change in condition****Melting point/Melting range:** 183 - 301 °C
Undetermined.**Flash point:** Undetermined.**Flammability (solid, gaseous):** Not determined.**Self-igniting:** Product is not selfigniting.**Danger of explosion:** Product does not present an explosion hazard.**Vapour pressure:** Not applicable.**Density at 20 °C:** 8.4 - 11.1 g/cm³

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Trade name: 245 Flux-Cored Lead (Pb) Solder
Vapour density Not applicable.

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Solubility in / Miscibility with water: Insoluble.

SECTION 10: Stability and reactivity
10.1 Reactivity
10.2 Chemical stability
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

10.3 Possibility of hazardous reactions No dangerous reactions known.

10.4 Conditions to avoid No further relevant information available.

10.5 Incompatible materials: Strong acids, strong oxidizers.

10.6 Hazardous decomposition products: No dangerous decomposition products known.

SECTION 11: Toxicological information
11.1 Information on toxicological effects
Acute toxicity
Primary irritant effect:
Skin corrosion/irritation Irritant to skin and mucous membranes.

Serious eye damage/irritation Smoke during soldering can cause eye irritation.

Additional toxicological information:

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Harmful

Irritant

SECTION 12: Ecological information
12.1 Toxicity
Aquatic toxicity: No further relevant information available.

Additional ecological information:
General notes:

The product contains heavy metals. Avoid transfer into the environment. Specific preliminary treatments are necessary.

12.5 Results of PBT and vPvB assessment
PBT: Not applicable.

vPvB: Not applicable.

SECTION 13: Disposal considerations
13.1 Waste treatment methods
Recommendation

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Disposal must be made according to official regulations.

Uncleaned packaging:
Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information
14.1 UN-Number

Not regulated

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14.2 UN proper shipping name	Not regulated
IMDG, IATA	Not regulated
14.3 Transport hazard class(es)	Not regulated
ADR, IMDG, IATA	
Class	Not regulated.
14.4 Packing group	Not regulated
14.5 Environmental hazards:	Not applicable.
Marine pollutant:	No
14.6 Special precautions for user	Not applicable.
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

All ingredients are listed on the following Government Inventories:

China:	Inventory of Existing Chemical Substances in China (IECSC)
Korea:	Korea Existing Chemicals List (ECL)
Europe:	European Inventory of Existing Commercial Chemical Substances (EINECS)
Japan:	Inventory of Existing and New Chemical Substances (ENCS)
Philippines:	Philippine Inventory of Chemicals and Chemical Substances (PICCS)
USA:	TSCA (Toxic Substances Control Act) TSCA Inventory of Chemical Substances

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

Hazard pictograms

GHS07 GHS08

Signal word Danger**Hazard-determining components of labelling:**

LEAD (Pb)

Hazard statements

H302+H312+H332	Harmful if swallowed, in contact with skin or if inhaled.
H351	Suspected of causing cancer.
H360	May damage fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P280	Wear protective gloves / eye protection.
P270	Do not eat, drink or smoke when using this product.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P301+P330+P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P402	Store in a dry place.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

Directive 2012/18/EU**Named dangerous substances - ANNEX I** None of the ingredients is listed.**15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.(Continued on page 7) ^{GB}

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SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

The information contained herein is based on data considered accurate and is offered solely for information, consideration and investigation. Kester extends no warranties, makes no representations and assumes no responsibility as to the accuracy, completeness or suitability of this data for any purchaser's use. The data on this Safety Data Sheet (SDS) relates only to this product and does not relate to use with any other material or in any process. All chemical products should be used only by, or under the direction of, technically qualified personnel who are aware of the hazards involved and the necessity for reasonable care in handling. Hazard communication regulations require that employees must be trained on how to use a Safety Data Sheet (SDS) as a source for hazard information.

Department issuing MSDS: Product Compliance / EHS Department

Contact: EHS_Kester@kester.com

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

Acute Tox. 4: Acute toxicity, Hazard Category 4

Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

Carc. 2: Carcinogenicity, Hazard Category 2

Repr. 1B: Reproductive toxicity, Hazard Category 1B

STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2

* **Data compared to the previous version altered.**

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245 FLUX-CORED LEAD (Pb) PRODUCT ALLOYS INCLUDED IN THIS SDS

Alloy	Flux	Diameter	Core	Description	Part #
SN40PB60	245	0.062	50	SN40PB60 #50/245 .062 5 LB SPL	2640608817
SN50PB50	245	0.04	50	SN50PB50 #50/245 .040 5 LB SPL	2650508813
SN5PB93.5AG1.5	245	0.031	58	SN05PB93.5AG01.5 #58/245 .031 1 LB SPL	2473408801
SN5PB93.5AG1.5	245	0.04	50	SN05PB93.5AG01.5 #50/245 .040 1 LB SPL	2473408813
SN60PB40	245	0.031	50	SN60PB40 #50/245 .031 1 LB SPL	2460408800
SN60PB40	245	0.031	66	SN60PB40 #66/245 .031 1 LB SPL	2460408802
SN60PB40	245	0.04	66	SN60PB40 #66/245 .040 1 LB SPL	2460408825
SN60PB40	245	0.05	58	SN60PB40 #58/245 .050 1 LB SPL	2460408815
SN60PB40	245	0.05	66	SN60PB40 #66/245 .050 1 LB SPL	2460408816
SN60PB40	245	0.062	50	SN60PB40 #50/245 .062 1 LB SPL	2460408817
SN62PB36AG2	245	0.015	50	SN62PB36AG02 #50/245 .015 1 LB SPL	2471508806
SN62PB36AG2	245	0.02	58	SN62PB36AG02 #58/245 .020 1 LB SPL	2471508834
SN62PB36AG2	245	0.02	66	SN62PB36AG02 #66/245 .020 3 LB SPL	2971508808
SN62PB36AG2	245	0.025	50	SN62PB36AG02 #50/245 .025 1 LB SPL	2471508809
SN62PB36AG2	245	0.025	66	SN62PB36AG02 #66/245 .025 1 LB SPL	2471508842
SN62PB36AG2	245	0.031	50	SN62PB36AG02 #50/245 .031 1 LB SPL	2471508800
SN62PB36AG2	245	0.031	58	SN62PB36AG02 #58/245 .031 1 LB SPL	2471508801
SN62PB36AG2	245	0.031	66	SN62PB36AG02 #66/245 .031 1 LB SPL	2471508802
SN62PB36AG2	245	0.031	66	SN62PB36AG02 #66/245 .031 2 LB SPL	2271508802
SN63PB37	245	0.01	50	SN63PB37 #50/245 .010 1 LB SPL	2463378810
SN63PB37	245	0.01	58	SN63PB37 #58/245 .010 1 LB SPL	2463378850
SN63PB37	245	0.01	66	SN63PB37 #66/245 .010 1 LB SPL	2463378870
SN63PB37	245	0.015	50	SN63PB37 #50/245 .015 1 LB SPL	2463378806
SN63PB37	245	0.015	58	SN63PB37 #58/245 .015 1 LB SPL	2463378843
SN63PB37	245	0.015	66	SN63PB37 #66/245 .015 1 LB SPL	2463378853
SN63PB37	245	0.02	50	SN63PB37 #50/245 .020 1 LB SPL	2463378807
SN63PB37	245	0.02	58	SN63PB37 #58/245 .020 1 LB SPL	2463378834
SN63PB37	245	0.02	66	SN63PB37 #66/245 .020 1 LB SPL	2463378808
SN63PB37	245	0.025	50	SN63PB37 #50/245 .025 1 LB SPL	2463378809
SN63PB37	245	0.025	58	SN63PB37 #58/245 .025 1 LB SPL	2463378860
SN63PB37	245	0.025	66	SN63PB37 #66/245 .025 1 LB SPL	2463378842
SN63PB37	245	0.03	50	SN63PB37 #50/245 .030 1 LB SPL	2463378811
SN63PB37	245	0.031	50	SN63PB37 #50/245 .031 1 LB SPL	2463378800
SN63PB37	245	0.031	58	SN63PB37 #58/245 .031 1 LB SPL	2463378801
SN63PB37	245	0.031	66	SN63PB37 #66/245 .031 1 LB SPL	2463378802
SN63PB37	245	0.04	50	SN63PB37 #50/245 .040 1 LB SPL	2463378813
SN63PB37	245	0.04	58	SN63PB37 #58/245 .040 1 LB SPL	2463378846
SN63PB37	245	0.04	66	SN63PB37 #66/245 .040 1 LB SPL	2463378825
SN63PB37	245	0.05	50	SN63PB37 #50/245 .050 5 LB SPL	2663378814
SN63PB37	245	0.05	50	SN63PB37 #50/245 .050 1 LB SPL	2463378814
SN63PB37	245	0.05	66	SN63PB37 #66/245 .050 1 LB SPL	2463378816
SN63PB37	245	0.062	50	SN63PB37 #50/245 .062 5 LB SPL	2663378817
SN63PB37	245	0.062	50	SN63PB37 #50/245 .062 1 LB SPL	2463378817
SN63PB37	245	0.062	58	SN63PB37 #58/245 .062 1 LB SPL	2463378803
SN63PB37	245	0.062	66	SN63PB37 #66/245 .062 1 LB SPL	2463378804