

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Trade name: Solid Lead Free Solder

Relevant identified uses of the substance or mixture and uses advised against

Solder

Professional use of 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



GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.
STOT SE 3 H335 May cause respiratory irritation.

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

Signal word Warning

Hazard statements

H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.

Precautionary statements

P280 Wear protective gloves / eye protection.
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:

For use in industrial installations only.
Restricted to professional users.

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2.3 Other hazards**Results of PBT and vPvB assessment**

PBT: Not applicable.

vPvB: Not applicable.

SECTION 3: Composition/information on ingredients
3.2 Chemical characterisation: Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

Chemical components:

CAS: 7440-31-5 EINECS: 231-141-8	TIN (Sn)		>65%
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:

^^ 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.

Composition and weight percent of solder alloys varies widely and can be determined by product label.

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

General information: Follow general first aid procedures.

After inhalation: 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.

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.

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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.

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

Prevent formation of dust.

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: None.

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:

7440-31-5 TIN (Sn)

PEL Long-term value 2 mg/m³ metal

REL Long-term value 2 mg/m³

TLV 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

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Natural rubber, NR

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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 material
Colour: Silver grey
Odour: Odourless

pH-value: Not applicable.

Change in condition

Melting point/Melting range: 221-245 °C

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: 7.31-7.42 g/cm³

Vapour density: Not applicable.

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

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Irritant

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

Additional ecological information:
General notes:

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

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
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.

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Hazard pictograms

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GHS07

Signal word Warning

Hazard statements

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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.

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

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

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

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

Bar Solder - Lead Free Alloys included in this SDS

Alloy	Description	Part #
K100LD	K100LD 750GM TR-BAR	BA2125
K100LD	K100 LD 1kg Bar	40010058
K100LD	K100LD UP BAR 1 2/3 LB	495740050
K100LD	K100LD UP FLO-BAR	795740050
SAC0307	99A03C07 750GM TR-BAR TWN	BA2148
SAC305	Sn96.5Ag3Cu0.5 Bar Chips (DE)	40010038
SAC305	965A3C05 750GM TR-BAR TWN	BA2140
SAC305	965A3C05 750GM TR-BAR	BA2093
SAC305	965A3C05 750GM TR-BAR (CLS)	BA2113
SAC305	965A3C05 750GM TR-BAR TWN	BA2141
SAC305	Sn96.5Ag3Cu0.5 1000g Bar (DE)	40010004
SAC305	965A3C05 1KG TR-BAR	BA2120
SAC305	Sn96.5Ag3Cu0.5 2.5kg 60.5cm Triangle Bar	40010066
SAC305	Sn96.5Ag3Cu0.5 4kg (DE)	40010042
SAC305	965A3C05 IN 5KG TR-BAR TWN	BA2142
SAC305	SN96.5AG3CU.5 BAR 1 2/3 LB	470680000
SAC357	958A35C07 750GM TR-BAR	BA2091
SAC357	958A35C07 1KG TR-BAR	BA2119
SN100	SN100 15MM ANODE BALL (99.99%)	BA2104
SN100	SN100 19MM ANODE BALL (99.99%)	BA2050
SN100	SN100 625GM E-BAR (99.99%)	BA2056
SN100	SN100 IN 750GM BAR TWN	BA2147
SN100	ST Solder Bar Sn100 145mm Bar	40010051
SN95.5AG3.9CU.6	SN95.5AG3.9CU.6 E-BAR 1 2/3 LB	470710000
SN95AG05	SN95AG05 BAR 1 2/3 LB	470700000
SN95SB05	SN95SB05 BAR 1 2/3 LB	470800000
SN96.3AG3.7	SN96.3AG3.7 BAR 1 2/3 LB	470500000
SN96.5AG03.5	SN96.5AG03.5 BAR 1 2/3 LB	470400000
SN96.5AG03CU.5	SN96.5AG03CU.5 FLO-BAR 5 LB.	770680000
SN96.5AG3.5	965A35 750GM TR-BAR	BA2085
SN96AG4	96A4 750GM TR-BAR	BA2086
SN97AG.20SB.80CU02	SN97AG.20SB.80CU02 BAR 1 2/3 LB	470310000
SN97AG.20SB.80CU02	SN97AG.20SB.80CU02 7.4 LB. (19" LONG)	770311900
SN97AG3	Sn97Ag3 750g Triangle Bar	40010068
SN97AG3	Sn97Ag3 1000g Bar (DE)	40010044
SN97AG3	Sn97Ag3 2.5kg 60.5cm Triangle Bar	40010067
SN97AG3	97A3 IN 5KG BAR TW	BA2149
SN97CU03	SN97CU03 BAR 1 2/3 LB	470380000
SN99	SN99 BAR 1 2/3 LB	470000000
SN99.3CU.7	SN99.3CU.7 BAR 1 2/3 LB	470120000
SN99.3CU0.7	993C07 750GM TR-BAR	BA2090

Solid Wire - Lead Free Alloys included in this SDS

Alloy	Diameter	Description	Part #
K100LD	0.05	SN99 SLD .050 4 LB SPL	1570000050
K100LD	0.079	K100LD SLD .079 20 LB SPL	1895740079
K100LD	0.125	K100LD SLD .125 5 LB SPL	1695740125
SAC305	0.031	SN96.5AG03CU.5 SLD .031 5 LB SPL	1670680031
SAC305	0.04	SN96.5AG03CU.5 SLD .040 5 LB SPL	1670680040
SAC305	0.062	SN96.5AG03CU.5 SLD .062 1 LB SPL	1470680062
SAC305	0.093	SN96.5AG03CU.5 SLD .093 20 LB SPL	1870680093
SAC305	0.118	SN96.5AG03CU.5 SLD .118 5 LB SPL	1670680118
SAC305	0.125	SN96.5AG03CU.5 SLD .125 5 LB SPL	1670680125
SAC305	0.125	SN96.5AG03CU0.5 SLD .125 1 LB SPL	1470680125
SAC305	3.0mm	Solid Sn96.5Ag3Cu.5 3.0mm 2.5kg Spl-Polnis	40510980
SAC305	3.0mm	Pb-Free SOLID WIRE	40511013
SAC305	3.0mm	Solid Sn96.5Ag3Cu0.5 3.0mm 5kg Spool (DE)	40511003
SAC387	0.015	SN95.5AG3.8CU.7 SLD .015 1 LB SPL	1470580015
SN95AG5	0.015	SN95AG05 SLD .015 1 LB SPL	1470700015
SN95AG5	0.02	SN95AG05 SLD .020 1 LB SPL	1470700020
SN95AG5	0.031	SN95AG05 SLD .031 1 LB SPL	1470700031
SN95AG5	0.04	SN95AG05 SLD .040 1 LB SPL	1470700040
SN95AG5	0.125	SN95AG05 SLD .125 1 LB SPL	1470700125
SN95AG5	0.031	SOLID 95A5 031I 1B 25B	WI3695
SN95AG5	0.25mm	Solid Sn95Ag5 0.25 mm 250 g spool	40500967
SN95SB5	0.093	SN95SB05 SLD .093 1 LB SPL	1470801001
SN95SB5	0.125	SN95SB05 SLD .125 5 LB SPL	1670800125
SN95SB5	0.125	SN95SB05 SLD .125 1 LB SPL	1470800125
SN96.3AG3.7	0.031	SN96.3AG3.7 SLD .031 1 LB SPL	1470500031
SN96.3AG3.7	0.062	SN96.3AG3.7 SLD .062 5 LB SPL	1670500062
SN96.3AG3.7	0.125	SN96.3AG3.7 SLD .125 5 LB SPL	1670500125
SN96.5AG3.5	0.125	SN96.5AG03.5 SLD .125 5 LB SPL	1670400125
SN97AG3	3.0mm	Solid Sn97Ag3 3.0mm 5kg Spl	40511008
SN97AG3	3.0mm	Solid Sn97Ag3 3.0mm 2.5kg Spl (Polnisch Et	40511004
SN97CU02AG.2SB.8	0.093	AQUABOND SLD WIRE SILVER BEARING .093 1 LB	1400008053
SN99	0.031	SN99 SLD .031 5 LB SPL	1670000031
SN99	0.045	SN99 SLD .045 1 LB SPL	1470000045
SN99	0.045	SN99 SLD .045 20 LB SPL	1870000045
SN99	0.062	SN99 SLD .062 20 LB SPL	1870000062
SN99	0.072	SN99 SLD .072 1 LB SPL	1470000072
SN99	0.078	SN99 SLD .078 20 LB SPL	1870000078