

**SECTION 1: Identification of the substance/mixture and of the company/undertaking**
**Trade name: 44 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 &amp; 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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Printing Date: 20.05.2015

**SAFETY DATA SHEET (SDS)**

according to 1907/2006/EC, Article 31

Version number 2

Revision: 20.05.2015

**Trade name: 44 Flux-Cored Lead (Pb) Solder**

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

**Additional information:**

Composition and weight percent of solder alloys varies widely and can be determined by product label. <sup>^^ See Product Alloy Table</sup>  
 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:** CO<sub>2</sub>. 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<sub>x</sub>)
Carbon dioxide (CO<sub>2</sub>)

**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/m<sup>3</sup>

 REL Long-term value 0.05\* mg/m<sup>3</sup>

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

TLV Long-term value 0.05\* mg/m<sup>3</sup>

\*and inorganic compounds, as Pb; BEI

**7440-31-5 TIN (Sn)**PEL Long-term value 2 mg/m<sup>3</sup> metalREL Long-term value 2 mg/m<sup>3</sup>TLV Long-term value 2 mg/m<sup>3</sup> 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/cm<sup>3</sup>

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**Trade name: 44 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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Trade name: **44 Flux-Cored Lead (Pb) Solder**

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

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**Trade name: 44 Flux-Cored Lead (Pb) Solder**

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

| Alloy            | Flux | Diameter | Core | Description                           | Part #     |
|------------------|------|----------|------|---------------------------------------|------------|
| AG03PB97         | 44   | 0.062    | 50   | AG03PB97 #50/44 .062 5 LB SPL         | 2674000059 |
| SN01PB97.5AG1.5  | 44   | 0.025    | 58   | SN01PB97.5AG1.5 #58/44 .025 1 LB SPL  | 2400150017 |
| SN40PB60         | 44   | 0.062    | 66   | SN40PB60 #66/44 .062 1 LB SPL         | 2440600061 |
| SN40PB60         | 44   | 0.093    | 66   | SN40PB60 #66/44 .093 5 LB SPL         | 2640600066 |
| SN40PB60         | 44   | 0.093    | 66   | SN40PB60 #66/44 .093 1 LB SPL         | 2440600066 |
| SN40PB60         | 44   | 0.25     | 66   | SN40PB60 #66/44 .250 EZD              | 2940600177 |
| SN50PB50         | 44   | 0.062    | 66   | SN50PB50 #66/44 .062 5 LB SPL         | 2650500061 |
| SN50PB50         | 44   | 0.062    | 66   | SN50PB50 #66/44 .062 1 LB SPL         | 2450500061 |
| SN50PB50         | 44   | 0.093    | 66   | SN50PB50 #66/44 .093 1 LB SPL         | 2450500066 |
| SN50PB50         | 44   | 0.125    | 58   | SN50PB50 #58/44 .125 1 LB SPL         | 2450500068 |
| SN50PB50         | 44   | 0.125    | 66   | SN50PB50 #66/44 .125 1 LB SPL         | 2450500069 |
| SN5PB93.5AG1.5   | 44   | 0.01     | 58   | SN05PB93.5AG1.5 #58/44 .010 1 LB SPL  | 2473400000 |
| SN5PB93.5AG1.5   | 44   | 0.015    | 58   | SN05PB93.5AG1.5 #58/44 .015 1 LB SPL  | 2473400006 |
| SN5PB93.5AG1.5   | 44   | 0.031    | 58   | SN05PB93.5AG01.5 #58/44 .031 1 LB SPL | 2473400026 |
| SN5PB93.5AG1.5   | 44   | 0.062    | 58   | SN05PB93.5AG01.5 #58/44 .062 1 LB SPL | 2473400060 |
| SN60PB40         | 44   | 0.015    | 66   | SN60PB40 #66/44 .015 1 LB SPL         | 2460400007 |
| SN60PB40         | 44   | 0.02     | 66   | SN60PB40 #66/44 .020 1 LB SPL         | 2460400010 |
| SN60PB40         | 44   | 0.025    | 58   | SN60PB40 #58/44 .025 1 LB SPL         | 2460400017 |
| SN60PB40         | 44   | 0.025    | 66   | SN60PB40 #66/44 .025 1 LB SPL         | 2460400018 |
| SN60PB40         | 44   | 0.031    | 58   | SN60PB40 #58/44 .031 1 LB SPL         | 2460400026 |
| SN60PB40         | 44   | 0.031    | 66   | SN60PB40 #66/44 .031 1 LB SPL         | 2460400027 |
| SN60PB40         | 44   | 0.04     | 58   | SN60PB40 #58/44 .040 1 LB SPL         | 2460400038 |
| SN60PB40         | 44   | 0.04     | 58   | SN60PB40 #58/44 .040 5 LB SPL         | 2660400038 |
| SN60PB40         | 44   | 0.04     | 66   | SN60PB40 #66/44 .040 5 LB SPL         | 2660400039 |
| SN60PB40         | 44   | 0.04     | 66   | SN60PB40 #66/44 .040 1 LB SPL         | 2460400039 |
| SN60PB40         | 44   | 0.05     | 58   | SN60PB40 #58/44 .050 1 LB SPL         | 2460400052 |
| SN60PB40         | 44   | 0.05     | 66   | SN60PB40 #66/44 .050 20 LB SPL        | 2860400053 |
| SN60PB40         | 44   | 0.05     | 66   | SN60PB40 #66/44 .050 1 LB SPL         | 2460400053 |
| SN60PB40         | 44   | 0.062    | 58   | SN60PB40 #58/44 .062 1 LB SPL         | 2460400060 |
| SN60PB40         | 44   | 0.062    | 66   | SN60PB40 #66/44 .062 20 LB SPL        | 2860400061 |
| SN60PB40         | 44   | 0.062    | 66   | SN60PB40 #66/44 .062 5 LB SPL         | 2660400061 |
| SN60PB40         | 44   | 0.062    | 66   | SN60PB40 #66/44 .062 1 LB SPL         | 2460400061 |
| SN60PB40         | 44   | 0.081    | 66   | SN60PB40 #66/44 .081 5 LB SPL         | 2660400103 |
| SN60PB40         | 44   | 0.093    | 66   | SN60PB40 #66/44 .093 1 LB SPL         | 2460400066 |
| SN60PB40         | 44   | 0.125    | 58   | SN60PB40 #58/44 .125 5 LB SPL         | 2660400068 |
| SN60PB40         | 44   | 0.125    | 66   | SN60PB40 #66/44 .125 5 LB SPL         | 2660400069 |
| SN60PB40         | 44   | 0.125    | 66   | SN60PB40 #66/44 .125 1 LB SPL         | 2460400069 |
| SN62PB36AG2      | 44   | 0.02     | 58   | SN62PB36AG02 #58/44 .020 1 LB SPL     | 2471500009 |
| SN62PB36AG2      | 44   | 0.02     | 66   | SN62PB36AG02 #66/44 .020 1 LB SPL     | 2471500010 |
| SN62PB36AG2      | 44   | 0.025    | 66   | SN62PB36AG02 #66/44 .025 1 LB SPL     | 2471500018 |
| SN62PB36AG2      | 44   | 0.031    | 66   | SN62PB36AG02 #66/44 .031 1 LB SPL     | 2471500027 |
| SN62PB36AG2      | 44   | 0.05     | 66   | SN62PB36AG02 #66/44 .050 1 LB SPL     | 2471500053 |
| SN62PB36AG2      | 44   | 0.062    | 58   | SN62PB36AG02 #58/44 .062 5 LB SPL     | 2671500060 |
| SN63PB36.65SB.35 | 44   | 0.02     | 66   | SN63PB36.65SB.35 #66/44 .020 1 LB SPL | 2400630010 |
| SN63PB37         | 44   | 0.01     | 66   | SN63PB37 #66/44 .010 1 LB SPL         | 2463370001 |
| SN63PB37         | 44   | 0.015    | 66   | SN63PB37 #66/44 .015 1 LB SPL         | 2463370007 |
| SN63PB37         | 44   | 0.02     | 58   | SN63PB37 #58/44 .020 1 LB SPL         | 2463370009 |
| SN63PB37         | 44   | 0.02     | 66   | SN63PB37 #66/44 .020 1 LB SPL         | 2463370010 |
| SN63PB37         | 44   | 0.025    | 58   | SN63PB37 #58/44 .025 1 LB SPL         | 2463370017 |
| SN63PB37         | 44   | 0.025    | 66   | SN63PB37 #66/44 .025 1 LB SPL         | 2463370018 |
| SN63PB37         | 44   | 0.031    | 58   | SN63PB37 #58/44 .031 1 LB SPL         | 2463370026 |
| SN63PB37         | 44   | 0.031    | 66   | SN63PB37 #66/44 .031 1 LB SPL         | 2463370027 |
| SN63PB37         | 44   | 0.04     | 58   | SN63PB37 #58/44 .040 5 LB SPL         | 2663370038 |
| SN63PB37         | 44   | 0.04     | 66   | SN63PB37 #66/44 .040 1 LB SPL         | 2463370039 |
| SN63PB37         | 44   | 0.05     | 66   | SN63PB37 #66/44 .050 1 LB SPL         | 2463370053 |
| SN63PB37         | 44   | 0.062    | 58   | SN63PB37 #58/44 .062 1 LB SPL         | 2463370060 |
| SN63PB37         | 44   | 0.062    | 66   | SN63PB37 #66/44 .062 1 LB SPL         | 2463370061 |
| SN63PB37         | 44   | 0.125    | 66   | SN63PB37 #66/44 .125 1 LB SPL         | 2463370069 |
| SN95SB5          | 44   | 0.031    | 66   | SN95SB05 #66/44 .031 1 LB SPL         | 2400010027 |