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

Trade name: R229D Solder Paste Sn62Pb36Ag2 Alloy
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
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

Kester GmbH
Ganghofer Strasse 45
D-82216 Gerlinzenden Germany
Tel +49 (0) 8142 4785 0

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

1.4 Emergency telephone number:
CHEMTREC 24-Hour Emergency Response Telephone Number: (800) 424-9300
CHEMTREC 24-Hour Emergency Response (Outside US & Canada) Telephone Number: (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

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Carc. 2 H351 Suspected of causing cancer.
Repr. 1 B 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 H332 Harmful if inhaled.
Skin Sens. 1 H317 May cause an allergic skin reaction.

2.2 Label elements
Labelling according to Regulation (EC) No 1272/2008
The product is classified and labelled according to the CLP regulation.

(Continued on page 2)
### SECTION 3: Composition/information on ingredients

**Description:** Mixture of substances listed below with nonhazardous additions.

<table>
<thead>
<tr>
<th>Chemical components:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 7439-92-1</td>
<td>LEAD (Pb)</td>
</tr>
<tr>
<td>EINECS: 231-100-4</td>
<td></td>
</tr>
<tr>
<td>CAS: 112-73-2</td>
<td>bis(2-butoxyethyl) ether</td>
</tr>
<tr>
<td>EINECS: 204-001-9</td>
<td></td>
</tr>
<tr>
<td>CAS: 65997-05-0</td>
<td>Modified Rosin</td>
</tr>
<tr>
<td>EINECS: 266-041-3</td>
<td></td>
</tr>
<tr>
<td>CAS: 7440-22-4</td>
<td>SILVER (Ag)</td>
</tr>
<tr>
<td>EINECS: 231-131-3</td>
<td></td>
</tr>
<tr>
<td>CAS: 872-50-4</td>
<td>N-methyl-2-pyrrolidine</td>
</tr>
<tr>
<td>EINECS: 212-828-1</td>
<td></td>
</tr>
</tbody>
</table>

(Continued on page 3)
SECTION 4: First aid measures

4.1 Description of first aid measures
General information:
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

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, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

5.2 Special hazards arising from the substance or mixture
In case of fire, the following can be released:

5.3 Advice for firefighters
Protective equipment: No special measures required.

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.
Prevent formation of dust.

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.

(Continued from page 2)

SVHC
CAS: 872-50-4 | N-methyl-2-pyrrolidone

(Continued on page 4)
SECTION 8: Exposure controls/personal protection

Additional information about design of technical facilities: No further data; see item 7.

8.1 Control parameters

<table>
<thead>
<tr>
<th>Ingredients with limit values that require monitoring at the workplace:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 7440-22-4 SILVER (Ag)</td>
</tr>
<tr>
<td>WEL</td>
</tr>
<tr>
<td>CAS: 872-50-4 N-methyl-2-pyrrolidone</td>
</tr>
<tr>
<td>WEL</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

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:
Not necessary if room is well-ventilated. Use suitable respiratory protective device in case of insufficient ventilation.

Protection of hands:

- Protective gloves

Material of gloves
Nitrile rubber, NBR
Natural rubber, NR

Penetration time of glove material
The exact breaking 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: Pasty
Colour: Silver grey
Odour: Mild

pH-value: Not applicable.
Trade name: R229D Solder Paste Sn62Pb36Ag2 Alloy

Change in condition
Melting point/freezing point: Undetermined.
Initial boiling point and boiling range: 1740 °C
Flash point: > 100 °C
Flammability (solid, gas): Not determined.
Auto-ignition temperature: Product is not selfigniting.
Explosive properties: Product does not present an explosion hazard.
Vapour pressure: Not applicable.
Density: Not determined.
Vapour density: Not applicable.
Solubility in / Miscibility with water: Insoluble.
Solvent content:
   Organic solvents: 2.4 %
   Solids content: 100.0 %

SECTION 10: Stability and reactivity

10.1 Reactivity No further relevant information available.
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: No further relevant information available.
10.6 Hazardous decomposition products: No dangerous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects
   Acute toxicity
   Harmful if swallowed or if inhaled.
   LD/LC50 values relevant for classification:

   CAS: 7439-92-1 LEAD (Pb)
   Oral LD50 500 mg/kg (ATE)
   Inhalative LC50/4 h 1.5 mg/l (ATE)

   CAS: 65997-06-0 Modified Rosin
   Oral LD50 > 4000 mg/kg (Rat)
   Dermal LD50 >2500 mg/kg (rabbit)

   Primary irritant effect:
   Skin corrosion/irritation Based on available data, the classification criteria are not met.
   Serious eye damage/irritation Based on available data, the classification criteria are not met.
   Respiratory or skin sensitisation
   May cause allergy or asthma symptoms or breathing difficulties if inhaled.
   May cause an allergic skin reaction.
CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
Germ cell mutagenicity Based on available data, the classification criteria are not met.
Carcinogenicity
Suspected of causing cancer.
Reproductive toxicity
May damage fertility or the unborn child.
STOT-single exposure Based on available data, the classification criteria are not met.
STOT-repeated exposure
May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard Based on available data, the classification criteria are not met.

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.
Danger to drinking water if even small quantities leak into the ground.
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.
Uncleaned packaging:
Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information

14.1 UN-Number
IMDG, IATA Void
14.2 UN proper shipping name
ADR, ADN, IMDG, IATA Void
14.3 Transport hazard class(es)
ADR, ADN, IMDG, IATA
Class Void
14.4 Packing group
ADR, IMDG, IATA Void
14.5 Environmental hazards:
Marine pollutant: No
14.6 Special precautions for user Not applicable.
14.7 Transport in bulk according to Annex II of Marpol
and the IBC Code Not applicable.
UN "Model Regulation": Void

(Continued on page 7)
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](image1) ![GHS08](image2)

Signal word Danger

Hazard-determining components of labelling:
LEAD (Pb)
Modified Rosin

Hazard statements
H302+H332 Harmful if swallowed or if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.
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
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves / eye protection.
P270 Do not eat, drink or smoke when using this product.
P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P302+P352 IF ON SKIN: Wash with plenty of water.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 30, 63

National regulations:

Other regulations, limitations and prohibitive regulations

Substances of very high concern (SVHC) according to REACH, Article 57
CAS: 872-50-4 [N-methyl-2-pyrrolidone]

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

(Continued on page 8)
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 SDS:** Product Compliance / EHS Department

**Contact:** EHS_Kester@kester.com

**Abbreviations and acronyms:**
- RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
- ICAO: International Civil Aviation Organisation
- 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
- PBT: Persistent, Bioaccumulative and Toxic
- SVHC: Substances of Very High Concern
- vPvB: very Persistent and very Bioaccumulative
- Acute Tox. 4: Acute toxicity – Category 4
- Skin Irrit. 2: Skin corrosion/irritation – Category 2
- Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
- Resp. Sens. 1: Respiratory sensitisation – Category 1
- Skin Sens. 1: Skin sensitisation – Category 1
- Carc. 2: Carcinogenicity – Category 2
- Carc. 2: Carcinogenicity – Category 2
- Repr. 1B: Reproductive toxicity – Category 1B
- Repr. 1B: Reproductive toxicity – Category 1B
- STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
- STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

* Data compared to the previous version altered.