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

1.1 Trade name: R276 Lead (Pb) Solder Paste (Sn62Pb36Ag2, Sn10Pb88Ag2, Sn43Pb43Bi14)

1.2 Relevant identified uses of the substance or mixture and uses advised against
No further relevant information available.

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 Gernlinden 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

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 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

(Continued on page 2)
Hazard-determining components of labelling:

LEAD (Pb)

Hazard statements

H302+H332 Harmful if swallowed 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

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Additional information:
Restricted to professional users.
Contains lead. Should not be used on surfaces liable to be chewed or sucked by children.

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.

<table>
<thead>
<tr>
<th>Chemical components</th>
<th>CAS:</th>
<th>EINECS:</th>
<th>Description</th>
<th>Hazards</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEAD (Pb)</td>
<td>7439-92-1</td>
<td>231-100-4</td>
<td></td>
<td>Carc. 2, H351: Rep. 1B. H360: STOT RE 2, H373 Acute Tox. 4, H302; Acute Tox. 4, H332</td>
<td>25-95%</td>
</tr>
<tr>
<td>SILVER (Ag)</td>
<td>7440-22-4</td>
<td>231-131-3</td>
<td>Substance with a Community workplace exposure limit</td>
<td></td>
<td>0-5%</td>
</tr>
<tr>
<td>N-methyl-2-pyrrolidone</td>
<td>872-50-4</td>
<td>212-628-1</td>
<td></td>
<td>Repr. 1B, H360D Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335</td>
<td>≥0.1–≤1%</td>
</tr>
</tbody>
</table>

SVHC

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

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.

(Continued on page 3)
SAFETY DATA SHEET (SDS)
according to 1907/2006/EC, Article 31

Trade name: R276 Lead (Pb) Solder Paste (Sn62Pb36Ag2, Sn10Pb88Ag2, Sn43Pb43Bi14)

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.
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: |
| CAS: 7440-22-4 SILVER (Ag) |
| WEL: Long-term value: 0.1 mg/m³ |
| CAS: 872-50-4 N-methyl-2-pyrrolidone |
| WEL: Short-term value: 80 mg/m³, 20 ppm |
| Long-term value: 40 mg/m³, 10 ppm |

(Continued on page 4)
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 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: Paste
Colour: Silver grey
Odour: Mild
pH-value: Not applicable.
Change in condition
Melting point/freezing point: Undetermined.
Initial boiling point and boiling range: 274 °C
Flash point: Not Applicable
Flammability (solid, gas): Not determined.
Auto-ignition temperature: Product is not selfigniting.
Explosive properties: Product does not present an explosion hazard.
Vapour pressure at 970 °C: 1.3 hPa
Density: Not determined.
Vapour density: Not applicable.
Souolubility in / Miscibility with
  water: Insoluble.
  Solvent content:
    Organic solvents: 4.2 %
    Solids content: 94.5 %

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:

<table>
<thead>
<tr>
<th>CAS: 7439-92-1 LEAD (Pb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>Inhalative</td>
</tr>
</tbody>
</table>

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 Based on available data, the classification criteria are not met.
  CMR effects (carcinogenity, 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.
12.5 Results of PBT and vPvB assessment
  PBT: 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: Not applicable.
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

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)

(Continued on page 7)
Hazard statements
H302+H332 Harmful if swallowed or if inhaled.
H351 Suspected of causing cancer.
H360 May damage fertility or the unborn child.
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Precautionary statements
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P405 Store locked up.
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.
REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 30

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 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:
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
Carc. 2: Carcinogenicity – Category 2
Repr. 1B: Reproductive toxicity – Category 1B
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

(Continued on page 8)
### Trade name: R276 Lead (Pb) Solder Paste (Sn62Pb36Ag2, Sn10Pb88Ag2, Sn43Pb43Bi14)

<table>
<thead>
<tr>
<th>STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Data compared to the previous version altered.</td>
</tr>
</tbody>
</table>

(Continued from page 7)