

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

Trade name: R276 Solder Paste Lead-Free

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

Solder Paste
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

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

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

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

H315 Causes skin irritation.

H319 Causes serious eye irritation.

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.

P403+P235 Store in a well-ventilated place. Keep cool.

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)	85-100%
CAS: 65997-05-9	Rosin ⚠ Skin Sens. 1, H317	5-10%
CAS: 55934-93-5 EINECS: 259-910-3	[(butoxymethylethoxy)methylethoxy]propan-1-ol	3.0-5.0%
CAS: 7440-22-4 EINECS: 231-131-3	SILVER (Ag)	3.0-5.0%

Additional information:

Solder powder is typically 85-92% of the solder paste composition.

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

Kester solder products are not classified as articles. This product is a mixture that is further processed by industrial users at temperatures that exceed 217C (Celsius) during the soldering procedure. Volatile substances evaporate during the soldering procedure and are no longer present in the finished part.

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, 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:

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

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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

Wash hands after handling paste and before eating or smoking. Care should be taken to remove paste from under fingernails.

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

7440-22-4 SILVER (Ag)

PEL Long-term value 0.01 mg/m³
metal and soluble compounds (as Ag)

REL Long-term value 0.01 mg/m³

TLV Long-term value 0.1 mg/m³ metal: dust and fume

8.2 Exposure controls

Personal protective equipment:

General protective and hygienic measures:

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

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

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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/Melting range:** 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:** 3.45 g/cm³**Vapour density** Not applicable.**Solubility in / Miscibility with water:**

Not miscible or difficult to mix.

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:** 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**

Causes skin irritation.

Serious eye damage/irritation

Causes serious eye irritation.

Respiratory or skin sensitisation Based on available data, the classification criteria are not met.

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CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Germ cell mutagenicity Based on available data, the classification criteria are not met.

Carcinogenicity Based on available data, the classification criteria are not met.

Reproductive toxicity Based on available data, the classification criteria are not met.

STOT-single exposure

May cause respiratory irritation.

STOT-repeated exposure Based on available data, the classification criteria are not met.

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.

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.

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.

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

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Labelling according to Regulation (EC) No 1272/2008

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Hazard pictograms



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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.

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)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

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

R276 Solder Paste Lead-Free Products

Alloy	Powder Size	Description	Part #
SAC305	3	SAC305 R276 T3 86% 35 g syr	7016080820
SAC305	3	R276 14% Sn96.5Ag3Cu0.5 25-45	41500265
SAC305	3	R276 13% Sn96.5Ag3Cu0.5 25-45	41500373
SAC305	3	R276 13% Sn96.5Ag3Cu0.5 25-45	41500421
SAC305	3	R276 13% Sn96.5Ag3Cu0.5 25-45	41500464
SAC305	3	R276 12% Sn96.5Ag3Cu0.5 25-45	41500331
SAC305	3	R276 13% Sn96.5Ag3Cu0.5 25-45	41500382
SAC305	4	R276 14% Sn96.5Ag3Cu0.5 20-38	41500422
SAC305	4	R276 13.5% Sn96.5Ag3Cu0.5 20-38	41500534
SAC387	3	R276 14% Sn95.5Ag3.8Cu0.7 25-45	41500234