

# Safety Data Sheet

according to Regulation (EC) No 1907/2006

Trade name: LPKF Dispense Solder Paste  
Revision date: 26.11.2015 Version: 3.0  
Print date: 26.11.2015 Replaces version: 2.1

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

### 1.1 Product identifier

LPKF Dispense Solder Paste

### 1.2 Relevant identified uses of the substance or mixture

Lead-free solder paste for dispensing with LPKF ProtoMat machines

### 1.3 Details of the supplier of the safety data sheet

#### Supplier

LPKF Laser & Electronics AG

#### Street/P.O. Box

Osteriede 7

#### Country Identifier/Postal Code/City

D-30827 Garbsen

#### Information contact

Product management

#### Telephone/Fax/Email

+49 5131 7095-0 / +49 5131 7095-90 / info@lpkf.com

### 1.4 Emergency Telephone Number

Telephone number (24/7): +49 551 38318-66

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification according to Regulation (EC) No. 1272/2008:

Physical and chemical hazards

–

Human health

Eye Dam. 1 H318 Causes serious eye damage.

Environment

–

### 2.2 Label elements

#### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

##### Pictogram:



##### Signal word:

Danger

##### Hazard component for labelling

Contains: 2-(2-hexyloxyethoxy)ethanol

##### Hazard statements

H318 Causes serious eye damage.

##### Precautionary Statements

P280 Wear protective gloves and eye protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Call a POISON CENTER or doctor/physician immediately.

##### Other label elements

none

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## 2.3 Other hazards

### Results of PBT and vPvB assessment:

The substance does not meet the criteria for classification as PBT or vPvB.

## SECTION 3: Composition/information on ingredients

### 3.1 Mixtures

**Substance name:** Tin  
EC No.: 231-141-8 CAS No.: 7440-31-5 Index No.:  
REACH Registration No.:  
**% by weight:** 82 - 89 %  
Classification according to Regulation (EC) No. 1272/2008:

**Substance name:** Complex reaction mass of Chinese gum rosin post-reacted with acrylic acid  
EC No.: 434-230-1 CAS No.: 144413-22-9 Index No.:  
REACH Registration No.:  
**% by weight:** 3 - 5 %  
Classification according to Regulation (EC) No. 1272/2008: Aquatic Chronic 4 H413

**Substance name:** 2-(2-hexyloxyethoxy)ethanol  
EC No.: 203-988-3 CAS No.: 112-59-4 Index No.:  
REACH Registration No.:  
**% by weight:** 2 - 5 %  
Classification according to Regulation (EC) No. 1272/2008: Eye Dam. 1, H318  
Acute Tox. 4, H312

**Substance name:** Silver  
EC No.: 231-131-3 CAS No.: 7440-22-4 Index No.:  
REACH Registration No.:  
**% by weight:** 2 - 3.1 %  
Classification according to Regulation (EC) No. 1272/2008: Substance with a workplace exposure limit

**Substance name:** Copper  
EC No.: 231-159-6 CAS No.: 7440-50-8 Index No.:  
REACH Registration No.: 01-2119480154-42  
**% by weight:** 0.1 - 1 %  
Classification according to Regulation (EC) No. 1272/2008:

(See section 16 for the full text of the hazard phrases.)

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

#### In case of inhalation

Supply fresh air, in case of complaints, consult a physician.  
If breathing is irregular or stopped, administer artificial respiration.

#### In case of skin contact

Immediately wash with water and soap and rinse thoroughly.  
Consult doctor if feeling unwell.

#### Following eye contact

Protect uninjured eye.  
Rinse the eyes with flowing water for several minutes holding the eyelids apart  
Remove contact lenses, if present and easy to do. Continue rinsing.  
Consult a physician.

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## Following ingestion

Rinse mouth and drink plenty of water.  
Do not induce vomiting, consult a physician immediately.  
Never give anything by mouth to an unconscious person or a person with cramps.

## 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

First Aid, decontamination, treatment of symptoms.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable:

Alcohol-resistant foam, dry extinguishing powder, carbon dioxide

### 5.2 Special hazards arising from the substance or mixture

In case of fire, the following can be released:

Irritant gases/vapours

Toxic gases/vapours

metal oxide smoke

### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes.

Wear self-contained breathing apparatus.

Wear fully protective suit.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep away unprotected persons.

Provide adequate ventilation.

### 6.2 Environmental precautions

Do not allow to enter into surface water, ground water or drains.

Discharge into the environment must be avoided.

### 6.3 Methods and material for containment and cleaning up

Send to recycling or to disposal in suitable containers.

Dispose of contaminated material as waste according to section 13.

Provide 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

Provide good ventilation/extraction at workplace.

Handle and open container carefully.

Avoid eye and skin contact. Wear personal protective equipment.

Do not breathe dust/fume/gas/mist/vapours/spray.

#### Information about fire and explosion protection

Usual measures for fire prevention.

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## Advice on general occupational hygiene

Provide washing facilities at the workplace.  
Wash hands before breaks and after work.

## 7.2 Conditions for safe storage, including any incompatibilities

### Information on storage conditions

Keep container tightly closed.  
Store in dry conditions.  
Keep locked up or accessible only to experts or their representatives.  
Ensure that local and national regulations on storage conditions are observed.

### Requirements for storage rooms and vessels

Store in a cool place.  
Storage temperature: 0-10 °C  
Storage class: Not applicable

## 7.3 Specific end uses

See section 1.2.

## SECTION 8: Exposure controls / personal protection

### 8.1 Control parameters

#### 8.1.1 Occupational limits and/or biological limit values

<b>Substance name:</b> Tin	<b>CAS No.:</b> 7440-31-5
Maximum workplace concentration value (MAK) (Germany)	see section IIb
Maximum workplace concentration value (MAK) (Austria)	Short-term value: 4 E mg/m <sup>3</sup> Long-term value: 2 E mg/m <sup>3</sup>
<b>Substance name:</b> Silver	<b>CAS No.:</b> 7440-22-4
<b>Occupational exposure limits (AGW) (Germany)</b>	Long-term value: 0.1 E mg/m <sup>3</sup> 8(II);DFG, EU
Maximum workplace concentration value (MAK) (Austria)	Short-term value: 0.1 E mg/m <sup>3</sup> Long-term value: 0.1 E mg/m <sup>3</sup>
Maximum workplace concentration value (MAK) (Switzerland)	Short-term value: 0.8e mg/m <sup>3</sup> Long-term value: 0.1e mg/m <sup>3</sup>
<b>Substance name:</b> Copper	<b>CAS No.:</b> 7440-50-8
Maximum workplace concentration value (MAK) (Germany)	Long-term value: 0.1 A mg/m as Cu
Maximum workplace concentration value (MAK) (Austria)	Short-term value: 4 E mg/m <sup>3</sup> Long-term value: 1 E mg/m <sup>3</sup>
Maximum workplace concentration value (MAK) (Switzerland)	Short-term value: 0.2 e mg/m <sup>3</sup> Long-term value: 0.1 e mg/m <sup>3</sup> SSc;

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### 8.1.2 Exposure controls

## 8.2 Appropriate engineering controls

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Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

### 8.2.1 Individual protection measures - personal protection equipment

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#### Eye/face protection

Tightly sealed goggles

#### Skin protection

##### Gloves

Glove material: Butyl caoutchouc (butyl rubber)

Glove thickness (mm):

Break through time (min.) >120 min (EN374)

When handling with chemical substances, protective gloves must be worn with the CE label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves together with the supplier of these gloves. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. The exact break through time has to be inquired from by the manufacturer of the protective gloves and has to be observed.

#### Respiratory protection

If technical extraction or ventilation measures are not possible or insufficient, respiratory protection must be worn.

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

Wear a respiratory filter in case of short-term or minor exposure; wear self-contained breathing apparatus in case of intensive or prolonged exposure.

#### General health and safety measures

Handle in accordance with good industrial hygiene and safety practice.

When using do not eat, drink, snuff, or smoke.

#### Body protection

Protective work clothing

## 8.2.2 Environmental exposure controls

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Discharge into the environment must be avoided.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Appearance	Physical state:	Pasty
	Colour:	Grey
Odour:		Mild
Odour threshold:		No data available.
pH value:		No data available.
Melting/freezing point:		217 - 227 °C
Initial boiling point and range:		260°C
Flash point		141°C
Evaporation rate:		No data available.
Flammability (solid, gas):		No data available.
Upper/lower flammability or explosive limits:		Not determined.
Vapour pressure:		No data available.
Vapour density:		No data available.
Density:		4-5 g/cm <sup>3</sup> at 20 °C
Relative density:		No data available.
Solubility(ies):		Not soluble in water
Partition coefficient (n-octanol/water):		No data available.
Auto-ignition temperature:		Not spontaneously flammable.
Decomposition temperature:		No data available.
Viscosity:		Dynamic: No information available. Kinematic: No data available.
Explosive properties:		Product does not present an explosion hazard.
Oxidising properties:		No data available.

### 9.2 Other information

No further relevant information available.

## SECTION 10: Stability and Reactivity

### 10.1 Reactivity

The product is stable if handled and stored under normal conditions (temperature, pressure).

### 10.2 Chemical stability

The product is stable if handled and stored under normal conditions (temperature, pressure).

### 10.3 Possibility of hazardous reactions

No known hazardous reactions.

### 10.4 Conditions to avoid

No further relevant information available.

### 10.5 Incompatible materials

Strong acids, strong oxidising agents

### 10.6 Hazardous decomposition products

Metal oxide smoke  
Carbon monoxide (CO) and carbon dioxide (CO<sub>2</sub>)  
Aliphatic compounds, rosin acid

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

#### LD/LC50 values relevant for classification:

CAS 112-59-4	2-(2-hexyloxyethoxy)ethanol	
Oral	LD50	2655 mg/kg (rat)
Dermal	LD50	1410 mg/kg (rat)
CAS 7440-22-4	Silver	
Oral	LD50	>5000 mg/kg (rat)
Dermal	LD50	>2000 mg/kg (rat)

#### Primary irritating effect

**Skin corrosion/irritation:** No irritating effect.

**Serious eye damage/eye irritation:** Causes serious eye damage.

#### Sensitisation

**Sensitisation to the respiratory tract/skin:** No sensitizing effects known.

#### Carcinogenicity

No indications of human carcinogenicity exist.

#### Mutagenicity:

No indications of human germ cell mutagenicity exist.

#### Reproductive toxicity

No indications of human reproductive toxicity exist.

#### Symptoms and effects (both acute and delayed) with information on routes of exposure

No further relevant information available.

## SECTION 12: Ecological information

### 12.1 Toxicity

**Aquatic toxicity:** No further relevant information available.

### 12.2 Persistence and degradability

No further relevant information available.

### 12.3 Bioaccumulative potential

No further relevant information available.

### 12.4 Mobility in soil

No further relevant information available.

#### General information:

Water hazard class 1 (Self-assessment): slightly hazardous for water.

Do not allow to enter into surface water, ground water or drains.

### 12.5 Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

### 12.6 Other adverse effects

No further relevant information available.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Must not be disposed of together with household waste. Do not empty into drains.

Dispose of waste according to applicable legislation.

#### Treatment of contaminated packaging

Dispose of waste according to applicable legislation.

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## SECTION 14: Transport information

### 14.1 UN number

Not applicable

### 14.2 UN proper shipping name

#### ADR/RID

Not applicable

#### IMDG-Code / ICAO-TI / IATA-DGR

Not applicable

### 14.3 Transport hazard class(es)

Not applicable

### 14.4 Packing group

Not applicable

### 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 73/78 and the IBC Code

Not applicable.

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

#### EU legislation

Regulation (EC) No. 1907/2006 (REACH)  
Regulation (EC) No. 1272/2008 (CLP)  
Directives 67/548/EEC and 1999/45/EC  
Directive 98/24/EC (protection of the health and safety of workers)  
Directive 2012/18/EU: Named dangerous substances - ANNEX I:  
None of the ingredients is listed.

#### National regulations

##### Restrictions of occupation:

Observe employment restrictions concerning juveniles.  
Observe employment restrictions for pregnant and nursing mothers.  
Observe employment restrictions for women of child-bearing age.

##### Water hazard classification

Water hazard class 1 (Self-assessment): slightly hazardous for water.

##### Emission control act ("TA-Luft")

Class	Fraction in %
III	90.0

##### Other regulations, restrictions and prohibition regulations:

Observe any national regulations!

### 15.2 Chemical Safety Assessment

A Chemical Safety Assessment has not been carried out.



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## SECTION 16: Other information

### Acronyms/abbreviations

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 Organization  
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 Harmonized 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  
Acute Tox. 4: Acute toxicity, Hazard Category 4  
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1  
Aquatic Chronic 4: Hazardous to the aquatic environment - Chronic Hazard, Category 4

### Full text of hazard statements and precautionary statements according to Regulation (EC) No. 1272/2008 referenced in chapters 2 to 15:

H312 Harmful in contact with skin.  
H318 Causes serious eye damage.  
H413 May cause long lasting harmful effects to aquatic life.

### Training advice

The product is to be handled only by persons who have been sufficiently informed about the mode of operation, the hazardous properties, and the required safety measures.

### Further information

The information contained in this safety data sheet is based on our present knowledge. However, this does not constitute a guarantee for any specific product features and does not establish a legally valid contractual relationship.

### Indication of changes since the last version

Complete revision

### Department issuing this data sheet

Product management