

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

**Trade name: NP505-HR Lead-Free Solder Paste**

**Relevant identified uses of the substance or mixture and uses advised against** Soldering Paste

### 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.  
Heng Qiao Road  
Wujiang Economic Development Zone  
Suzhou, Jiangsu, 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-determining components of labelling:**

Rosin, hydrogenated

Hexyl diglycol

**Hazard statements**

Causes skin irritation.

Causes serious eye irritation.

May cause respiratory irritation.

**Precautionary statements**

Wear protective gloves / eye protection.

IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF ON SKIN: Wash with plenty of soap and water.

Store in a well-ventilated place. Keep cool.

Dispose of contents/container in accordance with local/regional/national/international regulations.

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## Additional information:

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

### 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)	substance with a Community workplace exposure limit	85-100%
CAS: 65997-06-0	Rosin, hydrogenated	⚠ Skin Sens. 1, H317	5-10%
CAS: 112-59-4 EINECS: 203-988-3	Hexyl diglycol	⚠ Eye Dam. 1, H318 ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312	3-5%
CAS: 7440-22-4 EINECS: 231-131-3	SILVER (Ag)	substance with a Community workplace exposure limit	3-5%
CAS: 7440-50-8 EINECS: 231-159-6	COPPER (Cu)		≤1.0%

#### Additional information:

This product will be heated to a temperature of 217C (Celsius) during soldering. All volatile substances will evaporate and not remain on the finished circuit board.

## 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. If symptoms persist, consult a doctor.

**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. 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 (NOx)

Carbon dioxide (CO2)

### 5.3 Advice for firefighters

**Protective equipment:** Wear self-contained respiratory protective device.

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## 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** 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:**

#### 7440-31-5 TIN (Sn)

PEL (USA)	Long-term value: 2 mg/m <sup>3</sup> metal
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REL (USA)	Long-term value: 2 mg/m <sup>3</sup>
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TLV (USA)	Long-term value: 2 mg/m <sup>3</sup> metal
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#### 7440-22-4 SILVER (Ag)

PEL (USA)	Long-term value: 0.01 mg/m <sup>3</sup>
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REL (USA)	Long-term value: 0.01 mg/m <sup>3</sup>
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TLV (USA)	Long-term value: 0.1 mg/m <sup>3</sup> metal: dust and fume
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WEL (Great Britain)	Long-term value: 0.1 mg/m <sup>3</sup>
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### 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.

Avoid contact with the eyes and skin.

**Respiratory protection:**

Not necessary if room is well-ventilated.

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Use suitable respiratory protective device in case of insufficient ventilation.  
When ventilation is not sufficient to remove fumes from the breathing zone, a safety approved respirator or self-contained breathing apparatus should be worn.  
Not necessary if room is well ventilated.

**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



Face Shield with Safety Glasses when refilling.

**SECTION 9: Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

**General Information**

**Appearance:**

<b>Form:</b>	Pasty
<b>Colour:</b>	Silver grey
<b>Odour:</b>	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:** > 4.5 g/cm<sup>3</sup> g/cm<sup>3</sup>

**Vapour density** Not applicable.

**Solubility in / Miscibility with water:**

Insoluble.

**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.

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**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

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

##### 65997-06-0 Rosin, hydrogenated

Oral	LD50	> 4000 mg/kg (Rat)
Dermal	LD50	>2500 mg/kg (rabbit)

##### 112-59-4 Hexyl diglycol

Oral	LD50	2400 mg/kg (rat)
Dermal	LD50	1500 mg/kg (rabbit)

#### 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.

#### 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.

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**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  
ADR, IMDG, IATA Not regulated  
14.3 Transport hazard class(es) Not regulated

ADR, IMDG, IATA

Class Not regulated.

14.4 Packing group

IMDG Not Regulated

14.5 Environmental hazards: 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

**Signal word** Warning

#### Hazard-determining components of labelling:

Rosin, hydrogenated

Hexyl diglycol

#### Hazard statements

Causes skin irritation.

Causes serious eye irritation.

May cause respiratory irritation.

#### Precautionary statements

Wear protective gloves / eye protection.

IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF ON SKIN: Wash with plenty of soap and water.

Store in a well-ventilated place. Keep cool.

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.

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**Trade name: NP505-HR Lead-Free Solder Paste****15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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**SECTION 16: Other information****Relevant phrases**

The information contained in this SDS is provided only for consideration by qualified personnel who use this product. KESTER extends no warranties, makes no representations and assumes no responsibility as to the suitability of this data. It is the responsibility of the user to ensure safe conditions for handling, storage and disposal of this product.

**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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Acute toxicity, Hazard Category 4

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

Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1

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

\* **Data compared to the previous version altered.**