## 1 Identification

**Trade name:** NP505-HR Solder Paste  
**Relevant identified uses of the substance or mixture and uses advised against:**  
No further relevant information available.

**Details of the supplier of the safety data sheet**  
**Manufacturer/Supplier:**  
Kester Inc.  
800 West Thorndale Avenue  
Itasca, IL 60143 USA  
Tel (630) 616-4000  
Tel International 00 1 630 616-4000  
ITW Specialty Materials (Suzhou) Co., Ltd.  
Heng Qiao Road  
Wujiang Economic Development Zone  
Suzhou, Jiangsu 215200 China  
Tel +86 512 82060808

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

**Information department:** Product Compliance: EHS_Kester@kester.com  
**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

## 2 Hazard(s) identification

**Classification of the substance or mixture**

![Corrosion]

Eye Dam. 1 H318 Causes serious eye damage.

![Skin Sens. 1 H317 May cause an allergic skin reaction.]

**Label elements**

**GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

**Hazard pictograms**

- GHS05  
- GHS07

**Signal word** Danger

**Hazard-determining components of labeling:**  
Hexyl diglycol  
Modified Rosin

(Contd. on page 2)
Trade name: NP505-HR Solder Paste

Azole Isomers

Hazard statements
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.

Precautionary statements
P261 Avoid breathing dust/fume/gas/mist/vapors/spray
P280 Wear protective gloves/protective clothing/eye protection/face 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.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Classification system:
NFPA ratings (scale 0 - 4)

Health = 3  Fire = 0  Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = *3  Fire = 0  Reactivity = 0

Other hazards
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

3 Composition/information on ingredients

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

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Description</th>
<th>% Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 7440-31-5</td>
<td>TIN (Sn)</td>
<td>70-85%</td>
</tr>
<tr>
<td>Trade Secret</td>
<td>Modified Rosin</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▶ Skin Sens. 1, H317</td>
<td></td>
</tr>
<tr>
<td>CAS: 112-59-4</td>
<td>Hexyl diglycol</td>
<td>3-5%</td>
</tr>
<tr>
<td></td>
<td>▶ Eye Dam. 1, H318</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▶ Acute Tox. 4, H302; Acute Tox. 4, H312</td>
<td></td>
</tr>
<tr>
<td>CAS: 7440-22-4</td>
<td>SILVER (Ag)</td>
<td>1-3%</td>
</tr>
<tr>
<td>Trade Secret</td>
<td>Azole Isomers</td>
<td>≥0.1-%</td>
</tr>
<tr>
<td></td>
<td>▶ Acute Tox. 4, H302; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3; H335</td>
<td></td>
</tr>
</tbody>
</table>

SVHC
This product does not contain any Substance of Very High Concern (SVHC) on the European Chemicals Agency (ECHA) candidate list.

4 First-aid measures

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.
Trade name: NP505-HR Solder Paste

After eye contact: Rinse opened eye for several minutes under running water.
After swallowing: Seek immediate medical advice.
Information for doctor:
Most important symptoms and effects, both acute and delayed No further relevant information available.
Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

Extinguishing media
Suitable extinguishing agents:
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Special hazards arising from the substance or mixture In case of fire, the following can be released:
Advice for firefighters
Protective equipment: No special measures required.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures Ensure adequate ventilation
Environmental precautions: Do not allow to enter sewers/surface or ground water.
Methods and material for containment and cleaning up: Pick up mechanically.
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.
Protective Action Criteria for Chemicals

<table>
<thead>
<tr>
<th>PAC-1:</th>
<th>CAS: 7440-31-5</th>
<th>TIN (Sn)</th>
<th>6 mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 112-59-4</td>
<td>Hexyl diglycol</td>
<td>3.7 mg/m³</td>
<td></td>
</tr>
<tr>
<td>CAS: 7440-22-4</td>
<td>SILVER (Ag)</td>
<td>0.3 mg/m³</td>
<td></td>
</tr>
<tr>
<td>CAS: 7440-50-8</td>
<td>COPPER (Cu)</td>
<td>3 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAC-2:</th>
<th>CAS: 7440-31-5</th>
<th>TIN (Sn)</th>
<th>67 mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 112-59-4</td>
<td>Hexyl diglycol</td>
<td>41 mg/m³</td>
<td></td>
</tr>
<tr>
<td>CAS: 7440-22-4</td>
<td>SILVER (Ag)</td>
<td>170 mg/m³</td>
<td></td>
</tr>
<tr>
<td>CAS: 7440-50-8</td>
<td>COPPER (Cu)</td>
<td>33 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAC-3:</th>
<th>CAS: 7440-31-5</th>
<th>TIN (Sn)</th>
<th>400 mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 112-59-4</td>
<td>Hexyl diglycol</td>
<td>480 mg/m³</td>
<td></td>
</tr>
<tr>
<td>CAS: 7440-22-4</td>
<td>SILVER (Ag)</td>
<td>990 mg/m³</td>
<td></td>
</tr>
<tr>
<td>CAS: 7440-50-8</td>
<td>COPPER (Cu)</td>
<td>200 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

7 Handling and storage

Handling:
Precautions for safe handling No special measures required.
Information about protection against explosions and fires: No special measures required.

(Contd. of page 2)

(Contd. on page 4)
Trade name: NP505-HR Solder Paste

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.
Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

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

Control parameters
Components with limit values that require monitoring at the workplace:
The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.
At this time, the other constituents have no known exposure limits.

<table>
<thead>
<tr>
<th>CAS: 7440-31-5 TIN (Sn)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PEL</td>
<td>Long-term value: 2 mg/m³ metal</td>
</tr>
<tr>
<td>REL</td>
<td>Long-term value: 2 mg/m³</td>
</tr>
<tr>
<td>TLV</td>
<td>Long-term value: 2 mg/m³ metal</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS: 7440-22-4 SILVER (Ag)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PEL</td>
<td>Long-term value: 0.01 mg/m³</td>
</tr>
<tr>
<td>REL</td>
<td>Long-term value: 0.01 mg/m³</td>
</tr>
<tr>
<td>TLV</td>
<td>Long-term value: 0.1 mg/m³ metal: dust and fume</td>
</tr>
</tbody>
</table>

Additional information:
PEL = Permissible Exposure Limit (OSHA)
TLV = Threshold Limit Value (ACGIH)
OSHA = Occupational Safety and Health Administration
ACGIH = American Conference of Governmental Industrial Hygienists

Exposure controls
Personal protective equipment:
General protective and hygienic measures:
The usual precautionary measures for handling chemicals should be followed.
Wash hands before breaks and at the end of work.
Breathing equipment:
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.
9 Physical and chemical properties

Information on basic physical and chemical properties
General Information
Appearance:
Form: Paste
Color: Silver grey
Odor: Mild
pH-value: Not applicable.
Change in condition
Melting point/Melting range: Undetermined.
Boiling point/Boiling range: 259 °C (498.2 °F)
Flash point: Not applicable.
Flammability (solid, gaseous): Not determined.
Auto igniting: Product is not selfigniting.
Danger of explosion: Product does not present an explosion hazard.
Vapor pressure: Not applicable.
Density: Not determined.
Vapor density: Not applicable.
Solubility in / Miscibility with
Water: Insoluble.

10 Stability and reactivity

Reactivity No further relevant information available.
Chemical stability
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
Possibility of hazardous reactions No dangerous reactions known.
Conditions to avoid No further relevant information available.
Incompatible materials: No further relevant information available.
Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

Information on toxicological effects
Acute toxicity:
Primary irritant effect:
on the skin: No irritant effect.
on the eye: Irritating effect.
Trade name: NP505-HR Solder Paste

Sensitization: Sensitization possible through inhalation.
Additional toxicological information:

Carcinogenic categories

<table>
<thead>
<tr>
<th>IARC (International Agency for Research on Cancer)</th>
<th>None of the ingredients is listed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NTP (National Toxicology Program)</td>
<td>None of the ingredients is listed.</td>
</tr>
<tr>
<td>OSHA-Ca (Occupational Safety &amp; Health Administration)</td>
<td>None of the ingredients is listed.</td>
</tr>
</tbody>
</table>

12 Ecological information

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.
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

13 Disposal considerations

Waste treatment methods
Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

14 Transport information

UN-Number
DOT, ADR, ADN, IMDG, IATA
UN proper shipping name
DOT, ADR, ADN, IMDG, IATA
Transport hazard class(es)
DOT, ADR, ADN, IMDG, IATA
Class
Packing group
DOT, IMDG, IATA
Special precautions for user
Transport in bulk according to Annex II of MARPOL73/78
and the IBC Code
UN "Model Regulation":

(Contd. of page 5)

(Contd. on page 7)
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

USA The following information relates to product regulation specific to the USA.

SARA (Superfund Amendments and Reauthorization Act)

Section 355 (extremely hazardous substances):
None of the ingredient is listed.

Section 313 (Specific toxic chemical listings):
- CAS: 112-59-4 Hexyl diglycol
- CAS: 7440-22-4 SILVER (Ag)
- CAS: 7440-50-8 COPPER (Cu)

TSCA new (21st Century Act) (Substances not listed)
Modified Rosin

California Proposition 65

Chemicals known to cause cancer:
None of the ingredients is listed.

Chemicals known to cause reproductive toxicity:
None of the ingredients is listed.

Carcinogenic categories

EPA (Environmental Protection Agency)
- CAS: 7440-22-4 SILVER (Ag) D
- CAS: 7440-50-8 COPPER (Cu) D

NIOSH-Ca (National Institute for Occupational Safety and Health)
None of the ingredients is listed.

CANADA:
Workplace Hazardous Materials Identification (WHMIS):
This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulation (CPR) and the Safety Data Sheet (SDS) contains all of the information required by the CPR.

GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).

Hazard pictograms

Signal word Danger

(Contd. of page 6)
Hazard-determining components of labeling:
Hexyl diglycol
Modified Rosin
Azole Isomers

Hazard statements
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.

Precautionary statements
P261 Avoid breathing dust/fume/gas/mist/vapors/spray
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 If on skin: Wash with plenty of water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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 Material Safety Data Sheet 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 Material Safety Data Sheet as a source for hazard information.

Department issuing Safety Data Sheet (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
DOT: US Department of Transportation
IATA: International Air Transport Association
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)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
PBT: Persistent, Bioaccumulative and Toxic
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute Tox. 4: Acute toxicity – Category 4
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
Skin Sens. 1: Skin sensitisation – Category 1
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

* Data compared to the previous version altered.