



**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 06/03/2017

Reviewed on 06/03/2017

## 1 Identification

· **Product identifier**

· **Trade name:** **Adhesive liquid for prefd. wax parts**

· **Application of the substance / the mixture** Auxiliary for manufacture of dental prothesis

· **Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

Kulzer GmbH

Leipziger Straße 2, 63450 Hanau (Germany) Tel.: +49 (0)800 4372522

· **Information department:**

Tel. +1 (800) 431-1785 Fax: +1 (800) 522-1545

e-mail: customer.servicehkna@kulzer-dental.com

· **Emergency telephone number:**

Emergency CONTACT (24-Hour-Number)

GBK/Infotrac ID 105860: (domestic) 1 800 535 5053 or international (001) 352 323 3500

## 2 Hazard(s) identification

· **Classification of the substance or mixture**

Flam. Liq. 2 H225 Highly flammable liquid and vapor.

Skin Irrit. 2 H315 Causes skin irritation.

Repr. 2 H361 Suspected of damaging fertility or the unborn child.

STOT SE 3 H336 May cause drowsiness or dizziness.

· **Label elements**

· **GHS label elements**

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

· **Hazard pictograms**



GHS02 GHS07 GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**

cyclohexane

n-hexane

2-methylpentane

heptane

· **Hazard statements**

Highly flammable liquid and vapor.

Causes skin irritation.

Suspected of damaging fertility or the unborn child.

May cause drowsiness or dizziness.

· **Precautionary statements**

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Use explosion-proof electrical/ventilating/lighting/equipment.

Avoid breathing dust/fume/gas/mist/vapors/spray

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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Specific treatment (see on this label).  
Store locked up.

· **Classification system**

· **NFPA ratings for USA (scale 0-4)**



· **HMIS-Ratings (Scale 0-4)**



· **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

**3 Composition/information on ingredients**

· **Chemical characterization: Mixtures**

· **Description:** -

· **Dangerous components:**

|          |   |        |
|----------|---|--------|
| 110-82-7 | cyclohexane<br>Flam. Liq. 2, H225; Asp. Tox. 1, H304; Skin Irrit. 2, H315; STOT SE 3, H336                              | 25-50% |
| 107-83-5 | 2-methylpentane<br>Flam. Liq. 2, H225; Asp. Tox. 1, H304; Skin Irrit. 2, H315; STOT SE 3, H336                          | 5-10%  |
| 142-82-5 | heptane<br>Flam. Liq. 2, H225; Asp. Tox. 1, H304; Skin Irrit. 2, H315; STOT SE 3, H336                                  | 5-10%  |
| 110-54-3 | n-hexane<br>Flam. Liq. 2, H225; Repr. 2, H361; STOT RE 2, H373; Asp. Tox. 1, H304; Skin Irrit. 2, H315; STOT SE 3, H336 | 0-5%   |

· **Additional information** For the wording of the listed hazard phrases refer to section 16.

**4 First-aid measures**

· **Description of first aid measures**

- **After inhalation** Supply fresh air; consult doctor in case of complaints.
- **After skin contact**  
Immediately wash with water and soap and rinse thoroughly.  
If skin irritation continues, consult a doctor.
- **After eye contact**  
Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing** Do not induce vomiting; immediately call for medical help.
- **Information for doctor**
  - **Most important symptoms and effects, both acute and delayed**  
No further relevant information available.

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- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

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### 5 Fire-fighting measures

- **Extinguishing media**
  - **Suitable extinguishing agents**  
Water haze  
Foam  
Fire-extinguishing powder  
Carbon dioxide
  - **For safety reasons unsuitable extinguishing agents** Water with full jet.
- **Special hazards arising from the substance or mixture**  
Formation of toxic gases is possible during heating or in case of fire.
- **Advice for firefighters**
  - **Protective equipment:**  
Do not inhale explosion gases or combustion gases.  
Wear self-contained respiratory protective device.
- **Additional information** -

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation  
Use respiratory protective device against the effects of fumes/dust/aerosol.  
Keep away from ignition sources
- **Environmental precautions:**  
Prevent seepage into sewage system, workpits and cellars.  
Inform respective authorities in case of seepage into water course or sewage system.  
Do not allow product to reach sewage system or any water course.
- **Methods and material for containment and cleaning up:**  
Dispose of the collected material according to regulations.  
Ensure adequate ventilation.  
Send for recovery or disposal in suitable receptacles.  
Absorb with liquid binding material (diatomite, universal binders, for small amounts tissues).
- **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.
- 

### 7 Handling and storage

- **Handling**
  - **Precautions for safe handling**  
Keep receptacles tightly sealed.  
Ensure good ventilation/exhaustion at the workplace.

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Prevent formation of aerosols.

Use solvent-proof equipment.

**Information about protection against explosions and fires:**

Keep ignition sources away - Do not smoke.

Protect from heat.

Protect against electrostatic charges.

Highly volatile, flammable constituents are released during processing.

Fumes can combine with air to form an explosive mixture.

Flammable gas-air mixtures may be formed in empty receptacles.

**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:**

Store in cool, dry conditions in well sealed receptacles.

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

**8 Exposure controls/personal protection**

**Control parameters**

**Components with limit values that require monitoring at the workplace:**

**110-82-7 cyclohexane**

PEL Long-term value: 1050 mg/m<sup>3</sup>, 300 ppm

REL Long-term value: 1050 mg/m<sup>3</sup>, 300 ppm

TLV Long-term value: 344 mg/m<sup>3</sup>, 100 ppm

**107-83-5 2-methylpentane**

REL Long-term value: 350 mg/m<sup>3</sup>, 100 ppm

Ceiling limit value: 1800\* mg/m<sup>3</sup>, 510\* ppm  
\*15-min

TLV Short-term value: 3500 mg/m<sup>3</sup>, 1000 ppm

Long-term value: 1760 mg/m<sup>3</sup>, 500 ppm

**142-82-5 heptane**

PEL Long-term value: 2000 mg/m<sup>3</sup>, 500 ppm

REL Long-term value: 350 mg/m<sup>3</sup>, 85 ppm

Ceiling limit value: 1800\* mg/m<sup>3</sup>, 440\* ppm  
\*15-min

TLV Short-term value: 2050 mg/m<sup>3</sup>, 500 ppm

Long-term value: 1640 mg/m<sup>3</sup>, 400 ppm

**110-54-3 n-hexane**

PEL Long-term value: 1800 mg/m<sup>3</sup>, 500 ppm

REL Long-term value: 180 mg/m<sup>3</sup>, 50 ppm

TLV Long-term value: 176 mg/m<sup>3</sup>, 50 ppm

Skin; BEI

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**· Ingredients with biological limit values:**

**110-54-3 n-hexane**

|     |   |
|-----|---|
| BEI | 0.4 mg/L                                      |
|     | Medium: urine                                 |
|     | Time: end of shift at end of workweek         |
|     | Parameter: 2.5-Hexanedione without hydrolysis |

· **Additional information:** The lists that were valid during the creation were used as basis.

**· Exposure controls**

**· Personal protective equipment**

**· General protective and hygienic measures**

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.

**· Breathing equipment:**

Not necessary with efficient local exhaust. If exposition to vapours is possible, use breathing protective mask (filter A).

**· Protection of hands:**

Solvent resistant gloves  
Check protective gloves prior to each use for their proper condition.  
recommended

**· Material of 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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

**· 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.

**· For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**

Butyl rubber, BR  
Nitrile rubber, NBR

· **Eye protection:** Not absolutely necessary.

· **Body protection:** Light weight protective clothing

**9 Physical and chemical properties**

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

**· General Information**

**· Appearance:**

· **Form:**

Fluid

· **Color:**

Yellowish

· **Odor:**

Characteristic

· **Odor threshold:**

Not determined.

· **pH-value:**

Not determined.

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|   |  |
|---|--|
| · <b>Change in condition</b>                      |  |
| · <b>Melting point/Melting range:</b>             | undetermined   |
| · <b>Boiling point/Boiling range:</b>             | 77 °C (171 °F)   |
| · <b>Flash point:</b>                             | -20 °C (-4 °F)   |
| · <b>Flammability (solid, gaseous)</b>            | Not applicable.  |
| · <b>Ignition temperature:</b>                    |  |
| · <b>Decomposition temperature:</b>               | Not determined.  |
| · <b>Auto igniting:</b>                           | Product is not selfigniting.   |
| · <b>Danger of explosion:</b>                     | Product is not explosive. However, formation of explosive air/vapor mixtures are possible. |
| · <b>Explosion limits:</b>                        |  |
| · <b>Lower:</b>                                   | 1.2 Vol %  |
| · <b>Upper:</b>                                   | 8.3 Vol %  |
| · <b>Vapor pressure at 20 °C (68 °F):</b>         | 104 hPa (78 mm Hg)   |
| · <b>Density at 20 °C (68 °F):</b>                | 0.83 g/cm <sup>3</sup> (6.926 lbs/gal)   |
| · <b>Relative density</b>                         | Not determined.  |
| · <b>Vapor density</b>                            | Not determined.  |
| · <b>Evaporation rate</b>                         | Not determined.  |
| · <b>Solubility in / Miscibility with</b>         |  |
| · <b>Water:</b>                                   | Not miscible or difficult to mix   |
| · <b>Partition coefficient (n-octanol/water):</b> | Not determined.  |
| · <b>Viscosity:</b>                               |  |
| · <b>dynamic at 20 °C (68 °F):</b>                | ca. 3000 mPas  |
| · <b>kinematic at 20 °C (68 °F):</b>              | > 3600 mm <sup>2</sup> /s  |
| · <b>Solvent content:</b>                         |  |
| · <b>VOC EU</b>                                   | 60 %   |
| · <b>Solids content:</b>                          | 40 %   |
| · <b>Other information</b>                        | No further relevant information available.   |

**10 Stability and reactivity**

- **Reactivity** No further relevant information available.
- **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:** none
- **Additional information:** -

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**11 Toxicological information**

· **Information on toxicological effects**

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

**110-82-7 cyclohexane**

Oral LD50 12705 mg/kg (rat)

**110-54-3 n-hexane**

Oral LD50 28710 mg/kg (rat)

· **Primary irritant effect:**

· **on the skin:** Irritant to skin and mucous membranes.

· **Sensitization:** No sensitizing effects known.

· **Additional toxicological information:**

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

**12 Ecological information**

· **Toxicity**

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

· **Persistence and degradability** No further relevant information available.

· **Behavior in environmental systems:**

· **Bioaccumulative potential** No further relevant information available.

· **Mobility in soil** No further relevant information available.

· **Ecotoxicological effects:**

· **Remark:** Very toxic for fish

· **Additional ecological information:**

· **General notes:**

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Very toxic for aquatic organisms

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **Other adverse effects** No further relevant information available.

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**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, IMDG, IATA UN1133
- **UN proper shipping name**  
· DOT, IATA Adhesives  
· ADR 1133 Adhesives, special provision 640D  
· IMDG ADHESIVES (CYCLOHEXANE, 2-methylpentane),  
MARINE POLLUTANT
- **Transport hazard class(es)**
  - DOT
    - 
    - Class 3 Flammable liquids
    - Label 3
  - ADR
    - 
    - Class 3 (F1) Flammable liquids
    - Label 3
  - IMDG
    - 
    - Class 3 Flammable liquids

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|   |   |
|---|---|
| · <b>Label</b>  | 3   |
| · <b>IATA</b>   |   |
|  |   |
| · <b>Class</b>  | 3 Flammable liquids   |
| · <b>Label</b>  | 3   |
| · <b>Packing group</b>  |   |
| · <b>DOT, ADR, IMDG, IATA</b>   | II  |
| · <b>Environmental hazards:</b>   | Product contains environmentally hazardous substances:<br>cyclohexane, heptane                                  |
| · <b>Marine pollutant:</b>  | Symbol (fish and tree)  |
| · <b>Special marking (ADR):</b>   | Symbol (fish and tree)  |
| · <b>Special precautions for user</b>   | Warning: Flammable liquids  |
| · <b>Danger code (Kemler):</b>  | 33  |
| · <b>EMS Number:</b>  | F-E,S-D   |
| · <b>Stowage Category</b>   | B   |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>  | Not applicable.   |
| · <b>Transport/Additional information:</b>  | -   |
| · <b>ADR</b>  |   |
| · <b>Excepted quantities (EQ)</b>   | Code: E2<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 500 ml |
| · <b>IMDG</b>   |   |
| · <b>Limited quantities (LQ)</b>  | 5L  |
| · <b>Excepted quantities (EQ)</b>   | Code: E2<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 500 ml |
| · <b>UN "Model Regulation":</b>   | UN 1133 ADHESIVES, SPECIAL PROVISION 640D, 3, II  |

**15 Regulatory information**

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **SARA Section 355 (extremely hazardous substances)**

None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act)** None of the ingredients is listed.

· **Carcinogenity categories**

· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

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· **GHS label elements**

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

· **Hazard pictograms**



GHS02 GHS07 GHS08

· **Signal word** *Danger*

· **Hazard-determining components of labeling:**

cyclohexane  
n-hexane  
2-methylpentane  
heptane

· **Hazard statements**

Highly flammable liquid and vapor.  
Causes skin irritation.  
Suspected of damaging fertility or the unborn child.  
May cause drowsiness or dizziness.

· **Precautionary statements**

Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
Use explosion-proof electrical/ventilating/lighting/equipment.  
Avoid breathing dust/fume/gas/mist/vapors/spray  
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
Specific treatment (see on this label).  
Store locked up.

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

**16 Other information**

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**

H225 Highly flammable liquid and vapor.  
H304 May be fatal if swallowed and enters airways.  
H315 Causes skin irritation.  
H336 May cause drowsiness or dizziness.  
H361 Suspected of damaging fertility or the unborn child.  
H373 May cause damage to organs through prolonged or repeated exposure.

· **Date of preparation / last revision** 06/03/2017 / 2

· **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  
ACGIH: American Conference of Governmental Industrial Hygienists  
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)

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NFPA: National Fire Protection Association (USA)

HMS: Hazardous Materials Identification System (USA)

VOCV: Lenkungsabgabe auf flüchtigen organischen Verbindungen, Schweiz (Swiss Ordinance on volatile organic compounds)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

BEI: Biological Exposure Limit

Flam. Liq. 2: Flammable liquids – Category 2

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Repr. 2: Reproductive toxicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

Asp. Tox. 1: Aspiration hazard – Category 1

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

USA