

**Material Safety Data Sheet
According to 91/155 EC**

Printing date 14.04.2003

Reviewed on 11.04.2003

Hazardous according to criteria of Worksafe Australia

1 Identification of substance

· **Product details**

· **Trade name: Universal Adhesive**

· **Application of the substance / the preparation** Dental bonding material

· **Manufacturer/Supplier:**

Heraeus Kulzer GmbH & Co. KG
Grüner Weg 11, D-63450 Hanau

Tel.: 0800 4372522

· **Informing department:**

Quality Assurance

Dr. Palussek Tel.: +49 2133 51-4911 / Fax: +49 2133 51-5016

· **Emergency information:** Call +49 30 19240 (24 hours).

2 Composition/Data on components:

· **Chemical characterization**

· **Description:** -

· **Dangerous components:**

| | | | |
|-------------------------------------|-----------------------------|----------------------|--------|
| CAS: 141-78-6 EINECS: 205-500-4 | ethyl acetate | Xi, F; R 11-36-66-67 | 10-25% |
| CAS: 1330-20-7 EINECS: 215-535-7 | xylene, mixed isomers, pure | Xn; R 10-20/21-38 | 5-10% |
| CAS: 5593-70-4 EINECS: 227-006-8 | titanium tetrabutanolate | Xi; R 10-36 | 0-5% |
| CAS: 100-41-4 EINECS: 202-849-4 | ethylbenzene | Xn, F; R 11-20 | 0-5% |

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

3 Hazards identification

· **Hazard designation:**



F Highly flammable

· **Information pertaining to particular dangers for man and environment**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

R 11 Highly flammable.

· **Classification system**

The classification is in line with current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies.

4 First aid measures

- **After inhalation** Supply fresh air; consult doctor in case of symptoms.
- **After skin contact** The product is not skin irritating.
- **After eye contact** Rinse opened eye for several minutes under running water.
- **After swallowing** Initiate vomiting and consult a doctor.

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5 Fire fighting measures

- **Suitable extinguishing agents**
CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.
CO₂, sand, extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents**
Water.
Water with a full water jet.
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Person-related safety precautions:** Wear protective equipment. Keep unprotected persons away.
- **Measures for environmental protection:**
Prevent material from reaching sewage system, holes and cellars.
- **Measures for cleaning/collecting:**
Absorb with liquid-binding material (diatomite, universal binders, for small amounts tissues).
Do not flush with water or aqueous cleansing agents
- **Additional information:** No dangerous materials are released.

7 Handling and storage

- **Handling**
 - **Information for safe handling:** Keep containers tightly sealed.
 - **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **Storage**
 - **Requirements to be met by storerooms and containers:** Store in 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 containers.

8 Exposure controls and personal protection

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

- **Components with critical values that require monitoring at the workplace:**

141-78-6 ethyl acetate

| | |
|-----------|--|
| PEL (USA) | 1400 mg/m ³ , 400 ml/m ³ |
| REL (USA) | 1400 mg/m ³ , 400 ml/m ³ |
| TLV (USA) | 1440 mg/m ³ , 400 ml/m ³ |

1330-20-7 xylene, mixed isomers, pure

| | |
|-----------|--|
| PEL (USA) | 435 mg/m ³ , 100 ml/m ³ |
| REL (USA) | Short-term value: 655 mg/m ³ , 150 ml/m ³ Long-term value: 435 mg/m ³ , 100 ml/m ³ (o-, m-, & p-isomers) |
| TLV (USA) | Short-term value: 651 mg/m ³ , 150 ml/m ³ Long-term value: 434 mg/m ³ , 100 ml/m ³ BEI |

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100-41-4 ethylbenzene

| | |
|-----------|---|
| PEL (USA) | 435 mg/m ³ , 100 ml/m ³ |
| REL (USA) | Short-term value: 545 mg/m ³ , 125 ml/m ³ Long-term value: 435 mg/m ³ , 100 ml/m ³ |
| TLV (USA) | Short-term value: 543 mg/m ³ , 125 ml/m ³ Long-term value: 434 mg/m ³ , 100 ml/m ³ |
| BEI | |

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

· Personal protective equipment

· General protective and hygienic measures

Wash hands during breaks and at the end of the work.

· **Breathing equipment:** Not required.

· **Protection of hands:** Not required.

· 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.

· 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 in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:**

Natural rubber, NR

· **Eye protection:** not absolutely necessary

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

9 Physical and chemical properties:

· General Information

| | |
|------------------|------------|
| · Form: | Fluid |
| · Colour: | Blue |
| · Smell: | Ester-like |

· Change in condition

| | |
|---------------------------------------|----------------|
| · Melting point/Melting range: | Not determined |
| · Boiling point/Boiling range: | >70°C |

· **Flash point:** 3°C

· **Ignition temperature:** >400°C

· **Self-inflammability:** Product is not selfigniting.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapour mixtures is possible.

· Critical values for explosion:

| | |
|-----------------|------------|
| · Lower: | 2.1 Vol % |
| · Upper: | 11.5 Vol % |

· **Steam pressure at 20°C:** 102 hPa

· **Density at 20°C** 1.0-1.2 g/cm³

· Solubility in / Miscibility with

· **Water:** Not miscible or difficult to mix

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- **Solvent content:**
- **Organic solvents:** <30 %

10 Stability and reactivity

- **Conditions to be avoided:** No decomposition if used and stored according to specifications.
- **Dangerous reactions:** No dangerous reactions known
- **Dangerous products of composition:** None

11 Toxicological information

- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**
- Oral LD50 > 10000 mg/kg (rat)
- **Primary irritant effect:**
 - **on the skin:** No irritant effect.
 - **on the eye:** No irritant effect.
- **Sensitization:** No sensitizing effect known.

12 Ecological information:

- **General notes:**
Water hazard class 2 (calculated according to VwVwS): hazardous for water.
Do not allow product to reach ground water, water bodies or sewage system.
Danger to drinking water if even small quantities leak into soil.

13 Disposal considerations

- **Product:**
- **Recommendation**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **European waste catalogue**
- 18 01 06 chemicals consisting of or containing dangerous substances
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- **Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)**



- **ADR/RID-GGVS/E Class:** 3 Flammable liquids.
- **Kemler Number:** 33
- **UN-Number:** 1866
- **Packaging group:** II

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- **Label** 3
- **Designation of goods:** 1866 RESIN SOLUTION (vapor pressure at 50°C at most 110 kPa)

· **Maritime transport IMDG/GGVSea:**



- **IMDG/GGVSea Class:** 3
- **UN Number:** 1866
- **Label** 3
- **Packaging group:** II
- **EMS Number:** F-E,S-E
- **Marine pollutant:** No
- **Correct technical name:** RESIN SOLUTION

· **Air transport ICAO-TI and IATA-DGR:**



- **ICAO/IATA Class:** 3
- **UN/ID Number:** 1866
- **Label** 3
- **Packaging group:** II
- **Correct technical name:** RESIN SOLUTION

15 Regulatory information

· **Designation according to EC guidelines:**

The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)

· **Code letter and hazard designation of product:**

F Highly flammable

· **Risk phrases:**

11 Highly flammable.

· **Safety phrases:**

33 Take precautionary measures against static discharges.

43 In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.

· **National regulations**

· **Technical instructions (air):**

| Class | Share in % |
|-------|------------|
| II | 5-10 |
| III | 10-25 |

· **Water hazard class:**

Water hazard class 2 (calculated according to VwVwS): hazardous for water.

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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 R-phrases**

- 10 Flammable.
- 11 Highly flammable.
- 20 Harmful by inhalation.
- 20/21 Harmful by inhalation and in contact with skin.
- 36 Irritating to eyes.
- 38 Irritating to skin.
- 66 Repeated exposure may cause skin dryness or cracking.
- 67 Vapours may cause drowsiness and dizziness.

· **Contact:**

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

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