

**Safety data sheet
 according to 1907/2006/EC, Article 31**

Printing date 26.06.2017

Version number 3

Revision: 26.06.2017

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

- **1.1 Product identifier**
 - **Trade name: Technovit-2-Bond**
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
 No further relevant information available.
 - **Application of the substance / the mixture** Adhesives
- **1.3 Details of the supplier of the safety data sheet**
 - **Manufacturer/Supplier:**
 Kulzer GmbH
 Leipziger Straße 2, 63450 Hanau (Germany)
 Tel.: +49 (0)6181 9689-2570 (Wehrheim)
 - **Informing department:** email: technik.wehrheim@kulzer-dental.com
- **1.4 Emergency telephone number:** Emergency CONTACT (24-Hour-Number): +49 (0)6132-84463

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
 - **Classification according to Regulation (EC) No 1272/2008**
 Acute Tox. 4 H332 Harmful if inhaled.
 Skin Irrit. 2 H315 Causes skin irritation.
 Eye Irrit. 2 H319 Causes serious eye irritation.
 Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 Skin Sens. 1 H317 May cause an allergic skin reaction.
 Carc. 2 H351 Suspected of causing cancer.
 STOT SE 3 H335 May cause respiratory irritation.
 STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

- **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 GHS08

- **Signal word** Danger
- **Hazard-determining components of labelling:**
 diphenylmethane-4,4'-di-isocyanate
 Benzene, 1,1'-methylenebis[4-isocyanato-, homopolymer
 Triethoxy(3-isocyanatipropyl)silan
 m-phenylenebis(methylamine)

- **Hazard statements**
 H332 Harmful if inhaled.
 H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 H317 May cause an allergic skin reaction.
 H351 Suspected of causing cancer.
 H335 May cause respiratory irritation.
 H373 May cause damage to organs through prolonged or repeated exposure.

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· **Precautionary statements**

- P260 Do not breathe dust/fume/gas/mist/vapours/spray.
- P284 Wear respiratory protection.
- P280 Wear protective gloves.
- P262 Do not get in eyes, on skin, or on clothing.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

· **Additional information:**

Contains isocyanates. May produce an allergic reaction.

· **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: -**

· **Dangerous components:**

CAS: 101-68-8 EINECS: 202-966-0 Reg.nr.: 01-2119457014-47	diphenylmethane-4,4'-di-isocyanate Resp. Sens. 1, H334; Carc. 2, H351; STOT RE 2, H373; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	25-50%
CAS: 25686-28-6 NLP: 500-040-3	Benzene, 1,1'-methylenebis[4-isocyanato-, homopolymer Resp. Sens. 1, H334; Carc. 2, H351; STOT RE 2, H373; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317	5-10%
CAS: 2530-83-8 EINECS: 219-784-2	[3-(2,3-epoxypropoxy)propyl]trimethoxysilane Eye Dam. 1, H318	0-5%
CAS: 24801-88-5 EINECS: 246-467-6	Triethoxy(3-isocyanatopropyl)silan Acute Tox. 1, H330; Resp. Sens. 1, H334; Skin Corr. 1B, H314; Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Sens. 1, H317	< 1%
CAS: 1477-55-0 EINECS: 216-032-5	m-phenylenebis(methylamine) Skin Corr. 1A, H314; Acute Tox. 4, H302; Acute Tox. 4, H332; Skin Sens. 1, H317; Aquatic Chronic 3, H412	< 1%

SECTION 4: First aid measures

· **4.1 Description of first aid measures**

· **General information**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation** Supply fresh air; consult doctor in case of symptoms.

· **After skin contact** Seek medical treatment.

· **After eye contact**

Rinse opened eye for several minutes under running water. If symptoms persist, consult doctor.

· **After swallowing**

Rinse out mouth and then drink plenty of water.

In case of persistent symptoms consult doctor.

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- **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, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.
- **5.2 Special hazards arising from the substance or mixture**
 Can be released in case of fire
 Carbon monoxide (CO)
 Nitrogen oxides (NO_x)
 Carbon dioxide (CO₂)
- **5.3 Advice for firefighters**
 - **Protective equipment:**
 Wear self-contained breathing apparatus.
 Wear full protective suit.
 - **Additional information -**

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
 Wear protective equipment. Keep unprotected persons away.
 Ensure adequate ventilation
 Avoid contact with eyes and skin.
- **6.2 Environmental precautions:**
 Do not allow to enter drainage system, surface or ground water.
 Do not allow to enter the ground/soil.
- **6.3 Methods and material for containment and cleaning up:**
 Send for recovery or disposal in suitable containers.
- **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 information on disposal.
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SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
 Wear protective equipment. Keep unprotected persons away.
 Avoid contact with eyes and skin.
 Ensure good ventilation/exhaustion at the workplace.
- **7.2 Conditions for safe storage, including any incompatibilities**
 - **Storage**
 - **Requirements to be met by storerooms and containers:**
 Store in cool, dry place in tightly closed containers.
 - **Information about storage in one common storage facility:**
 Do not store together with acids.
 Do not store together with alkalis (caustic solutions).
 - **Further information about storage conditions:** Store container in a well ventilated position.

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

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SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**

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

101-68-8 diphenylmethane-4,4'-di-isocyanate

WEL	Short-term value: 0.07 mg/m ³ Long-term value: 0.02 mg/m ³ Sen; as -NCO
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· **DNELs**

101-68-8 diphenylmethane-4,4'-di-isocyanate

Oral	worker industr., lg.t., syst.	0.05 mg/Kg (nd)
Dermal	worker industr., acute, syst.	50 mg/Kg/d (nd)
Inhalative	worker industr., acute, syst.	0.1 mg/m ³ (nd)
	worker industr., acute, local	0.1 mg/m ³ (nd)
	worker industr., l.te., local	0.05 mg/m ³ (nd)

· **PNECs**

101-68-8 diphenylmethane-4,4'-di-isocyanate

freshwater	1 mg/l (nd)
marine water	0.1 mg/l (nd)
STP	1 mg/l (nd)
soil,dw	1 mg/Kg (nd)

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

· **8.2 Exposure controls**

· **Personal protective equipment**

· **General protective and hygienic measures**

The usual precautionary measures should be adhered to in handling the chemicals.

· **Breathing equipment:**

Use breathing protection in case of insufficient ventilation.

Filter A/P2.

· **Protection of hands:** Use protective gloves, if skin contact cannot be avoided.

· **Material of gloves**

Butyl rubber, BR

Nitrile rubber, NBR

· **Penetration time of glove material**

For the mixture of chemicals mentioned below the penetration time has to be at least 480 minutes (Permeation according to EN 374 Part 3: Level -).

· **As protection from splashes gloves made of the following materials are suitable:**

Nitrile rubber, NBR

Butyl rubber, BR

· **Eye protection:** Safety glasses

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

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SECTION 9: Physical and chemical properties

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

· **General Information**

· **Appearance:**

- **Form:** Fluid
- **Colour:** Pale
- **Smell:** Recognisable
- **Odour threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

- **Melting point/Melting range:** Not determined
- **Boiling point/Boiling range:** > 204 °C

· **Flash point:** > 143 °C

· **Inflammability (solid, gaseous)** Not applicable.

· **Ignition temperature:** Not applicable

· **Decomposition temperature:** Not determined.

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

· **Danger of explosion:** Product is not explosive.

· **Critical values for explosion:**

- **Lower:** Not determined.
- **Upper:** Not determined.

· **Steam pressure:** Not determined.

- **Density at 20 °C** 1.1 g/cm³
- **Relative density** Not determined.
- **Vapour density at 20 °C** >1
- **Evaporation rate** Not determined.

· **Solubility in / Miscibility with**

- **Water:** Fully miscible

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity:**

- **dynamic:** Not determined.
- **kinematic:** Not determined.

· **9.2 Other information** No further relevant information available.

SECTION 10: Stability and reactivity

· **10.1 Reactivity** No further relevant information available.

· **10.2 Chemical stability**

· **Conditions to be avoided:** No decomposition if used and stored according to specifications.

· **10.3 Possibility of hazardous reactions** No dangerous reactions known

· **10.4 Conditions to avoid** No further relevant information available.

· **10.5 Incompatible materials:** No further relevant information available.

· **10.6 Hazardous decomposition products:**

Nitrogen oxides (NO_x)
Carbon monoxide and carbon dioxide

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Trade name: **Technovit-2-Bond**· **Additional information:** -

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SECTION 11: Toxicological information· **11.1 Information on toxicological effects**· **Acute toxicity**

Harmful if inhaled.

· **LD/LC50 values that are relevant for classification:****101-68-8 diphenylmethane-4,4'-di-isocyanate**

Oral LD50 31600 mg/kg (rat)

9082-00-2 GLYCEROL PROPOXYLATE-B-ETHOXYLATE

Oral LD50 > 10000 mg/kg (rat)

Dermal LD50 > 5000 mg/kg (rabbit)

25723-16-4 Trimethylolpropan-poly (oxypropylen)-triether

Oral LD50 > 2500 mg/kg (rat)

Dermal LD50 > 2000 mg/kg (rat)

102-60-3 1,1',1'',1'''-ethylenedinitrilotetrapropan-2-ol

Oral LD50 3280 mg/kg (rat)

Dermal LD50 > 2000 mg/kg (rabbit)

2530-83-8 [3-(2,3-epoxypropoxy)propyl]trimethoxysilane

Oral LD50 7010 mg/kg (rat)

Dermal LD50 4000 mg/kg (rabbit)

Inhalative LC50/4 h > 5 mg/l (rat)

24801-88-5 Triethoxy(3-isocyanatipropyl)silan

Oral LD50 706 mg/kg (rat)

Dermal LD50 1259 mg/kg (rabbit)

Inhalative LC50/4 h 0.36 mg/l (rat)

1477-55-0 m-phenylenebis(methylamine)

Oral LD50 980 mg/kg (rat)

Dermal LD50 > 2000 mg/kg (rabbit)

Inhalative LC50/4 h 0.8 mg/l (rat)

· **Primary irritant effect:**· **Skin corrosion/irritation**

Causes skin irritation.

· **Serious eye damage/irritation**

Causes serious eye irritation.

· **Respiratory or skin sensitisation**

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

· **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

Carc. 2

· **Germ cell mutagenicity** Based on available data, the classification criteria are not met.· **Carcinogenicity**

Suspected of causing cancer.

· **Reproductive toxicity** Based on available data, the classification criteria are not met.· **STOT-single exposure**

May cause respiratory irritation.

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- **STOT-repeated exposure**
 May cause damage to organs through prolonged or repeated exposure.
- **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.
- **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.
 - **Additional ecological information:**
 - **General notes:** Avoid transfer into the environment.
- **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**
 - **Recommendation** Disposal must be made according to official regulations.

· **European waste catalogue**

08 04 09*	waste adhesives and sealants containing organic solvents or other dangerous substances
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- **Uncleaned packagings:**
 - **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

- | | |
|---|-----------------|
| · 14.1 UN-Number
· ADR, ADN, IMDG, IATA | Void |
| · 14.2 UN proper shipping name
· ADR, ADN, IMDG, IATA | Void |
| · 14.3 Transport hazard class(es)
· ADR, ADN, IMDG, IATA
· Class | Void |
| · 14.4 Packing group
· ADR, IMDG, IATA | Void |
| · 14.5 Environmental hazards:
· Marine pollutant: | No |
| · 14.6 Special precautions for user | Not applicable. |
| · 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code | Not applicable. |
| · Transport/Additional information: | - |

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· **UN "Model Regulation":** Void

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
 - **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 56a
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 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**

- H302 Harmful if swallowed.
- H312 Harmful in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.
- H330 Fatal if inhaled.
- H332 Harmful if inhaled.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H335 May cause respiratory irritation.
- H351 Suspected of causing cancer.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H412 Harmful to aquatic life with long lasting effects.

· **Abbreviations and acronyms:**

- 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 Organisation
- 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)
- DNEL: Derived No-Effect Level (REACH)
- PNEC: Predicted No-Effect Concentration (REACH)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative
- Acute Tox. 1: Acute toxicity – Category 1
- Acute Tox. 4: Acute toxicity – Category 4
- Skin Corr. 1A: Skin corrosion/irritation – Category 1A
- Skin Corr. 1B: Skin corrosion/irritation – Category 1B
- Skin Irrit. 2: Skin corrosion/irritation – Category 2
- Eye Dam. 1: Serious eye damage/eye irritation – Category 1
- Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
- Resp. Sens. 1: Respiratory sensitisation – Category 1
- Skin Sens. 1: Skin sensitisation – Category 1
- Carc. 2: Carcinogenicity – Category 2
- STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
- STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

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Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

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. * Data compared to the previous version altered.

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