

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

Printing date 24.08.2022

Version number 2

Revision: 24.08.2022

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

· **1.1 Product identifier**

· Trade name: **Technovit-2-Bond Komponente A**

· **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**
professional use
Hardening agent/ Curing agent

· **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 GB CLP regulation.

· **Hazard pictograms**



GHS07 GHS08

· **Signal word** Danger

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

Diphenylmethane-4,4'-di-isocyanate

· **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.
 P280 Wear protective gloves / 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.
 P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **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 Mixtures**

· **Description:** -

· **Dangerous components:**

CAS: 101-68-8 EINECS: 202-966-0 Reg.nr.: 01-2119457014-47-xxxx	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 ATE: LC50/4 h inhalative: 1.5 mg/l Specific concentration limits: Skin Irrit. 2; H315: C ≥ 5 % Eye Irrit. 2; H319: C ≥ 5 % Resp. Sens. 1; H334: C ≥ 0.1 % STOT SE 3; H335: C ≥ 5 %	10-30%
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· **Additional information** For the wording of the listed hazard phrases refer to section 16.

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.

Take affected persons out of danger area and instruct to lie down.

Personal protection for the First Aider.

Do not leave affected persons unsupervised.

· **After inhalation**

Supply fresh air; consult doctor in case of symptoms.

In case of unconsciousness bring patient into stable side position for transport.

Seek medical treatment.

· **After skin contact**

Instantly wash with water and soap and rinse thoroughly.

If skin irritation or rash occurs: Get medical advice/attention.

· **After eye contact**

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

Remove contact lenses, if present and easy to do. Continue rinsing.

· **After swallowing** Seek medical treatment.

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- **4.2 Most important symptoms and effects, both acute and delayed**
Allergic reactions
Breathing difficulty
Coughing
- **4.3 Indication of any immediate medical attention and special treatment needed**
Medical supervision for at least 48 hours

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
 - **Suitable extinguishing agents**
Alcohol-resistant foam
Fire-extinguishing powder
CO₂
Foam
 - **For safety reasons unsuitable extinguishing agents** Water with a full water jet.
- **5.2 Special hazards arising from the substance or mixture**
The product reacts with water and generates heat.
In case of fire the following can be released:
Hydrogen cyanide (HCN)
Carbon dioxide (CO₂)
Carbon monoxide (CO)
Nitrogen oxides (NO_x)
Formation of toxic gases is possible during heating or in case of fire.
- **5.3 Advice for firefighters**
 - **Protective equipment:**
Wear self-contained breathing apparatus.
(EN 133)
 - **Additional information -**

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Do not breathe vapor / mist / gas.
Keep away from ignition sources
Ensure adequate ventilation
Bring persons out of danger.
Wear protective clothing.
Keep people at a distance and stay on the windward side.
- **6.2 Environmental precautions:** Prevent material from reaching sewage system, holes and cellars.
- **6.3 Methods and material for containment and cleaning up:**
Dispose of the material collected according to regulations.
Use neutralising agent.
Absorb with liquid-binding material (diatomite, universal binders, for small amounts tissues).
- **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

Store in cool, dry place in tightly closed containers.

Avoid contact with eyes and skin.

Prevent formation of aerosols.

Do not breathe vapor / mist / gas.

Ensure good ventilation/exhaustion at the workplace.

Information about protection against explosions and fires:

Protect from heat.

Keep ignition sources away - Do not smoke.

Handling

do not mix with

amine

metals

Water.

Strong bases

Strong oxidizers

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.

Protect from the effects of light.

store locked up

Information about storage in one common storage facility: Not required.

Further information about storage conditions: None.

Recommended storage temperature: 18-29°C

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

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 (Great Britain) Short-term value: 0.07 mg/m³

Long-term value: 0.02 mg/m³

Sen; as -NCO

DNELs

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

Inhalative	worker industrial, acute, local	0.1 mg/m ³ (not defined)
	worker industrial, long term, local	0.05 mg/m ³ (not defined)
	general population, acute, local	0.05 mg/m ³ (not defined)
	general population, long term, systemic	0.025 mg/m ³ (not defined)

PNECs

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

freshwater	0.0037 mg/l (not defined)
marine water	0.00037 mg/l (not defined)
sediment, dry weight, freshwater	11.7 mg/Kg (not defined)
sediment, dry weight, marine water	1.17 mg/Kg (not defined)

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soil, dry weight	2.33 mg/Kg (not defined)
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· Ingredients with biological limit values:

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

BMGV (Great Britain)	1 µmol creatinine/mol Medium: urine Sampling time: At the end of the period of exposure Parameter: isocyanate-derived diamine
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· Additional information: The lists that were valid during the compilation were used as basis.

· 8.2 Exposure controls

· Individual protection measures, such as personal protective equipment

· General protective and hygienic measures

Wash hands during breaks and at the end of the work.
Keep away from foodstuffs, beverages and food.
Instantly remove any soiled and impregnated garments.
Do not eat or drink while working.

· Breathing equipment: Filter A/P2.

· Hand protection

Check protective gloves prior to each use for their proper condition.
chemical protection gloves are suitable, which are tested according to EN 374

· 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.

butyl rubber (IIR)

NBR: acrylonitrile-butadiene rubber

>0,4 mm

· 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.

>480 min

· Eye/face protection eye protection (EN 166)

· Body protection: Light weight protective clothing

· Environmental exposure controls

Do not allow to enter drainage system, surface or ground water.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Physical state

Fluid

· Colour:

Yellow

· Smell:

Characteristic

· Odour threshold:

Not determined.

· Melting point/freezing point:

Not determined

· Boiling point or initial boiling point and boiling range

208 °C

· Flammability

Not applicable.

· Lower and upper explosion limit

· Lower:

Not determined.

· Upper:

Not determined.

· Flash point:

>200 °C

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· Ignition temperature:	>601 °C
· Decomposition temperature:	Not determined.
· SADT	
· pH	Not determined.
· Viscosity:	
· Kinematic viscosity	Not determined.
· dynamic:	Not determined.
· Solubility	
· Water:	Fully miscible
· Partition coefficient n-octanol/water (log value)	Not determined.
· Steam pressure at 25 °C:	5-10 hPa
· Density and/or relative density	
· Density at 20 °C	1.15 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.

· 9.2 Other information	No further relevant information available.
· Appearance:	
· Form:	Fluid
· Important information on protection of health and environment, and on safety.	
· Self-inflammability:	Product is not selfigniting.
· Explosive properties:	Product is not explosive. Not determined.
· Change in condition	
· Evaporation rate	Not determined.

· Information with regard to physical hazard classes	
· Explosives	Void
· Flammable gases	Void
· Aerosols	Void
· Oxidising gases	Void
· Gases under pressure	Void
· Flammable liquids	Void
· Flammable solids	Void
· Self-reactive substances and mixtures	Void
· Pyrophoric liquids	Void
· Pyrophoric solids	Void
· Self-heating substances and mixtures	Void
· Substances and mixtures, which emit flammable gases in contact with water	Void
· Oxidising liquids	Void
· Oxidising solids	Void
· Organic peroxides	Void
· Corrosive to metals	Void
· Desensitised explosives	Void

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.

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- **10.3 Possibility of hazardous reactions** Exothermic polymerisation
- **10.4 Conditions to avoid**
Heat, flames and sparks.
moisture exposure
- **10.5 Incompatible materials:**
amine
Water.
Strong bases
Strong oxidizers
metals
- **10.6 Hazardous decomposition products:** None
- **Additional information:** -

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Harmful if inhaled.

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

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

Oral	LD50	>2,000 mg/kg (rat)
Dermal	LD50	>9,400 mg/kg (rabbit) (OECD 402)
Inhalative	LC50/4 h	1.5 mg/l (ATE)

- **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.
- **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.
- **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.
- **Additional toxicological information:**
 - **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
Carc. 2
- **11.2 Information on other hazards**
 - **Endocrine disrupting properties**
Taking into account the current state of scientific knowledge, no data on endocrine disrupting properties of the product are available.

None of the ingredients is listed.

SECTION 12: Ecological information

- **12.1 Toxicity**

· **Aquatic toxicity:**

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

LL50/96h	>100 mg/L (fish) (OECD 203)
EL50/48h	9 mg/L (daphnia) (EU C2.)

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NOEC / 21d	≥10 mg/l (daphnia) (OECD 211)
ErC50 / 72 h	>100 mg/l (algae) (OECD 201)
NOELR	≥100 mg/L /72h (algae) (OECD 201)

· 12.2 Persistence and degradability

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

Biodegradation 0 % (not defined) (OECD 301F; ISO 9408/ EEC 92/69/V, C.4-D)

· 12.3 Bioaccumulative potential

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

Bloconcentration factor (BCF) 92-200 (not defined) (OECD 305 E)

· 12.4 Mobility in soil No further relevant information available.

· 12.5 Results of PBT and vPvB assessment

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· 12.6 Endocrine disrupting properties

For information on endocrine disrupting properties see section 11.

The product does not contain substances with endocrine disrupting properties.

· 12.7 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods

· **Recommendation**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Disposal must be made according to official regulations.

· **Uncleaned packagings:**

· **Recommendation:**

Disposal must be made according to official regulations.

Non contaminated packagings can be used for recycling.

· **Recommended cleaning agent:** Water, if necessary with cleaning agent.

SECTION 14: Transport information

· 14.1 UN number or ID number

· **ADR, IMDG, IATA**

Void

· 14.2 UN proper shipping name

· **ADR, 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:

Not applicable.

· 14.6 Special precautions for user

Not applicable.

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|-----------------------------------------------------------------------|-----------------|
| · 14.7 Maritime transport in bulk according to IMO instruments | Not applicable. |
| · Transport/Additional information: | - |
| · UN "Model Regulation": | Void |

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
 - **Directive 2012/18/EU**
 - **Named dangerous substances - ANNEX I** None of the ingredients is listed.
 - **Seveso category** not assigned
 - **Information about limitation of use:**
 - Employment restrictions concerning young persons must be observed.
 - Employment restrictions concerning pregnant and lactating women must be observed.
- **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**
 - H315 Causes skin irritation.
 - H317 May cause an allergic skin reaction.
 - H319 Causes serious eye irritation.
 - 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.
- **Abbreviations and acronyms:**
 - SADT: Self Accelerating Decomposition Temperature
 - ADR: Accord relatif au transport international 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 (UK REACH)
 - PNEC: Predicted No-Effect Concentration (UK REACH)
 - 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 – Category 4
 - Skin Irrit. 2: Skin corrosion/irritation – Category 2
 - 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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· Sources*(EC) 1272/2008: classification, labelling and packaging of substances and mixtures**(EC) 1907/2006: UK REACH**ADR/RID/ADN - IDMG - IATA: transport of dangerous goods by road, rail, inland waterway, with maritime vessels and for the air transport***· * Data compared to the previous version altered.**

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