



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

Printing date 09.07.2021

Version number 5

Revision: 09.07.2021

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

· **1.1 Product identifier**

· Trade name: **Technovit 4002 IQ Powder**

· **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 Resin for metallographic testing

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

· **Manufacturer/Supplier:**

Kulzer GmbH

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

· **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**

Skin Sens. 1 H317 May cause an allergic skin reaction.

STOT RE 1 H372 Causes damage to the lung through prolonged or repeated exposure.
Route of exposure: Inhalation.

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

· **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 GHS09

· **Signal word** Danger

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

Quartz (SiO₂)

dibenzoyl peroxide

methyl methacrylate

· **Hazard statements**

H317 May cause an allergic skin reaction.

H372 Causes damage to the lung through prolonged or repeated exposure. Route of exposure: Inhalation.

H411 Toxic to aquatic life with long lasting effects.

· **Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P314 Get medical advice/attention if you feel unwell.

· **2.3 Other hazards -**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

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· **vPvB:** Not applicable.

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SECTION 3: Composition/information on ingredients

· **3.2 Chemical characterisation: Mixtures**

· **Description:** -

· **Dangerous components:**

| | | |
|--------------------------------------|--|----------|
| CAS: 14808-60-7 EINECS: 238-878-4 | Quartz (SiO ₂) STOT RE 1, H372 | ≥25-≤50% |
| CAS: 94-36-0 EINECS: 202-327-6 | dibenzoyl peroxide Self-react. B, H241; Org. Perox. B, H241 Aquatic Acute 1, H400 (M=10); Aquatic Chronic 1, H410 (M=10) Eye Irrit. 2, H319; Skin Sens. 1, H317 | ≥1-<2.5% |
| CAS: 80-62-6 EINECS: 201-297-1 | methyl methacrylate Flam. Liq. 2, H225 Skin Irrit. 2, H315; Skin Sens. 1, H317; STOT SE 3, H335 | ≥0.1-<1% |

· **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**

Take affected persons into the open air.

Personal protection for the First Aider.

· **After inhalation**

Supply fresh air; consult doctor in case of symptoms.

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

· **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**

Rinse out mouth and then drink plenty of water.

In case of persistent symptoms consult doctor.

· **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**

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.

· **For safety reasons unsuitable extinguishing agents** Water with a full water jet.

· **5.2 Special hazards arising from the substance or mixture**

Formation of toxic gases is possible during heating or in case of fire.

Can be released in case of fire

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Carbon dioxide (CO₂)

Carbon monoxide (CO)

· **5.3 Advice for firefighters**

· **Protective equipment:**

Wear self-contained breathing apparatus.

(EN 133)

· **Additional information**

-

Cool endangered containers with water spray jet.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**

Avoid causing dust.

Avoid contact with eyes and skin.

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

· **6.2 Environmental precautions:**

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

Damp down dust with water spray jet.

Do not allow to enter the ground/soil.

· **6.3 Methods and material for containment and cleaning up:**

Dispose of the material collected according to regulations.

Collect mechanically.

· **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.

-

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**

Avoid contact with eyes and skin.

Provide suction extractors if dust is formed.

Any deposit of dust which cannot be avoided must be removed regularly.

Ensure good ventilation/exhaustion at the workplace.

· **Handling**

do not mix with

Strong bases

Strong acids

organic peroxides

Strong oxidizers

reducing agent

· **Information about protection against explosions and fires: Protect from heat.**

· **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: Not required.**

· **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:

14808-60-7 Quartz (SiO₂)

| | |
|------------------------|---|
| AGW (European Union) | Long-term value: 0.1 mg/m ³ |
| BOELV (European Union) | Long-term value: 0.1* mg/m ³ *respirable fraction |

94-36-0 dibenzoyl peroxide

| | |
|---------------------|--------------------------------------|
| WEL (Great Britain) | Long-term value: 5 mg/m ³ |
|---------------------|--------------------------------------|

80-62-6 methyl methacrylate

| | |
|------------------------|--|
| WEL (Great Britain) | Short-term value: 416 mg/m ³ , 100 ppm Long-term value: 208 mg/m ³ , 50 ppm |
| IOELV (European Union) | Short-term value: 100 ppm Long-term value: 50 ppm |

· DNELs

94-36-0 dibenzoyl peroxide

| | | |
|------------|-------------------------------|---------------------------|
| Oral | ge.pop., l.te, syst. | 2 mg/Kg (nd) |
| Dermal | worker industr., l.te., syst. | 13.3 mg/Kg/d (nd) |
| Inhalative | worker industr., l.te., syst. | 39 mg/m ³ (nd) |

80-62-6 methyl methacrylate

| | | |
|------------|-------------------------------|------------------------------|
| Oral | ge.pop., l.te, syst. | 8.2 mg/Kg (nd) |
| Dermal | worker industr., l.te., syst. | 13.67 mg/Kg/d (nd) |
| | ge.pop., l.te, syst. | 8.2 mg/Kg/d (nd) |
| Inhalative | worker industr., acute, local | 416 mg/m ³ (nd) |
| | worker industr., l.te., syst. | 348.4 mg/m ³ (nd) |
| | worker industr., l.te., local | 208 mg/m ³ (nd) |
| | ge.pop., acu., local | 208 mg/m ³ (nd) |
| | ge.pop., l.te, syst. | 74.3 mg/m ³ (nd) |

· PNECs

94-36-0 dibenzoyl peroxide

| | |
|----------------------|--------------------|
| freshwater | 0.00002 mg/l (nd) |
| marine water | 0.000002 mg/l (nd) |
| STP | 0.35 mg/l (nd) |
| sedim., dw, fre.wat. | 0.013 mg/Kg (nd) |
| sedim., dw, mar.wat. | 0.001 mg/Kg (nd) |
| soil,dw | 0.003 mg/Kg (nd) |

80-62-6 methyl methacrylate

| | |
|--------------|------------------------------------|
| freshwater | 0.94 mg/l (aqua) 0.94 mg/l (nd) |
| marine water | 0.094 mg/l (nd) |
| STP | 10 mg/l (nd) |

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| | |
|----------------------|------------------|
| sedim., dw, fre.wat. | 10.2 mg/Kg (nd) |
| sedim., dw, mar.wat. | 0.102 mg/Kg (nd) |
| soil,dw | 1.48 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**

Keep away from foodstuffs, beverages and food.

Do not inhale dust / smoke / mist.

Instantly remove any soiled and impregnated garments.

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

Store protective clothing separately.

· **Breathing equipment:**

Use a mask with particle filter in case of dust generation.

Filter P2.

· **Protection of hands:**

If skin contact cannot be avoided, protective gloves are recommended to avoid possible sensitization.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

chemical protection gloves are suitable, which are tested according to EN 374

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

· **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.

NBR: acrylonitrile-butadiene rubber (0,11 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.

>30 min

· **Eye protection:** eye protection (EN 166)

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

· **Limitation and supervision of exposure into the environment**

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**

· **Appearance:**

· **Form:** Powder

· **Colour:** White

· **Smell:** Odourless

· **Odour threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

· **Melting point/freezing point:** Not determined

· **Initial boiling point and boiling range:** Not determined

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| | |
|--|--|
| · Flash point: | Not applicable |
| · Inflammability (solid, gaseous) | Not applicable. |
| · Decomposition temperature: | Not determined. |
| · Self-inflammability: | Product is not selfigniting. |
| · Explosive properties: | Product is not explosive. |
| · Critical values for explosion: | |
| · Lower: | Not determined. |
| · Upper: | Not determined. |
| · Steam pressure: | Not determined. Not applicable. |
| · Density at 20 °C | 2.575 g/cm ³ |
| · Relative density | Not determined. |
| · Vapour density | Not determined. |
| · Evaporation rate | Not determined. |
| · Solubility in / Miscibility with | |
| · Water: | Not miscible or difficult to mix |
| · Partition coefficient: n-octanol/water: | Not determined. |
| · Viscosity: | |
| · dynamic: | Not determined. Not applicable. |
| · kinematic: | Not determined. Not applicable. |
| · Solvent content: | |
| · Water: | 0.2-0.5 % |
| · Solids content: | 100.0 % |
| · 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** Heat, flames and sparks.
- **10.5 Incompatible materials:**
 - Strong bases
 - Strong acids
 - Strong oxidizers
 - reducing agent
 - organic peroxides
- **10.6 Hazardous decomposition products:** None
 - **Additional information:** -

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SECTION 11: Toxicological information

11.1 Information on toxicological effects

· **Acute toxicity** Based on available data, the classification criteria are not met.

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

94-36-0 dibenzoyl peroxide

| | | |
|------------|--------|---------------------------------|
| Oral | LD0 | >2,000 mg/kg (mouse) (OECD 401) |
| Inhalative | LC0/4h | 24.3 ppm (rat) (OECD 403) |

80-62-6 methyl methacrylate

| | | |
|------------|----------|-------------------------------|
| Oral | LD50 | ~7,900 mg/kg (rat) |
| Dermal | LD50 | >5,000 mg/kg (rab) (OECD 402) |
| Inhalative | LC50/4 h | 29.8 mg/l (rat) |

· **Primary irritant effect:**

· **Skin corrosion/irritation** Based on available data, the classification criteria are not met.

· **Serious eye damage/irritation**

Based on available data, the classification criteria are not met.

· **Respiratory or skin sensitisation**

May cause an allergic skin reaction.

· **Additional toxicological information:**

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

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

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

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

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

· **STOT-repeated exposure**

Causes damage to the lung through prolonged or repeated exposure. Route of exposure: Inhalation.

· **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1 Toxicity

· **Aquatic toxicity:**

94-36-0 dibenzoyl peroxide

| | |
|--------------|--------------------------------------|
| EC50/72h | 0.042 mg/l (algae) (OECD 201) |
| EC50/48h | 0.11 mg/l (daphnia) (OECD 202) |
| LC50/96h | 0.06 mg/l (fish) (OECD 203) |
| ErC50 / 72 h | 0.071 mg/l (algae) (OECD 201) |
| NOEC / 72h | 0.02 mg/l (algae) (OECD 201) |
| NOEC / 96h | 0.032 mg/l (fish) (OECD 203) |
| NOEC / 48h | 0.076 mg/l (daphnia) (OECD 202) |
| ErC10 | 0.001 mg/L /21d (daphnia) (OECD 211) |

80-62-6 methyl methacrylate

| | |
|--------------|--------------------------------------|
| EC50/21d | 49 mg/L (daphnia) (OECD 211) |
| EC50/48h | 69 mg/l (daphnia) (EPA OTS 797.1300) |
| NOEC / 21d | 37 mg/l (daphnia) (OECD 211) |
| ErC50 / 72 h | >110 mg/l (algae) (OECD 201) |
| NOEC / 72h | 110 mg/l (algae) (OECD 201) |

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| | |
|-------------|--------------------------------------|
| NOEC / 48h | 48 mg/l (daphnia) (EPA OTS 797.1300) |
| EbC50 / 72h | >110 mg/l (algae) (OECD 201) |
| NOEC/ 35d | 9.4 mg/L (fish) (OECD 210) |
| LC50/ 35d | 33.7 mg/L (fish) (OECD 210) |

12.2 Persistence and degradability

94-36-0 dibenzoyl peroxide

Biodegradation 71 % /28d (nd) (OECD 301D)

80-62-6 methyl methacrylate

Biodegradation 94 % /14d (nd) (OECD 301C)

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

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

· **Ecotoxicological effects:**

· **Remark:** Harmful to fish

· **Additional ecological information:**

· **General notes:**

Harmful to aquatic organisms

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

Danger to drinking water if even small quantities leak into soil.

· **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** Smaller quantities can be disposed with household garbage.

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

· **14.1 UN-Number**

· **ADR, IMDG, IATA**

UN3077

· **14.2 UN proper shipping name**

· **ADR**

3077 ENVIRONMENTALLY HAZARDOUS
SUBSTANCE, SOLID, N.O.S. (dibenzoyl
peroxide)

· **IMDG**

ENVIRONMENTALLY HAZARDOUS
SUBSTANCE, SOLID, N.O.S. (dibenzoyl
peroxide), MARINE POLLUTANT

· **IATA**

ENVIRONMENTALLY HAZARDOUS
SUBSTANCE, SOLID, N.O.S. (dibenzoyl
peroxide)

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14.3 Transport hazard class(es)

ADR



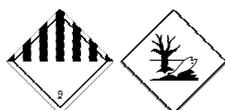
Class

9 (M7) Miscellaneous dangerous substances and articles.

Label

9

IMDG, IATA



Class

9 Miscellaneous dangerous substances and articles.

Label

9

14.4 Packing group

ADR, IMDG, IATA

III

14.5 Environmental hazards:

Marine pollutant:

Symbol (fish and tree)

Special marking (ADR):

Symbol (fish and tree)

Special marking (IATA):

Symbol (fish and tree)

14.6 Special precautions for user

Warning: Miscellaneous dangerous substances and articles.

Kemler Number:

90

EMS Number:

F-A,S-F

Stowage Category

A

Stowage Code

SW23 When transported in BK3 bulk container, see 7.6.2.12 and 7.7.3.9.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable.

Transport/Additional information:

-

ADR

Limited quantities (LQ)

5 kg

Excepted quantities (EQ)

Code: E1

Maximum net quantity per inner packaging: 30 g

Maximum net quantity per outer packaging: 1000 g

Transport category

3

Tunnel restriction code

-

IMDG

Limited quantities (LQ)

5 kg

Excepted quantities (EQ)

Code: E1

Maximum net quantity per inner packaging: 30 g

Maximum net quantity per outer

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packaging: 1000 g

· **UN "Model Regulation":**

UN 3077 ENVIRONMENTALLY HAZARDOUS
SUBSTANCE, SOLID, N.O.S. (DIBENZOYL
PEROXIDE), 9, III

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 E2** Hazardous to the Aquatic Environment
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 200 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 500 t

· **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**

- H225 Highly flammable liquid and vapour.
- H241 Heating may cause a fire or explosion.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H335 May cause respiratory irritation.
- H372 Causes damage to organs through prolonged or repeated exposure.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.

· **Abbreviations and acronyms:**

- 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 (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
- Flam. Liq. 2: Flammable liquids – Category 2
- Self-react. B: Self-reactive substances and mixtures – Type B
- Org. Perox. B: Organic peroxides – Type B
- Skin Irrit. 2: Skin corrosion/irritation – Category 2
- Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
- Skin Sens. 1: Skin sensitisation – Category 1
- STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
- STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

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Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

· **Sources**

(EC) 1272/2008: classification, labelling and packaging of substances and mixtures

(EC) 1907/2006: 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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