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Distributor Product No.

CM-251

Manufacturer: Heraeus Kulzer
Manufacturer Product No.: Technovit 4006 Liquid & Technovit 4006 Powder

Dear Customer:

In order to comply with the Hazard Communication Law which went into effect November 25, 1985, and the Globally Harmonized System (GHS) regulation update introduced by the Occupational Safety and Health Administration (OSHA) in 2015, attached is the safety data sheet pertaining to our product noted above.

Additional sheets are available upon request. Please feel free to contact us if we can be of further assistance.

Sincerely,

Mager Scientific, Inc.
Customer Service

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

Printing date 02.12.2013

Revision: 02.12.2013

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

· **Product identifier**

· **Trade name: Technovit 4006 liquid**

· **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.

· **Application of the substance / the preparation** Resin for metallographic testing

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

· **Manufacturer/Supplier:**

Heraeus Kulzer GmbH
Grüner Weg 11, D-63450 Hanau
Tel.: +49 (0)6081 959-365 (Wehrheim)

· **Informing department:**

Product Management Technique
Tel.: +49 6081 959-367
Fax: +49 6081 959-398
email: technik.wehrheim@kulzer-dental.com

· **Emergency telephone number:**

Emergency CONTACT (24-Hour-Number): GBK GmbH +49 (0)6132-84463

2 Hazards identification

· **Classification of the substance or mixture**

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

Xi; Irritant

R36/37/38: Irritating to eyes, respiratory system and skin.

Xi; Sensitising

R43: May cause sensitisation by skin contact.

F; Highly flammable

R11: Highly flammable.

· **Information concerning particular hazards for human 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.

· **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.

· **Label elements**

· **Labelling according to EU 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:**



Xi Irritant
F Highly flammable

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

methyl methacrylate

· **Risk phrases:**

11 Highly flammable.

36/37/38 Irritating to eyes, respiratory system and skin.

43 May cause sensitisation by skin contact.

(Contd. on page 2)

GB

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

Printing date 02.12.2013

Revision: 02.12.2013

Trade name: Technovit 4006 liquid

(Contd. of page 1)

- **Safety phrases:**
 - 9 Keep container in a well-ventilated place.
 - 16 Keep away from sources of ignition - No smoking.
 - 23 Do not breathe vapour.
 - 24 Avoid contact with skin.
 - 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 - 37 Wear suitable gloves.
- **Other hazards**
 - **Results of PBT and vPvB assessment**
 - **PBT:** Not applicable.
 - **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
 - **Description:** Product based on methacrylates

- **Dangerous components:**

CAS: 80-62-6 EINECS: 201-297-1 Reg.nr.: 01-2119452498-28-0000	methyl methacrylate Xi R37/38; Xi R43; F R11	> 90%
CAS: 79-41-4 EINECS: 201-204-4	methacrylic acid C R35; Xn R21/22	0-5%

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

4 First aid measures

- **Description of first aid measures**
 - **After inhalation** Supply fresh air; consult doctor in case of symptoms.
 - **After skin contact** Instantly wash with water and soap and rinse thoroughly.
 - **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.
Product based on methacrylates
 - **Information for doctor**
 - **Most important symptoms and effects, both acute and delayed**
No further relevant information available.
 - **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

- **Extinguishing media**
 - **Suitable extinguishing agents** CO₂, sand, extinguishing powder. Do not use water.
 - **For safety reasons unsuitable extinguishing agents** Water.
- **Special hazards arising from the substance or mixture**
Can form explosive gas-air mixtures.
Formation of toxic gases is possible during heating or in case of fire.
- **Advice for firefighters**
 - **Protective equipment:** No special measures required.

(Contd. on page 3)

GB

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

Printing date 02.12.2013

Revision: 02.12.2013

Trade name: **Technovit 4006 liquid**· **Additional information** -

(Contd. of page 2)

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Prevent material from reaching sewage system, holes and cellars.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (diatomite, universal binders, for small amounts tissues).
Do not flush with water or aqueous cleansing agents
Send for recovery or disposal in suitable containers.
- **Reference to other sections**
See Section 13 for information on disposal.
See Section 8 for information on personal protection equipment.

7 Handling and storage

- **Handling**
 - **Precautions for safe handling**
Keep containers tightly sealed.
Ensure good ventilation/exhaustion at the workplace.
Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).
 - **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
 - **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 cool (not above 25 °C).
Store in cool, dry conditions in well sealed containers.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

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

· **Components with critical values that require monitoring at the workplace:****80-62-6 methyl methacrylate**

OES	Short-term value: 416 mg/m ³ , 100 ppm Long-term value: 208 mg/m ³ , 50 ppm
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79-41-4 methacrylic acid

OES	Short-term value: 143 mg/m ³ , 40 ppm Long-term value: 72 mg/m ³ , 20 ppm
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· **Additional information:** The lists that were valid during the compilation were used as basis.

- **Exposure controls**
 - **Personal protective equipment**
 - **General protective and hygienic measures**
Keep away from foodstuffs, beverages and food.
Instantly remove any soiled and impregnated garments.

(Contd. on page 4)

GB

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

Printing date 02.12.2013

Revision: 02.12.2013

Trade name: Technovit 4006 liquid

(Contd. of page 3)

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

Do not inhale gases / fumes / aerosols.

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:**

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

Solvent resistant gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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

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

PVA gloves

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

Fluorocarbon rubber (Viton)

Chloroprene rubber, CR

Butyl rubber, BR

Nitrile rubber, NBR

· **Eye protection:** Protective goggles are recommended.

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

9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

· **Form:**

Fluid

· **Colour:**

Undefined. (from light yellow to brownish-green).

In the solid state: colorless

· **Smell:**

Characteristic

· **Change in condition**

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

· **Boiling point/Boiling range:** 100 °C

· **Flash point:**

10 °C

· **Ignition temperature:**

430 °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 %

(Contd. on page 5)

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

Printing date 02.12.2013

Revision: 02.12.2013

Trade name: Technovit 4006 liquid

(Contd. of page 4)

· Upper:	12.5 Vol %
· Steam pressure at 20 °C:	47 hPa
· Density at 20 °C	0.95 g/cm ³
· Solubility in / Miscibility with	
· Water:	Not miscible or difficult to mix
· Viscosity:	
· dynamic at 20 °C:	1 mPas
· Solvent content:	
· Water:	0.2 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity**
 - **Chemical stability**
 - **Conditions to be avoided:** No decomposition if used and stored according to specifications.
- **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:**
 If stored longer than recommended and/or above recommended temperature, product may polymerize generating heat.

11 Toxicological information

- **Information on toxicological effects**
 - **Acute toxicity:**
 - **Primary irritant effect:**
 - **on the skin:** Irritant for skin and mucous membranes.
 - **on the eye:** Irritant effect.
 - **Sensitization:** Sensitization possible by skin contact.
 - **Additional toxicological information:**
 The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:
 Irritant

12 Ecological information

- **Toxicity**
 - **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
 - **Bioaccumulative potential** No further relevant information available.
 - **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
 - **General notes:**
 Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
- **Results of PBT and vPvB assessment**
 - **PBT:** Not applicable.
 - **vPvB:** Not applicable.

(Contd. on page 6)

GB

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

Printing date 02.12.2013

Revision: 02.12.2013

Trade name: Technovit 4006 liquid

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

(Contd. of page 5)

13 Disposal considerations

 · **Waste treatment methods**

 · **Recommendation**

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

Small quantities can be polymerized with the matching system component(s) and the cured solid material can be disposed of with the regular garbage. Larger quantities must be disposed of following the regulations of the local authorities.

 · **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

 · **UN-Number**

 · **ADR, IMDG, IATA**

1247

 · **UN proper shipping name**

 · **ADR**

1247 METHYL METHACRYLATE MONOMER, STABILIZED, solution

 · **IMDG, IATA**

METHYL METHACRYLATE MONOMER, STABILIZED, solution

 · **Transport hazard class(es)**

 · **ADR**

 · **Class**
· **Label**

 3 (F1) Flammable liquids.
3

 · **IMDG, IATA**

 · **Class**
· **Label**

 3 Flammable liquids.
3

 · **Packing group**

 · **ADR, IMDG, IATA**

II

 · **Environmental hazards:**

 · **Marine pollutant:**

No

 · **Special precautions for user**

 · **Kemler Number:**

 Warning: Flammable liquids.
339

(Contd. on page 7)

GB

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

Printing date 02.12.2013

Revision: 02.12.2013

Trade name: Technovit 4006 liquid

(Contd. of page 6)

· EMS Number:	F-E,S-D
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	-

15 Regulatory information

- **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**
 - R11 Highly flammable.
 - R21/22 Harmful in contact with skin and if swallowed.
 - R35 Causes severe burns.
 - R37/38 Irritating to respiratory system and skin.
 - R43 May cause sensitisation by skin contact.
- * **Data compared to the previous version altered.**

GB

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

Printing date 02.12.2013

Revision: 02.12.2013

1 Identification of the substance/mixture and of the company/undertaking**· Product identifier**

- **Trade name: Technovit 4006 powder**
- **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
 - **Application of the substance / the preparation** Resin for metallographic testing

· Details of the supplier of the safety data sheet

- **Manufacturer/Supplier:**
Heraeus Kulzer GmbH
Grüner Weg 11, D-63450 Hanau
Tel.: +49 (0)6081 959-365 (Wehrheim)
- **Informing department:**
Product Management Technique
Tel.: +49 6081 959-367
Fax: +49 6081 959-398
email: technik.wehrheim@kulzer-dental.com
- **Emergency telephone number:**
Emergency CONTACT (24-Hour-Number): GBK GmbH +49 (0)6132-84463

2 Hazards identification**· Classification of the substance or mixture**

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** void
- **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.

· Label elements

- **Labelling according to EU guidelines:**
Observe the normal safety regulations when handling chemicals
The product is not subject to classification according to the calculation methods of the "General Classification Guideline for Preparations of the EC" as issued in the last version.
The product is not subject to identification regulations under EC Directives and the Ordinance on Hazardous Materials (GefStoffV).
- **Special labelling of certain preparations:**
Contains dibenzoyl peroxide. May produce an allergic reaction.

· Other hazards

- **Results of PBT and vPvB assessment**
 - **PBT:** Not applicable.
 - **vPvB:** Not applicable.

3 Composition/information on ingredients**· Chemical characterization: Mixtures**

- **Description:** Product based on methacrylate copolymers
- **Dangerous components:** Void
- **Additional information** For the wording of the listed risk phrases refer to section 16.

4 First aid measures**· Description of first aid measures**

- **General information** No special measures required.
- **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.

(Contd. on page 2)

GB

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

Printing date 02.12.2013

Revision: 02.12.2013

Trade name: Technovit 4006 powder

(Contd. of page 1)

- **Information for doctor**
 - **Most important symptoms and effects, both acute and delayed**
No further relevant information available.
 - **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

- **Extinguishing media**
 - **Suitable extinguishing agents**
CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
 - **Protective equipment:** No special measures required.
- **Additional information** -

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** No special measures required.
- **Methods and material for containment and cleaning up:** Collect mechanically.
- **Reference to other sections**
No dangerous materials are released.
See Section 8 for information on personal protection equipment.
-

7 Handling and storage

- **Handling**
 - **Precautions for safe handling** No special measures required.
 - **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
 - **Storage**
 - **Requirements to be met by storerooms and containers:** No special requirements.
 - **Information about storage in one common storage facility:** Not required.
 - **Further information about storage conditions:**
 - **Recommended storage temperature:** < 25 °C
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
 - **Components with critical values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
 - **Additional information:** The lists that were valid during the compilation were used as basis.
- **Exposure controls**
 - **Personal protective equipment**
 - **General protective and hygienic measures**
The usual precautionary measures should be adhered to in handling the chemicals.
 - **Breathing equipment:** Not required.
 - **Protection of hands:** Not required.

(Contd. on page 3)

GB

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

Printing date 02.12.2013

Revision: 02.12.2013

Trade name: **Technovit 4006 powder**

(Contd. of page 2)

- **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:** Powder
- **Colour:** According to product specification
- **Smell:** Odourless

- **Change in condition**

- **Melting point/Melting range:** Not determined
- **Boiling point/Boiling range:** Not determined

- **Flash point:** Not applicable

- **Ignition temperature:** 400.0 °C

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

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

- **Density** Not determined

- **Solubility in / Miscibility with**

- **Water:** Insoluble

- **Solvent content:**

- **Solids content:** 100.0 %

- **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity**

- **Chemical stability**

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

- **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

11 Toxicological information

- **Information on toxicological effects**

- **Acute toxicity:**

- **Primary irritant effect:**

- **on the skin:** No irritant effect.

- **on the eye:** No irritant effect.

- **Sensitization:** No sensitizing effect known.

- **Additional toxicological information:**

The product is not subject to classification according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version.

(Contd. on page 4)

GB

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

Printing date 02.12.2013

Revision: 02.12.2013

Trade name: Technovit 4006 powder

(Contd. of page 3)
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

12 Ecological information

- **Toxicity**
 - **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
 - **Bioaccumulative potential** No further relevant information available.
 - **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
 - **General notes:**
Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
- **Results of PBT and vPvB assessment**
 - **PBT:** Not applicable.
 - **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
 - **Recommendation**
Small quantities can be polymerized with the matching system component(s) and the cured solid material can be disposed of with the regular garbage. Larger quantities must be disposed of following the regulations of the local authorities.
- **European waste catalogue**
18 01 06 chemicals consisting of or containing dangerous substances
- **Uncleaned packagings:**
 - **Recommendation:** Packaging can be reused or recycled after cleaning.

14 Transport information

- **UN-Number**
 - **ADR, ADN, IMDG, IATA** Void
- **UN proper shipping name**
 - **ADR, ADN, IMDG, IATA** Void
- **Transport hazard class(es)**
 - **ADR, ADN, IMDG, IATA**
 - **Class** Void
- **Packing group**
 - **ADR, IMDG, IATA** Void
- **Environmental hazards:**
 - **Marine pollutant:** No
- **Special precautions for user** Not applicable.
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

(Contd. on page 5)

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

Printing date 02.12.2013

Revision: 02.12.2013

Trade name: Technovit 4006 powder

(Contd. of page 4)

· **Transport/Additional information:** -

15 Regulatory information

· **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.

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

GB