

Safety Data Sheet
according to 1907/2006/EC, Article 31

JAN 2024

1 Identification of substance

· **Product details**

· **Trade name:** **Technovit 4004 powder**
technovit 4004 Pulver

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

· **Manufacturer/Supplier:**

Heraeus Kulzer GmbH
Grüner Weg 11, D-63450 Hanau
Tel.: 06081 959-365 (Wehrheim)

· **Informing department:**

Stefan Schreier
Tel.: +49 6081 959-367
Fax: +49 6081 959-398
email: stefan.schreier@heraeus.com

· **Emergency information:**

Call "Poisoning Emergency Center Berlin": +49 30 30686 790 (24 hours, support in english and german language)

2 Hazards identification

· **Hazard designation:** void

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

The product does not have 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.

3 Composition/information on ingredients

· **Chemical characterization**

· **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

· **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.

5 Fire fighting measures

· **Suitable extinguishing agents**

CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

· **Protective equipment:** No special measures required.

· **Additional information** -

6 Accidental release measures

· **Person-related safety precautions:** Not required.

· **Measures for environmental protection:** No special measures required.

· **Measures for cleaning/collecting:** Collect mechanically.

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· **Additional information:**

No dangerous materials are released.

See Section 8 for information on personal protection equipment.

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7 Handling and storage

· **Handling**

· **Information for safe handling:** No special measures required.

· **Information about protection against explosions and fires:** No special measures required.

· **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:** Store cool (not above 25 °C).

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:**

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.

· **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:**

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**

PVC 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.

· **Eye protection:** not absolutely necessary

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

9 Physical and chemical properties:

· **General Information**

· Form:	Powder
· Colour:	Transparent
· Smell:	Odourless

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· 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 at 20°C	0 g/cm ³
· Solubility in / Miscibility with	
· Water:	Unsoluble
· Solvent content:	
· Solids content:	100 %

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:**
 - **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.
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:

- **General notes:**
Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

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13 Disposal considerations

· **Product:**

· **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**

11 01 98 | other wastes containing dangerous substances

· **Uncleaned packagings:**

· **Recommendation:** Packaging can be reused or recycled after cleaning.

14 Transport information

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

· **ADR/RID-GGVS/E Class:** -

· **Maritime transport IMDG/GGVSea:**

· **IMDG/GGVSea Class:** -

· **Marine pollutant:** No

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

· **ICAO/IATA Class:** -

· **Transport/Additional information:** -

15 Regulatory information

· **Designation according to EC 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).

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.

· **Contact:**

Dr. Thiele Tel.: (+49) 6181 35-3012

email: ruediger.thiele@heraeus.com

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

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

· **Product identifier**

· **Trade name:** **Technovit 4004 liquid**

· **Relevant identified uses of the substance or mixture and uses advised against**

· **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.: 06081 959-365 (Wehrheim)

· **Informing department:**

Stefan Schreier
Tel.: +49 6081 959-367
Fax: +49 6081 959-398
email: stefan.schreier@heraeus.com


· **Emergency telephone number:**

Call "Poisoning Emergency Center Berlin": +49 30 30686 790 (24 hours, support in english and german language)

2 Hazards identification

· **Classification of the substance or mixture**

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

 Xi; Irritant

R37/38: Irritating to 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.
37/38 Irritating to respiratory system and skin.
43 May cause sensitisation by skin contact.

· **Safety phrases:**

9 Keep container in a well-ventilated place.

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- 1 Keep away from sources of ignition - No smoking.
- 24 Avoid contact with skin.
- 33 Take precautionary measures against static discharges.
- 37 Wear suitable gloves.
- 43 In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.

· **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	methyl methacrylate	Xi R37/38; Xi R43; F R11	> 90%
CAS: 99-97-8 EINECS: 202-805-4	N,N-dimethyl-p-toluidine	T R23/24/25 R33-52/53	< 1%

- **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.

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.

· **Additional information -**

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.

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· **Reference to other sections**

See Section 13 for information on disposal.

See Section 8 for information on personal protection equipment.

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7 Handling and storage

· **Handling**

· **Precautions 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.

· **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.

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/m³, 100 ppm

Long-term value: 208 mg/m³, 50 ppm

· **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.

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

Avoid contact with the skin.

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.

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- **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:**
Butyl rubber, BR
Fluorocarbon rubber (Viton)
Nitrile rubber, NBR
Chloroprene rubber, CR
- **Eye protection:** Safety glasses
- **Body protection:** Light weight protective clothing

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

- **Form:** Fluid
- **Colour:** Colourless
- **Smell:** Characteristic

· Change in condition

- **Melting point/Melting range:** Not determined
- **Boiling point/Boiling range:** 100°C

· **Flash point:** 10°C

· **Ignition temperature:** 430.0°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 Vol %

· **Steam pressure at 20°C:** 47 hPa

· **Density at 20°C** 0.940 g/cm³

· Solubility in / Miscibility with

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

· Viscosity:

· **dynamic at 20°C:** 1 mPas

· Solvent content:

· **Solids content:** 1%

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

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- **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:** No irritant effect.
 - **Sensitization:** Sensitization possible by skin contact.
 - **Additional toxicological information:**
Irritant
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:

12 Ecological information

- **Toxicity**
 - **Acquatic toxicity:** No further relevant information available.
- **Additional ecological information:**
 - **General notes:**
Do not allow product to reach ground water, water bodies or sewage system.
Danger to drinking water if even small quantities leak into soil.
- **Results of PBT and vPvB assessment**
 - **PBT:** Not applicable.
 - **vPvB:** Not applicable.

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.
 - **Waste disposal key number:** 55512
- **European waste catalogue**

11 01 98	other wastes containing dangerous substances
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- **Uncleaned packagings:**
 - **Recommendation:** Disposal must be made according to official regulations.

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Trade name: Technovit 4004 liquid

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14 Transport information

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



- ADR/RID-GGVS/E Class: 3 (F1) Flammable liquids.
- Kemler Number: 339
- UN-Number: 1247
 - Packaging group: II
 - Label: 3
- UN proper shipping name: 1247 METHYL METHACRYLATE MONOMER, STABILIZED, solution

· Maritime transport IMDG/GGVSea:



- IMDG/GGVSea Class: 3
- UN Number: 1247
 - Label: 3
- Packaging group: II
- EMS Number: F-E, S-D
- Marine pollutant: No
- Correct technical name: METHYL METHACRYLATE MONOMER, STABILIZED, solution

· Air transport ICAO-TI and IATA-DGR:



- ICAO/IATA Class: 3
- UN/ID Number: 1247
 - Label: 3
- Packaging group: II
- Correct technical name: METHYL METHACRYLATE MONOMER, STABILIZED, solution

· Special precautions for user Warning: Flammable liquids.

· 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.
- R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
- R33 Danger of cumulative effects.

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R37/38 Irritating to respiratory system and skin.
R43 May cause sensitisation by skin contact.
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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