

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

JAN 2021

1 Identification of substance

· **Product details**

· **Trade name:** **Technovit 4071 powder**

· **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:**



Xi Irritant

· **Information pertaining to particular dangers for man 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.

R 43 May cause sensitisation by skin contact.

· **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:**

CAS: 94-36-0 EINECS: 202-327-6	dibenzoyl peroxide	Xi, E, O; R 3-7-36-43	0-5%
CAS: 84-61-7 EINECS: 201-545-9	dicyclohexyl phthalate		0-5%

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

4 First aid measures

- **After skin contact** Instantly wash with water and soap and rinse thoroughly.
- **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.

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- **Special hazards caused by the material, its products of combustion or flue gases:**
Formation of toxic gases is possible during heating or in case of fire.
- **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.
- **Additional information:**
No dangerous materials are released.
See Section 8 for information on personal protection equipment.
-

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:** None.

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:**

94-36-0 dibenzoyl peroxide

OES () Long-term value: 5 mg/m³

84-61-7 dicyclohexyl phthalate

OES () Long-term value: 5 mg/m³

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

- **Personal protective equipment**

- **General protective and hygienic measures**

Instantly remove any soiled and impregnated garments.

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

- **Breathing equipment:** Not required.

- **Protection of hands:**

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

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:**
Butyl rubber, BR
Fluorocarbon rubber (Viton)
Nitrile rubber, NBR
Natural rubber, NR
Chloroprene rubber, CR
- **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**
PVC or PE gloves
- **Eye protection:** not absolutely necessary
- **Body protection:** Light weight protective clothing

9 Physical and chemical properties:

· **General Information**

- **Form:** Powder
- **Colour:** Green
- **Smell:** Odourless

· **Change in condition**

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

- **Flash point:** Not applicable

- **Ignition temperature:** 400°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/cm³

· **Solubility in / Miscibility with**

- **Water:** Insoluble

· **Solvent content:**

- **Solids content:** 100.0 %

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:** Sensitization possible by skin contact.

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· **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:

- **Sensitisation** May cause sensitisation by skin contact.

* **13 Disposal considerations**

· **Product:**

· **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**

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:**

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

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

dibenzoyl peroxide

· **Risk phrases:**

43 May cause sensitisation by skin contact.

· **Safety phrases:**

24 Avoid contact with skin.

37 Wear suitable gloves.

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Trade name: Technovit 4071 powder

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- **National regulations**
- **Water hazard class:** Generally not hazardous for water.

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 R-phrases**

- 3 Extreme risk of explosion by shock, friction, fire or other sources of ignition.
- 36 Irritating to eyes.
- 43 May cause sensitisation by skin contact.
- 7 May cause fire.

· **Contact:**

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email: ruediger.thiele@heraeus.com

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

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Safety Data Sheet
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1 Identification of substance

· Product details

· **Trade name:** **Technovit 4071 liquid**

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

· Manufacturer/Supplier:

Heraeus Kulzer GmbH
Grüner Weg 11, D-63450 Hanau
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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:



Xi Irritant
F Highly flammable

· Information pertaining to particular dangers for man 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.

R 11 Highly flammable.

R 37/38 Irritating to respiratory system and skin.

R 43 May cause sensitisation by skin contact.

· 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 methacrylates

· Dangerous components:

CAS: 80-62-6 EINECS: 201-297-1	methyl methacrylate	Xi, F; R 11-37/38-43	25-50%
CAS: 112-55-0 EINECS: 203-984-1	dodecane-1-thiol	Xi; R 37/38-41-43	< 1%
CAS: 99-97-8 EINECS: 202-805-4	N,N-dimethyl-p-toluidine	T; R 23/24/25-33-52/53	< 1%

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

4 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** Instantly call for doctor.

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Trade name: Technovit 4071 liquid

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· **Information for doctor** Product based on methacrylates

5 Fire fighting measures

- **Suitable extinguishing agents** CO₂, sand, extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents** Water.
- **Special hazards caused by the material, its products of combustion or flue gases:**
Can form explosive gas-air mixtures.
Formation of toxic gases is possible during heating or in case of fire.
- **Protective equipment:** No special measures required.
- **Additional information** -

6 Accidental release measures

- **Person-related safety precautions:** Wear protective equipment. Keep unprotected persons away.
- **Measures for environmental protection:**
Prevent material from reaching sewage system, holes and cellars.
- **Measures for cleaning/collecting:**
Absorb with liquid-binding material (diatomite, universal binders, for small amounts tissues).
Do not flush with water or aqueous cleansing agents
- **Additional information:**
No dangerous materials are released.
See Section 8 for information on personal protection equipment.
-

7 Handling and storage

- **Handling**
 - **Information 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.
- **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 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:**
- | 80-62-6 methyl methacrylate | |
|-----------------------------|--|
| OES (j) | Short-term value: 416 mg/m ³ , 100 ppm
Long-term value: 208 mg/m ³ , 50 ppm |
- **Additional information:** The lists that were valid during the compilation were used as basis.
 - **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.

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Trade name: Technovit 4071 liquid

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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.

· **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:** not absolutely necessary

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

9 Physical and chemical properties:

· **General Information**

- | | |
|------------------|----------------|
| · Form: | Fluid |
| · Colour: | Colourless |
| · Smell: | Characteristic |

· **Change in condition**

- | | |
|---------------------------------------|----------------|
| · Melting point/Melting range: | Not determined |
| · Boiling point/Boiling range: | 101°C |

· **Flash point:** 15°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: | 12.5 Vol % |

· **Steam pressure at 20°C:** 47.0 hPa

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Trade name: Technovit 4071 liquid

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· Density at 20°C	1.000 g/cm ³
· Solubility in / Miscibility with	
· Water:	Not miscible or difficult to mix
· Viscosity:	
· dynamic at 20°C:	1 mPas

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
- **Additional information:**
If stored longer than recommended and/or above recommended temperature, product may polymerize generating heat.

11 Toxicological information

- **Acute toxicity:**
 - **Primary irritant effect:**
 - **on the skin:** Irritant for skin and mucous membranes.
 - **on the eye:** No irritant effect.
 - **Sensitization:**
Sensitizing effect by skin contact is possible by prolonged exposure.
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:
 - **Sensitisation** May cause sensitisation by skin contact.

12 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.

13 Disposal considerations

- **Product:**
 - **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:** 55370

· **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.

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
- **Designation of goods:** 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

· **Transport/Additional information:** -

15 Regulatory information

- **Designation according to EC 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

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Trade name: Technovit 4071 liquid

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

methyl methacrylate
dodecane-1-thiol

· **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.
16 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.

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 R-phrases**

11 Highly flammable.
23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
33 Danger of cumulative effects.
37/38 Irritating to respiratory system and skin.
41 Risk of serious damage to eyes.
43 May cause sensitisation by skin contact.
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

· **Contact:**

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· * Data compared to the previous version altered.

GB