

Material Safety Data Sheet
According to 91/155 EC

Printing date 28.11.2001

Reviewed on 28.11.2001

1 Identification of substance

· Product details

· Trade name: **Technovit 6091 liquid**

· Manufacturer/Supplier:

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

· Informing department:

Safety department: Dr. Tuchscherer +49 6081 959-287
Dr. Felber +49 6081 959-275

· **Emergency information:** Call +49 30 19240 (24 hours).

2 Composition/Data on components:

· Chemical characterization

· Description: Product based on methacrylates

· Dangerous components:

80-62-6	methyl methacrylate	Xi, F; R 11-36/37/38-43	50-75%
868-77-9	2-hydroxyethyl methacrylate	Xi; R 36/38-43	25-50%
79-39-0	methacrylamide	Xn; R 20/22	0-5%
99-97-8	N,N-dimethyl-p-toluidine	T; R 23/24/25-33-52/53	0-5%

3 Hazards identification

· Hazard designation:



Xn Harmful
F Highly flammable

· Information pertaining to particular dangers for man and environment

R 11 Highly flammable.
R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
R 33 Danger of cumulative effects.
R 36/37/38 Irritating to eyes, respiratory system and skin.
R 43 May cause sensitization 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.

4 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.

· **After inhalation** Supply fresh air; consult doctor in case of symptoms.

· After skin contact

Instantly wash with water and soap and rinse thoroughly.
Instantly rinse with water.

· After eye contact

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

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- **After swallowing**
Instantly call for doctor.
Do not induce vomiting; instantly call for medical help.

5 Fire fighting measures

- **Suitable extinguishing agents**
CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.
CO₂, sand, extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents**
Water.
Water with a full water jet.
- **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:** Put on breathing apparatus.

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).
Dispose of contaminated material as waste according to item 13.
Do not flush with water or aqueous cleansing agents
- **Additional information:** No dangerous materials are released.

7 Handling and storage

- **Handling**
 - **Information for safe handling:**
Keep containers tightly sealed.
Ensure good ventilation/exhaustion at the workplace.
 - **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:**
Keep cool, if possible (not above 25 °C).
Store in cool, dry conditions in well sealed containers.
 - **Storage class**
· Class according to regulation on inflammable liquids: A I

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	Short-term value: 416 mg/m ³ , 100 ppm
	Long-term value: 208 mg/m ³ , 50 ppm

- **CAS No. Designation of material % Type Value Unit Not required.**
- **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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- 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.
PVA gloves
Solvent resistant gloves
 - **Eye protection:** Protective goggles are recommended.
 - **Body protection:** Light weight protective clothing

9 Physical and chemical properties:

- **Form:** Fluid
- **Colour:** Colourless
- **Smell:** Characteristic
- **Change in condition**
 - **Melting point/Melting range:** Not determined
 - **Boiling point/Boiling range:** 101°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:** 12.5 Vol %
- **Steam pressure at 20°C:** 47 hPa
- **Density at 20°C** 0.95 g/cm³
- **Solubility in / Miscibility with**
 - **Water:** Not miscible or difficult to mix
- **Viscosity:**
 - **dynamic at 20°C:** 50 mPas
- **Solvent content:**
 - **Organic solvents:** 65.1 %
- **Solids content:** 3.1 %

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:**
 - **LD/LC50 values that are relevant for classification:**
 - 99-97-8 N,N-dimethyl-p-toluidine**
 - Oral | LD50 | 500 mg/kg (rat)

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Dermal	LD50	3 mg/kg (rat)
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· **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:

Harmful
Irritant

12 Ecological information:

· **General notes:**

- Water hazard class 2 (calculated according to VwVwS): hazardous for water.
- 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**

08 04 09	waste adhesives and sealants containing organic solvents or other 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 Flammable liquids.

· **Kemler Number:** 33

· **UN-Number:** 1993

· **Packaging group:** II

· **Label:** 3

· **Designation of goods:** 1993 FLAMMABLE LIQUID, N.O.S. (vapor pressure at 50°C at most 110 kPa) (METHYL METHACRYLATE MONOMER, STABILIZED)

· **Maritime transport IMDG/GGVSea:**



· **IMDG/GGVSea Class:** 3

· **UN Number:** 1993

· **Label:** 3

· **Packaging group:** II

· **EMS Number:** 3-07

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- **Marine pollutant:** No
- **Correct technical name:** FLAMMABLE LIQUID, N.O.S. (METHYL METHACRYLATE MONOMER, STABILIZED)

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



- **ICAO/IATA Class:** 3
- **UN/ID Number:** 1993
- **Label:** 3
- **Packaging group:** II
- **Correct technical name:** FLAMMABLE LIQUID, N.O.S. (METHYL METHACRYLATE MONOMER, STABILIZED)

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:**

Xn Harmful
F Highly flammable

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

methyl methacrylate
2-hydroxyethyl methacrylate
N,N-dimethyl-p-toluidine

- **Risk phrases:**

11 Highly flammable.
20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
33 Danger of cumulative effects.
36/37/38 Irritating to eyes, respiratory system and skin.
43 May cause sensitization by skin contact.

- **Safety phrases:**

9 Keep container in a well-ventilated place.
16 Keep away from sources of ignition - No smoking.
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
36/37 Wear suitable protective clothing and gloves.
60 This material and its container must be disposed of as hazardous waste.

- **National regulations**

- **Classification according to VbF: A I**

- **Technical instructions (air):**

Class	Share in %
II	65.1

- **Water hazard class:** Water hazard class 2 (calculated according to VwVwS): 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.

- **Contact:** Dr. Tuchscherer Tel.: +49 6081 959-287