

Safety data sheet

Plastic Acrylic Casting Resin

BEIL Safety data sheet according to 91/155/EEC
Date / Revised: 10.11.2005
Product: BKF Plastisch

Page: 1 of 7
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1. Substance/preparation and company identification

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2. Composition/information on ingredients

Chemical nature:

Preparation

Hazardous ingredients:

CAS No.:	80-62-6	methyl methacrylate
EINECS:	201-297-1	content: 30,0 – 60,0 %
Hazard symbols:	F, Xi	R-phrases: 11-37/38-43
CAS No.:	38668-48-3	N,N-bis-(2-hydroxypropyl)-p-toluidine
EINECS:	254-075-1	content: 0,1 – 1,0%
Hazard symbols:	T	R-phrases: 25-52/53
CAS No.:	123-81-9	ethylene di(S-thioacetate)
EINECS:	204-653-4	content: 0,0 – 1,0 %
Hazard symbols:	Xn, N	R-phrases: 21- 51/53

The wording of the hazard symbols and R-phrases is specified in chapter 16 if dangerous ingredients are mentioned.

3. Hazard identification

Hazards description:

F Highly flammable
Xi Irritant

Information pertaining to particular dangers for man and environment

R	11	Highly flammable
R	37/38	irritating to respiratory system and skin
R	43	May cause sensitisation by skin contact

4. First-aid measures

General information: Medical treatment is necessary if symptoms occur which are obviously caused by skin or eye contact with the product or by inhalation of its vapours. Remove soiled, soaked clothing immediately.

After inhalation : Move subject to fresh air and keep him calm. See an physician.

After skin contact: Immediately remove contaminated clothing. Immediately wash with water soap and rinse thoroughly.

After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.

After ingestion: Do not induce vomiting. Call a physician immediately.

5. Fire-fighting measures

Suitable extinguishing agents: foam, dry chemical, carbon dioxide

For safety reasons unsuitable extinguishing agents: water.

Special protective equipment for fire fighting: Wear self-contained breathing apparatus.

6. Accidental release measures

Personal precautions: Keep away from ignition sources. Take care for adequate ventilation. Use personal protective clothing. Use breathing apparatus if exposed to vapours/dust/mist/aerosol.

Environmental precautions: Prevent product from getting into drains/surface water/groundwater.

Methods for cleaning up: Larger quantities: Remove mechanically (by pumping). Use explosion-proof equipment! Smaller quantities and/or residues: Contain with absorbent material (e.g. sand, diatomaceous earth, acid absorbent, universal absorbent or sawdust). dispose of in accordance with regulations.

7. Handling and storage

Handling:

Instruction on safe handling: Ensure the area is well ventilated. Keep container tightly closed.

Information on fire and explosion protection: Keep away from sources of ignition --- no smoking. Take precautionary measures against static discharges in the event of fire, cool the endangered containers with water. When heated above the flash point and /or during spraying (atomizing), ignitable mixtures may form in air. Use explosion-proof equipment only.

Storage:

Requirements for storage areas and containers: Keep only in the original container at a temperature not exceeding 25°C. Protect from light. Fill the container by approximately 90% only as oxygen (air) is required for stabilisation. With large storage containers make sure the oxygen (air) supply is sufficient to ensure stability.

8. Exposure controls and personal protection

Components with workplace control parameters

CAS-Nr.: 80-62-6 methyl methacrylate

OES: Long-term value: 208 mg/m³ 50ppm

OES:Short-term value: 416 mg/m³ 100 ppm

Personal protective equipment

General protective and hygienic measures: Do not inhale vapours. Avoid contact with eyes

and skin.

Hygiene measures: Store work clothing separatly. Remove soiled or soaked clothing immediately. Follow the usual good standards of occupational hygiene. Use skin protective preparation as preventive skin protection .

Respiratory protection: Breathing apparatus in case of high concentrations, short term: filter appliance, filter A

Hand protection: butyl rubber gloves (0,7 mm), Breakthrough time approx. 300 min (EN 374)
In practice, due to variable exposure conditions, this information can only be an aid to orientation for the selection of a suitable chemical protection glove. In particular, this information does not substitute suitability tests by the end of the user.

General information: Gloves should be replaced regularly , especially after extended contact with the product. For each work-place a suitable glove type has to be selected.

Eye protection: tightly fitting goggles

Body protection: On handling of larger quantities: face mask, chemical-resistant boots and apron

9. Physical and chemical properties

<u>Form:</u>	liquid	
<u>Colour:</u>	colorless	
<u>Odour:</u>	ester-like	
<u>Boiling point:</u>	100,5°C	(methyl methacrylate)
<u>Flash point:</u>	10°C	(methyl methacrylate)
<u>Ignition temperature:</u>	430°C	(methyl methacrylate)
<u>Spontaneous ignition:</u>	not determined	
<u>Lower explosion limit:</u>	2,1 %(V)	(methyl methacrylate)
<u>Upper explosion limit:</u>	12,5 %(V)	(methyl methacrylate)
<u>Vapour pressure:</u>	38,7 hPa at 20°C	(methyl methacrylate)
<u>Density:</u>	approx. 1,0 g/cm ³ at 20°C	
<u>Relative vapour density:</u>	<1 at 20°C	
<u>Solubility in water:</u>	approx. 16g/l	(methyl methacrylate)
<u>Viscosity dynamic at 20°C:</u>	approx. 400 mPas	

10. Stability and reactivity

Thermal decomposition: No decomposition when used as directed.

Hazardous reactions: Polymerization with heat evolution may occur in the presence of radical forming substances (e.g. peroxides), reducing substances, and /or heavy metal ions.

Hazardous decomposition products: None when used as directed

11. Toxicological information

Acute oral toxicity:

LD50 rat > 5000 mg/kg

Related to substance: methyl methacrylate

LD50 rat 172 mg/kg

Related to substance: N,N-bis-(2-hydroxypropyl)-p-toluidine

Acute inhalational toxicity

Low toxicity by inhalation

LC50/4h rat 29,8 mg/l

Related to substance: methyl methacrylate

Acute dermal toxicity:

Practically non toxic in contact with skin.

LD50 rabbit >5000 mg/kg

Related to substance: methyl methacrylate

Sensitiation:

In sensitisation tests on guinea pigs with and without adjuvant, both positive and negative results were found.

In humans various types of allergic reactions have been observed (symptoms: headache, eye irritations, skin affections).

Related to substance: methyl methacrylate

Toxicity on repeated administration

Dose at which no adverse effects were observed (NOAEL). At higher doses adverse effects were observed.

rat, inhalation, 2a, 0, 25, 100, 400ppm NOAEL 25 ppm

Findings: Damage to mucous membranes in the nose at 400 ppm

Related to substance: methyl methacrylate

rat, in drinking water, 2a, 0, 6/7, 60/70, 2000ppm NOAEL 2000 ppm

Findings: no toxic effects

Related to substance: methyl methacrylate

Mutagenicity

Positive as well as negative results in in vitro mutagenicity/genotoxicity tests.

No experimental indication of genotoxicity in vivo available.

In summary not mutagenic according to internationally accepted criteria.

Related to substance: methyl methacrylate

Carcinogenicity

Non-carcinogenic in inhalation and feeding studies carried out on rats, mice and dogs.

Related to substance: methyl methacrylate

Reprotoxicity/teratogenicity

No indications of toxic effects were observed in reproduction studies in animals.

Related to substance: methyl methacrylate

General informations

Avoid contact with the skin and eyes and inhalation of the product vapours.

12. Ecological information

Persistence and degradability

Biodegradability:

readily degradable, OECD301C, 14d 94%

Related to substance: methyl methacrylate

Ecotoxicological effect

Fish toxicity

LC50 Oncorhynchus mykiss, rainbow trout, OECD 203 flow through

GLP, 96h 79 mg/l

Related to substance: methyl methacrylate

Daphnia toxicity

EC50 Daphnia magna, OECD 202, flow trough, 48 h 69 mg/l

Related to substance: methyl methacrylate

EC50 Daphnia magna, OECD 202 part 2, flow trough, 21d 49 mg/l

Related to substance: methyl methacrylate

LOEL Daphnia magna, OECD 202 part 2, flow trough, 21d	68 mg/l
Related to substance: methyl methacrylate	
NOEL Daphnia magna, OECD 202 part 2, flow trough, 21d	37 mg/l
Related to substance: methyl methacrylate	
<u>Algae toxicity</u>	
EC3 Scenedesmus quadricauda, DIN 38412 section 9, 8d	37 mg/l
Related to substance: methyl methacrylate	
<u>Bacteria toxicity</u>	
ECO Pseudomonas puida	100 mg/l
Related to substance: methyl methacrylate	
<u>General informations</u>	
Do not allow to enter soil, waterways or waste water	

13. Disposal considerations

Product

Waste is hazardous and therefore particularly to be kept under surveillance. It must be disposed of in accordance with the regulations after consultation of the competent local authorities and disposal company in a suitable and licensed facility.

European waste catalogue

07 02 08

Waste from the manufacture, formulation, supply and use (MFSU) of plastics, synthetic rubber and man-made fibres – other still bottoms and reaction residues

Always check the given waste codes according to the actual conditions of manufacturing, formulation or use in your facilities.

Uncleaned packagings:

Contaminated packaging should be emptied optimally and after appropriate professional cleansing may be taken for reuse. Packaging that cannot be cleaned should be disposed of professionally. Uncontaminated packaging may be taken for recycling.

14. Transport information

Land transport ADR (cross-border):

ADR/GGVS: 3
UN-Number: 1866
Packaging group: III
Label: 3
Description of goods: 1866 RESIN SOLUTION (containing: methyl methacrylate)
ADR: Special provision 640H

RID/GGVE: See ADR

Maritime transport IMDG:

IMDG Class: 3
UN-Number: 1866
Packaging group: II
EMS Number: F-E,S-E
Marine pollutant:
Packed (+/0): 0
Propper shipping name: 1866 RESIN SOLUTION (containing: methyl methacrylate)

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 3
UN/ID Number: 1866
Label: 3
Packaging group: II
Propper shipping name: 1866 RESIN SOLUTION (containing: methyl methacrylate)

15. Regulatory information

Regulations of the European union (Labelling) / National legislation/Regulations:

Directive 1999/45/EEC ('Preparation Directive'): requires labeling

Hazardous component(s) for labelling

contains methyl methacrylate

Hazard symbol(s):

F Highly flammable
Xi Irritant

R-phrase(s)

R 11 Highly flammable
R 37/38 Irritating to respiratory system and skin.
R 43 May cause sensitization by skin contact

S-phrase(s)

S 2 Keep out of the reach of children.
S 16 Keep away from sources of ignition --- No smoking.
S 14 Keep away from dirt, rust, chemicals in particular concentrated acids, alkalis and accelerators (e.g. heavy metal compounds and amines)
S 37 Wear suitable gloves
S 50 Do not mix with peroxide-accelerators or reducing agents.
S 56 Dipose of this material and its container to hazardous or special waste collection point.

16. Other information

The product is normally supplied in a stabilized form. If the permissible storage period and/or storage temperature is exceeded, the product may polymerize with heat evolution.

Full text of hazard symbols and R-phrases if mentioned as hazardous components in chapter 2:

Hazards description:

F Highly flammable
T Toxic
Xi Irritant
N Dangerous or the environment.
Xn Harmful

Relevante R-phrases

R 11 Highly flammable
R 22 Harmful if swallowed
R 25 Toxic if swallowed
R 37/38 Irritating to respiratory system and skin.
R 43 May cause sensitization by skin contact
R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R	52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
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The information contained here in is based on the present state of our knowledge and does not therefore guarantee certain properties. Recipients of our product must take responsibility for observing existing laws and regulations.