

Material Safety Data Sheet

According to 91/155 EEC

Printing date 21.12.2006

Reviewed on 21.12.2006

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

· **Product details**

· **Trade name:** *Pi-Ku-Plast HP 36 Monomer*

· **Article number:** 540 0021 0, 540 0021 1, 540 0021 2, 540 0021 3, 540 0021 4, 540 0022 2

· **Application of the substance / the preparation** Monomer solution for Pi-Ku-Plast HP 36.

· **Manufacturer/Supplier:**

Bredent

Weißenhorners Straße 2

D-89250 Senden

Tel.: +49 (0) 7309/872-0

Fax: +49 (0) 7309/872-24

· **Further information obtainable from:** R & D








· **Information in case of emergency:** Tel.: +49 (0) 6132-84436 (24 h)

2 Composition/information on ingredients

· **Chemical characterization**

· **Description:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous components:**

CAS: 80-62-6 EINECS: 201-297-1	methyl methacrylate	 Xi,  F; R 11-37/38-43	50-100%
CAS: 99-97-8 EINECS: 202-805-4	N,N-dimethyl-p-toluidine	 T; R 23/24/25-33-52/53	1-5%
CAS: 2082-81-7 EINECS: 218-218-1	tetramethylene dimethacrylate	 Xi; R 36/37/38	1-5%
CAS: 1330-20-7 EINECS: 215-535-7	xylene	 Xn,  Xi; R 10-20/21-38	1-5%
CAS: 97-90-5 EINECS: 202-617-2	ethylene dimethacrylate	 Xi; R 37-43	1-5%

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

3 Hazards identification

· **Hazard description:**



Xn Harmful

F 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.

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 sensitisation by skin contact.

· **Classification system:**

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

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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.

Immediately remove any clothing soiled by the product.

- **After inhalation:**

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

- **After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

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

- **After swallowing:** *Call for a doctor immediately.*

5 Fire-fighting measures

- **Suitable extinguishing agents:** *CO₂, sand, extinguishing powder. Do not use water.*

- **For safety reasons unsuitable extinguishing agents:** *Water with full jet*

- **Protective equipment:** *Wear self-contained respiratory protective device.*

6 Accidental release measures

- **Person-related safety precautions:**

Ensure adequate ventilation

Wear protective clothing.

Keep away from ignition sources.

Use respiratory protective device against the effects of fumes/dust/aerosol.

Wear protective equipment. Keep unprotected persons away.

- **Measures for environmental protection:** *Do not allow to enter sewers/ surface or ground water.*

- **Measures for cleaning/collecting:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

Dispose of the material collected according to regulations.

7 Handling and storage

- **Handling:**

- **Information for safe handling:**

Keep receptacles tightly sealed.

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

- **Information about fire - and explosion protection:**

Fumes can combine with air to form an explosive mixture.

Use explosion-proof apparatus / fittings and spark-proof tools.

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

- **Storage:**

- **Requirements to be met by storerooms and receptacles:**

Store only in the original receptacle.

Store in a cool location.

- **Information about storage in one common storage facility:** *Not required.*

- **Further information about storage conditions:**

Store in the dark.

Keep container tightly sealed.

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Store in cool, dry conditions in well sealed receptacles.

8 Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

· **Ingredients with limit values that require monitoring at the workplace:**

80-62-6 methyl methacrylate

WEL	Short-term value: 416 mg/m ³ , 100 ppm Long-term value: 208 mg/m ³ , 50 ppm
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1330-20-7 xylene

WEL	Short-term value: 441 mg/m ³ , 100 ppm Long-term value: 220 mg/m ³ , 50 ppm Sk; BMGV
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· **Additional information:** The lists valid during the making were used as basis.

· **Personal protective equipment:**

· **General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

Do not eat, drink, smoke or sniff while working.

Store protective clothing separately.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

· **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· **Protection of hands:**

Preventive skin protection by use of skin-protecting agents is recommended.



Protective gloves

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

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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.

· **Eye protection:**



Tightly sealed goggles

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9 Physical and chemical properties

· General Information

Form:	Fluid
Colour:	According to product specification
Odour:	Characteristic

· Change in condition

Melting point/Melting range: Undetermined.
Boiling point/Boiling range: 101°C

· **Flash point:** 10°C

· **Ignition temperature:** 430°C

· **Self-igniting:** Product is not selfigniting.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

· Explosion limits:

Lower: 2.1 Vol %
Upper: 12.5 Vol %

· **Vapour pressure at 20°C:** 47 hPa

· **Density at 20°C:** 0.945 g/cm³

· Solubility in / Miscibility with

water: Not miscible or difficult to mix.

10 Stability and reactivity

· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

· Dangerous reactions

Reacts with peroxides and other radical forming substances.

Reacts with reducing agents.

Reacts with heavy metals.

Exothermic polymerization.

· **Dangerous decomposition products:** None if used according to specifications.

11 Toxicological information

· Acute toxicity:

· LD/LC50 values relevant for classification:

80-62-6 methyl methacrylate

Oral	LD50	>5000 mg/kg (rat)
Dermal	LD50	>5000 mg/kg (rabbit)
Inhalative	LC50/4h	29.8 mg/l (rat)

· Primary irritant effect:

· **on the skin:** Irritant to skin and mucous membranes.

· **on the eye:** Irritating effect.

· **Sensitization:** Sensitization possible through skin contact.

· Additional toxicological information:

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Harmful

Irritant

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12 Ecological information

- **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

13 Disposal considerations

- **Product:**

- **Recommendation**

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

Must be specially treated adhering to official regulations.

- **Uncleaned packaging:**

- **Recommendation:** *Disposal must be made according to official regulations.*

14 Transport information

- **Land transport ADR/RID (cross-border)**



- **ADR/RID class:** 3 Flammable liquids.

- **Danger code (Kemler):** 33

- **UN-Number:** 1993

- **Packaging group:** II

- **Hazard label:** 3

- **Description of goods:** 1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (METHYL METHACRYLATE MONOMER, STABILIZED, N,N-dimethyl-p-toluidine)

- **Maritime transport IMDG:**



- **IMDG Class:** 3

- **UN Number:** 1993

- **Label:** 3

- **Packaging group:** II

- **EMS Number:** F-E,S-E

- **Marine pollutant:** No

- **Proper shipping 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

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Proper shipping name: FLAMMABLE LIQUID, N.O.S. (METHYL METHACRYLATE MONOMER, STABILIZED)

15 Regulatory information

Labelling according to EU guidelines:

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

Code letter and hazard designation of product:

Xn Harmful

F Highly flammable

Hazard-determining components of labelling:

methyl methacrylate

ethylene dimethacrylate

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 sensitisation by skin contact.

Safety phrases:

2 Keep out of the reach of children.

9 Keep container in a well-ventilated place.

36/37 Wear suitable protective clothing and gloves.

60 This material and its container must be disposed of as hazardous waste.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant R-phrases

10 Flammable.

11 Highly flammable.

20/21 Harmful by inhalation and in contact with skin.

23/24/25 Toxic by inhalation, in contact with skin and if swallowed.

33 Danger of cumulative effects.

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

37 Irritating to respiratory system.

37/38 Irritating to respiratory system and skin.

38 Irritating to skin.

43 May cause sensitisation by skin contact.

52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Department issuing MSDS: R & D

Contact: R & D

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