

Safety Data Sheet

according to Regulation (EC) No. 1907/2006

BEST-MK 4451

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

Product identifier

BEST-MK 4451

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

Use of the substance/mixture

Adhesives, sealants

Uses advised against

none/none

Details of the supplier of the safety data sheet

Company name:	Best Klebstoffe GmbH & Co. KG	
Street:	Gewerbestraße 10-14	
Place:	D-86981 Kinsau	
Telephone:	+49 (0)8869-91384-0	Telefax: +49 (0)8869-91384-15
e-mail:	info@bestklebstoffe.de	
Internet:	www.bestklebstoffe.de	
Responsible Department:	Dr. Timo Gans-Eichler Chemieberatung Raesfeldstr. 22 48149 Münster	e-mail: tge-consult@t-online.de Tel.: +49 (0)251/924520-60 www.tge-consult.de

Emergency telephone: +49 (0)8869-91384-0 (08:00 - 17:00)

SECTION 2: Hazards identification

Classification of the substance or mixture

Indications of danger : Irritant
R-phrases:
Irritating to eyes, respiratory system and skin.
May cause sensitization by skin contact.

GHS classification

Hazard categories:
Skin corrosion/irritation: Skin Irrit. 2
Serious eye damage/eye irritation: Eye Irrit. 2
Respiratory/skin sensitization: Skin Sens. 1
Specific target organ toxicity - single exposure: STOT SE 3
Hazard Statements:
Causes skin irritation.
Causes serious eye irritation.
May cause an allergic skin reaction.
May cause respiratory irritation.

Label elements

Signal word: Warning
Pictograms: GHS07

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Hazardous components which must be listed on the label

2-hydroxyethyl methacrylate

Hazard statements

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.

Precautionary statements

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P501	Dispose of contents/container to disposal according to official regulations .

SECTION 3: Composition/information on ingredients

Mixtures

Chemical characterization

anaerobic adhesive.

Hazardous components

EC No.	Chemical name	Quantity
CAS No.	Classification	
Index No.	GHS classification	
REACH No.		
212-782-2	2-hydroxyethyl methacrylate	20 - < 50 %
868-77-9	Xi R36/38-43	
607-124-00-X	Eye Irrit. 2, Skin Irrit. 2, Skin Sens. 1; H319 H315 H317	
201-204-4	2-methylpropenoic acid, methacrylic acid	1 - < 5 %
79-41-4	Xn, C R21/22-35	
607-088-00-5	Acute Tox. 4, Acute Tox. 4, Skin Corr. 1A; H312 H302 H314	
201-254-7	cumene hydroperoxide, alpha,alpha-dimethylbenzyl hydroperoxide	0,1 - < 1 %
80-15-9	O, T, Xn, C, N R7-23-21/22-48/20/22-34-51-53	
617-002-00-8	Acute Tox. 3, Acute Tox. 4, Acute Tox. 4, STOT RE 2, Skin Corr. 1B, Aquatic Chronic 2; H242 H331 H312 H302 H373 ** H314 H411	
202-805-4	N,N-dimethyl-p-toluidine	0,1 - < 1 %
99-97-8	T R23/24/25-33-52-53	
612-056-00-9	Acute Tox. 3, Acute Tox. 3, Acute Tox. 3, STOT RE 2, Aquatic Chronic 3; H331 H311 H301 H373 ** H412	
202-704-5	cumene	0,1 - < 1 %
98-82-8	Xn, Xi, N R10-65-37-51-53	
601-024-00-X	Flam. Liq. 3, Asp. Tox. 1, STOT SE 3, Aquatic Chronic 2; H226 H304 H335 H411	

Full text of R- and H-phrases: see section 16.

Further Information

Note: This hazard characteristics refer to the properties of pure ingredients, for the identification of the preparation (product), see Section 2 and 16.

SECTION 4: First aid measures

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Description of first aid measures

General information

In case of accident or if you feel unwell, seek medical advice immediately (show safety data sheet if possible).

After inhalation

Provide fresh air. If symptoms persist, seek medical advice.

After contact with skin

After contact with skin, wash immediately with: Water and soap. In case of skin irritation, seek medical treatment.

After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water. In case of troubles or persistent symptoms, consult an ophthalmologist.

After ingestion

Do not induce vomiting. Rinse mouth thoroughly with water. Let water be swallowed in little sips (dilution effect). Never give anything by mouth to an unconscious person or a person with cramps. Call a POISON CENTER or doctor/physician.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media

Foam. Carbon dioxide. Extinguishing powder.

Extinguishing media which must not be used for safety reasons

High power water jet.

Special hazards arising from the substance or mixture

Carbon monoxide. Carbon dioxide (CO₂).

Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Wear a self-contained breathing apparatus and chemical resistant suit.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Extinguishing materials should be selected according to the surrounding area. Use water spray/stream to protect personnel and to cool endangered containers.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

See protective measures under point 7 and 8.
Provide adequate ventilation.

Environmental precautions

Do not empty into drains or the aquatic environment.

Methods and material for containment and cleaning up

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).
Treat the assimilated material according to the section on waste disposal.

SECTION 7: Handling and storage

Precautions for safe handling

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Advice on safe handling

Wear suitable protective clothing. (Refer to chapter 8.)
Avoid contact during pregnancy/while nursing.

Advice on protection against fire and explosion

Usual measures for fire prevention.

Further information on handling

Avoid contact with skin, eye and clothing.

Conditions for safe storage, including any incompatibilities**Requirements for storage rooms and vessels**

Keep container tightly closed in a cool, well-ventilated place. Keep container dry.

Advice on storage compatibility

Do not store together with: Radioactive substances. Infectious substances. Organic peroxides. Oxidizing solids Oxidizing liquids Pyrophoric liquids and solids. Inflammatory substances. Substances or mixtures which, in contact with water emit flammable gases. Non-combustible toxic substances.

Further information on storage conditions

Protect against: Light. UV-radiation/sunlight. heat. cooling moisture.

SECTION 8: Exposure controls/personal protection**Control parameters****Exposure limits (EH40)**

CAS No.	Chemical name	ml/m ³	mg/m ³	F/ml	Category	Origin
98-82-8	Cumene	25	125		TWA (8 h)	WEL
		50	250		STEL (15 min)	WEL
79-41-4	Methacrylic acid	20	72		TWA (8 h)	WEL
		40	143		STEL (15 min)	WEL

Exposure controls**Occupational exposure controls**

In case of open handling, use devices with built-in suction where possible. If suction of the immediate vicinity is impossible or insufficient, adequate airing of the working place must be ensured. Avoid contact during pregnancy/while nursing.

Protective and hygiene measures

Always close containers tightly after the removal of product. Do not eat, drink, smoke or sneeze at the workplace. Wash hands before breaks and at the end of work. Remove contaminated clothing immediately and dispose off safely. Wash contaminated clothing prior to re-use. Used working clothes should not be used outside the work area. Street clothing should be stored separately from work clothing.

Respiratory protection

Respiratory protection required in case of:
exceeding critical value

Generation/formation of aerosols

Generation/formation of mist

Suitable respiratory protective equipment:

Combination filter device (DIN EN 141).. Type : A / P2/P3

Hand protection

Pull-over gloves of rubber. DIN EN 374

Suitable material:

(penetration time (maximum wearing period): >= 8h)

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Butyl rubber. (0,5 mm)
FKM (fluororubber). (0,4 mm)
CR (polychloroprenes, Chloroprene rubber). (0,5 mm)
Before using check leak tightness / impermeability. In case of reutilization, clean gloves before taking off and store in well-aired place.
Protect skin by using skin protective cream.

Eye protection

Suitable eye protection: Tightly sealed safety glasses. DIN EN 166

Skin protection

Suitable protection of the body: Lab apron.

Environmental exposure controls

People who suffer from skins problems, asthma, allergies, chronic or recurring respiratory illnesses must not be deployed in processes, which use this substance.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state: liquid
Colour: grey / metal
Odour: characteristic

Test method

pH-Value: n/a

Changes in the physical state

Melting point:	not determined
Boiling point:	not determined
Flash point:	>100 °C
Lower explosion limits:	not determined
Upper explosion limits:	not determined
Ignition temperature:	>300 °C
Vapour pressure: (at 25 °C)	1,5 hPa DIN 51616
Density (at 25 °C):	1,08 g/cm ³ DIN 51757
Water solubility:	practically insoluble
Viscosity / dynamic: (at 23 °C)	50.000 mPa·s/thix

SECTION 10: Stability and reactivity

Chemical stability

Stable under normal storage and handling conditions.
point of decomposition: > 200 °C

Possibility of hazardous reactions

Reacts with : Strong acid. Oxidizing agents, strong. Alkalis (alkalis), concentrated.

Conditions to avoid

Protect against: Light. UV-radiation/sunlight. heat. cooling moisture.

Incompatible materials

Materials to avoid: Strong acid. Oxidizing agents, strong. Alkalis (alkalis), concentrated.

Hazardous decomposition products

Can be released in case of fire: Carbon monoxide. Carbon dioxide (CO₂).

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SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

CAS No.	Chemical name		Exposure routes	Method	Dose	Species	h
868-77-9	2-hydroxyethyl methacrylate						
	Acute oral toxicity	LD50	5050 mg/kg			Ratte	
79-41-4	2-methylpropenoic acid, methacrylic acid						
	Acute oral toxicity	LD50	1320-2260 mg/kg			Rat.	
	Acute dermal toxicity	ATE	1100 mg/kg				
80-15-9	cumene hydroperoxide, alpha,alpha-dimethylbenzyl hydroperoxide						
	Acute oral toxicity	LD50	382 mg/kg			Ratte	
	Acute dermal toxicity	LD50	500 mg/kg			Ratte	
	Acute inhalation toxicity	LC50	(200) mg/l			Mouse.	4
99-97-8	N,N-dimethyl-p-toluidine						
	Acute oral toxicity	LD50	(200) mg/kg				
	Acute dermal toxicity	LD50	>2000 mg/kg			Rat.	
	Acute inhalation toxicity	LC50	1,4 mg/l			Rat.	4
98-82-8	cumene						
	Acute oral toxicity	LD50	1400 mg/kg			Rat.	

Irritation and corrosivity

Irritant effect on the eye: irritant.

Irritant effect on the skin: irritant.

Sensitizing effects

2-hydroxyethyl methacrylate:

Respiratory or skin sensitisation:

People who suffer from skins problems, asthma, allergies, chronic or recurring respiratory illnesses must not be deployed in processes, which use this substance.

Severe effects after repeated or prolonged exposure

cumene hydroperoxide, alpha,alpha-dimethylbenzyl hydroperoxide:

 Subchronic inhalative toxicity (90d) Rat. NOAEC = 31 mg/m³

cumene:

Subchronic inhalative toxicity (90d) Rat. NOAEC = 125 ppm

Carcinogenic/mutagenic/toxic effects for reproduction

cumene:

No experimental indications of mutagenicity in-vitro exist.

cumene hydroperoxide, alpha,alpha-dimethylbenzyl hydroperoxide:

Evidence exists for mutagenicity in vivo .

SECTION 12: Ecological information

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Toxicity

CAS No.	Chemical name			h
	Aquatic toxicity	Method	Dose	Species
868-77-9	2-hydroxyethyl methacrylate			
	Acute fish toxicity	LC50	227 mg/l	Pimephales promelas
79-41-4	2-methylpropenoic acid, methacrylic acid			
	Acute fish toxicity	LC50	85 mg/l	Oncorhynchus mykiss
	Acute crustacea toxicity	EC50	>130 mg/l	Daphnia magna
80-15-9	cumene hydroperoxide, alpha,alpha-dimethylbenzyl hydroperoxide			
	Acute fish toxicity	LC50	3,9 mg/l	rainbow trout
	Acute crustacea toxicity	EC50	18,84 mg/l	Daphnia magna
99-97-8	N,N-dimethyl-p-toluidine			
	Acute fish toxicity	LC50	46-53 mg/l	
98-82-8	cumene			
	Acute fish toxicity	LC50	4,8 mg/l	Oncorhynchus mykiss
	Acute algae toxicity	ErC50	1,88-2,15 mg/l	Desmodesmus subspicatus

Persistence and degradability

cumene hydroperoxide, alpha,alpha-dimethylbenzyl hydroperoxide:

Not easily bio-degradable (according to OECD-criteria).

OECD 301B / ISO 9439 / EEC 92/69 annex V, C.4-C (28 d) = 3%

2-hydroxyethyl methacrylate:

Easily biodegradable (concerning to the criteria of the OECD)

OECD 301C / ISO 9408 / EEC 92/69 annex V, C.4-F (14d) > 92%

cumene:

Easily biodegradable (concerning to the criteria of the OECD): 70% (20d)

2-methylpropenoic acid, methacrylic acid:

Easily biodegradable (concerning to the criteria of the OECD)

OECD 301D / EEC 92/69 annex V, C.4-E (28d) = 86%

Bioaccumulative potential

No indication of bio-accumulation potential.

Partition coefficient n-octanol/water

CAS No.	Chemical name	Log Pow
868-77-9	2-hydroxyethyl methacrylate	0,47
79-41-4	2-methylpropenoic acid, methacrylic acid	0,93
80-15-9	cumene hydroperoxide, alpha,alpha-dimethylbenzyl hydroperoxide	2,16
99-97-8	N,N-dimethyl-p-toluidine	2,81
98-82-8	cumene	3,55

Mobility in soil

No information available.

SECTION 13: Disposal considerations

Waste treatment methods

Advice on disposal

Consult the local waste disposal expert about waste disposal.

Waste disposal number of waste from residues/unused products

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080409 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS; wastes from MFSU of adhesives and sealants (including waterproofing products); waste adhesives and sealants containing organic solvents or other dangerous substances
Classified as hazardous waste.

Waste disposal number of used product

080409 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS; wastes from MFSU of adhesives and sealants (including waterproofing products); waste adhesives and sealants containing organic solvents or other dangerous substances
Classified as hazardous waste.

Contaminated packaging

Cleaned containers may be recycled.

SECTION 14: Transport information

Land transport (ADR/RID)

UN number: Not restricted

Other applicable information (land transport)

Not restricted

Inland waterways transport

UN number: Not restricted

Other applicable information (inland waterways transport)

Not restricted

Marine transport

UN number: Not restricted

Other applicable information (marine transport)

Not restricted

Air transport

UN/ID number: Not restricted

UN proper shipping name: Not restricted

SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulatory information

1999/13/EC (VOC): < 1% (Data concerning the Directive 1999/13/EC on the limitation of emissions of volatile organic compounds (VOC-RL))

Additional information

1967/548 (2008/58, 30. ATP/ 31. ATP); 1991/689 (2001/118); 1999/13; 2004/42; 648/2004; 1907/2006; 1272/2008; 75/324/EWG (2008/47/EG)

National regulatory information

Employment restrictions: Observe employment restrictions for young people. Observe employment restrictions for child bearing mothers and nursing. Observe employment restrictions for women of child-bearing age.

Water contaminating class (D): 1 - slightly water contaminating

SECTION 16: Other information

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Changes

Rev 1,00 Initial release 12.12.11

Full text of R-phrases referred to under sections 2 and 3

07	May cause fire.
10	Flammable.
21/22	Harmful in contact with skin and if swallowed.
23	Toxic by inhalation.
23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
33	Danger of cumulative effects.
34	Causes burns.
35	Causes severe burns.
36/37/38	Irritating to eyes, respiratory system and skin.
36/38	Irritating to eyes and skin.
37	Irritating to respiratory system.
43	May cause sensitization by skin contact.
48/20/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
51	Toxic to aquatic organisms.
52	Harmful to aquatic organisms.
53	May cause long-term adverse effects in the aquatic environment.
65	Harmful: may cause lung damage if swallowed.

Full text of H-Statements referred to under sections 2 and 3

H226	Flammable liquid and vapour.
H242	Heating may cause a fire.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)
