

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH)

Revision date: 4 Jun 2024

Print date: 4 Jun 2024

Version: 3.2

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FK-Chem

FK-fix S, Komponente A

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

1.1 Product identifier

Trade name/designation:

FK-fix S, Komponente A

UFI:

0V00-70PA-W00N-F8C8

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

Use of the substance/mixture:

2-Component adhesive.

Reserved for industrial and professional use.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

FK-Chem GmbH & Co. KG

Günther-Irmscher-Straße 5

73630 Remshalden

GERMANY

Telephone: +49 (0) 7151 209196-0

Telefax: +49 (0) 7151 209169-9

E-mail: kontakt@fk-chem.de

Website: http://www.fk-chem.de

E-mail (competent person): m.kirschbaum@fk-chem.de, Mr. Dr. Martin Kirschbaum

1.4 Emergency phone number

24h: +49 551 19240 (german and english)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Hazard classes and hazard categories	Hazard statements	Classification procedure
Skin corrosion/irritation (Skin Irrit. 2)	H315: Causes skin irritation.	Calculation
Flammable liquids (Flam. Liq. 2)	H225: Highly flammable liquid and vapour.	Assessment
Respiratory or skin sensitisation (Skin Sens. 1)	H317: May cause an allergic skin reaction.	Calculation
STOT-single exposure (STOT SE 3)	H335: May cause respiratory irritation.	Calculation

2.2 Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms:



GHS02

Flame



GHS07

Exclamation mark

Signal word: Danger

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Hazard components for labelling:

Pentaerythrit-tetra(mercaptopoacetate); methyl methacrylate; tetramethylene dimethacrylate

Hazard statements for physical hazards

H225	Highly flammable liquid and vapour.
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Hazard statements for health hazards

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

Precautionary statements - Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P243	Take action to prevent static discharges.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statements - Response

P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.

2.3 Other hazards

Adverse human health effects and symptoms:

May cause eye irritation.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Ingredients:

Product identifiers	Substance name Classification according to Regulation (EC) No. 1272/2008 [CLP]	Content
CAS No.: 80-62-6 EC No.: 201-297-1 Index No.: 607-035-00-6 REACH No.: 01-2119452498-28	methyl methacrylate Flam. Liq. 2 (H225), STOT SE 3 (H335), Skin Irrit. 2 (H315), Skin Sens. 1 (H317)   Danger	50 - < 100 weight-%
CAS No.: 3290-92-4 EC No.: 221-950-4 REACH No.: 01-2119542176-41	propylidynetrimethyl trimethacrylate Aquatic Chronic 2 (H411) 	1 - < 5 weight-%
CAS No.: 112945-52-5 REACH No.: 01-2119379499-16	Silicium dioxide (nano) The substance is classified as not hazardous according to regulation (EC) No 1272/2008 [CLP].	2 - < 3 weight-%
CAS No.: 2082-81-7 EC No.: 218-218-1 REACH No.: 01-2119967415-30	tetramethylene dimethacrylate Skin Sens. 1B (H317)  Warning	0.1 - < 1 weight-%
CAS No.: 38668-48-3 EC No.: 254-075-1 REACH No.: 01-2119980937-17	1,1'-(p-tolylimino)diPropan-2-ol Acute Tox. 2 (H300), Aquatic Chronic 3 (H412), Eye Irrit. 2 (H319)  Danger	< 1 weight-%
CAS No.: 10193-99-4 EC No.: 233-482-8 REACH No.: 01-2120769725-40	Pentaerythrit-tetra(mercaptopoacetate) Acute Tox. 4 (H302, H312, H332), Aquatic Chronic 2 (H411), Skin Sens. 1A (H317)   Warning	0.1 - < 1 weight-%

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

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SECTION 4: First aid measures

4.1 Description of first aid measures

General information:

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove victim out of the danger area. Take off immediately all contaminated clothing. If unconscious but breathing normally, place in recovery position and seek medical advice. Do not leave affected person unattended.

Following inhalation:

Provide fresh air. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a doctor if you feel unwell.

In case of skin contact:

Wash immediately with: Water and soap. If skin irritation or rash occurs: Get medical advice/attention.

After eye contact:

Rinse immediately carefully and thoroughly with eye-bath or water. In case of eye irritation consult an ophthalmologist.

Following ingestion:

Rinse mouth immediately and drink plenty of water. Get medical advice/attention.

4.2 Most important symptoms and effects, both acute and delayed

Causes skin irritation. May cause an allergic skin reaction. May cause respiratory irritation. May cause eye irritation.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media:

Water spray jet, alcohol resistant foam, Extinguishing powder, Carbon dioxide (CO2).

5.2 Special hazards arising from the substance or mixture

Highly flammable liquid and vapour. Vapours can form explosive mixtures with air. The vapour of the product is heavier than air and may accumulate below ground level, in pits, channels and basements in higher concentration.

Hazardous combustion products:

In case of fire may be liberated: carbon oxides (COx), gases/vapours, toxic

5.3 Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

Personal precautions:

Provide adequate ventilation. Do not breathe dust/fume/gas/mist/vapours/spray. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Avoid contact with eyes and skin. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Remove persons to safety.

Protective equipment:

Wear protective gloves/protective clothing/eye protection/face protection. See section 8.

6.1.2 For emergency responders

Personal protection equipment:

Personal protection equipment: see section 8.

6.2 Environmental precautions

Do not allow to enter into surface water or drains.

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Do not allow to enter into soil/subsoil.

6.3 Methods and material for containment and cleaning up

For containment:

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Take up mechanically, placing in appropriate containers for disposal.

For cleaning up:

Solvent / Water with tenside additive

6.4 Reference to other sections

Safe handling: see section 7.

Personal protection equipment: see section 8.

Disposal: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures

Advices on safe handling:

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Avoid contact with skin, eyes and clothes. Wear personal protection equipment (refer to section 8).

Fire prevent measures:

Highly flammable: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use explosion-proof machinery, apparatus, ventilation facilities, tools etc. Take precautionary measures against static discharges.

Environmental precautions:

Discharge into the environment must be avoided.

Advices on general occupational hygiene

Wash hands before breaks and after work. When using do not eat, drink or smoke. Take off contaminated clothing and wash it before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions:

Keep container tightly closed in a cool, well-ventilated place. Make sure spills can be contained, e.g. in sump pallets or kerbed areas. Protect from sunlight.

Requirements for storage rooms and vessels:

Material, solvent-resistant. Keep/Store only in original container.

Hints on storage assembly:

Keep away from combustible material. Do not store together with: Substances, Storage class 6.1.

Keep away from food, drink and animal feedingstuffs.

7.3 Specific end use(s)

Recommendation:

2-Component adhesive.

Observe instructions for use.

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SECTION 8: Exposure controls / Personal protection

8.1 Control Parameters

8.1.1 Occupational exposure limit values

Limit value type (country)	Substance name	① Long-term occupational exposure limit value ② Short-term occupational exposure limit value ③ Instantaneous value ④ Monitoring and observation processes ⑤ Remark
IOELV (EU)	methyl methacrylate CAS No.: 80-62-6 EC No.: 201-297-1	① 50 ppm ② 100 ppm
WEL (GB)	methyl methacrylate CAS No.: 80-62-6 EC No.: 201-297-1	① 50 ppm (208 mg/m ³) ② 100 ppm (416 mg/m ³)
WEL (GB)	Silicium dioxide (nano) CAS No.: 112945-52-5	① 2.4 mg/m ³ ⑤ (Silica, amorphous; respirable fraction)
WEL (GB)	Silicium dioxide (nano) CAS No.: 112945-52-5	① 6 mg/m ³ ⑤ (Silica, amorphous; inhalable fraction)

8.1.2 Biological limit values

No data available.

8.1.3 DNEL-/PNEC-values

No data available.

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment. Generation/formation of aerosols: Devices with local exhaust / Technical ventilation of workplace

8.2.2 Personal protection equipment



Eye/face protection:

Eye glasses with side protection (EN 166).

Skin protection:

Tested protective gloves must be worn (EN ISO 374).

Suitable material: NBR (Nitrile rubber), IIR (Butyl rubber)

Thickness of the glove material: $\geq 0,5$ mm

Breakthrough time: ≥ 480 min

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. Check leak tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. Recommendation: Draw up and observe skin protection programme.

Respiratory protection:

If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn. Combination filtering device, Filter type A-P2.

Other protection measures:

Wear suitable protective clothing (EN 340).

8.2.3 Environmental exposure controls

No data available.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state: liquid, viscous

Colour: different, depending on coloration

Odour: like Methyl methacrylate

Safety relevant basic data

Parameter	Value	at	① Method ② Remark
pH	not applicable		
Melting point	not determined		
Freezing point	not determined		
Initial boiling point and boiling range	100 °C		② Methyl methacrylate
Decomposition temperature	not determined		
Flash point	9 °C		① c.c.
Evaporation rate	not determined		
Auto-ignition temperature	≥ 430 °C		② Methyl methacrylate
Upper/lower flammability or explosive limits	2.1 - 12.5 Vol-%		② Methyl methacrylate
Vapour pressure	38.7 hPa	20 °C	② Methyl methacrylate
Vapour density	not determined		
Density	≈ 1 g/mL	20 °C	
Relative density	not determined		
Bulk density	not applicable		
Water solubility	slightly soluble	20 °C	
Partition coefficient: n-octanol/water, log P (o/w)	1.38		② Methyl methacrylate
Dynamic viscosity	10,000 - 15,000 mPa*s	20 °C	② thixotropic
Kinematic viscosity	not determined		

9.2 Other information

No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity

Highly flammable liquid and vapour.

10.2 Chemical stability

The product is chemically stable under recommended conditions of storage, use and temperature.

10.3 Possibility of hazardous reactions

No hazardous reaction when handled and stored according to provisions. Vapours can form explosive mixtures with air. Can polymerise exothermically if heated, exposed to air, sunlight or by addition or free radical initiators.

10.4 Conditions to avoid

Protect from sunlight. Store in a well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5 Incompatible materials

Oxidising agent

10.6 Hazardous decomposition products

No known hazardous decomposition products.

In case of fire may be liberated: carbon oxides (COx), gases/vapours, toxic

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SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

1,1'-(p-tolylimino)diPropan-2-ol	CAS No.: 38668-48-3	EC No.: 254-075-1
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LD₅₀ oral: 25 – 200 mg/kg (Rat) OECD 401
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Acute oral toxicity:

Based on available data, the classification criteria are not met.

Acute dermal toxicity:

Based on available data, the classification criteria are not met.

Acute inhalation toxicity:

Based on available data, the classification criteria are not met.

Skin corrosion/irritation:

Causes skin irritation.

Serious eye damage/irritation:

Based on available data, the classification criteria are not met.

May cause eye irritation.

Respiratory or skin sensitisation:

May cause an allergic skin reaction.

Germ cell mutagenicity:

Based on available data, the classification criteria are not met.

Carcinogenicity:

Based on available data, the classification criteria are not met.

Reproductive toxicity:

Based on available data, the classification criteria are not met.

STOT-single exposure:

May cause respiratory irritation.

STOT-repeated exposure:

Based on available data, the classification criteria are not met.

Aspiration hazard:

Based on available data, the classification criteria are not met.

11.2 Information on other hazards

Endocrine disrupting properties:

This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

SECTION 12: Ecological information

12.1 Toxicity

1,1'-(p-tolylimino)diPropan-2-ol	CAS No.: 38668-48-3	EC No.: 254-075-1
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LC₅₀: 17 mg/L 4 d (fish, Brachydanio rerio)

EC₅₀: 28.8 mg/L 2 d (crustaceans)

Aquatic toxicity:

Based on available data, the classification criteria are not met.

12.2 Persistence and degradability

Biodegradation:

Not readily biodegradable (according to OECD criteria)

12.3 Bioaccumulative potential

Bioconcentration factor (BCF):

There are no data available on the preparation/mixture itself.

Partition coefficient: n-octanol/water, log P (o/w):

1.38; Remark: Methyl methacrylate

Accumulation / Evaluation:

No indication of bioaccumulation potential.

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12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

1,1'-(p-tolylimino)diPropan-2-ol CAS No.: 38668-48-3 EC No.: 254-075-1

Results of PBT and vPvB assessment: —

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6 Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

12.7 Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste treatment options

Appropriate disposal / Product:

Dispose of waste according to applicable legislation. Consult the appropriate local waste disposal expert about waste disposal.

Appropriate disposal / Package:

Completely emptied packages can be recycled.

Other disposal recommendations:

The allocation of waste code numbers / waste names must be carried out in accordance with the European Waste Catalogue (EWC). Collect in closed and suitable containers for disposal. Do not allow to enter into surface water or drains. Waste for disposal is to be classified and labelled.

SECTION 14: Transport information

Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI-/IATA-DGR)
14.1 UN number or ID number			
UN 1133	UN 1133	UN 1133	UN 1133
14.2 UN proper shipping name			
Adhesives	Adhesives	Adhesives	Adhesives
14.3 Transport hazard class(es)			
 3	 3	 3	 3
14.4 Packing group			
III	III	III	III
14.5 Environmental hazards			
No	No	No	No
14.6 Special precautions for user			
Special Provisions: not determined	Special Provisions: not determined	Special Provisions: not determined	Special Provisions: not determined
Limited Quantity (LQ): 5 L	Limited Quantity (LQ): not determined	Limited Quantity (LQ): not determined	Limited Quantity (LQ): not determined
Excepted Quantities (EQ): not determined	Excepted Quantities (EQ): not determined	Excepted Quantities (EQ): not determined	Excepted Quantities (EQ): not determined
Hazard identification number (Kemler No.): 30	Classification code: F1	Classification code: F-E, S-E	Remark: -
	Remark: -	Remark: -	

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Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI-/IATA-DGR)
Classification code: F1			
Tunnel restriction code: (D/E)			
Remark: -			

14.7 Maritime transport in bulk according to IMO instruments

not determined

Additional information:

Transport as "limited quantity" according to chapter 3.4 ADR/RID

SECTION 15: Regulatory information

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

15.1.1 EU legislation

Authorisations:

Contains no substances listed in REACH Annex XIV.

Restrictions on use:

Use restriction according to REACH annex XVII, no.: 3

Other regulations (EU):

Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

The product does not contain substances of very high concern (SVHC) $\geq 0,1\%$.

VOC content (EU): > 50 %

15.1.2 National regulations

No data available.

15.2 Chemical Safety Assessment

No data available.

SECTION 16: Other information

16.1 Indication of changes

Changes executed in version 3.1:

Section 11: Toxicological Information

Section 12: Ecological Information (non-mandatory)

General revision

Changes executed in version 3.2:

Section 15: Regulatory Information (non-mandatory)

Section 16: Abbreviations and acronyms

General revision

16.2 Abbreviations and acronyms

ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route

ATE = acute toxicity estimate

CAS = Chemical Abstracts Service

CLP = Classification, Labelling and Packaging

DMEL = Derived Minimum Effect Level

DNEL = Derived No Effect Level

EC₅₀ = Median effective concentration

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ECB = European Chemicals Bureau

EEC = European Economic Community

EINECS = European Inventory of Existing Commercial Chemical Substances

ELINCS = European List of Notified Chemical Substances

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk

IC₅₀ = Inhibition concentration, 50%

IMDG = International Maritime Code for Dangerous Goods

IUCLID = International Uniform Chemical Information Database

LC₅₀ = Lethal concentration, 50%

LD₅₀ = Median lethal dose

LC₀ = lethal concentration, 0%

LOAEL = lowest-observed-adverse-effect level

MARPOL = International Convention for the Prevention of Marine Pollution from Ships

NOAEL = No Observed Adverse Effect Level

NOEC = No Observed Effect Content

PBT = Persistent, Bioaccumulative and Toxic substance

PNEC = Predicted No-Effect Content

RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses

REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals

STP = Sewage Treatment Plant

TLV®/TWA = Threshold limit value - time-weighted average

TLV®/STEL = Threshold limit value - short-time exposure limit

VOC = Volatile Organic Compounds

vPvB = very Persistent and very Bioaccumulative

16.3 Key literature references and sources for data

European Chemicals Agency (ECHA): <https://www.echa.europa.eu>

ECHA, C&L Inventory: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database>

ECHA, Registered substances: <https://echa.europa.eu/information-on-chemicals/registered-substances>

GESTIS, Information system on hazardous substances: <https://www.gestis.dguv.de/search>

GESTIS, International Limit Values: <https://limitvalue.ifa.dguv.de>

Hörrath Gefährliche Stoffe und Gemische, 8. Auflage, Dr. Angela Schulz

Safety data sheets of the manufacturers

16.4 Classification for mixtures and used evaluation method according to regulation (EC) No. 1272/2008 [CLP]

Hazard classes and hazard categories	Hazard statements	Classification procedure
Skin corrosion/irritation (Skin Irrit. 2)	H315: Causes skin irritation.	Calculation
Flammable liquids (Flam. Liq. 2)	H225: Highly flammable liquid and vapour.	Assessment
Respiratory or skin sensitisation (Skin Sens. 1)	H317: May cause an allergic skin reaction.	Calculation
STOT-single exposure (STOT SE 3)	H335: May cause respiratory irritation.	Calculation

16.5 Relevant H- and EUH-phrases

Hazard statements	
H225	Highly flammable liquid and vapour.
H300	Fatal if swallowed.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.

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Hazard statements

H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

16.6 Training advice

No data available.

16.7 Additional information

The information in this safety data sheet has been established to our best knowledge and was up-to-date at time of revision. The information is intended to give you advice about the safe handling of the product for storage, processing, transport and disposal. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.

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

1.1 Product identifier

Trade name/designation:

FK-fix S, Komponente B

UFI:

GK80-S0T2-G005-YYT2

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

Use of the substance/mixture:

2-Component adhesive.

Reserved for industrial and professional use.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

FK-Chem GmbH & Co. KG

Günther-Irmscher-Straße 5

73630 Remshalden

GERMANY

Telephone: +49 (0) 7151 209196-0

Telefax: +49 (0) 7151 209169-9

E-mail: kontakt@fk-chem.de

Website: http://www.fk-chem.de

E-mail (competent person): m.kirschbaum@fk-chem.de, Mr. Dr. Martin Kirschbaum

1.4 Emergency phone number

24h: +49 551 19240 (german and english)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Hazard classes and hazard categories	Hazard statements	Classification procedure
Hazardous to the aquatic environment (Aquatic Acute 1)	H400: Very toxic to aquatic life.	Calculation
Hazardous to the aquatic environment (Aquatic Chronic 1)	H410: Very toxic to aquatic life with long lasting effects.	Calculation
Respiratory or skin sensitisation (Skin Sens. 1B)	H317: May cause an allergic skin reaction.	Calculation

2.2 Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms:



GHS07

Exclamation mark



GHS09

Environment

Signal word: Warning

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Hazard components for labelling:

dibenzoyl peroxide

Hazard statements for health hazards

H317	May cause an allergic skin reaction.
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Hazard statements for environmental hazards

H410	Very toxic to aquatic life with long lasting effects.
------	---

Supplemental hazard information: none

Precautionary statements - Prevention

P235+P410	Keep cool. Protect from sunlight.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statements - Response

P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P361+P364	Take off immediately all contaminated clothing and wash it before reuse.

2.3 Other hazards

Adverse human health effects and symptoms:

May cause eye irritation.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Ingredients:

Product identifiers	Substance name Classification according to Regulation (EC) No. 1272/2008 [CLP]	Content
CAS No.: 94-36-0 EC No.: 202-327-6	dibenzoyl peroxide Aquatic Acute 1 (H400), Aquatic Chronic 1 (H410), Eye Irrit. 2 (H319), Org. Perox. B (H241), Skin Sens. 1 (H317)      Danger M-factor (acute): 10 M-factor (chronic): 10	5 - 10 weight-%

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

SECTION 4: First aid measures

4.1 Description of first aid measures

General information:

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove victim out of the danger area. Take off immediately all contaminated clothing. If unconscious but breathing normally, place in recovery position and seek medical advice. Do not leave affected person unattended.

Following inhalation:

Provide fresh air. In case of respiratory tract irritation, consult a physician.

In case of skin contact:

Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.

After eye contact:

Do not subject to friction. In case of contact with eyes, rinse thoroughly with water. In case of eye irritation consult an ophthalmologist.

Following ingestion:

Rinse mouth immediately and drink plenty of water. Get medical advice/attention.

4.2 Most important symptoms and effects, both acute and delayed

May cause an allergic skin reaction. May cause eye irritation.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

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SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media:

Water spray jet, alcohol resistant foam, Extinguishing powder, Carbon dioxide (CO2).

5.2 Special hazards arising from the substance or mixture

Oxidising! May intensify fire; oxidiser. Decomposition takes place from temperatures above: +50 °C. Formation of: Oxygen (O₂); carbon oxides (CO_x); gases/vapours, toxic. Due to gaseous decomposition products, overpressure can occur in tightly sealed containers. When heated above decomposition temperature, harmful fumes can be generated.

5.3 Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Move undamaged containers from immediate hazard area if it can be done safely. Use water spray to keep fire-exposed containers cool. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

Personal precautions:

Avoid contact with skin, eyes and clothes. Keep cool. Protect from sunlight. Remove persons to safety.

Protective equipment:

Wear protective gloves/protective clothing/eye protection/face protection. See section 8.

6.1.2 For emergency responders

Personal protection equipment:

Personal protection equipment: see section 8.

6.2 Environmental precautions

Do not allow to enter into surface water or drains.

Do not allow to enter into soil/subsoil.

6.3 Methods and material for containment and cleaning up

For containment:

Take up mechanically. Alternative: Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Collect in closed and suitable containers for disposal.

For cleaning up:

Water (with cleaning agent)

6.4 Reference to other sections

Safe handling: see section 7.

Personal protection equipment: see section 8.

Disposal: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures

Advices on safe handling:

Provide adequate ventilation. Avoid contact with skin, eyes and clothes. Impurities may cause catalytic decomposition. Always close containers tightly after the removal of product. Handle with care - avoid bumps, friction and impact. Do not expose to temperatures exceeding 45 °C. Wear personal protection equipment (refer to section 8).

Fire prevent measures:

Avoid: impurities. Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Protect from sunlight.

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Measures to prevent aerosol and dust generation:

Dust should be exhausted directly at the point of origin.

Environmental precautions:

Discharge into the environment must be avoided.

Advices on general occupational hygiene

When using do not eat, drink or smoke. Wash hands before breaks and after work. Take off contaminated clothing and wash it before reuse. Apply skin care products after work.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions:

Keep container tightly closed in a cool, well-ventilated place. Make sure spills can be contained, e.g. in sump pallets or kerbed areas. Peroxides: Observe in addition any national regulations. storage temperature: 5 - 30 °C

Requirements for storage rooms and vessels:

Keep/Store only in original container.

Hints on storage assembly:

Keep away from food, drink and animal feedingstuffs.

7.3 Specific end use(s)

Recommendation:

2-Component adhesive.

Observe instructions for use.

SECTION 8: Exposure controls / Personal protection

8.1 Control Parameters

8.1.1 Occupational exposure limit values

Limit value type (country)	Substance name	① Long-term occupational exposure limit value ② Short-term occupational exposure limit value ③ Instantaneous value ④ Monitoring and observation processes ⑤ Remark
WEL (GB)	dibenzoyl peroxide CAS No.: 94-36-0 EC No.: 202-327-6	① 5 mg/m ³

8.1.2 Biological limit values

No data available.

8.1.3 DNEL-/PNEC-values

Substance name	DNEL value	① DNEL type ② Exposure route
dibenzoyl peroxide CAS No.: 94-36-0 EC No.: 202-327-6	39 mg/m ³	① DNEL consumer ② Long-term - inhalation, systemic effects
dibenzoyl peroxide CAS No.: 94-36-0 EC No.: 202-327-6	13.3 mg/kg bw/day	① DNEL worker ② Long-term - dermal, systemic effects
dibenzoyl peroxide CAS No.: 94-36-0 EC No.: 202-327-6	2 mg/kg bw/day	① DNEL worker ② Long-term - oral, systemic effects

Substance name	PNEC value	① PNEC type
dibenzoyl peroxide CAS No.: 94-36-0 EC No.: 202-327-6	0.00002 mg/L	① PNEC aquatic, freshwater
dibenzoyl peroxide CAS No.: 94-36-0 EC No.: 202-327-6	0.000002 mg/L	① PNEC aquatic, marine water

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Substance name	PNEC value	① PNEC type
dibenzoyl peroxide CAS No.: 94-36-0 EC No.: 202-327-6	0.35 mg/L	① PNEC sewage treatment plant
dibenzoyl peroxide CAS No.: 94-36-0 EC No.: 202-327-6	0.013 mg/kg	① PNEC sediment, freshwater
dibenzoyl peroxide CAS No.: 94-36-0 EC No.: 202-327-6	0.001 mg/kg	① PNEC sediment, marine water

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment. Provide adequate ventilation as well as local exhaust at critical locations.

8.2.2 Personal protection equipment



Eye/face protection:

Recommendation: Eye glasses with side protection (EN 166)

Skin protection:

Tested protective gloves must be worn (EN ISO 374).

Suitable material: NBR (Nitrile rubber), IIR (Butyl rubber)

Thickness of the glove material: $\geq 0,5$ mm

Breakthrough time: ≥ 480 min

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. Check leak tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. Recommendation: Draw up and observe skin protection programme.

Respiratory protection:

If workplace limits are exceeded, a respiratory protection approved for this particular job must be worn.

Suitable respiratory protection apparatus: Combination filtering device, Filter type A-P2.

Other protection measures:

Wear suitable protective clothing (EN 340).

8.2.3 Environmental exposure controls

No data available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state: solid, pasty

Colour: white

Odour: not determined

Safety relevant basic data

Parameter	Value	at	① Method ② Remark
pH	not applicable		
Melting point	not applicable		
Freezing point	not applicable		
Initial boiling point and boiling range	not applicable		② (decomposition)
Decomposition temperature	50 °C		② SADT
Flash point	not determined		

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Parameter	Value	at	① Method ② Remark
Evaporation rate	not determined		
Auto-ignition temperature	not applicable		
Upper/lower flammability or explosive limits	not determined		
Vapour pressure	not determined		
Vapour density	not determined		
Density	1.1 g/cm ³	20 °C	
Relative density	not determined		
Bulk density	not applicable		
Water solubility	not determined	20 °C	
Partition coefficient: n-octanol/water, log P (o/w)	not determined		
Dynamic viscosity	not determined		
Kinematic viscosity	not determined		

9.2 Other information

No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is combustible and can be ignited by heat, sparks, flames, or other sources of ignition (e.g. static electricity, pilot lights, or mechanical/electrical equipment).

10.2 Chemical stability

The product is chemically stable under recommended conditions of storage, use and temperature.

10.3 Possibility of hazardous reactions

No hazardous reaction when handled and stored according to provisions.

Warning! Autocatalytic decomposition reaction: See section 10.6

10.4 Conditions to avoid

Avoid: impurities, UV-radiation/sunlight, Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

10.5 Incompatible materials

impurities. Impurities may cause catalytic decomposition. Spontaneous decomposition!

10.6 Hazardous decomposition products

Decomposition takes place from temperatures above: +50 °C (Self-accelerating decomposition temperature (SADT)). Formation of: Oxygen (O₂); carbon oxides (CO_x); gases/vapours, toxic.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute oral toxicity:

Based on available data, the classification criteria are not met.

Acute dermal toxicity:

Based on available data, the classification criteria are not met.

Acute inhalation toxicity:

Based on available data, the classification criteria are not met.

Skin corrosion/irritation:

Based on available data, the classification criteria are not met.

Serious eye damage/irritation:

Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation:

May cause an allergic skin reaction.

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Germ cell mutagenicity:

Based on available data, the classification criteria are not met.

Carcinogenicity:

Based on available data, the classification criteria are not met.

Reproductive toxicity:

Based on available data, the classification criteria are not met.

STOT-single exposure:

Based on available data, the classification criteria are not met.

May cause eye irritation.

STOT-repeated exposure:

Based on available data, the classification criteria are not met.

Aspiration hazard:

Based on available data, the classification criteria are not met.

11.2 Information on other hazards

Endocrine disrupting properties:

This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

SECTION 12: Ecological information

12.1 Toxicity

dibenzoyl peroxide	CAS No.: 94-36-0	EC No.: 202-327-6
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LC₅₀: 0.06 mg/L 4 d (fish)
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EC₅₀: 0.11 mg/L 2 d (crustaceans, Daphnia magna (Big water flea))

EC₅₀: 0.06 mg/L 3 d (Algae/water plant)

EC₅₀: 35 mg/L (Bakteria)
--

Aquatic toxicity:

Very toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

Biodegradation:

Not readily biodegradable (according to OECD criteria)

12.3 Bioaccumulative potential

Bioconcentration factor (BCF):

There are no data available on the preparation/mixture itself.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

dibenzoyl peroxide	CAS No.: 94-36-0	EC No.: 202-327-6
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Results of PBT and vPvB assessment: —
--

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6 Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

12.7 Other adverse effects

No data available.

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SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste treatment options

Appropriate disposal / Product:

Dispose of waste according to applicable legislation. Consult the appropriate local waste disposal expert about waste disposal.

Appropriate disposal / Package:

Completely emptied packages can be recycled.

Other disposal recommendations:

The allocation of waste code numbers / waste names must be carried out in accordance with the European Waste Catalogue (EWC). Collect in closed and suitable containers for disposal. Do not allow to enter into surface water or drains. Waste for disposal is to be classified and labelled.

SECTION 14: Transport information

Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI-/IATA-DGR)
14.1 UN number or ID number			
UN 3077	UN 3077	UN 3077	UN 3077
14.2 UN proper shipping name			
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (DIBENZOYL PEROXIDE)			
14.3 Transport hazard class(es)			
			
9	9	9	9
14.4 Packing group			
III	III	III	III
14.5 Environmental hazards			
			MARINE POLLUTANT
14.6 Special precautions for user			
Special Provisions: not determined	Special Provisions: not determined	Special Provisions: not determined	Special Provisions: not determined
Limited Quantity (LQ): 5 kg	Limited Quantity (LQ): not determined	Limited Quantity (LQ): not determined	Limited Quantity (LQ): not determined
Excepted Quantities (EQ): not determined			
Hazard identification number (Kemler No.): 90	Classification code: M7	Classification code: M7	Classification code: M7
Classification code: M7	Remark: -	EmS-No.: F-A, S-F	Remark: -
Tunnel restriction code: (E)		Remark: -	Remark: -
Remark: -			

14.7 Maritime transport in bulk according to IMO instruments

not relevant

Additional information:

Transport as "Limited Quantity" according to chapter 3.4 ADR/RID.

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SECTION 15: Regulatory information

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

15.1.1 EU legislation

Authorisations:

Contains no substances listed in REACH Annex XIV.

Restrictions on use:

Use restriction according to REACH annex XVII, no.: 3

Other regulations (EU):

Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

The product does not contain substances of very high concern (SVHC) $\geq 0,1\%$.

VOC content (EU): 0,00 %

15.1.2 National regulations

No data available.

15.2 Chemical Safety Assessment

No data available.

SECTION 16: Other information

16.1 Indication of changes

Changes executed in version 3.1:

Section 11: Toxicological Information

Section 12: Ecological Information (non-mandatory)

General revision

Changes executed in version 3.2:

Section 15: Regulatory Information (non-mandatory)

Section 16: Abbreviations and acronyms

General revision

16.2 Abbreviations and acronyms

ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route

ATE = acute toxicity estimate

CAS = Chemical Abstracts Service

CLP = Classification, Labelling and Packaging

DMEL = Derived Minimum Effect Level

DNEL = Derived No Effect Level

EC₅₀ = Median effective concentration

ECB = European Chemicals Bureau

EEC = European Economic Community

EINECS = European Inventory of Existing Commercial Chemical Substances

ELINCS = European List of Notified Chemical Substances

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk

IC₅₀ = Inhibition concentration, 50%

IMDG = International Maritime Code for Dangerous Goods

IUCLID = International Uniform Chemical Information Database

LC₅₀ = Lethal concentration, 50%

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LD₅₀ = Median lethal dose

LC₀ = lethal concentration, 0%

LOAEL = lowest-observed-adverse-effect level

MARPOL = International Convention for the Prevention of Marine Pollution from Ships

NOAEL = No Observed Adverse Effect Level

NOEC = No Observed Effect Content

PBT = Persistent, Bioaccumulative and Toxic substance

PNEC = Predicted No-Effect Content

RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses

REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals

STP = Sewage Treatment Plant

TLV®/TWA = Threshold limit value - time-weighted average

TLV®/STEL = Threshold limit value - short-time exposure limit

VOC = Volatile Organic Compounds

vPvB = very Persistent and very Bioaccumulative

16.3 Key literature references and sources for data

European Chemicals Agency (ECHA): <https://www.echa.europa.eu>

ECHA, C&L Inventory: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database>

ECHA, Registered substances: <https://echa.europa.eu/information-on-chemicals/registered-substances>

GESTIS, Information system on hazardous substances: <https://www.gestis.dguv.de/search>

GESTIS, International Limit Values: <https://limitvalue.ifa.dguv.de>

Hörath Gefährliche Stoffe und Gemische, 8. Auflage, Dr. Angela Schulz

Safety data sheets of the manufacturers

16.4 Classification for mixtures and used evaluation method according to regulation (EC) No. 1272/2008 [CLP]

Hazard classes and hazard categories	Hazard statements	Classification procedure
Hazardous to the aquatic environment (Aquatic Acute 1)	H400: Very toxic to aquatic life.	Calculation
Hazardous to the aquatic environment (Aquatic Chronic 1)	H410: Very toxic to aquatic life with long lasting effects.	Calculation
Respiratory or skin sensitisation (Skin Sens. 1B)	H317: May cause an allergic skin reaction.	Calculation

16.5 Relevant H- and EUH-phrases

Hazard statements	
H241	Heating may cause a fire or explosion.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

16.6 Training advice

No data available.

16.7 Additional information

The information in this safety data sheet has been established to our best knowledge and was up-to-date at time of revision. The information is intended to give you advice about the safe handling of the product for storage, processing, transport and disposal. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.