

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Name of product GMK 2510 Hardener
Code-Nr. 162010

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

Recommended intended purpose(s)

Hardener

1.3. Details of the supplier of the safety data sheet**Distributor**

WEICON GmbH & Co. KG
Königsberger Str. 255, DE-48157 Münster
Phone : +49(0)251 / 9322 - 0, Fax : +49(0)251 / 9322 - 244
E-Mail : msds@weicon.de
Internet : www.weicon.de

Advice

Produktsicherheit / Product-Safety-Department
Phone +49(0)251 / 9322 - 0
Fax +49(0)251 / 9322 - 244
E-mail (competent person):
msds@weicon.de

1.4. Emergency telephone number

EMERGENCY CONTACT - UK, UAE, South Africa (24h): Tel:
++44 1865 407333 (English)
TRANSPORT EMERGENCY CONTACT - UK, UAE, South
Africa (24h): Tel: ++44 1865 407333 (English)

Manufacturer

WEICON GmbH & Co. KG
Königsberger Str. 255, DE-48157 Münster

1.4. Emergency telephone number

GIFTNOTRUF/TRANSPORTNOTRUF - Deutschland (24h):
Tel: ++49 69 222 25285 (Deutsch, Englisch)

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture**

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

Hazard classes and Hazard categories	Hazard Statements	Classification procedure
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Flam. Liq. 2	H225	
Acute Tox. 4	H302	
Acute Tox. 4	H332	
Skin Irrit. 2	H315	
Eye Irrit. 2	H319	
Resp. Sens. 1	H334	
Skin Sens. 1	H317	

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

Hazard classes and Hazard categories	Hazard Statements	Classification procedure
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STOT SE 3	H336	
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Hazard Statements

H225	Highly flammable liquid and vapour.
H302 + H332	Harmful if swallowed or if inhaled.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H336	May cause drowsiness or dizziness.

2.2. Label elements
Labelling according to Regulation (EC) No 1272/2008 [CLP/GHS]


GHS02



GHS07



GHS08

Signal word

Danger

Hazard Statements

H225	Highly flammable liquid and vapour.
H302 + H332	Harmful if swallowed or if inhaled.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H336	May cause drowsiness or dizziness.

Precautionary Statements

P102	Keep out of reach of children.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/eye protection.
P285	In case of inadequate ventilation wear respiratory protection.
P301 + P312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P341	IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P330	Rinse mouth.
P332 + P313	If skin irritation occurs: Get medical advice/attention.



Safety Data Sheet according to Regulation (EC)

No. 1907/2006 (REACH)

Printed 13.07.2018

revision 13.07.2018 (GB) Version 2.1

GMK 2510 Hardener

P337 + P313	If eye irritation persists: Get medical advice/attention.
P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P362	Take off contaminated clothing.
P370 + P378	In case of fire: Use water for extinction.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container to hazardous or special waste collection point.

Hazardous ingredients for labeling

ethyl-acetate, Methylidynetri-p-phenylene triisocyanate

Special rules for supplemental label elements for certain mixtures

Contains isocyanates. May produce an allergic reaction.

Additional information**Remark**

For industrial use only.

2.3. Other hazards

Inhalation of dust may cause irritation of the respiratory system.

Information pertaining to special dangers for human and environment

Harmful by inhalation and if swallowed.

Danger of serious damage to health by prolonged exposure.

Results of PBT and vPvB assessment

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

SECTION 3: Composition/ information on ingredients**3.1. Substances**

not applicable

3.2. Mixtures**Hazardous ingredients**

CAS No	EC No	Name	[% weight]	Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]
101-68-8	202-966-0	diphenylmethane-4,4'-diisocyanate	< 0,1	Carc. 2, H351 / Acute Tox. 4, H332 / STOT RE 2, H373 / Eye Irrit. 2, H319 / STOT SE 3, H335 / Skin Irrit. 2, H315 / Resp. Sens. 1, H334 / Skin Sens. 1, H317
108-90-7	203-628-5	chlorobenzene	< 2,5	Flam. Liq. 3, H226 / Acute Tox. 4, H332 / Aquatic Chronic 2, H411
141-78-6	205-500-4	ethyl-acetate	ca. 70	Flam. Liq. 2, H225 / Eye Irrit. 2, H319 / STOT SE 3, H336
103-71-9	203-137-6	Phenylisocyanat	< 0,05	Acute Tox. 1, H330 / Acute Tox. 4, H302 / Skin Corr. 1B, H314 / Resp. Sens. 1, H334 / Skin Sens. 1, H317 / STOT SE 3, H335 / Flam. Liq. 3, H226
2422-91-5	219-351-8	Methylidynetri-p-phenylene triisocyanate	ca. 27	Acute Tox. 2, H330 / Acute Tox. 4, H302 / Skin Irrit. 2, H315 / Eye Irrit. 2, H319 / Resp. Sens. 1, H334 / Skin Sens. 1B, H317 / STOT SE 3, H335

REACH

CAS No	Name	REACH registration number
101-68-8	diphenylmethane-4,4'-diisocyanate	01-2119457014-47

**REACH (continued)**

CAS No	Name	REACH registration number
108-90-7	chlorobenzene	01-2119432722-45
141-78-6	ethyl-acetate	01-2119475103-46
103-71-9	Phenylisocyanat	01-2119938959-13
2422-91-5	Methylidynetri-p-phenylene triisocyanate	01-2120039442-63

SECTION 4: First aid measures**4.1. Description of first aid measures****General information**

Remove moisted clothing immediately.

Take affected person into fresh air.

In case of inhalation

Ensure of fresh air.

In case of inhalation remove the casualty into fresh air and seek medical advice.

If intensive inhalation of dust seek medical treatment immediately.

In case of skin contact

In case of contact with skin wash off with soap and water.

Consult a doctor if skin irritation persists.

In case of eye contact

In case of contact with eyes rinsing with plenty of lukewarm water carefully and seek for medical treatment.

In case of ingestion

Do not induce vomiting.

Call for a doctor immediately.

4.2. Most important symptoms and effects, both acute and delayed**Physician's information / possible symptoms**

Respiratory complaints

Asthmatic complaints

Gastrointestinal complaints

skin irritation

Physician's information / possible dangers

allergic reactions

4.3. Indication of any immediate medical attention and special treatment needed**Treatment (Advice to doctor)**

Monitor circulation.

Keep under medical supervision for at least 48 hours.

Symptoms may not occur until several hours.

SECTION 5: Firefighting measures**5.1. Extinguishing media****Suitable extinguishing media**

Foam

ABC powder

Carbon dioxide

sand

Unsuitable extinguishing media

Full water jet



5.2. Special hazards arising from the substance or mixture

In case of fire formation of dangerous gases possible.

Nitrogen oxides (NO_x)
Carbon monoxide (CO)
Carbon dioxide (CO₂)
Hydrogen cyanide (HCN)

5.3. Advice for firefighters

Special protective equipment for fire-fighters

Use breathing apparatus with independent air supply (isolated).

Fire-fighting operations, rescue and clearing work under effect of combustion and smoulder gases just may be done with breathing apparatus.

Do not inhale explosion and/or combustion gases.

Additional information

Vapours are heavier than air and will spread on the ground.

Cool endangered containers with water spray jet.

Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Ensure adequate ventilation.

Use personal protective clothing.

Keep away sources of ignition.

Use breathing apparatus if exposed to vapours/dust/aerosol.

6.2. Environmental precautions

Do not discharge into the drains/surface waters/groundwater.

Do not discharge into the subsoil/soil.

6.3. Methods and material for containment and cleaning up

Protect from water.

After approx. 1 hour, transfer to suitable drum containers. Do not close these (likelihood of CO₂ production). Keep damp in the open air in a safe place for several days.

Ventilate area concerned

Take up with absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr).

After taking up the material dispose according to regulation.

Additional Information

Sort out leaky cans and dispose according to regulations.

6.4. Reference to other sections

Safe handling: see section 7

Disposal: see section 13

Personal protection equipment: see section 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Care for thoroughly room ventilation, if necessary use in well ventilated area with local exhaust ventilation at workplace.

Provide good room ventilation even at ground level (vapours are heavier than air).

Take the usual precautions when handling with chemicals.

**General protective measures**

Avoid contact with eyes and skin
Do not inhale gases/vapours/aerosols.
Do not inhale dust.
Ensure sufficient ventilation.

Hygiene measures

At work do not eat, drink and smoke.
Work in rooms with good ventilation.
Keep separated from food and feed.
Wash hands before breaks and after work.

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking
Protect from heat and sunlight.
Vapours can form an explosive mixture with air.
Take precautionary measures against static discharges.

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

Keep only in original container.

Advice on storage compatibility

Do not store with oxidizing agents.
Do not store together with animal feedstuffs.
Do not store together with food.
Keep away from water.

Further information on storage conditions

Store at +5 till +25 °C.
Keep container tightly closed and store at cool and aired place.
Protect from heat and direct solar radiation.
Store in a dry place.

7.3. Specific end use(s)**Recommendation(s) for intended use**

See section 1.2

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Ingredients with occupational exposure limits to be monitored**

CAS No	Name	Code	[mg/m ³]	[ppm]	Remark
110-82-7	Cyclohexane	8 hours	350	1050	EH40/2005
		Short-term	1050	300	
141-78-6	Ethyl acetate	8 hours		200	EH40/2005
		Short-term		400	

Indicative occupational exposure limit values (91/322/EEC, 2000/39/EC, 2006/15/EC or 2009/161/EU)

CAS No	Name	Code	[mg/m ³]	[ppm]	Remark
108-90-7	monochlorobenzene	8 hours	23	5	
		Short-term	70	15	

DNEL-/PNEC-values



Safety Data Sheet according to Regulation (EC)

No. 1907/2006 (REACH)

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revision 13.07.2018 (GB) Version 2.1

GMK 2510 Hardener**DNEL worker**

CAS No	Substance name	Value	Code	Remark
141-78-6	ethyl-acetate	1468 mg/m ³	DNEL acute inhalative (local)	
		1468 mg/m ³	DNEL acute inhalative (systemic)	
		734 mg/m ³	DNEL long-term inhalative (local)	
		63 mg/kg	DNEL long-term dermal (systemic)	
2422-91-5	Methyldynetri-p-phenylene triisocyanate	0,048 mg/m ³	DNEL long-term inhalative (local)	
		0,096 mg/m ³	DNEL acute inhalative (local)	

PNEC

CAS No	Substance name	Value	Code	Remark
141-78-6	ethyl-acetate	0,24 mg/l	PNEC aquatic, freshwater	
		0,024 mg/l	PNEC aquatic, marine water	
		0,115 mg/kg	PNEC sediment, marine water	
		0,34 mg/kg	PNEC sediment, freshwater	
2422-91-5	Methyldynetri-p-phenylene triisocyanate	100 mg/l	PNEC sewage treatment plant (STP)	
		0,1 mg/l	PNEC aquatic, freshwater	
		0,01 mg/l	PNEC aquatic, marine water	
		1670 mg/kg	PNEC sediment, marine water	
		16700 mg/kg	PNEC sediment, freshwater	
		3330 mg/kg	PNEC soil, freshwater	

Additional advice

The statutory local and national regulations have to be observed.

8.2. Exposure controls**Respiratory protection**

In case of insufficient ventilation or long-term effect use breathing apparatus.

Breathing apparatus in the event of aerosol or mist formation.

Short-term: filter apparatus, filter A2/P2, otherwise environment-independent breathing apparatus.

Hand protection

In the cases of special applications, it is recommended to check the chemical resistance with the manufacturer of the gloves.

In the cases of special applications, it is recommended to check the chemical resistance with the manufacturer of the gloves.

Glove material specification [make/type, thickness, permeation time/life, wetting resistance]: butyl rubber, 0,7mm; 480min

Eye protection

tightly fitting goggles

Other protection measures

protective clothing

Appropriate engineering controls

Care for thoroughly room ventilation, if necessary use in well ventilated area with local exhaust ventilation at workplace.

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties****Appearance**

liquid

Colour

yellowy-brown

Odour

fruity

Odour threshold

No data available

Important health, safety and environmental information

	Value	Temperature	at	Method	Remark
pH value	not determined				
Acid number	Not required				
boiling point	ca. 77 °C				
melting point	not determined				
Flash point	ca. -4 °C			DIN 51755	
Vapourisation rate	No data available				
Flammable (solid)	not applicable				
Flammability (gas)	not applicable				
Ignition temperature	ca. 460 °C				
Self ignition temperature	not determined				
Lower explosion limit	2,1 Vol-%				
Upper explosion limit	11,5 Vol-%				
Vapour pressure	ca. 97 hPa	20 °C			
Relative density	ca. 1 g/cm ³	20 °C		DIN 53217	
Bulk density	No data available				
Vapour density	No data available				
Solubility in water					Reacts with water
Solubility/other	not determined				
Partition coefficient n-octanol/water (log P O/W)	not determined				
Decomposition temperature	not determined				
Viscosity dynamic	ca. 3 mPa*s	20 °C		DIN 53015	

**GMK 2510 Hardener**

	Value	Temperature	at	Method	Remark
Viscosity kinematic	not determined				

Oxidising properties

No data available

Explosive properties

The product is considered non-explosive ; nevertheless explosive vapour/air mixtures can be generated .

9.2. Other information

No information available.

SECTION 10: Stability and reactivity**10.1. Reactivity**

No information available.

10.2. Chemical stability

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

10.3. Possibility of hazardous reactions

Exothermic reaction with alcohols and amines.

Danger of bursting container.

Reactions with oxidising agents.

Reactions with water.

10.4. Conditions to avoid

In case of temperature increase (heating): explosion risk.

Keep away from heat.

10.5. Incompatible materials**Substances to avoid**

Alcohols

Amines

Oxidising agent

Water

10.6. Hazardous decomposition products

Gases / vapours, highly flammable

Carbon monoxide

Carbon dioxide

Thermal decomposition

Remark No decomposition if used as directed.

SECTION 11: Toxicological information**11.1. Information on toxicological effects****Acute toxicity/Irritation/Sensitization**

	Value/Validation	Species	Method	Remark
LD50 acute oral	1504			ATE



Safety Data Sheet according to Regulation (EC)

No. 1907/2006 (REACH)

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revision 13.07.2018 (GB) Version 2.1

GMK 2510 Hardener

	Value/Validation	Species	Method	Remark
LD50 acute dermal	> 5000			ATE
LC50 acute inhalation	1,62 ()		dust/mist	ATE
Skin irritation	irritant			
Eye irritation	irritant			
Skin sensitization	sensitizing			
Sensitization respiratory system	sensitizing			

Subacute Toxicity - Carcinogenicity

	Value	Species	Method	Validation
Mutagenicity				No experimental in-vitro information available.
Reproduction-Toxicity				No indications of toxic effects were observed in reproduction studies in animals.
Carcinogenicity				No indications of carcinogenic effects are available from long-term trials.

Specific target organ toxicity (single exposure)

May cause drowsiness or dizziness.

Experiences made from practice

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Risk of strong health injuries in case of long-term exposition.

Sensitization through inhalation possible.

Sensitization through skin contact possible.

May cause drowsiness or dizziness.

Irritates eyes and skin.

Additional information

The product is to be handled with the caution usual with chemicals.

Other hazardous properties may not be excluded.

The product has not been tested. The information is derived from the properties of the individual components.

SECTION 12: Ecological information**12.1. Toxicity****Ecotoxicological effects**

	Value	Species	Method	Validation
Fish	NOEC < 9,65 mg/l (32 d)	Pimephales promelas		CAS: 141-78-6
Daphnia	EC 50 20 mg/l (48 h)	Daphnia magna		CAS: 108-90-7
Algae	ErC50 12,5 mg/l (96 h)	Selenastrum capricornutum		CAS: 108-90-7

**12.2. Persistence and degradability**

	Elimination rate	Method of analysis	Method	Validation
Biological degradability	41,5 % (28 d) CAS: 2422-91-5		OECD 301 F	not readily degradable
Degradability	79 % (20 d) CAS: 141-78-6		OECD 301 D	Moderately/partially biodegradable

12.3. Bioaccumulative potential

Because of its consistency the product cannot be dispersed in the environment. Adverse ecological effects are therefore unlikely on the basis of current knowledge.

12.4. Mobility in soil

No information available.

12.5. 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. Other adverse effects**General regulation**

Do not allow uncontrolled leakage of product into the environment.

Product is not allowed to be discharged into aquatic environment, drains or sewage treatment plants.

The ecotoxic effect of the product has not been tested. The information on this is given on the basis of details in the literature.

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Waste code No.**

08 04 09*

Name of waste

waste adhesives and sealants containing organic solvents or other hazardous substances

Wastes marked with an asterisk are considered to be hazardous waste pursuant to Directive 2008/98/EC on hazardous waste.

Recommendations for the product

Remove in accordance with local official regulations.

Dispose of as hazardous waste.

Recommendations for packaging

Dispose of according to the local waste regulations.

Packaging that cannot be cleaned should be disposed of like the product.

General information

Assignment to a waste code number / waste identification according to the EWC is to be carried out on a sector or process-specific basis.

! SECTION 14: Transport information

	ADR/RID	IMDG	IATA-DGR
14.1. UN number	1993	1993	1993
14.2. UN proper shipping name	FLAMMABLE LIQUID, N.O. S. (ethyl-acetate, chlorobenzene)	FLAMMABLE LIQUID, N.O.S. (ethyl-acetate, chlorobenzene)	Flammable liquid, n.o.s. (ethyl-acetate, chlorobenzene)



	ADR/RID	IMDG	IATA-DGR
14.3. Transport hazard class(es)	3	3	3
14.4. Packing group	II	II	II
14.5. Environmental hazards	No	No	No

14.6. Special precautions for user

No information available.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

Land and inland navigation transport ADR/RID

Hazard label(s) 3

tunnel restriction code D/E

Special provisions 640D

Classification code F1

! SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****VOC standard****VOC content** 73 %**VOC value** ca.730 g/L**15.2. Chemical Safety Assessment**

Chemical safety assessments for substances in this mixture were not carried out.

! SECTION 16: Other information**! Recommended uses and restrictions**

National and local regulations concerning chemicals shall be observed.

For industrial use only.

Further information

Each user is responsible for the implementation of the national special regulations.

The information contained herein is based on the state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.

Please observe the following disclaimer! --- Our safety data sheets have been compiled according to effective EU-directives, WITHOUT taking into account the special national directives concerning the handling of hazardous substances.

Indication of changes: "!" = Data changed compared with the previous version. Previous version: 2.0

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.



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GMK 2510 Hardener

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- H351 Suspected of causing cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).
- H373 May cause damage to organs (or state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).
- H411 Toxic to aquatic life with long lasting effects.