

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 05.02.2021

Version number 24

Revision: 05.02.2021

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

1.1 Product identifier

- Trade name: **Repair Resin, Repair Kit**
- Article number: 30210, 30224, 30233, 30225, 30205, 30206
- UFI: X173-T0VJ-400V-FCC9

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

- Application of the substance / the mixture
- No further relevant information available.
- Reaction resin
Knife filler/ Surfacer
Polyester resin

1.3 Details of the supplier of the safety data sheet

- Manufacturer/Supplier: AKEMI chemisch technische Spezialfabrik GmbH
Lechstrasse 28
D 90451 Nürnberg
- Tel. +49(0)911-642960
Fax. +49(0)911-644456
e-mail info@akemi.de

- Further information obtainable from: see manufacturer / supplier

1.4 Emergency telephone number:

Product Safety Department AKEMI chemisch technische Spezialfabrik GmbH
Tel. +49(0)911-64296-59
Reachable during the following office hours:
Monday – Thursday from 07:30 a.m. to 16:30 p.m.
Friday from 07:30 a.m. to 13:30 p.m.
+44 (171) 635 91 91
National Poison Inform. Centre
Medical Toxicology Unit
Avalonley Road
London SE14 5ER

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

- | | | |
|-------------------|-------|--|
| Flam. Liq. 3 | H226 | Flammable liquid and vapour. |
| Skin Irrit. 2 | H315 | Causes skin irritation. |
| Eye Irrit. 2 | H319 | Causes serious eye irritation. |
| Skin Sens. 1 | H317 | May cause an allergic skin reaction. |
| Repr. 2 | H361d | Suspected of damaging the unborn child. |
| STOT RE 2 | H373 | May cause damage to the hearing organs through prolonged or repeated exposure. |
| Aquatic Chronic 2 | H411 | Toxic to aquatic life with long lasting effects. |
- Response: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
- Storage: Store in a well-ventilated place. Keep cool.

2.2 Label elements

- Labelling according to Regulation (EC) No 1272/2008
- Hazard pictograms

The product is classified and labelled according to the CLP regulation.



GHS02 GHS07 GHS08 GHS09

Signal word

Warning

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· Hazard-determining components of labelling:

styrene
maleic anhydride
cobalt(II) 2-ethylhexanoate
Reaction mass of 2,2'-[(4-methylphenyl)imino]bisethanol and 2-[[2-(2-hydroxyethoxy)ethyl](4-methylphenyl)amino]-ethanol

· Hazard statements

H226 Flammable liquid and vapour.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H361d Suspected of damaging the unborn child.
H373 May cause damage to the hearing organs through prolonged or repeated exposure.

· Precautionary statements

H411 Toxic to aquatic life with long lasting effects.
P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P103 Read carefully and follow all instructions.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260 Do not breathe vapours.
P273 Avoid release to the environment.
P280 Wear protective gloves / eye protection.
P302+P352 IF ON SKIN: Wash with plenty of 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.
P314 Get medical advice/attention if you feel unwell.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **2.3 Other hazards**

During processing and product hardening the network generator is released as fume. Consequently, take care for adequate air conditioning and for fume exhaustion on request.

· Results of PBT and vPvB assessment

· PBT: Not applicable.
· vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

· **3.2 Chemical characterisation: Mixtures**

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

· Dangerous components:

CAS: 25013-15-4 EINECS: 246-562-2 Reg.nr.: 01-2119622074-50-0000	vinyltoluene Flam. Liq. 3, H226 Asp. Tox. 1, H304 Aquatic Chronic 2, H411 Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319	12.5-25%
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CAS: 100-42-5 EINECS: 202-851-5 Index number: 601-026-00-0 Reg.nr.: 01-2119457861-32	styrene Flam. Liq. 3, H226 Repr. 2, H361d; STOT RE 1, H372; Asp. Tox. 1, H304 Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335 Aquatic Chronic 3, H412	<10%
CAS: 7779-90-0 EINECS: 231-944-3 Index number: 030-011-00-6 Reg.nr.: 01-2119485044-40-0000	trizinc bis(orthophosphate) Aquatic Acute 1, H400; Aquatic Chronic 1, H410	1-5%
EC number: 911-490-9 Reg.nr.: 01-2119979579-10	Reaction mass of 2,2'-[(4-methylphenyl)imino]bisethanol and 2-[[2-(2-hydroxyethoxy)ethyl](4-methylphenyl)amino]-ethanol Eye Dam. 1, H318 Acute Tox. 4, H302; Skin Irrit. 2, H315; Skin Sens. 1, H317 Aquatic Chronic 3, H412	<1%
CAS: 38668-48-3 EINECS: 254-075-1 Reg.nr.: 01-2119980937-17	1,1'-(p-tolylimino)dipropyl-2-ol Acute Tox. 2, H300 Eye Irrit. 2, H319 Aquatic Chronic 3, H412	<1%
CAS: 108-31-6 EINECS: 203-571-6 Index number: 607-096-00-9 Reg.nr.: 01-2119472428-31	maleic anhydride Resp. Sens. 1, H334; STOT RE 1, H372 Skin Corr. 1B, H314; Eye Dam. 1, H318 Acute Tox. 4, H302; Skin Sens. 1A, H317	<1%

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

SECTION 4: First aid measures**· 4.1 Description of first aid measures**

- General information: Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
Take affected persons out into the fresh air.
Position and transport stably in side position.
- After inhalation: Supply fresh air. If required, provide artificial respiration. Keep patient warm.
Consult doctor if symptoms persist.
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: Do not induce vomiting; call for medical help immediately.
Drink plenty of water and provide fresh air. Call for a doctor immediately.
- Information for doctor: With reference to section 2 the formulation contains styrene in the indicated mass concentration range. Styrene fumes will preferably be incorporated by inhalation via respiratory tract, skin resorption is currently considered as an inferior way of incorporation. In case of inhalation styrene is absorbed in a 60-90% range. Distribution in organism occurs rapidly, the maximum blood concentration can be analyzed after one hour after incorporation. Styrene exposition affects skin, mucous membranes, and central nervous system (CNS).
Acute damages / risks to health:
In case of styrene poisoning mainly damages to and interactions with central nervous system (CNS) arise. In concentration ranges above 200 ml/m3 symptoms such as fatigue, nausea, imbalance and prolonged response times are observed.
Chronical health risks:
Effects at central and peripheral nervous system and respiratory tract are evident in literature.

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Main health risks are:

- prolonged response times
- reduced cognitive performance, partial amnesia
- retardation of nervous impulse transition speed
- disturbances of pulmonary function

Symptoms in intoxication with (aromatic) hydrocarbons (dosis letalis about 30 g)

a) In acute intoxication: headache, dizziness, euphoria, gastro-intestinal dysfunction, state of excitement, coma.

b) In chronic intoxication: myelotoxic damage, fatigue, dizziness, emaciation, cardiac palpitation after physical exercise, leucopenia, anemia, leukosis.

Therapy in hydrocarbons intoxication: In case of inhalation provision of fresh air; in case of peroral intake administration of Carbo medicinalis; only after intubation conduct of gastrolavage in application of Carbo medicinalis; in case of cramps administration of Diazepam 20 mg intravenously.

· **4.2 Most important symptoms and effects, both acute and delayed**

Headache

Profuse sweating

Nausea

Dizziness

Breathing difficulty

· **Hazards**

Danger of impaired breathing.

Skin contact with polyester and epoxy resin solutions as ingredient of the product should be avoided due to risks of skin irritations or allergic skin appearances. If occasional hand contact can not be avoided, protection gloves, proper protection ointments and protective agents generating a protective layer on the skin were applied.

· **4.3 Indication of any immediate medical attention and special treatment needed**

If swallowed, gastric irrigation with added, activated carbon.

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**

· **Suitable extinguishing agents:**

CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· **For safety reasons unsuitable extinguishing agents:**

Water with full jet

· **5.2 Special hazards arising from the substance or mixture**

Formation of toxic gases is possible during heating or in case of fire.

In case of fire, the following can be released:

Carbon monoxide (CO)

Nitrogen oxides (NOx)

Hydrogen cyanide (HCN)

Under certain fire conditions, traces of other toxic gases cannot be excluded.

· **5.3 Advice for firefighters**

· **Protective equipment:**

Wear self-contained respiratory protective device.

Do not inhale explosion gases or combustion gases.

Wear fully protective suit.

· **Additional information**

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

Collect contaminated fire fighting water separately. It must not enter the sewage system.

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SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Keep away from ignition sources.

· **6.2 Environmental precautions:**

Use respiratory protective device against the effects of fumes/dust/aerosol.
Prevent seepage into sewage system, workpits and cellars.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.

· **6.3 Methods and material for containment and cleaning up:**

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

Ensure adequate ventilation.

Dispose of the material collected according to regulations.

· **6.4 Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Keep receptacles tightly sealed.

Store in cool, dry place in tightly closed receptacles.

Keep away from heat and direct sunlight.

Prevent formation of aerosols.

Use only in well ventilated areas.

Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).

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

Keep ignition sources away - Do not smoke.

Protect from heat.

Protect against electrostatic charges.

Fumes can combine with air to form an explosive mixture.

· **7.2 Conditions for safe storage, including any incompatibilities**

· **Storage:**

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

Store in a cool location.

Store only in the original receptacle.

Prevent any seepage into the ground.

· **Information about storage in one common storage facility:**

Do not store together with acids.

Do not store together with alkalis (caustic solutions).

Store away from oxidising agents.

Store away from foodstuffs.

· **Further information about storage conditions:**

Protect from heat and direct sunlight.

Store in cool, dry conditions in well sealed receptacles.

Keep container tightly sealed.

Store receptacle in a well ventilated area.

· **Storage class:**

3

· **7.3 Specific end use(s)**

No further relevant information available.

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SECTION 8: Exposure controls/personal protection**8.1 Control parameters**

Additional information about design of technical facilities:

No further data; see item 7.

Ingredients with limit values that require monitoring at the workplace:

100-42-5 styrene

WEL	Short-term value: 1080 mg/m ³ , 250 ppm
	Long-term value: 430 mg/m ³ , 100 ppm

108-31-6 maleic anhydride

WEL	Short-term value: 3 mg/m ³
	Long-term value: 1 mg/m ³
Sen	

DNELs**25013-15-4 vinyltoluene**

Oral	DNEL (Langzeit-wiederholt)	0.0833 mg/kg bw/day (BEV)
Inhalative	DNEL (Langzeit-wiederholt)	5.83 mg/m ³ Air (ARB)
		1.04 mg/m ³ Air (BEV)

100-42-5 styrene

Oral	DNEL (Langzeit-wiederholt)	2.1 mg/kg bw/day (BEV)
Dermal	DNEL (Langzeit-wiederholt)	406 mg/kg bw/day (ARB)
		343 mg/kg bw/day (BEV)
Inhalative	DNEL (Kurzzeit-akut)	289-306 mg/m ³ Air (ARB)
		174.25-182.75 mg/m ³ Air (BEV)
	DNEL (Langzeit-wiederholt)	85 mg/m ³ Air (ARB)
		10.2 mg/m ³ Air (BEV)

7779-90-0 trizinc bis(orthophosphate)

Oral	DNEL (Langzeit-wiederholt)	0.83 mg/kg bw/day (BEV)
Dermal	DNEL (Langzeit-wiederholt)	83 mg/kg bw/day (ARB)
		83 mg/kg bw/day (BEV)
Inhalative	DNEL (Langzeit-wiederholt)	5 mg/m ³ Air (ARB)
		2.5 mg/m ³ Air (BEV)

Reaction mass of 2,2'-[(4-methylphenyl)imino]bisethanol and 2-[[2-(2-hydroxyethoxy)ethyl](4-methylphenyl)amino]-ethanol

Oral	DNEL (Langzeit-wiederholt)	0.83 mg/kg bw/day (BEV)
Dermal	DNEL (Langzeit-wiederholt)	1.4 mg/kg bw/day (ARB)
		0.83 mg/kg bw/day (BEV)
Inhalative	DNEL (Langzeit-wiederholt)	9.8 mg/m ³ Air (ARB)
		2.9 mg/m ³ Air (BEV)

38668-48-3 1,1'-(p-tolylimino)dipropen-2-ol

Oral	DNEL (Langzeit-wiederholt)	0.3 mg/kg bw/day (BEV)
Dermal	DNEL (Langzeit-wiederholt)	0.7 mg/kg bw/day (ARB)
		0.3 mg/kg bw/day (BEV)
Inhalative	DNEL (Langzeit-wiederholt)	2.47 mg/m ³ Air (ARB)
		0.4 mg/m ³ Air (BEV)

108-31-6 maleic anhydride

Oral	DNEL (Langzeit-wiederholt)	0.06 mg/kg bw/day (BEV)
Dermal	DNEL (Kurzzeit-akut)	0.04 mg/kg bw/day (ARB)

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Inhalative	DNEL (Langzeit-wiederholt)	0.2 mg/kg bw/day (ARB)
		0.1 mg/kg bw/day (BEV)
	DNEL (Kurzzeit-akut)	0.95 mg/m³ Air (ARB)
	DNEL (Langzeit-wiederholt)	0.19-0.4 mg/m³ Air (ARB)
		0.08 mg/m³ Air (BEV)

· PNECs

25013-15-4 vinyltoluene

PNEC (wässrig)	17 mg/l (KA)
	0.002 mg/l (MW)
	0.0498 mg/l (SW)
PNEC (fest)	0.0471 mg/kg Trockengew (BO)
	0.025 mg/kg Trockengew (MWS)
	1.245 mg/kg Trockengew (SWS)

100-42-5 styrene

PNEC (wässrig)	5 mg/l (KA)
	0.014 mg/l (MW)
	0.028 mg/l (SW)
	0.04 mg/l (WAS)
PNEC (fest)	0.2 mg/kg Trockengew (BO)
	0.307 mg/kg Trockengew (MWS)
	0.614 mg/kg Trockengew (SWS)

Reaction mass of 2,2'-[(4-methylphenyl)imino]bisethanol and 2-[[2-(2-hydroxyethoxy)ethyl](4-methylphenyl)amino]-ethanol

PNEC (wässrig)	10 mg/l (KA)
	0.005 mg/l (MW)
	0.048 mg/l (SW)
PNEC (fest)	0.21 mg/kg Trockengew (BO)
	0.12 mg/kg Trockengew (MWS)
	1.2 mg/kg Trockengew (SWS)

38668-48-3 1,1'-(p-tolylimino)dipropen-2-ol

PNEC (wässrig)	199.5 mg/l (KA)
	0.0017 mg/l (MW)
	0.017 mg/l (SW)
	0.17 mg/l (WAS)
PNEC (fest)	0.005 mg/kg Trockengew (BO)
	0.00782 mg/kg Trockengew (MWS)
	0.0782 mg/kg Trockengew (SWS)

108-31-6 maleic anhydride

PNEC (wässrig)	44.6 mg/l (KA)
	0.00446 mg/l (MW)
	0.0446 mg/l (SW)
	0.4281 mg/l (WAS)
PNEC (fest)	0.0415 mg/kg Trockengew (BO)
	0.0334 mg/kg Trockengew (MWS)
	0.334 mg/kg Trockengew (SWS)

· Additional information:

The lists valid during the making were used as basis.

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· **8.2 Exposure controls**

· Personal protective equipment:

· General protective and hygienic measures:

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

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.

Do not inhale gases / fumes / aerosols.

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

Use skin protection cream for skin protection.

Clean skin thoroughly immediately after handling the product.

· 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.

Short term filter device:

Filter A/P2

· Protection of hands:

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

After use of gloves apply skin-cleaning agents and skin cosmetics.

Skin protection agent recommendation for preventive skin shelter without use of protective gloves:

ARRETIL (<http://www.stoko.com>)

Skin protection agent recommendation for preventive skin shelter in application and combination of protective gloves:

STOKO EMULSION (<http://www.stoko.com>)



Protective gloves

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

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

The protection gloves to be used have to comply with the specifications of the directive 89/686/EC and the directive derived decree EN374, respectively, e.g. the above listed protection glove type. The mentioned permeation times' data were generated and verified with material samples of the recommended protection glove type in the scope of laboratory analyses of the company KCL GmbH in compliance with EN374.

This recommendation refers exclusively to the material safety data sheet referenced product delivered by Akemi and the indicated field of application. In case of product dilution or in case of mixture with different substances or chemicals, and in condition of EN374 deviation the producer of CE-approved protection gloves must be contacted for detailed information (e.g., KCL GmbH, Germany, 36124 Eichenzell, internet: <http://www.kcl.de>).

Skin protection recommendation for skin cleaning after product handling:

Kresto Classic (<http://debstoko.com>)

Skin protection agent recommendation for skin aftercare:

STOKO VITAN (<http://www.stoko.com>)

· Material of gloves

Butyl rubber, BR

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.

· 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.

Value for the permeation: Level ≤ 2, 30 min

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- For the permanent contact gloves made of the following materials are suitable:
Butyl rubber, BR
Butoject (KCL, Art_No. 897, 898)
- As protection from splashes gloves made of the following materials are suitable:
Butyl rubber, BR
Butoject (KCL, Art_No. 897, 898)
- Not suitable are gloves made of the following materials:
Chloroprene rubber, CR
Leather gloves
Strong material gloves
- Eye protection:
 Tightly sealed goggles
- Body protection:
Solvent resistant protective clothing

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

General Information

Appearance:

Form:

Fluid

Colour:

greengrey

Odour:

Specific type

pH-value:

Not applicable

Change in condition

Melting point/freezing point:

Undetermined.

Initial boiling point and boiling range:

145.2 °C

Flash point:

32 °C

Ignition temperature:

480 °C

Auto-ignition temperature:

Product is not selfigniting.

Explosive properties:

Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

Explosion limits:

Lower:

1.2 Vol %

Upper:

8.9 Vol %

Vapour pressure at 20 °C:

6 hPa

Density at 20 °C:

1.36 g/cm³

Solubility in / Miscibility with water:

Not miscible or difficult to mix.

Viscosity:

Dynamic at 20 °C:

2,500 mPas

Kinematic:

Not determined.

Solvent content:

Organic solvents:

25.4 %

Solids content:

32.5 %

9.2 Other information

No further relevant information available.

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SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
No decomposition if used and stored according to specifications.
- **10.3 Possibility of hazardous reactions** Exothermic polymerisation.
Reacts with peroxides and other radical forming substances.
Reacts with strong alkali.
Reacts with strong acids.
Reacts with strong oxidising agents.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** Carbon monoxide and carbon dioxide
Hydrogen cyanide (prussic acid)
Nitrogen oxides (NOx)
Possible in traces.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.

· LD/LC50 values relevant for classification:

ATE (Acute Toxicity Estimates)

Oral	LD50	>11,737-<93,897 mg/kg (rat)
Inhalative	LC50/4 h	>41.3 mg/l

25013-15-4 vinyltoluene

Oral	LD50	3,375 mg/kg (rat)
	NOAEL	600 mg/kg (rat)
Dermal	LD50	4,585 mg/kg (rabbit)
Inhalative	LC50/4h	>16,891 mg/m3 (rat)
	LC50/4 h	11 mg/l (ATE)

100-42-5 styrene

Oral	LD50	>2,000 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rat) (OECD-Prüfrichtlinie 402)
Inhalative	LC50/4h	9.5 mg/m3 (mouse)
		11,800 mg/m3 (rat)
	LC50/4 h	11.8 mg/l (rat)
	NOAEC	4.34 mg/l (rat)

7779-90-0 trizinc bis(orthophosphate)

Oral	LD50	>5,000 mg/kg (rat)
Inhalative	LC50/4 h	>5.7 mg/l (rat)

Reaction mass of 2,2'-[(4-methylphenyl)imino]bisethanol and 2-[[2-(2-hydroxyethoxy)ethyl](4-methylphenyl)amino]-ethanol

Oral	LD50	619 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rat)

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Oral	LD50	>25-<200 mg/kg (rat) (OECD 423)
Dermal	LD50	>2,000 mg/kg (rabbit) (OECD 402)

108-31-6 maleic anhydride

Oral	LD50	1,090-2,620 mg/kg (rabbit) 400-480 mg/kg (rat)
Dermal	LD50	2,620 mg/kg (rabbit)
Inhalative	LC50/1h	>4.35 mg/l (rat)
	LC50/48h	138 mg/l (lem)

· Primary irritant effect:

· Skin corrosion/irritation

Causes skin irritation.

· Serious eye damage/irritation

Causes serious eye irritation.

· Respiratory or skin sensitisation

May cause an allergic skin reaction.

· Additional toxicological information:· Toxicokinetics, metabolism and distribution

After incorporation and inhalation styrene predominantly will be metabolized in the organism to mandelic and phenylglyoxylic acid and metabolites will pass through urine excretion.

· Acute effects (acute toxicity, irritation and corrosivity)

Styrene:

Artificial special nutrition in rat population, acute LD50 value, oral: 5000 mg/kg.

Inhalation, rat population, acute LC50 value (4h): 24 mg/l.

· CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Styrene

Tests for chromosome divergence:

Mouse micro-nucleus test: mutagen

Styrene:

Tests for DNA effects:

- exchange of chromatides: mutagen

- DNA chain fragmentation: mutagen

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

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

Suspected of damaging the unborn child.

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

May cause damage to the hearing organs through prolonged or repeated exposure.

· Aspiration hazard

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

SECTION 12: Ecological information· **12.1 Toxicity**· Aquatic toxicity:**25013-15-4 vinyltoluene**

EC50	2.6 mg/l (Bluegill.)
EC50/48h	1.3 mg/l (daphnia magna)
ErC50/72h	4.3 mg/l (Pseudokirchneriella subcapitata)
NOEC	0.563 mg/l (piscis)
NOELR/72h	1.6 mg/l (green alge)
NOEC/21d	0.32 mg/l (daphnia magna)
	0.563 mg/l (piscis)
EC10	0.25 mg/l (Desmodesmus subspicatus)
EC50/72h	0.319 mg/l (Desmodesmus subspicatus)

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LC50/96h	5.2 mg/l (Fathead minnow) 2.6 mg/l (selenastrum capricornutum) 5.2-23.4 mg/l (piscis) 5.2 mg/l (pimephales promelas)
100-42-5 styrene	
EC50/96h	6.3 mg/l (Pseudokirchneriella subcapitata)
EC50	500 mg/l (BES) (ISO Vorschrift 8192-1986 E) 5.5 mg/l (Photobac. phosphoreum)
IC50/72h	4.9 mg/l (green alge) 1.4 mg/l (selenastrum capricornutum)
IC5/8d	>200 mg/l (Scenedesmus quadricauda)
EC10/16h	72 mg/l (pseudomonas putida)
EC50/16h	>72 mg/l (pseudomonas putida)
EC50/8d	>200 mg/l (Scenedesmus quadricauda)
EC50/72u	>1-<10 mg/l (green alge)
EC20/0.5h	140 mg/l (BES) (OECD 209)
NOEC/21d	1.01 mg/l (daphnia magna)
EC10	0.28 mg/l (Pseudokirchneriella subcapitata) (EPA OTS 797.1050)
EC50/48h	0.56 mg/l (green alge) 3.3-7.4 mg/l (daphnia magna)
EC50/72h	0.46-4.3 mg/l (Pseudokirchneriella subcapitata)
LC50/96h	>1-<10 mg/l (piscis) 19.03-33.53 mg/l (Iem) 3.24-4.99 mg/l (pimephales promelas) 6.75-14.5 mg/l (Pimephales promelas) 58.75-95.32 mg/l (poecilia reticulata)
LC50/72h	4.9 mg/l (green alge)
7779-90-0 trizinc bis(orthophosphate)	
EC50/48h	28.2 mg/l (daphnia magna)
ErC50/72h	<0.3 mg/l (Desmodesmus subspicatus)
EC50/48h	<1.7 mg/l (daphnia magna)
EC50/72h	0.28 mg/l (Selenastrum capricornutum)
LC50/96h	<5.1 mg/l (Oncorhynchus mykiss)
Reaction mass of 2,2'-[(4-methylphenyl)imino]bisethanol and 2-[[2-(2-hydroxyethoxy)ethyl](4-methylphenyl)amino]-ethanol	
EC50/48h	48 mg/l (daphnia magna)
EC50/72h	>100 mg/l (Pseudokirchneriella subcapitata)
LC50/96h	>100 mg/l (Cyprinus carpio)
38668-48-3 1,1'-(p-tolylimino)dipropen-2-ol	
EC50/48h	28.8 mg/l (daphnia magna) (OECD 202)
EC20/0.5h	>1,995 mg/l (BES) (OECD 209)
EC50/72h	245 mg/l (Desmodesmus subspicatus) (OECD 201)
LC50/96h	17 mg/l (Brachydanio rerio)
108-31-6 maleic anhydride	
EC50/24h	316-330 mg/l (daphnia magna)
EC50	77 mg/l (daphnia magna)
EC10/18h	44.6 mg/l (pseudomonas putida)

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EC50/48h	42.81 mg/l (daphnia magna)
ErC50/72h	74.35 mg/l (Pseudokirchneriella subcapitata) (OECD 202)
NOELR/72h	150 mg/l (Pseudokirchneriella subcapitata)
NOEC/21d	10 mg/l (daphnia magna)
EC50/72h	29 mg/l (Desmodesmus subspicatus)
	74.32 mg/l (Pseudokirchneriella subcapitata)
	>150 mg/l (Selenastrum capricornutum)
LC50/96h	75 mg/l (Iepomis macrochirus)
	75 mg/l (Oncorhynchus mykiss)

· **12.2 Persistence and degradability**

No further relevant information available.

· **12.3 Bioaccumulative potential**

No further relevant information available.

· **12.4 Mobility in soil**

No further relevant information available.

· **Ecotoxicological effects:**

· **Remark:**

Harmful to fish

· **Additional ecological information:**

· **General notes:**

Do not allow product to reach ground water, water course or sewage system.

Harmful to aquatic organisms

Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water

· **12.5 Results of PBT and vPvB assessment**

· **PBT:**

Not applicable.

· **vPvB:**

Not applicable.

· **12.6 Other adverse effects**

No further relevant information available.

* **SECTION 13: Disposal considerations**

· **13.1 Waste treatment methods**

· **Recommendation**

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

· **Uncleaned packaging:**

· **Recommendation:**

Disposal must be made according to official regulations.

Empty contaminated packaging thoroughly. They may be recycled after thorough and proper cleaning.

· **Recommended cleansing agents:**

Alcohol
acetone

* **SECTION 14: Transport information**

· **14.1 UN-Number**

· **ADR, IMDG, IATA**

UN3269

· **14.2 UN proper shipping name**

· **ADR**

3269 POLYESTER RESIN KIT, ENVIRONMENTALLY
HAZARDOUS

· **IMDG**

POLYESTER RESIN KIT (VINYL TOLUENES,
STABILIZED, tri zinc bis(orthophosphate)), MARINE
POLLUTANT

· **IATA**

POLYESTER RESIN KIT

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· 14.3 Transport hazard class(es)**· ADR**

· Class
· Label

3 (F3) Flammable liquids.
3

· IMDG

· Class
· Label

3 Flammable liquids.
3

· IATA

· Class
· Label

3 Flammable liquids.
3

· 14.4 Packing group**· ADR, IMDG, IATA**

III

· 14.5 Environmental hazards:**· Marine pollutant:****· Special marking (ADR):**

Product contains environmentally hazardous substances:
Symbol (fish and tree)
Symbol (fish and tree)

· 14.6 Special precautions for user**· Hazard identification number (Kemler code):****· EMS Number:****· Stowage Category**

Warning: Flammable liquids.

-

F-E,S-D

A

· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable.

· Transport/Additional information:**· ADR****· Excepted quantities (EQ)****· Remarks:**

Code: E0

Not permitted as Excepted Quantity

Without hardener component: no dangerous goods < 450 l

· IMDG**· Limited quantities (LQ)****· Excepted quantities (EQ)****· Remarks:**

5L

Code: See SP340

Without hardener component: no dangerous goods < 30 l

· IATA**· Remarks:**

Without hardener component: 3/III UN 1866 Resin Solution

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GB

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· UN "Model Regulation":	UN 3269 POLYESTER RESIN KIT, 3, III, ENVIRONMENTALLY HAZARDOUS
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SECTION 15: Regulatory information

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

- Directive 2012/18/EU
 - Named dangerous substances - ANNEX I
 - Seveso category
 - Qualifying quantity (tonnes) for the application of lower-tier requirements
 - Qualifying quantity (tonnes) for the application of upper-tier requirements
 - National regulations:
 - Information about limitation of use:
 - Waterhazard class:
 - VOC EU
 - DECOPAINT: subject to EU-regulations 2004/42/EG (ANNEX II)
 - 15.2 Chemical safety assessment:
- None of the ingredients is listed.
E2 Hazardous to the Aquatic Environment
P5c FLAMMABLE LIQUIDS
- 200 t
- 500 t
- Employment restrictions concerning pregnant and lactating women must be observed.
Employment restrictions concerning juveniles must be observed.
- Water hazard class 2 (Self-assessment): hazardous for water.
345.4 g/l
- EU Grenzwert für dieses Produkt (Produktkategorie (Kat. B/b)): 250 g/l (2007) / 250 g/l (2010).
Das Produkt enthält max. 125 g/l VOC.
- A Chemical Safety Assessment has not been carried out.

SECTION 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 phrases
 - Recommended restriction of use
 - Department issuing SDS:
- H226 Flammable liquid and vapour.
H300 Fatal if swallowed.
H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H361d Suspected of damaging the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.
- refer to Technical Data Sheet (TDS)
- Laboratory

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· Contact:

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· Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 3: Flammable liquids – Category 3
Acute Tox. 2: Acute toxicity – Category 2
Acute Tox. 4: Acute toxicity – Category 4
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Resp. Sens. 1: Respiratory sensitisation – Category 1
Skin Sens. 1: Skin sensitisation – Category 1
Skin Sens. 1A: Skin sensitisation – Category 1A
Repr. 2: Reproductive toxicity – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Asp. Tox. 1: Aspiration hazard – Category 1
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3
REACH directive 1907/2006/EC

· Sources· * Data compared to the previous version altered.

Adaptation in accordance with REACH directive 1907/2006/EC