

Safety Data Sheet

acc. to OSHA HCS

Printing date 01/22/2014

Reviewed on 01/22/2014

1 Identification

· Product identifier

· Trade name: **Marble Filler 1000 Transparent Waterclear**

· Article number: 10720

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

No further relevant information available.

· Application of the substance / the mixture

Polyester resin

· 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

· Information department:

Laboratory

· 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.

2 Hazard(s) identification

· Classification of the substance or mixture



GHS02 Flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



GHS08 Health hazard

STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

· Classification according to Directive 67/548/EEC or Directive 1999/45/EC



Harmful

Harmful by inhalation. Harmful: danger of serious damage to health by prolonged exposure through inhalation.



Irritant

Irritating to eyes, respiratory system and skin.

Flammable.

· Information concerning particular hazards for human and environment:

Vapours of the product are heavier than air and may accumulate on the ground, in mines, drains or cellars with higher concentration.

Contact with skin and inhalation of aerosols/ vapours of the preparation should be avoided.

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

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· Classification system: The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

· **Label elements**

· Labelling according to EU guidelines: The product has been classified and marked in accordance with directives on hazardous materials.

· Code letter and hazard designation of product:




Xn Harmful

· Hazard-determining components of labeling: styrene

· Risk phrases: Flammable.
Harmful by inhalation.
Irritating to eyes, respiratory system and skin.
Harmful: danger of serious damage to health by prolonged exposure through inhalation.

· Safety phrases: Keep out of the reach of children.
Do not breathe vapour.
Avoid contact with skin and eyes.
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point
Wear suitable protective clothing, gloves and eye/face protection.
In case of insufficient ventilation, wear suitable respiratory equipment.
If swallowed, seek medical advice immediately and show this container or label.
Use only in well-ventilated areas.

· **Classification system:**
· NFPA ratings (scale 0 - 4)



Health = 2
Fire = 3
Reactivity = 0

· HMIS-ratings (scale 0 - 4)

HEALTH	2
FIRE	3
REACTIVITY	0

Health = *2
Fire = 3
Reactivity = 0

· **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.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

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

· Dangerous components:

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CAS: 100-42-5 EINECS: 202-851-5 Index number: 601-026-00-0	styrene ☒ Xn R20-48/20-65; ☒ Xi R36/37/38 R10 ⚠ Flam. Liq. 3, H226; ⚠ STOT RE 1, H372; Asp. Tox. 1, H304; ⚠ Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	25-50%
CAS: 111-46-6 EINECS: 203-872-2 Index number: 603-140-00-6	2,2'-oxybisethanol ☒ Xn R22 ⚠ Acute Tox. 4, H302	<1%

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

4 First-aid measures

· **Description of first aid measures**

- General information: Take affected persons out into the fresh air.
Position and transport stably on side.
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.
- 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: If skin irritation continues, consult a doctor.
Immediately wash with water and soap and rinse thoroughly.
- After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- After swallowing: A person vomiting while lying on their back should be turned onto their side.
- 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.
Main health risks are:
 - prolonged response times
 - reduced cognitive performance, partial amnesia
 - retardation of nervous impulse transition speed
 - disturbances of pulmonary function
- Most important symptoms and effects, both acute and delayed Headache
Dizziness
Dizziness
Breathing difficulty
Nausea
- Danger 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

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- Indication of any immediate medical attention and special treatment needed: on the skin were applied.
If swallowed, gastric irrigation with added, activated carbon.

5 Fire-fighting measures

- **Extinguishing media**
- Suitable extinguishing agents: CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- For safety reasons unsuitable extinguishing agents: Water with full jet
- **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)
In certain fire conditions, traces of other toxic gases cannot be excluded.
- **Advice for firefighters**
- Protective equipment:
Wear self-contained respiratory protective device.
Do not inhale explosion gases or combustion gases.
Wear fully protective suit.
Mount respiratory protective device.
- **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.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation
Keep away from ignition sources
Use respiratory protective device against the effects of fumes/dust/aerosol.
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Dispose of the collected material according to regulations.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **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.

7 Handling and storage

- **Handling:**
- Precautions for safe handling
Keep receptacles tightly sealed.
Store in cool, dry place in tightly closed receptacles.
Keep away from heat and direct sunlight.
Use only in well ventilated areas.

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- Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).
 Ensure good ventilation/exhaustion at the workplace.
- Keep ignition sources away - Do not smoke.
 Protect against electrostatic charges.
- Conditions for safe storage, including any incompatibilities**
- Storage:
- Store only in the original receptacle.
 Prevent any seepage into the ground.
- Store away from oxidizing agents.
 Store away from foodstuffs.
- Keep receptacle tightly sealed.
- No further relevant information available.

8 Exposure controls/personal protection

- No further data; see item 7.
- Control parameters

Components with limit values that require monitoring at the workplace:

100-42-5 styrene

PEL	Long-term value: 100 ppm Ceiling limit value: 200; 600* ppm *5-min peak in any 3 hrs
REL	Short-term value: 425 mg/m ³ , 100 ppm Long-term value: 215 mg/m ³ , 50 ppm
TLV	Short-term value: 170 mg/m ³ , 40 ppm Long-term value: 85 mg/m ³ , 20 ppm BEI

111-46-6 2,2'-oxybisethanol

WEEL	Long-term value: 10 mg/m ³
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Ingredients with biological limit values:

100-42-5 styrene

BEI	400 mg/g creatinine Medium: urine Time: end of shift Parameter: Mandelic acid plus phenylglyoxylic acid (nonspecific)
	0.2 mg/L Medium: venous blood Time: end of shift Parameter: Styrene (semi-quantitative)

Additional information: The lists that were valid during the creation were used as basis.

Exposure controls

- Personal protective equipment:
 - General protective and hygienic measures:
- Use skin protection cream for skin protection.
 Be sure to clean skin thoroughly after work and before breaks.
 Keep away from foodstuffs, beverages and feed.

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Breathing equipment:

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

Filter A/P2

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

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.

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

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

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

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

Akemi skin protection recommendation for skin cleaning after product handling:

SLIG SPEZIAL (<http://www.stoko.com>)

Akemi skin protection agent recommendation for skin aftercare:

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

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>).



Protective gloves

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

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

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

Material of gloves

Fluorocarbon rubber (Viton)

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove materialValue for the permeation: Level \leq 6, 480 min

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

For the permanent contact gloves made of the following materials are suitable:

Fluorocarbon rubber (Viton)

Vitoject (KCL, Art No. 890)

As protection from splashes gloves made of the following materials are suitable:

Fluorocarbon rubber (Viton)

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· Not suitable are gloves made of the following materials:

Vitoject (KCL, Art No. 890)
Butyl rubber, BR
Butoject (KCL, Art No. 897, 898)
Nitrile rubber, NBR
Camatril (KCL, 730, 731, 732, 733)

· Eye protection:

Chloroprene rubber, CR
Natural rubber, NR
Leather gloves
Strong gloves



Tightly sealed goggles

· Body protection:

Protective work clothing

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

Form: Fluid
Color: Colorless
Odor: Characteristic

· pH-value: Not applicable

· Change in condition

Melting point/Melting range: Undetermined.
Boiling point/Boiling range: 145 °C (293 °F)

· Flash point: 31 °C (88 °F)

· Ignition temperature: 480 °C (896 °F)

· Auto igniting: Product is not selfigniting.

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

· Explosion limits:

Lower: 1.2 Vol %
Upper: 8.9 Vol %

· Vapor pressure at 20 °C (68 °F): 6 hPa (5 mm Hg)

· Density at 20 °C (68 °F): 1.13 g/cm³ (9.43 lbs/gal)

· Specific gravity at 20 °C (68 °F): 1.13 g/cm³ (9.43 lbs/gal)

· Solubility in / Miscibility with

Water: Not miscible or difficult to mix.

· Viscosity:

Dynamic: Not determined.
Kinematic at 20 °C (68 °F): 220 s (DIN 53211/4)

· Solvent content:

Organic solvents: 34.5 %

Solids content: 64.5 %

· **Other information** No further relevant information available.

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*** 10 Stability and reactivity**

- **Reactivity**
- Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions** Exothermic polymerization.
Reacts with peroxides and other radical forming substances.
Reacts with strong alkali.
Reacts with strong acids.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

*** 11 Toxicological information**

- **Information on toxicological effects**
- Acute toxicity:

· LD/LC50 values that are relevant for classification:

100-42-5 styrene

Oral	LD50	5000 mg/kg (rat)
Dermal	LD50	>2000 mg/kg (rat) (OECD-Prüfrichtlinie 402)
Inhalative	LC50/4 h	11.8 mg/l (rat)
	LC50/4h	9.5 mg/m3 (mouse)

- Primary irritant effect:
- on the skin: Irritant to skin and mucous membranes.
- on the eye: Irritating effect.
- Sensitization: No sensitizing effects known.
- Experience with humans: After incorporation and inhalation styrene predominantly will be metabolized in the organism to mandelic and phenylglyoxylic acid and matabolites will pass through urine excretion.
- Additional toxicological information: The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Irritant

- Carcinogenic categories

· IARC (International Agency for Research on Cancer)

100-42-5	styrene		2B
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· NTP (National Toxicology Program)

None of the ingredients is listed.

*** 12 Ecological information**

- **Toxicity**

· Aquatic toxicity:

100-42-5 styrene

EC10	0.28 mg/l (Pseudokirchneriella subcapitata) (EPA OTS 797.1050)
EC10/16h	72 mg/l (pseudomonas putida)

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EC20/0.5h	140 mg/l (BES) (OECD 209)
EC50	500 mg/l (BES) (ISO Vorschrift 8192-1986 E) 5.5 mg/l (Photobac. phosphoreum)
EC50/16h	> 72.0 mg mg/l (pseudomonas putida)
EC50/48h	0.56 mg/l (green alge) 4.7 mg/l (daphnia magna)
EC50/72h	0.46-4.3 mg/l (Pseudokirchneriella subcapitata)
EC50/72u	>1-<10 mg/l (green alge)
EC50/8d	> 200 mg/l (Scenedesmus quadricauda)
EC50/96h	0.15-3.2 mg/l (Pseudokirchneriella subcapitata)
IC5/8d	> 200 mg/l (Scenedesmus quadricauda)
IC50/72h	4.9 mg/l (green alge) 1.4 mg mg/l (selenastrum capricornutum)
LC50/72h	4.9 mg/l (green alge)
LC50/96h	>1-<10 mg/l (piscis) 25.0 mg/l (lem) 32 mg/l (pimephales promelas) 4.02 mg/l (Pimephales promelas) 58.75-95.32 mg/l (poecilia reticulata)

- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- Bioaccumulative potential No further relevant information available.
- Mobility in soil No further relevant information available.
- **Additional ecological information:**
- General notes: Do not allow product to reach ground water, water course or sewage system.
Water hazard class 2 (Self-assessment): hazardous for water
- **Results of PBT and vPvB assessment**
- PBT: Not applicable.
- vPvB: Not applicable.
- **Other adverse effects** No further relevant information available.

* 13 Disposal considerations

- **Waste treatment methods**
- Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- Recommendation: Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning.
- Recommended cleansing agent: Alcohol
acetone

* 14 Transport information

- | | |
|----------------------------------|------------------------------------|
| · UN-Number | |
| · <u>DOT, ADR, IMDG, IATA</u> | UN3269 |
| · UN proper shipping name | |
| · <u>DOT</u> | Polyester resin kit, solution |
| · <u>ADR</u> | 3269 Polyester resin kit, solution |
| · <u>IMDG, IATA</u> | POLYESTER RESIN KIT, solution |

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· Transport hazard class(es)**· DOT**

· Class 3 Flammable liquids.
· Label 3

· ADR

· Class 3 (FT3) Flammable liquids
· Label 3

· IMDG, IATA

· Class 3 Flammable liquids.
· Label 3

· Packing group

· DOT, ADR, IMDG, IATA III

· Environmental hazards:

· Marine pollutant: No

· Special precautions for user

Warning: Flammable liquids
· Danger code (Kemler): -
· EMS Number: F-E,S-D

· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

· UN "Model Regulation":

UN3269, Polyester resin kit, solution, 3, III

15 Regulatory information**· Safety, health and environmental regulations/legislation specific for the substance or mixture****· Sara****· Section 355 (extremely hazardous substances):**

None of the ingredient is listed.

· Section 313 (Specific toxic chemical listings):

100-42-5 styrene

· TSCA (Toxic Substances Control Act):

All ingredients are listed.

· Proposition 65**· Chemicals known to cause cancer:**

None of the ingredients is listed.

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· <u>Chemicals known to cause reproductive toxicity for females:</u>	
None of the ingredients is listed.	
· <u>Chemicals known to cause reproductive toxicity for males:</u>	
None of the ingredients is listed.	
· <u>Chemicals known to cause developmental toxicity:</u>	
None of the ingredients is listed.	
· <u>Carcinogenity categories</u>	
· <u>EPA (Environmental Protection Agency)</u>	
None of the ingredients is listed.	
· <u>TLV (Threshold Limit Value established by ACGIH)</u>	
100-42-5 styrene	A4
· <u>MAK (German Maximum Workplace Concentration)</u>	
100-42-5 styrene	5
· <u>NIOSH-Ca (National Institute for Occupational Safety and Health)</u>	
None of the ingredients is listed.	
· <u>OSHA-Ca (Occupational Safety & Health Administration)</u>	
None of the ingredients is listed.	

· Product related hazard informations:

The product has been classified and marked in accordance with directives on hazardous materials.

· Hazard symbols:



Xn Harmful

· Hazard-determining components of labeling:

styrene

· Risk phrases:

Flammable.
 Harmful by inhalation.
 Irritating to eyes, respiratory system and skin.
 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

· Safety phrases:

Keep out of the reach of children.
 Do not breathe vapour.
 Avoid contact with skin and eyes.
 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point
 Wear suitable protective clothing, gloves and eye/face protection.
 In case of insufficient ventilation, wear suitable respiratory equipment.
 If swallowed, seek medical advice immediately and show this container or label.
 Use only in well-ventilated areas.

· National regulations:

· Information about limitation of use: Employment restrictions concerning young persons must be observed.
 Employment restrictions concerning pregnant and lactating women must be observed.

· Water hazard class:

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

· VOC USA

389.7 g/l / 3.25 lb/gal

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· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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* 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.

· **Department issuing MSDS:** Laboratory

· **Contact:** Dieter Zimmermann

· **Date of preparation / last revision** 01/22/2014 / -

· **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 Organization
 ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 IMDG: International Maritime Code for Dangerous Goods
 DOT: US Department of Transportation
 IATA: International Air Transport Association
 ACGIH: American Conference of Governmental Industrial Hygienists
 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)
 NFPA: National Fire Protection Association (USA)
 HMIS: Hazardous Materials Identification System (USA)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent

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