



Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 20.05.2014

Version number 10

Revision: 20.05.2014

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

- **1.1 Product identifier**
- **Trade name:** KEIM Silex-OH
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
- **Application of the substance / the mixture** Sealer based on silicic acid ester
- **Uses advised against** All other uses are not recommended.
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 KEIM MINERAL PAINTS LTD
 Santok Building
 Deer Park Way
 Donnington Wood
 Telford
 Shropshire
 TF2 7NA
 United Kingdom
 Tel: +44 1952 231250
 Fax: +44 1952 231251
 Url: <http://www.keimpaints.co.uk>
- **Further information obtainable from:**
 David Pratt
 Telefon: +44 1952 231250
 E-Mail: sales@keimpaints.co.uk
- **1.4 Emergency telephone number:**
 GBK Gefahrgut Büro GmbH
 Emergency number: +49(0)6132/84463

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**

Flam. Liq. 2	H225	Highly flammable liquid and vapour.
Acute Tox. 4	H332	Harmful if inhaled.
Eye Irrit. 2	H319	Causes serious eye irritation.
STOT SE 3	H335-H336	May cause respiratory irritation. May cause drowsiness or dizziness.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**
 Xi; Irritant
 R36/37: Irritating to eyes and respiratory system.
 F; Highly flammable
 R11: Highly flammable.
- **Classification system:**
 R66-67: Repeated exposure may cause skin dryness or cracking. Vapours may cause drowsiness and dizziness.
- **Classification system:**
 The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

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- **2.2 Label elements**

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

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

- **Hazard pictograms**



GHS02 GHS07

- **Signal word** Danger

- **Hazard-determining components of labelling:**

tetraethyl silicate

- **Hazard statements**

H225 Highly flammable liquid and vapour.

H332 Harmful if inhaled.

H319 Causes serious eye irritation.

H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

- **Precautionary statements**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P233 Keep container tightly closed.

P243 Take precautionary measures against static discharge.

P271 Use only outdoors or in a well-ventilated area.

P260 Do not breathe spray.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 If eye irritation persists: Get medical advice/attention.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P314 Get medical advice/attention if you feel unwell.

P370+P378 In case of fire: Use for extinction: Water haze, CO₂, alcohol resistant foam.

P403+P235 Store in a well-ventilated place. Keep cool.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Additional information:**

EUH066 Repeated exposure may cause skin dryness or cracking.

- **2.3 Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**

- **Description:** Tetraethylsilicate (monomer/oligomer blend) in org. solvent

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· Dangerous components:

CAS: 78-10-4 EINECS: 201-083-8 Index number: 014-005-00-0 Reg.nr.: 01-2119496195-28	tetraethyl silicate ☒ Xn R20; ☒ Xi R36/37 R10 ☠ Flam. Liq. 3, H226; ☠ Acute Tox. 4, H332; Eye Irrit. 2, H319; STOT SE 3, H335	20-25%
CAS: 78-93-3 EINECS: 201-159-0 Index number: 606-002-00-3 Reg.nr.: 01-2119457290-XX	butanone ☒ Xi R36; ☠ F R11 R66-67 ☠ Flam. Liq. 2, H225; ☠ Eye Irrit. 2, H319; STOT SE 3, H336	15-20%
CAS: 67-64-1 EINECS: 200-662-2 Index number: 606-001-00-8 Reg.nr.: 01-2119471330-XX	acetone ☒ Xi R36; ☠ F R11 R66-67 ☠ Flam. Liq. 2, H225; ☠ Eye Irrit. 2, H319; STOT SE 3, H336	5-10%
CAS: 3648-18-8 EINECS: 222-883-3	dioctyltin dilaurate ☒ T R48/25; ☒ Xn R63 R52/53 ☠ Repr. 2, H361d; STOT RE 1, H372; Aquatic Chronic 3, H412	< 1%

· **Additional information:** For the wording of the listed risk 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.
Seek medical treatment in case of complaints.
When seeing the doctor we suggest to present this safety data sheet.

· After inhalation:

Take affected persons into fresh air and keep quiet.
Seek medical treatment in case of complaints.

· 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:

Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.

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

No further relevant information available.

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

No further relevant information available.

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SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
Water haze, extinguishing powder, alcohol resistant foam, CO₂, sand.
- **For safety reasons unsuitable extinguishing agents:**
Water spray
Water with full jet
- **5.2 Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
carbon oxide (CO_x)
silicon dioxid (SiO₂)
Dangerous decomposition product: ethyl alcohol.
- **5.3 Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.
- **Additional information**
Cool endangered receptacles with water spray.
Collect contaminated fire fighting water separately. It must not enter the sewage system.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
In case of fire do not breath smoke, fumes and vapours.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation
Keep away from ignition sources.
Avoid contact with skin and eyes.
Do not inhale fumes.
Respect the protection rules (see section 7 a. 8).
Wear protective equipment. Keep unprotected persons away.
Particular danger of slipping on leaked/spilled product.
- **6.2 Environmental precautions:**
Do not allow product to reach soil, sewage system or any water course.
Follow local governmental rules and regulations.
Keep contaminated washing water and dispose of appropriately.
- **6.3 Methods and material for containment and cleaning up:**
Do not flush away with water. For small amounts: Absorb with a liquid binding material such as diatomaceous earth and dispose of according to local/state/federal regulations. Contain larger amounts and pump up into suitable containers. Clean any slippery coating that remains using a detergent / soap solution or another biodegradable cleaner. Exhaust vapours.
Ensure adequate ventilation.
- **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.

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SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Keep receptacles tightly sealed.
Avoid contact with skin and eyes.
Prevent formation of aerosols.
See item 8 for information about suitable protective equipment and technical precautions.
Respect the protection rules.
- **Information about fire - and explosion protection:**
Fumes can combine with air to form an explosive mixture.
Cool endangered receptacles with water spray.
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Keep in the original containers in a cool and dry place.
Store only in unopened original receptacles.
Prevent any seepage into the ground.
- **Information about storage in one common storage facility:**
Reacts with: water, basic substances and acids. Reaction causes the formation of: ethanol.
- **Further information about storage conditions:**
Protect from heat and direct sunlight.
Protect from frost.
Keep container tightly sealed.
Protect from humidity and water.
- **Storage class:** 3A
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**

- **Ingredients with limit values that require monitoring at the workplace:**

78-93-3 butanone

WEL	Short-term value: 899 mg/m ³ , 300 ppm Long-term value: 600 mg/m ³ , 200 ppm Sk, BMGV
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67-64-1 acetone

WEL	Short-term value: 3620 mg/m ³ , 1500 ppm Long-term value: 1210 mg/m ³ , 500 ppm
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- **DNELs**

78-10-4 tetraethyl silicate

Dermal	Long-term - systemic effects, consumer	8.4 mg/kg/day (consumer)
	Long-term - systemic effects, worker	12.1 mg/kg bw/day (worker)
Inhalative	Acute - local effects, consumer	25 mg/m ³ (consumer)
	Acute - local effects, worker	85 mg/m ³ (worker)
	Long-term - local effects, worker	85 mg/m ³ (worker)

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	Long-term - systemic effects, consumer	25 mg/m ³ (consumer)
	Long-term - systemic effects, worker	85 mg/m ³ (worker)

· **PNECs**

78-10-4 tetraethyl silicate

Aquatic compartment - freshwater	0.192 mg/l (freshwater)
Aquatic compartment - marine water	0.0192 mg/l (marine water)
Aquatic compartment - sediment in freshwater	0.18 mg/kg sed dw (sediment fresh water)
Aquatic compartment - sediment in marine water	0.018 mg/kg sed dw (sediment marine water)
Aquatic compartment - water, intermittent releases	10 mg/l (not specified)
Sewage treatment plant	4000 mg/l (sewage sludge)
Terrestrial compartment - soil	0.05 mg/kg dw (soil)

· **Ingredients with biological limit values:**

78-93-3 butanone

BMGV	70 µmol/L
	Medium: urine
	Sampling time: post shift
	Parameter: butan-2-one

· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

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

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.

· **Respiratory protection:** In case of long or strong exposure: das mask filter ABEK.

· **Protection of hands:** Protective gloves

· **Material of gloves**

suitable material e.g.:

Butyl rubber, BR

Recommended thickness of the material: ≥ 0.5 mm

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 material**

Value for the permeation: Level ≥ 3 (60 min)

The determined penetration times according to EN 374 part III are not performed under practical conditions. Therefore a maximum wearing time, which corresponds to 50% of the penetration time, is recommended.

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

· **Eye protection:** Tightly sealed goggles

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· **Body protection:** Protective work clothing

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SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Appearance:

· Form:	Fluid
· Colour:	Colourless
· Odour:	Strong
· Odour threshold:	Not determined.

· **pH-value:** Not applicable

· Change in condition

· Melting point/Melting range:	< -40 °C
· Boiling point/Boiling range:	56 °C

· **Flash point:** 2 °C (DIN 51755)

· **Ignition temperature:** 230 °C (DIN 51794)

· **Decomposition temperature:** Not determined.

· **Self-igniting:** Product is not selfigniting.

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

· Explosion limits:

· Lower:	1.3 Vol %
· Upper:	23.0 Vol %

· **Oxidizing properties** Not applicable.

· **Vapour pressure at 20 °C:** 233 hPa

· Density at 20 °C:	0.96* g/cm ³
· Relative density	Not determined.
· Vapour density	Not applicable.
· Evaporation rate	Not determined.

· **Solubility in / Miscibility with water at 20 °C:** 235 g/l

· **Partition coefficient (n-octanol/water):** Not applicable.

· Viscosity:

· Dynamic:	Not determined.
· Kinematic:	Not determined.

· 9.2 Other information

Explosion limits for released ethanol: 3,5 - 15% (V).
* The values are for freshly produced material and may change with the time.

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SECTION 10: Stability and reactivity

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **10.3 Possibility of hazardous reactions** Reacts with water.
- **10.4 Conditions to avoid** Humidity
- **10.5 Incompatible materials:**
Reacts with: water, basic substances and acids. Reaction causes the formation of: alcohols.
- **10.6 Hazardous decomposition products:**
In case of fire, the following can be released:
carbon oxide (CO_x)
silicon dioxid (SiO₂)
ethyl alcohol (hydrolysis)
No hazardous decomposition products if stored and handled as prescribed.
- **Additional information:** In use may form flammable/explosive vapour-air mixture.

SECTION 11: Toxicological information

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

- **LD/LC50 values relevant for classification:**

	ATE mix	> 2000 mg/kg (orally)
	ATE mix (4h)	4.7 mg/l (inhalation)

78-10-4 tetraethyl silicate

Oral	LD50	6270 mg/kg (rat)
Dermal	LD50	5878 mg/kg (rabbit)

78-93-3 butanone

Oral	LD50	3300 mg/kg (rat)
Dermal	LD50	5000 mg/kg (rabbit)

67-64-1 acetone

Oral	LD50	5800 mg/kg (rat)
Dermal	LD50	20000 mg/kg (rabbit)
Inhalative	LC50/4 h	39 mg/l (rat)

- **Primary irritant effect:**
- **on the skin:** Repeated exposure may cause skin dryness or cracking.
- **on the eye:** Irritating effect.
- **during inhalation:**
Harmful by inhalation
Irritant effect possible.
Vapours may cause drowsiness and dizziness.
- **during swallowing:** Irritant effect possible
- **Sensitization:** No sensitizing effects known.
- **Other information (about experimental toxicology):**
Experimental analysis are not available.

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- **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Harmful
Irritant

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability**
Silicone content: Contact with water liberates: silicic acid and ethanol.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Other information:**
In appropriate sewage treatment plants an extensively elimination off water due to biological degrading, mechanical separation and stripping.
- **Additional ecological information:**
- **AOX-indication:**
Due to the substance of content which do not include organic jointed halogens, the product can not take influence on the AOX-load of the waste water.
- **According to the formulation contains the following heavy metals and compounds from the EU guideline NO. 2006/11/EC:**
According to our current data base the product does not consist of any heavy metals or substances of EU-directives 76/464/EWG.
- **General notes:**
At present there are no ecotoxicological assessments.
The product may not be released into the environment without control.
Water hazard class 1 (German Regulation) (Self-assessment): slightly 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** Disposal must be made according to official regulations.

- **European waste catalogue**

07 01 99	wastes not otherwise specified
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- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

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SECTION 14: Transport information

<ul style="list-style-type: none"> · 14.1 UN-Number · ADR, IMDG, IATA 	UN1993	
<ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR · IMDG, IATA 	1993 FLAMMABLE LIQUID, N.O.S. (contains ETHYL METHYL KETONE (METHYL ETHYL KETONE), ACETONE), special provision 640D FLAMMABLE LIQUID, N.O.S. (CONTAINS ETHYL METHYL KETONE (METHYL ETHYL KETONE), ACETONE)	
<ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR, IMDG, IATA 	<div style="text-align: center;">  </div> <ul style="list-style-type: none"> · Class · Label 	3 Flammable liquids. 3
<ul style="list-style-type: none"> · 14.4 Packing group · ADR, IMDG, IATA 	II	
<ul style="list-style-type: none"> · 14.5 Environmental hazards: · Marine pollutant: 	No	
<ul style="list-style-type: none"> · 14.6 Special precautions for user · Danger code (Kemler): · EMS Number: 	Warning: Flammable liquids. 33 F-E, <u>S</u> -E	
<ul style="list-style-type: none"> · 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	Not applicable.	
<ul style="list-style-type: none"> · Transport/Additional information: 		
<ul style="list-style-type: none"> · ADR · Limited quantities (LQ) · Transport category · Tunnel restriction code 	1L 2 D/E	
<ul style="list-style-type: none"> · UN "Model Regulation": 	UN1993, FLAMMABLE LIQUID, N.O.S. (contains ETHYL METHYL KETONE (METHYL ETHYL KETONE), ACETONE), special provision 640D, 3, II	

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SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations:**
- **Waterhazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.
- **Other regulations, limitations and prohibitive regulations**
REACH Annex XVII: This product contains dioctyltin dilaurate > 0.1 wt -%. Annex XVII, entry 20 of Regulation 1907/2006, must be considered.
- **Please note:**
TRGS 200 (Germany)
TRGS 500 (Germany)
TRGS 510 (Germany)
TRGS 900 (Germany)
- **Product-Code/Giscode:** M-GF05
- **15.2 Chemical safety assessment:**
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**
H225 Highly flammable liquid and vapour.
H226 Flammable liquid and vapour.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H361d Suspected of damaging the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects.
- **R10** Flammable.
· **R11** Highly flammable.
· **R20** Harmful by inhalation.
· **R36** Irritating to eyes.
· **R36/37** Irritating to eyes and respiratory system.
· **R48/25** Toxic: danger of serious damage to health by prolonged exposure if swallowed.
· **R52/53** Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
· **R63** Possible risk of harm to the unborn child.
· **R66** Repeated exposure may cause skin dryness or cracking.
· **R67** Vapours may cause drowsiness and dizziness.
- **Department issuing MSDS:** KEIMFARBEN Germany, Product safety department
- **Contact:** Mrs. Popescu
- **Abbreviations and acronyms:**
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

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IATA: International Air Transport Association
GHS: Globally Harmonized 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)
TRGS: Technische Regeln für Gefahrstoffe (Technical Rules for Dangerous Substances, BAuA, Germany)
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
EC10: Effective concentration at 10% mortality rate.
EC50: Half maximal effective concentration.
LC10: Lethal concentration at 10% mortality rate.
NOEC: No observed effect concentration.
REACH: Registration, Evaluation and Authorisation of Chemicals (Regulation (EC) No.1907/2006)

• * **Data compared to the previous version altered.**

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