



Safety data sheet according to 1907/2006/EC, Article 31

Printing date 26.07.2017



Version number 12

Revision: 26.07.2017

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

- **1.1 Product identifier**
- **Trade name: KEIM SILANGRUND**
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
- **Application of the substance / the mixture** Water-repellent, silane-based primer.
- **Uses advised against** All other uses are not recommended.
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
KEIMFARBEN GMBH
Keimstraße 16 / 86420 Diedorf
Tel. +49 (0)821 4802-0
Fax +49 (0)821 4802-210
www.keim.com / info@keimfarben.de
- **Further information obtainable from:**
Product safety department
Telefon: 49(0)821/4802-138
E-Mail: sdb.info@keimfarben.de
- **1.4 Emergency telephone number:**
GBK GmbH Global Regulatory Compliance
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.
Eye Irrit. 2 H319 Causes serious eye irritation.
- **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 statements**
H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.
- **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.

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- P243 Take action to prevent static discharges.
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.
P370+P378 In case of fire: Use for extinction: CO₂, powder or water spray.
P403+P235 Store in a well-ventilated place. Keep cool.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **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:** Alkylalkoxysilane / silanes + ethanol

- **Dangerous components:**

CAS: 64-17-5 EINECS: 200-578-6 Index number: 603-002-00-5 Reg.nr.: 01-2119457610-43-XXXX	ethanol ⚠ Flam. Liq. 2, H225; ⚠ Eye Irrit. 2, H319	>75%
CAS: 35435-21-3 EINECS: 252-558-1 Reg.nr.: 01-2119555666-27-XXXX	Alkyltriethoxysilane ⚠ Flam. Liq. 3, H226	10-25%
CAS: 110-54-3 EINECS: 203-777-6 Index number: 601-037-00-0	n-hexane ⚠ Flam. Liq. 2, H225; ⚠ Repr. 2, H361f; STOT RE 2, H373; Asp. Tox. 1, H304; ⚠ Aquatic Chronic 2, H411; ⚠ Skin Irrit. 2, H315; STOT SE 3, H336	<0.5%
CAS: 64742-49-0 EINECS: 265-151-9 Index number: 649-328-00-1	Naphtha (petroleum), hydrotreated light ⚠ Flam. Liq. 2, H225; ⚠ Asp. Tox. 1, H304; ⚠ Aquatic Chronic 2, H411; ⚠ Skin Irrit. 2, H315; STOT SE 3, H336	<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:**
When seeing the doctor we suggest to present this safety data sheet.
Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
Wash off immediately with water and soap and rinse well afterwards.
If skin irritation continues, consult a doctor.

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- **After eye contact:**
Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
Rinse mouth and throat well with 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.

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.
- **5.2 Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
carbon oxide (CO_x)
silicon dioxide (SiO₂)
- **5.3 Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.
- **Additional information**
Cool endangered receptacles with water spray.
In case of fire do not breathe smoke, fumes and vapours.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Keep away from ignition sources.
Avoid contact with skin and eyes.
Do not inhale fumes.
Particular danger of slipping on leaked/spilled product.
Wear protective equipment. Keep unprotected persons away.
- **6.2 Environmental precautions:**
Do not allow product to reach soil, sewage system or any water course.
Follow local governmental rules and regulations.
- **6.3 Methods and material for containment and cleaning up:**
Absorb with non-combustible liquid-binding material (sand, diatomite, vermiculite).
Ensure adequate ventilation.
Dispose of the material collected according to regulations.
Clear contaminated areas thoroughly.
- **6.4 Reference to other sections**
Eliminate all sources of ignition.
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.

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See Section 13 for disposal information.

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SECTION 7: Handling and storage

· 7.1 Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Keep receptacles tightly sealed.

Avoid contact with skin and eyes.

Do not inhale aerosols.

See item 8 for information about suitable protective equipment and technical precautions. Respect the protection rules.

· Information about fire - and explosion protection:

Use explosion-proof apparatus / fittings and spark-proof tools.

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:

Store only in unopened original receptacles.

Keep in the original containers in a cool and dry place.

· Information about storage in one common storage facility:

Store away from oxidising agents.

Store away from water.

· Further information about storage conditions:

Protect from humidity and water.

Store receptacle in a well ventilated area.

Keep container tightly sealed.

Protect from heat and direct sunlight.

· 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:

64-17-5 ethanol

AGW (Germany)	Long-term value: 960 mg/m ³ , 500 ppm
	2(II);DFG, Y

110-54-3 n-hexane

AGW (Germany)	Long-term value: 180 mg/m ³ , 50 ppm
	8(II);DFG, EU, Y

64742-49-0 Naphtha (petroleum), hydrotreated light (<1%)

MAK (Germany)	vgl.Abschn.Xb
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· DNELs**35435-21-3 Alkyltriethoxysilane**

Oral	Long-term - systemic effects, consumer	9.5 mg/kg/day (consumer)
Dermal	Long-term - systemic effects, worker	13.4 mg/kg bw/day (worker)
Inhalative	Long-term - systemic effects, consumer	9.5 mg/kg/day (consumer)
	Acute-systemic effects, worker	45 (worker)
	Acute-systemic effects, consumer	67.8 (consumer)
	Long-term - systemic effects, consumer	11.3 mg/m ³ (consumer)

· PNECs**35435-21-3 Alkyltriethoxysilane**

Aquatic compartment - freshwater	0.64 mg/l (freshwater)
Aquatic compartment - marine water	0.064 mg/l (marine water)
Aquatic compartment - water, intermittent releases	6.4 mg/l (not specified)
Aquatic compartment - sediment in freshwater	4.3 mg/kg sed dw (sediment fresh water)
Aquatic compartment - sediment in marine water	0.43 mg/kg sed dw (sediment marine water)
Terrestrial compartment - soil	0.48 mg/kg dw (soil)
Sewage treatment plant	1 mg/l (sewage treatment plant)
Oral secondary poisoning	10 mg/kg food (not specified)

· Ingredients with biological limit values:**110-54-3 n-hexane**

BGW (Germany)	5 mg/l
	Untersuchungsmaterial: Urin
	Probennahmezeitpunkt: Expositionsende bzw. Schichtende
	Parameter: 2.5-Hexandion plus 4.5-Dihydroxy-2-hexanon (nach Hydrolyse)

· Additional information: The lists valid during the making were used as basis.**· 8.2 Exposure controls****· Personal protective equipment:****· General protective and hygienic measures:**

Avoid contact with the eyes and skin.

Do not inhale aerosols.

Wash hands before breaks and at the end of work.

Immediately remove all soiled and contaminated clothing

· 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.

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- **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 through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Tightly sealed goggles
- **Body protection:** Protective work clothing
- **Limitation and supervision of exposure into the environment** See Section 12 and 6.2

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Appearance:

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

· **pH-value:** Not determined

· Change in condition

· Melting point/freezing point:	Undetermined.
· Initial boiling point and boiling range:	78°C (bei 980 hPa)

· **Flash point:** 4°C (DIN 51755)

· **Flammability (solid, gas):** Not applicable.

· **Ignition temperature:** 360°C

· **Decomposition temperature:** Not determined.

· **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:	0.4 Vol %
· Upper:	15 Vol %

· **Oxidising properties** Not applicable.

· **Vapour pressure at 20°C:** 55.9 hPa

· **Density at 20°C:** 0.8-0.9* g/cm³ (bei 980 hPa)

· **Relative density** Not determined.

· **Vapour density** Not applicable.

· **Evaporation rate** Not determined.

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- | | |
|--|--|
| · Solubility in / Miscibility with water: | Hydrolised. |
| · Partition coefficient: n-octanol/water: | Not determined. |
| · Viscosity: | |
| Dynamic at 20°C: | 1.27* mPas |
| Kinematic: | Not determined. |
| · 9.2 Other information | * The values are for freshly produced material and may change with the time. |

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability** Stable under normal conditions of storage and use.
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** oxidizing agents
- **10.6 Hazardous decomposition products:**
In case of fire, the following can be released:
carbon oxide (COx)
silicon dioxid (SiO₂)
No hazardous decomposition products if stored and handled as prescribed.

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 mix	>2,000 mg/kg (orally)
64-17-5 ethanol		
Oral	LD50	10,470 mg/kg (rat)
Inhalative	LC50/4 h	124.7 mg/l (rat)
35435-21-3 Alkyltriethoxysilane		
Oral	LD50	>2,000 mg/kg (rat) (OECD 423)
Dermal	LD50	>2,000 mg/kg (rat) (OECD 402)
	NOAEL	150 mg/kg (rat)

- **Primary irritant effect:**
- **Skin corrosion/irritation** Frequent persistent contact with the skin may cause skin irritation.
- **Serious eye damage/irritation**
Causes serious eye irritation.

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- **during inhalation:** Irritant effect possible.
- **during swallowing:** Irritant effect possible
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Other information (about experimental toxicology):**
Experimental analysis are not available.
The product was not tested. The statements on toxicology have been derived from the properties of the individual components.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** not applicable
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:

64-17-5 ethanol

NOEC	10 mg/l (daphnia)
EC 50/48h	>1,000 mg/l (bacteria) 5,012 mg/l (daphnia)
EC 50/72 h	275 mg/l (algae) (OECD 201)
LC 50/96 h	14,200 mg/l (fish)
EC 10	72 mg/l (algae) (OECD 201)

35435-21-3 Alkyltriethoxysilane

NOEC	21 mg/l (daphnia) (reproduction)
EC 50/3h	>100 mg/l (sewage sludge)
LC 50/96 h	>100 mg/l (fish) (OECD 203, semistatisch)

- **12.2 Persistence and degradability** The solvent is biodegradable.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **AOX-indication:**
According to our standard of knowledge the product does not contain any organic bounded halogen.
The product has no influence on the waste water's AOX-value.
- **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.
Do not allow product to reach ground water, water course or sewage system.

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- 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**
Must not be disposed with household garbage. Do not allow product to reach sewage system.
Disposal must be made according to official regulations.

- **European waste catalogue**

08 01 11*	waste paint and varnish containing organic solvents or other hazardous substances
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- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary with cleansing agents.

SECTION 14: Transport information

- | | |
|---|---|
| · 14.1 UN-Number | |
| · ADR, IMDG, IATA | UN1993 |
| · 14.2 UN proper shipping name | |
| · ADR | 1993 FLAMMABLE LIQUID, N.O.S. (ETHANOL (ETHYL ALCOHOL), Alkyltriethoxysilane), special provision 640D |
| · IMDG | FLAMMABLE LIQUID, N.O.S. (ETHANOL (ETHYL ALCOHOL), Alkyltriethoxysilane) |
| · IATA | FLAMMABLE LIQUID, N.O.S. (ETHANOL, Alkyltriethoxysilane) |
| · 14.3 Transport hazard class(es) | |
| · ADR, IMDG, IATA | |
|  | |
| · Class | 3 Flammable liquids. |
| · Label | 3 |
| · 14.4 Packing group | |
| · ADR, IMDG, IATA | II |

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· 14.5 Environmental hazards:	
· Marine pollutant:	No
· 14.6 Special precautions for user	Warning: Flammable liquids.
· Danger code (Kemler):	33
· EMS Number:	F-E,S-E
· Stowage Category	B
· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· Transport category	2
· Tunnel restriction code	D/E
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1993 FLAMMABLE LIQUID, N.O.S., SPECIAL PROVISION 640D (ETHANOL (ETHYL ALCOHOL), ALKYLTRIETHOXYSILANE), 3, II

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Labelling according to Regulation (EC) No 1272/2008**
For information on labelling please refer to section 2 of this document.
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **Seveso category** P5c FLAMMABLE LIQUIDS
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5,000 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50,000 t
- **National regulations:**
- **Waterhazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.
- **Other regulations, limitations and prohibitive regulations**
- **Please note:**
TRGS 200 (Germany)

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TRGS 500 (Germany)

TRGS 510 (Germany)

TRGS 900 (Germany)

- **Substances of very high concern (SVHC) according to REACH, Article 57** not applicable
- **Product-Code/Giscode:** BSL50
- **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.

H304 May be fatal if swallowed and enters airways.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

H361f Suspected of damaging fertility.

H373 May cause damage to organs through prolonged or repeated exposure.

H411 Toxic to aquatic life with long lasting effects.

- **Department issuing SDS:** KEIMFARBEN Germany, Product safety department

· **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

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)

TRGS: Technische Regeln für Gefahrstoffe (Technical Rules for Dangerous Substances, BAuA, Germany)

VOC: Volatile Organic Compounds (USA, EU)

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

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

AGW: Arbeitsplatzgrenzwert (Germany)

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)

Flam. Liq. 2: Flammable liquids – Category 2

Flam. Liq. 3: Flammable liquids – Category 3

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Repr. 2: Reproductive toxicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

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Asp. Tox. 1: Aspiration hazard – Category 1
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2
· * **Data compared to the previous version altered.**

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