Safety data sheet

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

1.1. Product identifier

Code: **CS0008-(07645 e seg.)**

Product name **SILCOFLEX 599**

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

Intended use **Sealant for metal sheet silicone-based, alkoxy curing.**

1.3. Details of the supplier of the safety data sheet

Name **PIGAL s.r.l.**

Full address **Via G. Rossa, 2**

District and Country **40053 VALSAMOGGIA - Crespellano (BO)**
ITALIA

Tel. +39 051969068

Fax +39 051969353

e-mail address of the competent person

responsible for the Safety Data Sheet **health.safety@pigal.it; pigalab@pigal.it**

1.4. Emergency telephone number

For urgent inquiries refer to **+39 051969068 ore ufficio/office hours (8.30-13; 14-17.30) 118 (contattare il centro antiveleni più vicino)/please contact your near local poison control center**

SECTION 2. Hazards identification.

2.1. Classification of the substance or mixture.

The product is not classified as hazardous pursuant to the provisions set forth in EC Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). However, since the product contains hazardous substances in concentrations such as to be declared in section no. 3, it requires a safety data sheet with appropriate information, compliant to EC Regulation 1907/2006 and subsequent amendments.

2.1.1. Regulation 1272/2008 (CLP) and following amendments and adjustments.

Hazard classification and indication:

2.2. Label elements.

Hazard pictograms:

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Signal words: --

Hazard statements:

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Precautionary statements:

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Safety data sheet available on request.

2.3. Other hazards.

During the cross-linking developed by hydrolysis ETHANOL (CAS 64-17-5) and methanol (CAS 67-56-1).
Contains: 3-(trietoxysilil)propylamine; 3- (2-amino ethyl amino) propyl trimethoxy silane. It may cause an allergic reaction.

SECTION 3. Composition/information on ingredients.

3.1. Substances.

Information not relevant.

3.2. Mixtures.

Contains:

Identification.	Conc. %.	Classification 67/548/EEC.	Classification 1272/2008 (CLP).
Vinyltrimethoxysilane			
CAS. 2768-02-7 EC. 220-449-8	1,5 - 2	R10, Xn R20	Flam. Liq. 3 H226, Acute Tox. 4 H332
INDEX. -			
Reg. no. 01-2119513215-52			
Morfolinometil-trietossisilano			
CAS. 21743-27-1	1,5 - 2		Aquatic Chronic 3 H412
EC. 480-370-1			
INDEX. -			
Reg. no. 01-0000020083-82			
METHANOL			
CAS. 67-56-1	released	F R11, T R23/24/25, T R39/23/24/25	Flam. Liq. 2 H225, Acute Tox. 3 H301, Acute Tox. 3 H311, Acute Tox. 3 H331, STOT SE 1 H370
EC. 200-659-6			
INDEX. 603-001-00-X			
ETHANOL			
CAS. 64-17-5 EC. 200-578-6	released	F R11	Flam. Liq. 2 H225
INDEX. 603-002-00-5			

Note: Upper limit is not included into the range.

The full wording of the hazard (H) phrases is given in section 16 of the sheet.

SECTION 4. First aid measures.

4.1. Description of first aid measures.

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. If problem persists,

seek medical advice.
SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention immediately. Wash contaminated clothing before using it again.
INHALATION: Remove to open air. If the subject stops breathing, administer artificial respiration. Get medical advice/attention immediately.
INGESTION: Get medical advice/attention immediately. Do not induce vomiting. Do not administer anything not explicitly authorised by a doctor.

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

For symptoms and effects caused by the contained substances, see chap. 11.

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

Information not available.

SECTION 5. Firefighting measures.

5.1. Extinguishing media.

SUITABLE EXTINGUISHING EQUIPMENT
Extinguishing substances are: carbon dioxide, foam, chemical powder. For product loss or leakage that has not caught fire, water spray can be used to disperse flammable vapours and protect those trying to stem the leak.
UNSUITABLE EXTINGUISHING EQUIPMENT
Do not use jets of water. Water is not effective for putting out fires but can be used to cool containers exposed to flames to prevent explosions.

5.2. Special hazards arising from the substance or mixture.

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE
Excess pressure may form in containers exposed to fire at a risk of explosion. Do not breathe combustion products.

5.3. Advice for firefighters.

GENERAL INFORMATION
Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.
SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS
Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

SECTION 6. Accidental release measures.

6.1. Personal precautions, protective equipment and emergency procedures.

Block the leakage if there is no hazard.
Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

6.2. Environmental precautions.

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

6.3. Methods and material for containment and cleaning up.

Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.
Make sure the leakage site is well aired. Check incompatibility for container material in section 7. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

6.4. Reference to other sections.

Any information on personal protection and disposal is given in sections 8 and 13.

SECTION 7. Handling and storage.

7.1. Precautions for safe handling.

Keep away from heat, sparks and naked flames; do not smoke or use matches or lighters. Vapours may catch fire and an explosion may occur; vapour accumulation is therefore to be avoided by leaving windows and doors open and ensuring good cross ventilation. Without adequate ventilation, vapours may accumulate at ground level and, if ignited, catch fire even at a distance, with the danger of backfire. Avoid bunching of electrostatic charges. When performing transfer operations involving large containers, connect to an earthing system and wear antistatic footwear. Vigorous stirring and flow through the tubes and equipment may cause the formation and accumulation of electrostatic charges. In order to avoid the risk of fires and explosions, never use compressed air when handling. Open containers with caution as they may be pressurised. Do not eat, drink or smoke during use. Avoid leakage of the product into the environment.

7.2. Conditions for safe storage, including any incompatibilities.

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Store in a well ventilated place, keep far away from sources of heat, naked flames and sparks and other sources of ignition. Keep containers away from any incompatible materials, see section 10 for details.

7.3. Specific end use(s).

Information not available.

SECTION 8. Exposure controls/personal protection.

8.1. Control parameters.

Regulatory References:

United Kingdom	EH40/2005 Workplace exposure limits. Containing the list of workplace exposure limits for use with the Control of Substances Hazardous to Health Regulations (as amended).
Éire	Code of Practice Chemical Agent Regulations 2011.
OEL EU	Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC.
TLV-ACGIH	ACGIH 2012

Vinyltrimethoxysilane

Threshold Limit Value.

Type	Country	TWA/8h		STEL/15min	
		mg/m3	ppm	mg/m3	ppm
OEL		260	200		

ETHANOL

Threshold Limit Value.						
Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
WEL	UK	1920	1000			
OEL	IRL				1000	
TLV-ACGIH				1884	1000	

METHANOL

Threshold Limit Value.						
Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
OEL	EU	260	200			SKIN
WEL	UK	266	200	333	250	SKIN
OEL	IRL	260	200			SKIN
TLV-ACGIH		262	200	328	250	

Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.

Trimethoxyvinylsilane:DMEL / DNEL
Systemic effects (worker, skin) Acute and long-term = 0.69 mg / (kg * day)
Systemic effects (worker,inhalation) acute and long-term = 4.9 mg / m
PNEC
Fresh water = 0.34 mg / l
Sea water = 0.034 mg / l
Water (interval emission) = 3.4 mg / l.

8.2. Exposure controls.

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.

HAND PROTECTION
Protective butyl rubber gloves Material thickness:> 0.3 mm Penetration time:> 480 min
Protective gloves nitrile rubber Material thickness:> 0.4 mm Penetration time: 10-30 min (see standard EN 374).
The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability.
The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

SKIN PROTECTION
Wear category I professional long-sleeved overalls and safety footwear (see Directive 89/686/EEC and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

EYE PROTECTION
Wear airtight protective goggles (see standard EN 166).

RESPIRATORY PROTECTION
If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, use a mask with Gas Filter ABEK (gases and certain inorganic and organic acid vapors; ammonia / amines), in accordance with recognized standards such as EN 14387. In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.
Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold

values considered. The protection provided by masks is in any case limited.
If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

SECTION 9. Physical and chemical properties.

9.1. Information on basic physical and chemical properties.

Appearance	pasty
Colour	various
Odour	typical
Odour threshold.	Not available.
pH.	Not available.
Melting point / freezing point.	Not available.
Initial boiling point.	Not available.
Boiling range.	Not available.
Flash point.	Not available.
Evaporation Rate	Not available.
Flammability of solids and gases	Not available.
Lower inflammability limit.	Not available.
Upper inflammability limit.	Not available.
Lower explosive limit.	3,5 % (V/V).
Upper explosive limit.	15 % (V/V).
Vapour pressure.	Not available.
Vapour density	Not available.
Relative density.	1,400 Kg/l
Solubility	immiscible with water
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature.	Not available.
Decomposition temperature.	Not available.
Viscosity	Not available.
Explosive properties	Not available.
Oxidising properties	Not available.

9.2. Other information.

VOC (Directive 1999/13/EC) :	2,00 %	-	28,00	g/litre.
VOC (volatile carbon) :	0,90 %	-	12,54	g/litre.
Can pressure:	N.A.			

SECTION 10. Stability and reactivity.

10.1. Reactivity.

There are no particular risks of reaction with other substances in normal conditions of use.

10.2. Chemical stability.

The product is stable in normal conditions of use and storage.

10.3. Possibility of hazardous reactions.

The vapours may also form explosive mixtures with the air.

ETHANOL: risk of explosion on contact with: alkaline metals, alkaline oxides, calcium hypochlorite, sulphur monofluoride, acetic anhydride (with acids), concentrated hydrogen peroxide, perchlorates, perchloric acid, perchloronitrile, mercury nitrate, nitric acid, silver and nitric acid, silver nitrate, silver nitrate and ammonia, silver oxide and ammonia, strong oxidising agents, nitrogen dioxide. Can react dangerously with: bromoacetylene, chlorine acetylene, bromine trifluoride, chromium trioxide, chromyl chloride, oxiranes, fluorine, potassium tert-butoxide, lithium hydride, phosphorus trioxide, black platinum, zirconium (IV) chloride, zirconium (IV) iodide. Forms an explosive mixture with the air.

10.4. Conditions to avoid.

Avoid overheating. Avoid bunching of electrostatic charges. Avoid all sources of ignition.

ETHANOL: avoid exposure to sources of heat and naked flames.

Moisture.

10.5. Incompatible materials.

It reacts with: water, bases and acids. The reaction takes place with formation of: methanol and ethanol.

10.6. Hazardous decomposition products.

In the event of thermal decomposition or fire, gases and vapours that are potentially dangerous to health may be released.

Ethanol and Methanol - Measurements have shown that at temperatures higher than 150 ° C, for oxidative decomposition, is liberated a small amount of formaldehyde.

SECTION 11. Toxicological information.

11.1. Information on toxicological effects.

METHANOL: The minimal lethal dose following ingestion is considered to be in the range of 300-1000 mg/kg. Ingestion of as little as 4-10 ml methanol in adults may cause permanent blindness (IPCS).

Vinyltrimethoxysilane - ACUTE TOXICITY
Skin irritation - (Rabbit / METHOD OECD TG 404): no irritant.
Eye irritant - (Rabbit / METHOD OECD TG 405): no irritant.
Sensitization - (Guinea pig / METHOD OECD TG 406): No sensitizer.

ETHANOL
LD50 (Oral). > 5000 mg/kg Rat
LC50 (Inhalation). 120 mg/l/4h Pimephales promelas

Vinyltrimethoxysilane
LD50 (Oral). 7120 mg/kg Rat (OECD TG401)
LD50 (Dermal). 3540 mg/kg Rabbit (RTECS)
LC50 (Inhalation). 16,8 mg/l Rat - 4h/vapour (OECD TG403)

PRODUCT Acute Toxicity - LD50 (oral):> 2000 mg / kg Rat (by analogy)
LD50 (skin)> 2000 mg / kg Rat (by analogy).

SECTION 12. Ecological information.

12.1. Toxicity.
Vinyltrimethoxysilane - EC50 (7d) 210 mg / l - Algae.

ETHANOL
LC50 - for Fish.
15300 mg/l/96h Pesce - Pimephales promelas

Vinyltrimethoxysilane
LC50 - for Fish.
191 mg/l/96h Trota Iridea
EC50 - for Crustacea.
168,7 mg/l/48h Daphnia Magna

12.2. Persistence and degradability.

Vinyltrimethoxysilane - BIODEGRADABILITY '
51% no readily biodegradable (OECD 301F METHOD)
CHEMICAL PHYSICS Removability = 2.4 h (half-life, METHOD OECD 111)
Hydrolysis, abiotic degradability.
Hydrolysis products: methanol, ethanol and compounds of silanol and / or siloxanol. Silicone content: Not biodegradable.

12.3. Bioaccumulative potential.

Vinyltrimethoxysilane - ACCUMULATION: negative, Log Pow = - 2.0 (product of hydrolysis).
Biologic accumulation is unlikely.

12.4. Mobility in soil.

Vinyltrimethoxysilane - MOBILITY ': low absorption in the soil.
Insoluble in water. Easily separable from water by filtration in the cured state.

12.5. Results of PBT and vPvB assessment.

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

12.6. Other adverse effects.

Information not available.

SECTION 13. Disposal considerations.

The valid EEC waste code are largely source-related; the manifacturer is, therefore, unable to specify waste codes for products used in various sectors.
Small quantities of cured product can be treated as industrial waste similar to MSW.
CER-code (suggested): 08 04 10.

13.1. Waste treatment methods.

Reuse, when possible. Neat product residues should be considered special non-hazardous waste.
Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.
Avoid littering. Do not contaminate soil, sewers and waterways.
CONTAMINATED PACKAGING
Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

SECTION 14. Transport information.

The product is not dangerous under current provisions of the Code of International Carriage of Dangerous Goods by Road (ADR) and by Rail (RID), of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code - It is not meant for carriage in bulk in tankers.

SECTION 15. Regulatory information.

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

Seveso category. None.

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006.

None.

Substances in Candidate List (Art. 59 REACH).

None.

Substances subject to authorisarion (Annex XIV REACH).

None.

Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:

None.

Substances subject to the Rotterdam Convention:

None.

Substances subject to the Stockholm Convention:

None.

Healthcare controls.

Information not available.

Information on the status of international registration - Listed on or in accordance with the following inventories:
EINECS - Europe
ECL - Korea
AICS - Australia
ENCS - Japan
PICCS - Philippines
TSCA - USA.

15.2. Chemical safety assessment.

No chemical safety assessment has been processed for the mixture and the substances it contains.

SECTION 16. Other information.

H412	Harmful to aquatic life with long lasting effects.
H226	Flammable liquid and vapour.
H332	Harmful if inhaled.
H225	Highly flammable liquid and vapour.

H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H331	Toxic if inhaled.
H370	Causes damage to organs.

Text of risk (R) phrases mentioned in section 2-3 of the sheet:

R10	FLAMMABLE.
R11	HIGHLY FLAMMABLE.
R20	HARMFUL BY INHALATION.
R23/24/25	TOXIC BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
R39/23/24/25	TOXIC: DANGER OF VERY SERIOUS IRREVERSIBLE EFFECTS THROUGH INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.

LEGEND:
- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX NUMBER: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

GENERAL BIBLIOGRAPHY
1. Regulation (EU) 1907/2006 (REACH) of the European Parliament
2. Regulation (EU) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 790/2009 (I Atp. CLP) of the European Parliament
4. Regulation (EU) 2015/830 of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
- The Merck Index. - 10th Edition
- Handling Chemical Safety

- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- ECHA website

Note for users:
The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.
This document must not be regarded as a guarantee on any specific product property.
The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.
Provide appointed staff with adequate training on how to use chemical products.

Changes to previous review:
The following sections were modified:
03 / 16.