

# SAFETY DATA SHEET

FOR INDUSTRIAL USE ONLY

SILQUEST\* A-1170 SILANE

## Section 1. Product and company identification

**Product name** : SILQUEST\* A-1170 SILANE

**Chemical name** : Bis(trimethoxysilylpropyl)amine

**Material uses** : Adhesion Promoter

**Manufacturer/Importer/Distributor Information** : Momentive Performance Materials - Sistersville  
10851 Energy Highway  
FRIENDLY WV 26146

**Contact person** : commercial.services@momentive.com

**Telephone** : General information  
+1-800-295-2392

**Emergency telephone number**


**Supplier** : CHEMTREC  
1-800-424-9300

## Section 2. Hazards identification

**Classification of the substance or mixture** : SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1

**Ingredients of unknown toxicity** : Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 3.2 %

### GHS label elements

**Hazard pictograms** : 

**Signal word** : Danger

**Hazard statements** : H318 Causes serious eye damage.

### Precautionary statements

**General** : Not applicable.

**Prevention** : Wear eye or face protection.  
Wash hands thoroughly after handling.

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

Immediately call a POISON CENTER or physician.

- Storage** : Not applicable.
- Disposal** : Not applicable.
- Other hazards which do not result in classification** : Product may hydrolyse upon contact with body fluids in the gastrointestinal tract to produce additional methanol; therefore, consider the signs/symptoms of methanol poisoning and also observe the known latency period of several days!

### Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Chemical name** : 1-Propanamine, 3-(trimethoxysilyl) -N-[3-(trimethoxysilyl) propyl] -

Hazardous ingredients	% by weight	CAS number
bis(3-(trimethoxysilyl)propyl)amine	70 - 100	82985-35-1
Related Silane Esters	1 - 5	

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

### Section 4. First aid measures

#### Description of necessary first aid measures

- Eye contact** : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
- Inhalation** : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be

kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### **Indication of immediate medical attention and special treatment needed, if necessary**

- |  |   |   |
|--|---|---|
| <b>Notes to physician</b>                | : | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Product may hydrolyse upon contact with body fluids in the gastrointestinal tract to produce additional methanol; therefore, consider the signs/symptoms of methanol poisoning and also observe the known latency period of several days!                               |
| <b>Specific treatments</b>               | : | No specific treatment.  |
| <b>Protection of first aid personnel</b> | : | No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. |

See toxicological information (Section 11)

## **Section 5. Fire-fighting measures**

### **Extinguishing media**

- |                                       |   |  |
|---------------------------------------|---|--|
| <b>Suitable extinguishing media</b>   | : | Use dry chemical, CO <sub>2</sub> , alcohol-resistant foam or water spray (fog). |
| <b>Unsuitable extinguishing media</b> | : | water jet  |

- |   |   |  |
|---|---|--|
| <b>Specific hazards arising from the chemical</b> | : | In a fire or if heated, a pressure increase will occur and the container may burst.  |
| <b>Hazardous thermal decomposition products</b>   | : | Decomposition products may include the following materials:<br>carbon dioxide<br>carbon monoxide<br>nitrogen oxides<br>silicon oxides<br>Measurements at temperatures above 150°C in presence of air (oxygen) have shown that small amounts of formaldehyde are formed due to oxidative degradation. |

- |   |   |   |
|---|---|---|
| <b>Special protective actions for fire-fighters</b>   | : | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Use water spray to keep fire-exposed containers cool. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. |
| <b>Special protective equipment for fire-fighters</b> | : | Firefighters must wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus with full face mask and full protective clothing.   |

## **Section 6. Accidental release measures**

### **Personal precautions, protective equipment and emergency procedures**

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

#### **Methods and material for containment and cleaning up**

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Note: see section 1 of SDS for emergency contact information and section 13 of SDS for waste disposal.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13 of SDS). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 of SDS for emergency contact information and section 13 of SDS for waste disposal.

## **Section 7. Handling and storage**

### **Precautions for safe handling**

- Protective measures** : Put on appropriate personal protective equipment (see section 8 of SDS). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10 of SDS) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

None.

- Appropriate engineering controls** : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

### Skin protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : If exposure limits are exceeded or respiratory irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Supplied air respirators may be required for non-routine or emergency situations. Respiratory protection must be provided in accordance with OSHA regulations (see 29CFR 1910.134). Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## Section 9. Physical and chemical properties

### Appearance

Physical state	:	Liquid
Color	:	colorless.
Odor	:	ester-like
Odor threshold	:	Not available
pH	:	Not available
Melting point	:	< 0 °C (< 32 °F)
Boiling point	:	152 °C (306 °F)
Flash point	:	112.7 °C (234.9 °F) (ASTM D 93)
Burning time	:	Not available
Burning rate	:	Not available
Evaporation rate	:	< 1(n-Butyl acetate=1)
Flammability (solid, gas)	:	Not available
Lower and upper explosive (flammable) limits	:	<b>Lower:</b> Not available <b>Upper:</b> Not available
Vapor pressure	:	< 1.33 hPa @ 20 °C (68 °F)
Vapor density	:	Greater than 1 [Air = 1]
Relative density	:	1.05 @ 25 °C (77 °F)
Density	:	1.0400 g/cm <sup>3</sup>
Solubility	:	Not available
Solubility in water	:	Reactive hydrolyses
Partition coefficient: n-octanol/water	:	Not available
Auto-ignition temperature	:	Not available
Decomposition temperature	:	Not available
SADT	:	Not available
Viscosity	:	<b>Dynamic:</b> Not available <b>Kinematic:</b> Not available

### Other information

No additional information.

## Section 10. Stability and reactivity

Reactivity	:	Stable under normal conditions.
Chemical stability	:	The product is stable.
Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	:	No specific data.
Incompatible materials	:	Reacts with water or moisture to form: Methanol Siloxane gel.

**Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Product Toxicological Data				
	LD50 Oral	Rat	3,780 mg/kg OECD-Guideline 401 (Acute Oral Toxicity)	-
	LD50 Dermal	Rabbit	11,865 mg/kg OECD-Guideline 402 (Acute Dermal Toxicity)	-

**Conclusion/Summary** : Not determined

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Product Toxicological Data					
	Skin OECD- Guideline 404 (Acute Dermal Irritation/Cor rosion)	Rabbit			-
<b>Remarks:</b>		Non-irritating to the skin.			
	eyes OECD- Guideline 405 (Acute Eye Irritation/Cor rosion)	Rabbit			-
<b>Remarks:</b>		Causes severe eye irritation.			

#### **Conclusion/Summary**

**Skin** : Not determined  
**eyes** : Not determined  
**Respiratory** : Not determined

#### Sensitization

Product/ingredient name	Route of exposure	Species	Result
Product Toxicological Data	Maximisation Test	Guinea pig	Negative OECD- Guideline 406 (Skin Sensitisation)

#### **Conclusion/Summary**

**Skin** : Not determined  
**Respiratory** : Not determined

#### Mutagenicity

**Conclusion/Summary** : Not determined

**Carcinogenicity**

**Conclusion/Summary** : Not determined

**Reproductive toxicity**

**Conclusion/Summary** : Not determined

**Teratogenicity**

**Conclusion/Summary** : Not determined

**Specific target organ toxicity (single exposure)**

Not available

**Specific target organ toxicity (repeated exposure)**

Not available

**Aspiration hazard**

Not available

**Information on the likely routes of exposure** : Not available

**Potential acute health effects**

- Eye contact** : Causes serious eye damage.
- Inhalation** : May give off gas, vapour or dust that is very irritating or corrosive to the respiratory system.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : May cause burns to mouth, throat and stomach. A component of this material reacts with water to form a solid obstruction in the stomach. This product hydrolyzes in the stomach to form methanol. Methanol may cause nausea, abdominal pain, vomiting, headache, dizziness, shortness of breath, weakness, fatigue, leg cramps, restlessness, confusion, drunken behavior, visual disturbances, drowsiness, coma, and death. There may be a delay of several hours between swallowing methanol and the onset of signs and symptoms. The effects observed are in part due to acidosis and partially to cerebral edema. Visual effects include blurred vision, diplopia, changes in color perception, restriction of visual fields, complete blindness. Ingestion of moderate quantities of methanol also produces metabolic acidosis. Onset of symptoms may be delayed up to 48 hours. 60-200 ml methanol is fatal dose for most adults. Ingestion of as little as 10 ml methanol has caused blindness. With massive overdoses, liver, kidney and heart muscle injuries have been described.

**Symptoms related to the physical, chemical and toxicological characteristics**

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation



redness  
blistering may occur  
**Ingestion** : Adverse symptoms may include the following:  
stomach pains

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

**Potential immediate effects** : Not available  
**Potential delayed effects** : Not available

#### Long term exposure

**Potential immediate effects** : Not available  
**Potential delayed effects** : Not available

### Potential chronic health effects

**Conclusion/Summary** : Not determined

**General** : No known significant effects or critical hazards.  
**Carcinogenicity** : No known significant effects or critical hazards.  
**Mutagenicity** : This material was negative in a bacterial reverse (Salmonella typhimurium/Escherichia coli) mutation assay. No known significant effects or critical hazards.  
**Teratogenicity** : No known significant effects or critical hazards.  
**Developmental effects** : No known significant effects or critical hazards.  
**Fertility effects** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available

## **Section 12. Ecological information**

### Ecotoxicity

Product/ingredient name	Result	Species	Exposure
Product Ecotoxicological Data			
	Acute LC50 130 mg/l Fresh water OECD Guideline 203 (Fish, Acute Toxicity Test)	Fish - Salmo gairdneri	96 h
	Acute No-observable-effect- concentration 100 mg/l Fresh water OECD Guideline 203 (Fish, Acute Toxicity Test)	Fish - Salmo gairdneri	96 h
	Acute EC50 > 100 mg/l Fresh water OECD Test Guideline 201	Aquatic plants - Desmodesmus subspicatus (green algae)	72 h
<b>Remarks - Acute - Aquatic</b>	The information given is based on data available for the material, the		

<b>plants:</b>	components of the material, and similar materials.		
	Acute No-observable-effect-concentration 22 mg/l Fresh water OECD Test Guideline 201	Aquatic plants - Desmodesmus subspicatus (green algae)	72 h
<b>Remarks - Acute - Aquatic plants:</b>	The information given is based on data available for the material, the components of the material, and similar materials.		

**Conclusion/Summary** : Not available

#### Persistence/degradability

Product/ingredient name	Test	Result	Dose	Inoculum
1-Propanamine, 3-(trimethoxysilyl)-N-[3-(trimethoxysilyl)propyl]-	OECD-Guideline 301 D (Closed Bottle Test)	17 % - 28 d		
<b>Remarks:</b>	The product is not readily biodegradable.			

**Conclusion/Summary** : Not available

#### Mobility in soil

**Soil/water partition coefficient (KOC)** : Not available

**Other adverse effects** : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. See Section 8 for information on appropriate personal protective equipment.

## Section 14. Transport information

**DOT SHIPPING NAME:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(bis(3-(trimethoxysilyl)propyl)amine)  
**DOT HAZARD CLASS:** 9  
**DOT LABEL (S):** 9

**UN/NA NUMBER:** UN3082  
**PACKING GROUP:** III  
  
**IMDG SHIPPING NAME:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,  
 N.O.S.(bis(3-(trimethoxysilyl)propyl)amine)  
**CLASS:** 9, 9,  
**IMDG-Labels:** 9  
**UN NUMBER:** UN3082  
**PACKING GROUP:** III  
**EmS No.:** F-A; S-F  
  
**IATA:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,  
 N.O.S.(bis(3-(trimethoxysilyl)propyl)amine)  
**CLASS:** 9  
**ICAO-Labels:** 9MI  
**UN NUMBER:** UN3082  
**PACKING GROUP:** III

**Special precautions for user** : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

## 15.Regulatory information

### United States

**U.S. Federal regulations** : **United States - TSCA 12(b) - Chemical export notification:** None required.  
**United States - TSCA 5(a)2 - Final significant new use rules:** Not listed  
**United States - TSCA 5(a)2 - Proposed significant new use rules:** Not listed  
**United States - TSCA 5(e) - Substances consent order:** Not listed

### SARA 311/312

**Classification** : Immediate (acute) health hazard  
 Delayed (chronic) health hazard

**California Prop. 65:** : WARNING: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

### Canada

**WHMIS (Canada)** : Class D-1A: Material causing immediate and serious toxic effects (Very toxic).  
 Class D-2A: Material causing other toxic effects (Very toxic).  
 Class D-2B: Material causing other toxic effects (Toxic).

### International regulations

**International lists** : **Australia inventory (AICS):** All components are listed or exempted.  
**Japan inventory:** At least one component is not listed.  
**China inventory (IECSC):** All components are listed or exempted.  
**Korea inventory:** All components are listed or exempted.

**Canada inventory:** All components are listed or exempted. (Quantity restricted)  
**Philippines inventory (PICCS):** All components are listed or exempted.  
**United States inventory (TSCA 8b):** All components are listed or exempted.  
**New Zealand Inventory (NZIoC):** At least one component is not listed.  
**Taiwan inventory (CSNN):** All components are listed or exempted.

## Section 16. Other information

**Label requirements** : MAY BE HARMFUL OR FATAL IF SWALLOWED.  
**Hazardous Material Information System III (U.S.A.) :**

<b>Health</b>	2
<b>Flammability</b>	1
<b>Physical hazards</b>	2

**Caution:** HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868. The customer is responsible for determining the PPE code for this material.

**Full text of abbreviated H statements** : Not applicable.

### History

**Date of printing** : 10/03/2016  
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**Date of previous issue** : 05/14/2015  
**Version** : 1.1  
**Prepared by** : Product Safety Stewardship  
**Key to abbreviations** :  
 ATE = Acute Toxicity Estimate  
 BCF = Bioconcentration Factor  
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 IATA = International Air Transport Association  
 IBC = Intermediate Bulk Container  
 IMDG = International Maritime Dangerous Goods  
 LogPow = logarithm of the octanol/water partition coefficient  
 MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
 RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail  
 UN = United Nations

**References** : Not available

### Notice to reader

Unless otherwise specified in section 1, Momentive products are intended for use in the manufacture and/or formulation of products and are not intended for direct consumer use. These products are not intended for long-lasting (> 30 days) implantation, injection or direct ingestion into the human body, nor for use in the manufacture of multiple use contraceptives.  
 Keep out of the reach of children.

### Further Information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality

specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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