

SECTION 3. Composition/information on ingredients

3.1. Substances

Information not relevant

3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification (EC) 1272/2008 (CLP)
Trimethoxyvinylsilane		
INDEX	$2,5 \leq x < 3$	Flam. Liq. 3 H226, Acute Tox. 4 H332, Skin Sens. 1B H317
EC 220-449-8		LC50 Inhalation vapours: 16,8 mg/l/4h
CAS 2768-02-7		
REACH Reg. 01-2119513215-52-xxxx		
3-Aminopropyltrimethoxysilan		
INDEX	$2 \leq x < 2,5$	Eye Dam. 1 H318, Skin Irrit. 2 H315
EC 237-511-5		
CAS 13822-56-5		
REACH Reg. 01-2119510159-45-xxxx		

The full wording of 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. Wash immediately with plenty of water. If irritation persists, get medical advice/attention. Wash contaminated clothing before using it again.

INHALATION: Remove to open air. In the event of breathing difficulties, get medical advice/attention immediately.

INGESTION: Get medical advice/attention. Induce vomiting only if indicated by the doctor. Never give anything by mouth to an unconscious person, unless authorised by a doctor.

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

Specific information on symptoms and effects caused by the product are unknown.

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

Treat symptomatically. Small amounts of methanol (CAS 67-56-1) are formed by hydrolysis and released upon curing.

SECTION 5. Firefighting measures

5.1. Extinguishing media

SUITABLE EXTINGUISHING EQUIPMENT

The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.

UNSUITABLE EXTINGUISHING EQUIPMENT

None in particular.

5.2. Special hazards arising from the substance or mixture

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

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. 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. 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. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat. Avoid leakage of the product into the environment.

7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store in a cool and 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.

Protect against moisture. Store at a temperature between +10 and +35 °C. Store away from food or feed and beverages.

Storage class TRGS 510 (Germany): 10

7.3. Specific end use(s)

Information not available

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

Small amounts of methanol (CAS 67-56-1) are formed by hydrolysis and released upon curing
Methanol (CAS 67-56-1): (EU) TWA: 200 ppm

SECTION 8. Exposure controls/personal protection ... / >>

Trimethoxyvinylsilane

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,34	mg/l
Normal value in marine water	0,034	mg/l
Normal value of STP microorganisms	110	mg/l

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers			Chronic systemic	Effects on workers			
	Acute local	Acute systemic	Chronic local		Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				0,3 mg/kg bw/d				
Inhalation				18,9 mg/m3				27,6 mg/m3
Skin				7,8 mg/kg bw/d				3,9 mg/kg bw/d

3-Aminopropyltrimethoxysilan

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,33	mg/l
Normal value in marine water	0,033	mg/l
Normal value for fresh water sediment	1,2	mg/kg/d
Normal value for marine water sediment	0,12	mg/kg/d
Normal value for water, intermittent release	3,3	mg/l
Normal value of STP microorganisms	13	mg/l
Normal value for the food chain (secondary poisoning)	44,4	mg/kg
Normal value for the terrestrial compartment	0,045	mg/kg/d

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers			Chronic systemic	Effects on workers			
	Acute local	Acute systemic	Chronic local		Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				5 mg/kg bw/d				
Inhalation				17 mg/m3				58 mg/m3
Skin				5 mg/kg bw/d				8,3 mg/kg bw/d

VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified ; LOW = low hazard ; MED = medium hazard ; HIGH = high hazard.

8.2. Exposure controls

This product contains substances that in their original state are in powder form, however in this product they are found in a non-breathable form. Inhalation of dust/particles from exposure to this product is highly unlikely.

This product contains carbon black in a non-breathable form. Inhalation of carbon black due to exposure to this product is unlikely.

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

Protect hands with category III work gloves.

The following should be considered when choosing work glove material (see standard EN 374): 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 Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

EYE PROTECTION

Wear airtight protective goggles (see standard EN ISO 16321).

RESPIRATORY PROTECTION

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. Use a mask with a type A filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387).

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.

ENVIRONMENTAL EXPOSURE CONTROLS

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure

compliance with environmental standards.

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Information
Appearance	pasty liquid	
Colour	black	
Odour	mild	
Odour threshold	not applicable	
Melting point / freezing point	not available	
Initial boiling point	not available	
Boiling range	not applicable	
Flammability	not applicable	
Lower explosive limit	not available	
Upper explosive limit	not available	
Flash point	> 60 °C	
Auto-ignition temperature	224 °C	
Decomposition temperature	not available	
pH	not applicable	Reason for missing data: not soluble in water
Kinematic viscosity	not available	
Dynamic viscosity	6000-14000 Pa*s	Temperature: 20 °C
Solubility	insoluble in water	
Partition coefficient: n-octanol/water	not available	
Vapour pressure	not available	
Density and/or relative density	1,48	
Relative vapour density	not available	
Particle characteristics	not applicable	

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Information not available

9.2.2. Other safety characteristics

Information not available

SECTION 10. Stability and reactivity

10.1. Reactivity

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

Product cures with moisture.

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.

3-Aminopropyltrimethoxysilan

On contact with: water. Forms: methanol.

10.4. Conditions to avoid

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

Product cures with moisture. Protect from moisture. Exposure to air or moisture over prolonged periods. Do not freeze. Keep away from open flames, hot surfaces and sources of ignition.

10.5. Incompatible materials

SECTION 10. Stability and reactivity ... / >>

Information not available

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.

None under normal use conditions. Small amounts of methanol (CAS 67-56-1) are formed by hydrolysis and released upon curing.

SECTION 11. Toxicological information**11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008**

The data collected on the overall product take priority over the data of the individual ingredients.

Metabolism, toxicokinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure

Mixture information:

INHALATION: Based on the available data, the criteria for classification are not met.

CONTACT WITH EYES: Based on the available data, the criteria for classification are not met.

CONTACT WITH SKIN: Based on the available data, the criteria for classification are not met. It may cause sensitisation in susceptible individuals.

INGESTION: Based on the available data, the criteria for classification are not met.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Information not available

Interactive effects

Information not available

ACUTE TOXICITY

ATE (Inhalation - vapours) of the mixture:	> 20 mg/l
ATE (Oral) of the mixture:	Not classified (no significant component)
ATE (Dermal) of the mixture:	Not classified (no significant component)

Trimethoxyvinylsilane	
LD50 (Dermal):	3540 µg/kg <i>Oryctolagus cuniculus</i>
LD50 (Oral):	7120 mg/kg bw Rat
LC50 (Inhalation vapours):	16,8 mg/l/4h Rat

3-Aminopropyltrimethoxysilan	
LD50 (Dermal):	> 10000 ml/kg Rabbit
LD50 (Oral):	> 2000 mg/kg Rat
LC50 (Inhalation vapours):	> 5 ppm Rat

The following values are calculated according to chapter 3.1 of the GHS document

STAmix (oral) >5000 mg/kg

STAmix (dermal) >5000 mg/kg

STAmix (inhalation-gas) >20000 ppm

STAmix (inhalation-dust/mist) >5 mg/l

STAmix (inhalation-vapour) 617.00 mg/l

SKIN CORROSION / IRRITATION

Does not meet the classification criteria for this hazard class

SERIOUS EYE DAMAGE / IRRITATION

Does not meet the classification criteria for this hazard class

No classification is proposed, based on the negative conclusive data. By analogy with other similar product tested: No irritation in contact with the eyes: H319 phrase does not apply.

SECTION 11. Toxicological information ... / >>

Method: OCSE 437 Bovine Corneal Opacity and Permeability (BCOP) test
Effective dose: 100% product
Exposure time: 10 min.
Results: Product score <3; Non-irritating.

RESPIRATORY OR SKIN SENSITISATION

May produce an allergic reaction.

Contains:

Trimethoxyvinylsilane

Skin sensitization

No reactions were observed. May cause sensitization in susceptible individuals.

Method: OECD 406 skin sensitization

CN code: Guinea pig

Exposure: dermal

Results: No sensitization reactions were observed.

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

11.2. Information on other hazards

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with human health effects under evaluation.

SECTION 12. Ecological information**12.1. Toxicity**

Trimethoxyvinylsilane

LC50 - for Fish

191 mg/l/96h Oncorhynchus mykiss

EC50 - for Crustacea

168,7 mg/l/48h Daphnia magna

EC50 - for Algae / Aquatic Plants

957 mg/l/72h Desmodesmus subspicatus

Chronic NOEC for Fish

100 mg/l Oncorhynchus mykiss

Chronic NOEC for Crustacea

1 mg/l Daphnia magna

3-Aminopropyltrimethoxysilan

LC50 - for Fish

> 934 mg/l/96h Danio rerio

EC50 - for Crustacea

331 mg/l/48h Daphnia magna

EC50 - for Algae / Aquatic Plants

> 1000 mg/l/72h Desmodesmus subspicatus

Chronic NOEC for Crustacea

94 mg/l Daphnia magna

Chronic NOEC for Algae / Aquatic Plants

1,3 mg/l Desmodesmus subspicatus

SECTION 12. Ecological information ... / >>**12.2. Persistence and degradability**

Trimethoxyvinylsilane
NOT rapidly degradable

3-Aminopropyltrimethoxysilan
Rapidly degradable

12.3. Bioaccumulative potential

Trimethoxyvinylsilane
Partition coefficient: n-octanol/water 1,1 Log Kow 20 °C - pH 7

12.4. Mobility in soil

Information not available

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 \geq than 0,1%.

12.6. Endocrine disrupting properties

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with environmental effects under evaluation.

12.7. Other adverse effects

Information not available

SECTION 13. Disposal considerations

EWC: 080410.

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.
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.

14.1. UN number or ID number

not applicable

14.2. UN proper shipping name

not applicable

14.3. Transport hazard class(es)

not applicable

14.4. Packing group

not applicable

SECTION 14. Transport information ... / >>**14.5. Environmental hazards**

not applicable

14.6. Special precautions for user

not applicable

14.7. Maritime transport in bulk according to IMO instruments

Information not relevant

SECTION 15. Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**Seveso Category - Directive 2012/18/EU: NoneRestrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006

<u>Product</u>	
Point	40

Regulation (EU) 2019/1148 - on the marketing and use of explosives precursors
not applicableSubstances in Candidate List (Art. 59 REACH)On the basis of available data, the product does not contain any SVHC in percentage \geq than 0,1%.Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to Regulation (EU) 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Healthcare controls

Information not available

15.2. Chemical safety assessment

A chemical safety assessment has not been performed for the preparation/for the substances indicated in section 3.

SECTION 16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

Flam. Liq. 3	Flammable liquid, category 3
Acute Tox. 4	Acute toxicity, category 4
Eye Dam. 1	Serious eye damage, category 1
Skin Irrit. 2	Skin irritation, category 2
Skin Sens. 1B	Skin sensitization, category 1B
H226	Flammable liquid and vapour.
H332	Harmful if inhaled.
H318	Causes serious eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
EUH210	Safety data sheet available on request.

LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- ATE: Acute Toxicity Estimate
- CAS: Chemical Abstract Service Number

SECTION 16. Other information ... / >>

- CE50: Effective concentration (required to induce a 50% effect)
- CE: Identifier in ESIS (European archive of existing substances)
- CLP: Regulation (EC) 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: 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: Regulation (EC) 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: Time-weighted average exposure limit
- TWA STEL: Short-term 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 (EC) 1907/2006 (REACH) of the European Parliament
2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 2020/878 (II Annex of REACH Regulation)
4. Regulation (EC) 790/2009 (I Atp. CLP) 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
10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
12. Regulation (EU) 2016/1179 (IX Atp. CLP)
13. Regulation (EU) 2017/776 (X Atp. CLP)
14. Regulation (EU) 2018/669 (XI Atp. CLP)
15. Regulation (EU) 2019/521 (XII Atp. CLP)
16. Delegated Regulation (UE) 2018/1480 (XIII Atp. CLP)
17. Regulation (EU) 2019/1148
18. Delegated Regulation (UE) 2020/217 (XIV Atp. CLP)
19. Delegated Regulation (UE) 2020/1182 (XV Atp. CLP)
20. Delegated Regulation (UE) 2021/643 (XVI Atp. CLP)
21. Delegated Regulation (UE) 2021/849 (XVII Atp. CLP)
22. Delegated Regulation (UE) 2022/692 (XVIII Atp. CLP)

- 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
- IFA GESTIS website
- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

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.

CALCULATION METHODS FOR CLASSIFICATION

Chemical and physical hazards: Product classification derives from criteria established by the CLP Regulation, Annex I, Part 2. The data for evaluation of chemical-physical properties are reported in section 9.

Health hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 3, unless determined otherwise in Section 11.

Environmental hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 4, unless determined otherwise in Section 12.