

Safety data sheet

according to Regulation (EC) No 1907/2006, Article 31

Printing date 28.05.2026

Version number 2 (replaces version 1)

Revision: 28.05.2026

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

1.1 Product identifier

Trade name: **AKENOVA XL PANEL BOND**

Article number: 10324

UFI: QH5F-3016-600N-05FD

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

No further relevant information available.

Product category: PC1 Adhesives, sealants

Application of the substance / the mixture: Adhesives

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier: AKEMI chemisch technische Spezialfabrik GmbH
 Lechstrasse 28
 D 90451 Nürnberg

Tel. +49(0)911-642960
 Fax. +49(0)911-644456
 e-mail info@akemi.de

Further information obtainable from:

Laboratory

1.4 Emergency telephone number:

Product Safety Department AKEMI chemisch technische Spezialfabrik GmbH
 Tel. +49(0)911-64296-59
 Reachable during the following office hours:
 Monday – Thursday from 07:30 a.m. to 16:30 p.m.
 Friday from 07:30 a.m. to 13:30 p.m.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Eye Irrit. 2 H319 Causes serious eye irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

Hazard pictograms

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



GHS07

Signal word

Warning

Hazard-determining components of labelling:

trimethoxyvinylsilane
 N-(3-(trimethoxysilyl)propyl)ethylenediamine
 H319 Causes serious eye irritation.

Hazard statements

H317 May cause an allergic skin reaction.

Precautionary statements

P101 If medical advice is needed, have product container or label at hand.
 P102 Keep out of reach of children.
 P103 Read carefully and follow all instructions.
 P261 Avoid breathing vapours.
 P280 Wear protective gloves / eye protection.
 P302+P352 IF ON SKIN: Wash with plenty of water.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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P333+P313
P501If skin irritation or rash occurs: Get medical advice/attention.
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:

1760-24-3 N-(3-(trimethoxysilyl)propyl)ethylenediamine

· Determination of endocrine-
disrupting properties

For information on endocrine disrupting properties see section 11.

SECTION 3: Composition/information on ingredients**· 3.2 Mixtures**

· Description: Mixture: consisting of the following components.

· Dangerous components:

CAS: 2768-02-7 EINECS: 220-449-8 Index number: 014-049-00-0 Reg.nr.: 01-2119513215-52-0003	trimethoxyvinylsilane Flam. Liq. 3, H226 Acute Tox. 4, H332; Skin Sens. 1B, H317	1-5%
CAS: 1760-24-3 EINECS: 217-164-6 Reg.nr.: 01-2119970215-39	N-(3-(trimethoxysilyl)propyl)ethylenediamine Eye Dam. 1, H318 Skin Sens. 1B, H317; STOT SE 3, H335 vPvB	1-5%

· 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**

· After inhalation: Supply fresh air; consult doctor in case of complaints.

· After skin contact: Rinse with warm water.

· After eye contact: If skin irritation continues, consult a doctor.

· After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· After swallowing: If symptoms persist consult doctor.

· 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**

No further relevant information available.

· 5.3 Advice for firefighters· Protective equipment: Wear self-contained respiratory protective device.

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SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.
Use respiratory protective device against the effects of fumes/dust/aerosol.

· **6.2 Environmental precautions:**

Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.

· **6.3 Methods and material for containment and cleaning up:**

Do not flush with water or aqueous cleansing agents
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

· **6.4 Reference to other sections**

See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**

No special precautions are necessary if used correctly.
Ensure good ventilation/exhaustion at the workplace.

· **Information about fire - and explosion protection:**

Fumes can combine with air to form an explosive mixture.
Keep ignition sources away - Do not smoke.

· **7.2 Conditions for safe storage, including any incompatibilities**

· **Storage:**

· **Requirements to be met by storerooms and receptacles:**

Prevent any seepage into the ground.

· **Information about storage in one common storage facility:**

Not required

· **Further information about storage conditions:**

Protect from frost.
Protect from humidity and water.
Store in cool, dry conditions in well sealed receptacles.

· **Storage class:**

12

· **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:**

2768-02-7 trimethoxyvinylsilane

TLV-ACGIH	Short-term value: 328 mg/m ³ , 250 ppm Long-term value: 262 mg/m ³ , 200 ppm
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· **DNELs**

2768-02-7 trimethoxyvinylsilane

Oral	DNEL (Langzeit-wiederholt)	0.3 mg/kg bw/day (BEV)
Dermal	DNEL (Kurzzeit-akut)	0.2 mg/kg bw/day (ARB)
		0.1 mg/kg bw/day (BEV)
	DNEL (Langzeit-wiederholt)	3.9 mg/kg bw/day (ARB)

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Inhalative	DNEL (Kurzzeit-akut)	7.8 mg/kg bw/day (BEV) 4.9 mg/m ³ Air (ARB) 93.4 mg/m ³ Air (BEV)
	DNEL (Langzeit-wiederholt)	27.6 mg/m ³ Air (ARB) 6.7-18.9 mg/m ³ Air (BEV)

1760-24-3 N-(3-(trimethoxysilyl)propyl)ethylenediamine

Oral	DNEL (Langzeit-wiederholt)	2.5 mg/kg bw/day (BEV)
Dermal	DNEL (Kurzzeit-akut)	5 mg/kg bw/day (ARB) 17 mg/kg bw/day (BEV)
	DNEL (Langzeit-wiederholt)	5 mg/kg bw/day (ARB) 2.5 mg/kg bw/day (BEV)
Inhalative	DNEL (Langzeit-wiederholt)	35.5 mg/m ³ Air (ARB) 8.7 mg/m ³ Air (BEV)

· **PNECs****2768-02-7 trimethoxyvinylsilane**

PNEC (wässrig)	6.6 mg/l (KA)
	0.036 mg/l (MW)
	0.36 mg/l (SW)
	2.4 mg/l (WAS)
PNEC (fest)	0.06 mg/kg Trockengew (BO)
	0.15 mg/kg Trockengew (MWS)
	1.5 mg/kg Trockengew (SWS)

1760-24-3 N-(3-(trimethoxysilyl)propyl)ethylenediamine

PNEC (wässrig)	25 mg/l (KA)
	0.0062 mg/l (MW)
	0.062 mg/l (SW)
	0.62 mg/l (WAS)
PNEC (fest)	0.0075 mg/kg Trockengew (BO)
	0.005 mg/kg Trockengew (MWS)
	0.05 mg/kg Trockengew (SWS)

· **Additional information:** The lists valid during the making were used as basis.· **8.2 Exposure controls**

- Appropriate engineering controls No further data; see section 7.
- Individual protection measures, such as personal protective equipment
- General protective and hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals.

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

Wash hands before breaks and at the end of work.

-
- Respiratory protection:

Not required

-
- Hand protection

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

The protection gloves to be used have to comply with the specifications of the directive 89/686/EC and the directive derived decree EN374, respectively, e.g. the above listed protection glove type. The mentioned permeation times' data were generated and verified with material samples of the recommended protection glove type in the scope of laboratory analyses of the company KCL GmbH in compliance with EN374.

This recommendation refers exclusively to the material safety data sheet

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referenced product delivered by manufacturer and the indicated field of application. In case of product dilution or in case of mixture with different substances or chemicals, and in condition of EN374 deviation the producer of CE-approved protection gloves must be contacted for detailed information (e.g., KCL GmbH, Germany, 36124 Eichenzell, internet: <http://www.kcl.de>).

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· Penetration time of glove material

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

· For the permanent contact gloves made of the following materials are suitable:

Butyl rubber, BR

· As protection from splashes gloves made of the following materials are suitable:

Butoject (KCL, Art_No. 897, 898)

Butyl rubber, BR

· Not suitable are gloves made of the following materials:

Leather gloves

Strong material gloves

Rubber gloves

· Eye/face protection

Goggles recommended during refilling

· Body protection:

Protective work clothing

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Physical state

Liquid

· Colour:

According to product specification

· Odour:

Nearly odourless

· Odour threshold:

Not determined

· Melting point/freezing point:

Undetermined

· Boiling point or initial boiling point and boiling range

Undetermined

· Flammability

Not applicable

· Lower and upper explosion limit

· Lower:

Not determined

· Upper:

Not determined

· Flash point:

Not applicable

· Decomposition temperature:

Not determined

· pH

Not determined

· Viscosity:

· Kinematic viscosity

Not determined

· Dynamic:

Not determined

· Solubility

· water:

Not miscible or difficult to mix.

· Partition coefficient n-octanol/water (log value)

Not determined

· Vapour pressure:

Not determined

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· Density and/or relative density	
· Density at 20 °C:	1.64 g/cm ³
· Relative density	Not determined
· Vapour density	Not determined

· 9.2 Other information

· Appearance:	
· Form:	Pasty
· Important information on protection of health and environment, and on safety.	
· Ignition temperature:	Product is not selfigniting.
· Explosive properties:	Product does not present an explosion hazard.
· Solvent content:	
· Organic solvents:	0.0 %
· Solids content:	55.8 %
· Change in condition	
· Evaporation rate	Not determined

· Information with regard to physical hazard classes	
· Explosives	Void
· Flammable gases	Void
· Aerosols	Void
· Oxidising gases	Void
· Gases under pressure	Void
· Flammable liquids	Void
· Flammable solids	Void
· Self-reactive substances and mixtures	Void
· Pyrophoric liquids	Void
· Pyrophoric solids	Void
· Self-heating substances and mixtures	Void
· Substances and mixtures, which emit flammable gases in contact with water	Void
· Oxidising liquids	Void
· Oxidising solids	Void
· Organic peroxides	Void
· Corrosive to metals	Void
· Desensitised explosives	Void

SECTION 10: Stability and reactivity

· 10.1 Reactivity	No further relevant information available.
· 10.2 Chemical stability	
· 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:	No further relevant information available.

SECTION 11: Toxicological information

· 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008	
· Acute toxicity	Based on available data, the classification criteria are not met.

· LD/LC50 values relevant for classification:

ATE (Acute Toxicity Estimates)

Inhalative	LC50/4 h	753 mg/l (rat)
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2768-02-7 trimethoxyvinylsilane

Oral	LD50	6,899-7,120 mg/kg (rat) (OECD 401)
	NOAEL-Werte	250 mg/kg (rat) (OECD422)
Dermal	LD50	3,158-3,760 mg/kg (rabbit) (OECD 402)
Inhalative	LC50/4h	16.8 mg/m ³ (rat) (OECD 403)
	LC50/4 h	16.8 mg/l (rat)
	NOAEC	0.058-1.7 mg/l (rat) (EPA OTS)

1760-24-3 N-(3-(trimethoxysilyl)propyl)ethylenediamine

Oral	LD50	2,995 mg/kg (rat)
	NOEL	≥500 mg/kg (rat) (OECD 422)
	NOAEL	≥500 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rat)
Inhalative	LC50/4 h	1.49 mg/l (rat)

- Primary irritant effect: Based on available data, the classification criteria are not met.
- Skin corrosion/irritation Causes serious eye irritation.
- Serious eye damage/irritation May cause an allergic skin reaction.
- Respiratory or skin sensitisation Based on available data, the classification criteria are not met.
- 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.

11.2 Information on other hazards

- Endocrine disrupting properties

None of the ingredients is listed.

SECTION 12: Ecological information**12.1 Toxicity**

- Aquatic toxicity:

2768-02-7 trimethoxyvinylsilane

IC50/72h	210 mg/l (selenastrum capricornutum)
EC50/48h	169 mg/l (Daphnia magna) (OECD 202)
EC10/5h	1,000 mg/l (pseudomonas putida)
ErC50/72h	>957 mg/l (Desmodemus subspicatus) (OECD 201)
	>89 mg/l (Pseudokirchneriella subcapitata)
EC50/8d	210 mg/l (Pseudokirchneriella subcapitata)
NOEC	28 mg/kg (Daphnia magna) (OECD 211)
	25 mg/kg (Selenastrum capricornutum)
NOELR/72h	>957 mg/l (Desmodemus subspicatus) (=ECD 201)
	≥89 mg/l (Pseudokirchneriella subcapitata)
NOEC/21d	28.1 mg/l (Daphnia magna) (OECD 211)
EC10	1,000 mg/l (pseudomonas putida)
	32 mg/l (selenastrum capricornutum)
LC50/96h	>100 mg/l (Danio rerio.) (OECD 203)
	191 mg/l (Oncorhynchus mykiss) (OECD 203)

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1760-24-3 N-(3-(trimethoxysilyl)propyl)ethylenediamine

EC50	435 mg/l (Klärschlamm: Atmungs-/Vermehrungshemmung) 67 mg/l (pseudomonas putida) (DIN 38412 part 8)
IC50/72h	8.8 mg/l (algae) (OECD 201)
EC50/48h	23 mg/l (Daphnia magna) (OECD 202)
ErC50/72h	8.8 mg/l (Pseudokirchneriella subcapitata) (OECD 201)
EC50/16h	67 mg/l (pseudomonas putida)
NOEC	3.1 mg/kg (algae) (OECD 201) ≥1,000 mg/kg (Eisenia fetida (Regenwürmer)) (OECD 207)
NOELR/72h	3.1 mg/l (Pseudokirchneriella subcapitata) (OECD 201)
NOEC/21d	>1 mg/l (Daphnia magna)
EC50/48h	87.4 mg/l (Daphnia magna)
EC50/72h	5 mg/l (algae) 126 mg/l (Scenedesmus subspicatus)
LC50/96h	344 mg/l (Brachydanio rerio) 597 mg/l (Danio rerio.) (OECD 203) 168 mg/l (pimephales promelas)

· **12.2 Persistence and degradability**

No further relevant information available.

· **12.3 Bioaccumulative potential**

No further relevant information available.

· **12.4 Mobility in soil**

No further relevant information available.

· **12.5 Results of PBT and vPvB assessment**

· **PBT:** Not applicable

· **vPvB:**

1760-24-3 N-(3-(trimethoxysilyl)propyl)ethylenediamine

· **12.6 Endocrine disrupting properties**

The product does not contain substances with endocrine disrupting properties.

· **12.7 Other adverse effects**

· **Remark:** Harmful to fish

· **Additional ecological information:**

· **General notes:** Harmful to aquatic organisms
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**

· **Recommendation** Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packaging:**

· **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

· **14.1 UN number or ID number**

· **ADR, ADN, IMDG, IATA** Void

· **14.2 UN proper shipping name**

· **ADR, ADN, IMDG, IATA** Void

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· 14.3 Transport hazard class(es)

· ADR, ADN, IMDG, IATA

· Class Void

· 14.4 Packing group

· ADR, IMDG, IATA Void

· 14.5 Environmental hazards:

· Marine pollutant: No

· 14.6 Special precautions for user

Not applicable

· 14.7 Maritime transport in bulk according to IMO instruments

Not applicable

· Transport/Additional information:

Not dangerous according to the above specifications.

· UN "Model Regulation":

Void

SECTION 15: Regulatory information
· 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

· Directive 2012/18/EU

· Named dangerous substances -

ANNEX I

None of the ingredients is listed.

· REGULATION (EC) No 1907/2006

ANNEX XVII

Conditions of restriction: 3

· DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II

None of the ingredients is listed.

· REGULATION (EU) 2019/1148

· Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))

None of the ingredients is listed.

· Annex II - REPORTABLE EXPLOSIVES PRECURSORS

None of the ingredients is listed.

· Regulation (EC) No 273/2004 on drug precursors

None of the ingredients is listed.

· Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors

None of the ingredients is listed.

· National regulations:

· Information about limitation of use: Employment restrictions concerning juveniles must be observed.
Employment restrictions concerning pregnant and lactating women must be observed.

· Waterhazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.

· Substances of very high concern (SVHC) according to REACH, Article 57

None of the ingredients is listed.

· VOC EU

0.4 g/l

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· **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.

This Safety Data Sheet is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

· <u>Department issuing SDS:</u>	Laboratory
· <u>Date of previous version:</u>	06.06.2024
· <u>Version number of previous version:</u>	1
· <u>Abbreviations and acronyms:</u>	ADR: Accord relatif au transport international 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) 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 ATE: Acute toxicity estimate values Flam. Liq. 3: Flammable liquids – Category 3 Acute Tox. 4: Acute toxicity – Category 4 Eye Dam. 1: Serious eye damage/eye irritation – Category 1 Eye Irrit. 2: Serious eye damage/eye irritation – Category 2 Skin Sens. 1: Skin sensitisation – Category 1 Skin Sens. 1B: Skin sensitisation – Category 1B STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

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