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

1.1 Product identifier

- Trade name DAPCO™ 2200 PRIMERLESS FIREWALL SEALANT, PART A

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

Uses of the Substance / Mixture

- Sealant

1.3 Details of the supplier of the safety data sheet

Company

CYTEC INDUSTRIES INC.
COMPOSITE MATERIALS
504 CARNEGIE CENTER PRINCETON, NJ 08540 USA
Tel: +1-833-970-1163

1.4 Emergency telephone

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CONTACT CHEMTREC (24-Hour Number): 800-424-9300 within the United States and Canada, or 703-527-3887 for international collect calls.

Disclaimer

The ® indicates a Registered Trademark in the United States and the ™ indicates a trademark in the United States. The mark may also be registered, subject of an application for registration, or a trademark in other countries.

SECTION 2: Hazards identification

Although OSHA has not adopted the environmental portion of the GHS regulations, this document may include information on environmental effects.

2.1 Classification of the substance or mixture

HCS 2012 (29 CFR 1910.1200)

- Not a hazardous product according to the OSHA Globally Harmonized System (GHS).

2.2 Label elements

HCS 2012 (29 CFR 1910.1200)

- Not a hazardous product according to the OSHA Globally Harmonized System (GHS).

2.3 Other hazards which do not result in classification

- Heating to temperatures above 150 °C in the presence of air may result in the release of formaldehyde.

SECTION 3: Composition/information on ingredients

3.1 Substance

- Not applicable, this product is a mixture.

3.2 Mixture

- Chemical nature Mixture of polysiloxanes and fillers

Hazardous Ingredients and Impurities

Chemical name	Identification number CAS-No.	Concentration [%]
Calcium Carbonate	471-34-1	30 - 50
Octadecanoic acid	57-11-4	1 - 5
Titanium oxide (TiO2)	13463-67-7	1 - 5
Trimethylated silica	68909-20-6	1 - 5

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1 Description of first-aid measures

In case of inhalation

- Move to fresh air.
- Get medical attention immediately if symptoms occur.

In case of skin contact

- Use appropriate protective equipment when treating a contaminated person.

In case of eye contact

- Rinse with running water whilst keeping the eyes wide open.

In case of ingestion

- Do NOT induce vomiting.
- Rinse mouth with water.

4.2 Most important symptoms and effects, both acute and delayed

Effects

- Under certain conditions, this product may generate formaldehyde as a by-product of oxidative thermal decomposition. Formaldehyde is listed as a potential human carcinogen by IARC, OSHA, and ACGIH.

Effects

- No hazards to be specially mentioned.
- Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough.
- Risk of nose bleeding
- Irritating to mucous membranes

Repeated or prolonged exposure

- Contact with dust can cause mechanical irritation or drying of the skin.
- Dust contact with the eyes can lead to mechanical irritation.

Symptoms

- At high concentrations:
- slight irritation

- Cough
- Redness
- Redness of the conjunctiva

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician

- When symptoms persist or in all cases of doubt seek medical advice.

SECTION 5: Firefighting measures

Flash point	Not applicable
Autoignition temperature	No data available
Flammability / Explosive limit	No data available

5.1 Extinguishing media

Suitable extinguishing media

- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2 Special hazards arising from the substance or mixture

- Under fire conditions:
- Will burn
- On combustion, toxic gases are released.

5.3 Advice for firefighters

Special protective equipment for fire-fighters

- In the event of fire, wear self-contained breathing apparatus.

Specific fire fighting methods

- Do not use a solid water stream as it may scatter and spread fire.

Further information

- Standard procedure for chemical fires.
- Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
- Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- For further information refer to section 8 "Exposure controls / personal protection."

6.2 Environmental precautions

- Prevent further leakage or spillage if safe to do so.
- Contain the spilled material by diking.
- Do not let product enter drains.
- Do not allow uncontrolled discharge of product into the environment.

- Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies

6.3 Methods and materials for containment and cleaning up

- Stop leak if safe to do so.
- Avoid dust formation.
- Sweep up and shovel into suitable containers for disposal.
- Keep in properly labeled containers.
- Keep in suitable, closed containers for disposal.
- After cleaning, flush away traces with water.
- Recover the cleaning water for subsequent disposal.
- Decontaminate tools, equipment and personal protective equipment in a segregated area.
- Dispose of in accordance with local regulations.
- Never return spills in original containers for re-use.

6.4 Reference to other sections

- 7. HANDLING AND STORAGE
- 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
- 13. DISPOSAL CONSIDERATIONS

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Under certain conditions, this product may generate formaldehyde as a by-product of oxidative thermal decomposition. Formaldehyde is listed as a potential human carcinogen by IARC, OSHA, and ACGIH.
- Avoid exceeding the given occupational exposure limits (see section 8).

Hygiene measures

- Handle in accordance with good industrial hygiene and safety practice.
- Wash hands before breaks and at the end of workday.
- When using do not eat, drink or smoke.
- Eye wash bottles or eye wash stations in compliance with applicable standards.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

- Store in dry, well-ventilated premises at room temperature.

7.3 Specific end use(s)

- Contact your supplier for additional information

SECTION 8: Exposure controls/personal protection

Introductory Remarks: These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

8.1 Control parameters

Components with workplace occupational exposure limits

Components	Value type	Value	Basis
Calcium Carbonate	TWA	5 mg/m3	National Institute for Occupational Safety and Health
	Form of exposure : Respirable Occurs in nature as as limestone, chalk, marble, dolomite, aragonite, calcite & oyster shells.Expressed as :Calcium carbonate		
Calcium Carbonate	TWA	10 mg/m3	National Institute for Occupational Safety and Health
	Form of exposure : total Occurs in nature as as limestone, chalk, marble, dolomite, aragonite, calcite & oyster shells.Expressed as :Calcium carbonate		
Octadecanoic acid	TWA	10 mg/m3	American Conference of Governmental Industrial Hygienists
	Form of exposure : Inhalable particulate matter		
Octadecanoic acid	TWA	3 mg/m3	American Conference of Governmental Industrial Hygienists
	Form of exposure : Respirable particulate matter		
Titanium oxide (TiO2)			National Institute for Occupational Safety and Health
	Potential Occupational Carcinogen		
Titanium oxide (TiO2)	TWA	15 mg/m3	Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants
	Form of exposure : total dust		
Titanium oxide (TiO2)	TWA	10 mg/m3	American Conference of Governmental Industrial Hygienists
	Expressed as :Titanium dioxide		
Trimethylated silica	TWA	4 mg/m3	Solvay Acceptable Exposure Limit

NIOSH IDLH (Immediately Dangerous to Life or Health Concentrations)

Components	CAS-No.	Concentration
Titanium oxide (TiO2)	13463-67-7	5000 mg/m³

8.2 Exposure controls

Control measures

Engineering measures
- Provide appropriate exhaust ventilation at places where dust is formed.
- Apply technical measures to comply with the occupational exposure limits.

Individual protection measures

Respiratory protection
- Keep in a well-ventilated place.
- Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust).

Hand protection
- Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).
- Impervious gloves

Eye protection
- Dust proof goggles, if dusty.
- Eye wash bottles or eye wash stations in compliance with applicable standards.

Skin and body protection
- Dust impervious protective suit

Hygiene measures
- Handle in accordance with good industrial hygiene and safety practice.
- Wash hands before breaks and at the end of workday.
- When using do not eat, drink or smoke.
- Eye wash bottles or eye wash stations in compliance with applicable standards.

SECTION 9: Physical and chemical properties

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product information phone number in Section 1 for its exact specifications.

9.1 Information on basic physical and chemical properties

Appearance	Form:	paste
	Physical state:	solid
	Color:	blue
Odor	odorless	
Odor Threshold	No data available	
Molecular weight	Mixture	

pH	No data available
Melting point/freezing point	No data available
Initial boiling point and boiling range	No data available
Flash point	Not applicable
Evaporation rate (Butylacetate = 1)	No data available
Flammability (solid, gas)	No data available
Flammability (liquids)	No data available
Flammability / Explosive limit	No data available
Autoignition temperature	No data available
Vapor pressure	No data available
Vapor density	No data available
Density	1.45 g/cm3
Relative density	No data available
Solubility	Water solubility: negligible
Partition coefficient: n-octanol/water	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

9.2 Other information

Non Volatiles by Weight	100 %

SECTION 10: Stability and reactivity

10.1 Reactivity

- Not classified as a reactivity hazard.

10.2 Chemical stability

- Stable under normal conditions.

10.3 Possibility of hazardous reactions

polymerization

- Hazardous polymerization does not occur.

10.4 Conditions to avoid

- None known.

10.5 Incompatible materials

- none

10.6 Hazardous decomposition products

- Carbon dioxide (CO2)
- Carbon monoxide
- Formaldehyde
- Silicon dioxide
- Calcium oxide

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity	Not classified as hazardous for acute oral toxicity according to GHS. According to the available data on the components. According to the classification criteria for mixtures. Unpublished reports and/or published data.
Acute inhalation toxicity	Not classified as hazardous for acute inhalation toxicity according to GHS. According to the available data on the components. According to the classification criteria for mixtures. Unpublished reports and/or published data.
Acute dermal toxicity	Not classified as hazardous for acute dermal toxicity according to GHS. According to the available data on the components. According to the classification criteria for mixtures. Unpublished reports and/or published data.
Acute toxicity (other routes of administration)	Not applicable
Skin corrosion/irritation	Not classified as irritating to skin According to the available data on the components. According to the classification criteria for mixtures. Unpublished reports and/or published data.
Serious eye damage/eye irritation	Not classified as irritating to eyes According to the available data on the components. According to the classification criteria for mixtures. Unpublished reports and/or published data.
Respiratory or skin sensitization	Does not cause skin sensitization. According to the available data on the components. According to the classification criteria for mixtures. Unpublished reports and/or published data. Does not cause respiratory sensitization. According to the available data on the components. According to the classification criteria for mixtures. Unpublished reports and/or published data.

Mutagenicity

Genotoxicity in vitro

Product is not considered to be genotoxic
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.

Genotoxicity in vivo

Product is not considered to be genotoxic
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.

Carcinogenicity

The product is not considered to be carcinogenic.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.

Components	CAS-No.	Rating	Basis
Titanium oxide (TiO2)	13463-67-7	Group 2B: Possibly carcinogenic to humans	IARC

This product does not contain any ingredient designated as probable or suspected human carcinogens by:
NTP
OSHA

Toxicity for reproduction and development

Toxicity to reproduction / fertility

The product is not considered to affect fertility.,According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.

Developmental Toxicity/Teratogenicity

The product is not considered to be toxic for development.,According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.

STOT

STOT-single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure according to GHS criteria.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.

STOT-repeated exposure

The substance or mixture is not considered to cause damage to organs through prolonged or repeated exposure.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.

The product itself has not been tested.

Neurological effects

Trimethylated silica

No neurotoxic effects observed.

Experience with human exposure

Experience with human exposure : Inhalation

No data is available on the product itself.

Experience with human exposure : Skin contact

No data is available on the product itself.

Experience with human exposure : Eye contact

No data is available on the product itself.

Experience with human exposure : Ingestion

No data is available on the product itself.

CMR effects

Carcinogenicity

Octadecanoic acid	Not classified as a carcinogen according to GHS criteria
Titanium oxide (TiO2)	Not classified as a carcinogen according to GHS criteria: the mechanism or mode of action of tumour formation is considered not relevant for humans.

Mutagenicity

Octadecanoic acid	Not classified as mutagen according to GHS criteria.

Teratogenicity

Octadecanoic acid	Not classified as toxic for the reproduction (development) according to GHS criteria

Reproductive toxicity

Octadecanoic acid	Not classified as toxic for the reproduction (fertility and/or development) according to GHS criteria

Aspiration toxicity — No aspiration toxicity classification, According to the available data on the components, According to the classification criteria for mixtures.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic Compartment

Acute toxicity to fish	The product itself has not been tested.
Acute toxicity to daphnia and other aquatic invertebrates	The product itself has not been tested.
Toxicity to aquatic plants	The product itself has not been tested.
Toxicity to microorganisms	The product itself has not been tested.
Chronic toxicity to fish	The product itself has not been tested.
Chronic toxicity to daphnia and other aquatic invertebrates	The product itself has not been tested.

Sediment compartment

Toxicity to benthic organisms	The product itself has not been tested.

Terrestrial Compartment

Toxicity to soil dwelling organisms	The product itself has not been tested.
Toxicity to terrestrial plants	The product itself has not been tested.
Toxicity to above ground organisms	The product itself has not been tested.

12.2 Persistence and degradability

Abiotic degradation

Stability in water	Conclusion is not possible for a mixture as a whole.
Photodegradation	Conclusion is not possible for a mixture as a whole.
Other Physicochemical reactions	Conclusion is not possible for a mixture as a whole.

Physical- and photo-chemical elimination

Physico-chemical removability	Conclusion is not possible for a mixture as a whole.

Biodegradation

Biodegradability	As (bio)degradability is not relevant for mixtures, all the components of the mixture were assessed individually (rapid degradability assessment available below).
Ratio BOD / COD	Conclusion is not possible for a mixture as a whole.
Ratio BOD / ThOD	Conclusion is not possible for a mixture as a whole.
Biochemical Oxygen Demand (BOD)	Conclusion is not possible for a mixture as a whole.
Dissolved organic carbon (DOC)	Conclusion is not possible for a mixture as a whole.
Chemical Oxygen Demand (COD)	Conclusion is not possible for a mixture as a whole.
Adsorbed organic bound halogens (AOX)	Conclusion is not possible for a mixture as a whole.
Degradability assessment	Conclusion is not possible due to incomplete or heterogeneous data on the components Unpublished reports Published data

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water	Conclusion is not possible for a mixture as a whole.
Bioconcentration factor (BCF)	As bioaccumulation is not relevant for mixtures, all the components of the mixture were assessed individually. Conclusion is not possible due to incomplete or heterogeneous data on the components Unpublished reports Published data

12.4 Mobility in soil

Adsorption potential (Koc)	Conclusion is not possible for a mixture as a whole.
Known distribution to environmental compartments	Conclusion is not possible due to incomplete or heterogeneous data on the components

12.5 Results of PBT and vPvB assessment

This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).
This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).
According to the available data on the components

12.6 Other adverse effects

Ecotoxicity assessment

Short-term (acute) aquatic hazard	No acute environmental hazard identified. According to the available data on the components. According to the classification criteria for mixtures. Unpublished reports and/or published data.
Long-term (chronic) aquatic hazard	No chronic environmental hazard identified. According to the available data on the components. According to the classification criteria for mixtures. Unpublished reports and/or published data.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product Disposal

- The Company encourages the recycle, recovery and reuse of materials, where permitted. If disposal is necessary, The Company recommends that organic materials, especially when classified as hazardous waste, be disposed of by thermal treatment or incineration at approved facilities. All local and national regulations should be followed.

SECTION 14: Transport information

DOT
not regulated

TDG
not regulated

NOM
not regulated

IMDG
not regulated

IATA
not regulated

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transportation regulations for hazardous materials, it would be advisable to check their validity with your sales office.

SECTION 15: Regulatory information

15.1 Notification status

Inventory Information	Status
United States TSCA Inventory	- All substances listed as active on the TSCA inventory
Canadian Domestic Substances List (DSL)	- Listed on Inventory
Australia Inventory of Chemical Substances (AICS)	- Listed on Inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	- Listed on Inventory
Korea. Korean Existing Chemicals Inventory (KECI)	- Listed on Inventory
China. Inventory of Existing Chemical Substances in China (IECSC)	- Listed on Inventory
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	- Listed on Inventory
Taiwan Chemical Substance Inventory (TCSI)	- Listed on Inventory
New Zealand. Inventory of Chemical Substances	- All components are listed on the NZIOC inventory. The HSNO status of the product has not been assessed.
EU. European Registration, Evaluation, Authorisation and Restriction of Chemical (REACH)	- When purchased from a Solvay legal entity based in the EEA ("European Economic Area"), this product is compliant with the registration provisions of the REACH Regulation (EC) No. 1907/2006 as all its components are either excluded, exempt, and/or registered. When purchased from a legal entity outside of the EEA, please contact your local representative for additional information.

15.2 Federal Regulations

US. EPA EPCRA SARA Title III

SARA HAZARD DESIGNATION SECTIONS 311/312 (40 CFR 370)

No SARA Hazards

Section 313 Toxic Chemicals (40 CFR 372.65)
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Section 302 Emergency Planning Extremely Hazardous Substance Threshold Planning Quantity (40 CFR 355)
This material does not contain any components with a section 302 EHS TPQ.

Section 302 Emergency Planning Extremely Hazardous Substance Reportable Quantity (40 CFR 355)
This material does not contain any components with a SARA 302 RQ.

Section 304 Emergency Release Notification Reportable Quantity (40 CFR 355)
This material does not contain any components with a section 304 EHS RQ.

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

This material does not contain any components with a CERCLA RQ.

15.3 State Regulations

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)

This product is not sold or intended to be sold as a "consumer product" as defined under California's Proposition 65 statute and regulations. If you require information, please contact your local sales representative.

SECTION 16: Other information

NFPA (National Fire Protection Association) - Classification

Health	1 slight
Flammability	1 slight
Instability or Reactivity	0 minimal

Further information

- Distribute new edition to clients

Date Prepared: 04/20/2020

Key or legend to abbreviations and acronyms used in the safety data sheet

- TWA: 8-hour, time-weighted average
- SAEL: Solvay Acceptable Exposure Limit
- ACGIH: American Conference of Governmental Industrial Hygienists
- OSHA: Occupational Safety and Health Administration
- NTP: National Toxicology Program
- IARC: International Agency for Research on Cancer
- NIOSH: National Institute for Occupational Safety and Health
- ADR: European Agreement on International Carriage of Dangerous Goods by Road.
- ADN: European Agreement on the International Carriage of Dangerous Goods by Inland Waterways.
- RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
- IATA: International Air Transport Association.
- ICAO-TI: Technical Specification for Safe Transport of Dangerous Goods by Air.
- IMDG: International Maritime Dangerous Goods.
- TWA: Time weighted average
- ATE: Estimated value of acute toxicity
- EC: European Community number
- CAS: Chemical Abstracts Service.
- LD50: Substance that causes 50% (half) death in the test animals group (Median Fatal Dose).
- LC50: Substance concentration causing 50% (half) death in the test animals group.
- EC50: Effective Concentration of the substance causing the maximum of 50%.
- PBT: Persistent, Bioaccumulative and Toxic substance.
- vPvB: Very Persistent and Very Bioaccumulative.
- SEA: Classification, labeling, packaging regulation
- DNEL: Derived No Effect Level
- PNEC: Predicted No Effect Concentration
- BHOT: Specific Target Organ Toxicity

Not all acronyms listed above are referenced in this SDS.

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. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose, and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but do not replace them. Thus, the information only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in any other manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.

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

1.1 Product identifier

- Trade name DAPCO™ 2200 PRIMERLESS FIREWALL SEALANT, PART B

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

Uses of the Substance / Mixture

- Sealant

1.3 Details of the supplier of the safety data sheet

Company

CYTEC INDUSTRIES INC.
COMPOSITE MATERIALS
504 CARNEGIE CENTER PRINCETON, NJ 08540 USA
Tel: +1-833-970-1163

1.4 Emergency telephone

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CONTACT CHEMTREC (24-Hour Number): 800-424-9300 within the United States and Canada, or 703-527-3887 for international collect calls.

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SECTION 2: Hazards identification

Although OSHA has not adopted the environmental portion of the GHS regulations, this document may include information on environmental effects.

2.1 Classification of the substance or mixture

HCS 2012 (29 CFR 1910.1200)

Flammable liquids, Category 3	H226: Flammable liquid and vapor.
Skin corrosion, Category 1B	H314: Causes severe skin burns and eye damage.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Skin sensitization, Category 1	H317: May cause an allergic skin reaction.
Germ cell mutagenicity, Category 2	H341: Suspected of causing genetic defects.
Reproductive toxicity, Category 1B	H360: May damage fertility or the unborn child.
Specific target organ toxicity - single exposure, Category 1	H370: Causes damage to organs.
Specific target organ toxicity - repeated exposure, Category 1	H372: Causes damage to organs through prolonged or repeated exposure.

2.2 Label elements

HCS 2012 (29 CFR 1910.1200)

Pictogram

Signal Word

- Danger

Hazard Statements

- H226	Flammable liquid and vapor.
- H314	Causes severe skin burns and eye damage.
- H317	May cause an allergic skin reaction.
- H341	Suspected of causing genetic defects.
- H360	May damage fertility or the unborn child.
- H370	Causes damage to organs.
- H372	Causes damage to organs through prolonged or repeated exposure.

Precautionary Statements

Prevention

- P201	Obtain special instructions before use.
- P202	Do not handle until all safety precautions have been read and understood.
- P210	Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
- P233	Keep container tightly closed.
- P240	Ground/bond container and receiving equipment.
- P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
- P242	Use only non-sparking tools.
- P243	Take precautionary measures against static discharge.
- P260	Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
- P264	Wash skin thoroughly after handling.
- P270	Do not eat, drink or smoke when using this product.
- P272	Contaminated work clothing must not be allowed out of the workplace.
- P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

- P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
- P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
- P305 + P351 + P338 + P310	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/ doctor.
- P307 + P311	IF exposed: Call a POISON CENTER or doctor/ physician.
- P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
- P363	Wash contaminated clothing before reuse.
- P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage

- P403 + P235	Store in a well-ventilated place. Keep cool.
- P405	Store locked up.

Disposal

- P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards which do not result in classification

- H402: Harmful to aquatic life.
- H412: Harmful to aquatic life with long lasting effects.

SECTION 3: Composition/information on ingredients

3.1 Substance

- Not applicable, this product is a mixture.

3.2 Mixture

Hazardous Ingredients and Impurities

Chemical name	Identification number CAS-No.	Concentration [%]
Organo-silane	*****	30 - 50
Silicon Compound	*****	30 - 50
Dodecanoic acid, 1,1'-(dibutylstannylene) ester	77-58-7	1 - 2
Titanium oxide (TiO2)	13463-67-7	0.1 - 1

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1 Description of first-aid measures

In case of inhalation

- Quickly move the person away from the contaminated area. Make the affected person rest.
- Immediate medical attention is required.
- Show this sheet to the doctor.
- Be prepared to provide first aid or medical support if necessary.

In case of skin contact

- Wash off immediately with plenty of water for at least 15 minutes.
- Use appropriate protective equipment when treating a contaminated person.
- Immediate medical attention is required.
- Show this sheet to the doctor.
- Be prepared to provide first aid or medical support if necessary.

In case of eye contact

- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
- Keep eye wide open while rinsing.
- Show this sheet to the doctor.
- Always obtain medical advice, even if there are no symptoms.
- Be prepared to provide first aid or medical support if necessary.

In case of ingestion

- Do NOT induce vomiting.
- Immediate medical attention is required.
- Show this sheet to the doctor.
- Do not give anything to drink.
- Be prepared to provide first aid or medical support if necessary.

4.2 Most important symptoms and effects, both acute and delayed

Effects

- Serious effects on health can appear after exposure, even death.
- Serious effects on health may appear after prolonged or repeated exposure.
- The effects will depend on target organs.
- May damage fertility or the unborn child.
- Chronic exposure is suspected of causing genetic effects on basis of animal data. Effects on human have not been proven.
- Chronic exposure may cause allergic dermatitis.
- Exposure may cause allergic rhinitis, conjunctivitis, asthma or shock.
- If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.
- In case of inhalation, irritation/corrosion of the respiratory tract.
- Risk of respiratory disorder
- May cause irreversible skin damage.
- Chronic exposure may cause dermatitis.
- May cause irreversible eye damage.
- Loss of the eye

Symptoms

- Symptoms will depend on the target organs.
- Inhalation may provoke the following symptoms:
- Cough
- Breathing difficulties
- Irritation
- Redness
- Swelling of tissue
- Ingestion may provoke the following symptoms:
- Nausea
- Diarrhea
- Abdominal pain
- May cause respiratory tract irritation.
- allergic rhinitis
- Severe allergic skin reactions, bronchiospasm and anaphylactic shock
- Itching
- Dermatitis
- Causes skin burns.
- Lachrymation
- Conjunctivitis
- Causes eye burns.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician

- Immediate medical attention is required.
- Consult with an ophthalmologist immediately in all cases.
- Burns must be treated by a physician.
- Treat symptomatically.
- Contact a poison control center.
- Keep under medical supervision for at least 48 hours.
- Contact the occupational physician in case of exposure.

SECTION 5: Firefighting measures

Flash point	140 °F (60 °C) Seta closed cup
Autoignition temperature	No data available
Flammability / Explosive limit	No data available

5.1 Extinguishing media

Suitable extinguishing media

- Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media

- High volume water jet

5.2 Special hazards arising from the substance or mixture

- Under fire conditions:
- Will burn
- On combustion, toxic gases are released.

5.3 Advice for firefighters

Special protective equipment for fire-fighters

- In the event of fire, wear self-contained breathing apparatus.
- Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing
- For further information refer to section 8 "Exposure controls / personal protection."

Specific fire fighting methods

- Cool containers/tanks with water spray.
- Do not use a solid water stream as it may scatter and spread fire.

Further information

- Standard procedure for chemical fires.
- Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
- Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Where exposure level is not known, wear approved, positive pressure, self-contained respirator.
- Where exposure level is known, wear approved respirator suitable for level of exposure.
- Avoid contact with the skin and the eyes.
- In addition to the protective clothing/equipment in Section 8, wear a two piece PVC suit with hood or PVC overalls with hood.

6.2 Environmental precautions

- Stop the leak. Turn leaking containers leak-side up to prevent the escape of liquid.
- Contain the spilled material by diking.
- Do not let product enter drains.
- Do not allow uncontrolled discharge of product into the environment.

- Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies

6.3 Methods and materials for containment and cleaning up

- Remove all sources of ignition.
- Stop leak if safe to do so.
- Keep in properly labeled containers.
- Keep in suitable, closed containers for disposal.
- Wash nonrecoverable remainder with large amounts of water.
- Soak up with inert absorbent material and dispose of as hazardous waste.
- Decontaminate tools, equipment and personal protective equipment in a segregated area.
- Dispose of in accordance with local regulations.
- Never return spills in original containers for re-use.

6.4 Reference to other sections

- 7. HANDLING AND STORAGE
- 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
- 13. DISPOSAL CONSIDERATIONS

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Containers must be bonded and grounded when pouring or transferring material.
- This material contains a flammable or combustible liquid and vapor.

Hygiene measures

- Handle in accordance with good industrial hygiene and safety practice.
- Wash hands before breaks and at the end of workday.
- When using do not eat, drink or smoke.
- Eye wash bottles or eye wash stations in compliance with applicable standards.
- Ensure that eyewash stations and safety showers are close to the workstation location.
- Keep away from food and drink.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions

- Observe the general rules of industrial fire protection.
- Areas containing this material should have fire safe practices and electrical equipment in accordance with applicable regulations and/or guidelines. Standards are primarily based on the material`s flashpoint, but may also take into account properties such as miscibility with water or toxicity. All local and national regulations should be followed. |par In the Americas, National Fire Protection Association (NFPA) 30: Flammable and Combustible Liquids Code, is a widely used standard. NFPA 30 establishes storage conditions for the following classes of materials: Class I Flammable Liquids, Flashpoint <37.8 °C. Class II Combustible Liquids, 37.8 °C < Flashpoint <60 °C. Class IIIa Combustible Liquids, 60 °C < Flashpoint < 93 °C. Class IIIb Combustible Liquids, Flashpoint > 93 °C.
- Keep away from sources of ignition - No smoking.

Requirements for storage rooms and vessels

- Store in dry, well-ventilated premises at room temperature.

7.3 Specific end use(s)

- Contact your supplier for additional information

SECTION 8: Exposure controls/personal protection

Introductory Remarks: These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

8.1 Control parameters

Components with workplace occupational exposure limits

Components	Value type	Value	Basis
Dodecanoic acid, 1,1'-(dibutylstannylene) ester	TWA	0.1 mg/m3	Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants
	Expressed as :Tin		
Dodecanoic acid, 1,1'-(dibutylstannylene) ester	TWA	0.1 mg/m3	American Conference of Governmental Industrial Hygienists
	Danger of cutaneous absorption Expressed as :Tin		
Dodecanoic acid, 1,1'-(dibutylstannylene) ester	STEL	0.2 mg/m3	American Conference of Governmental Industrial Hygienists
	Danger of cutaneous absorption Expressed as :Tin		
Dodecanoic acid, 1,1'-(dibutylstannylene) ester	TWA	0.1 mg/m3	National Institute for Occupational Safety and Health
	Also see specific listing for Cyhexatin., Potential for dermal absorptionExpressed as :Tin		
Dodecanoic acid, 1,1'-(dibutylstannylene) ester	PEL	0.1 mg/m3	
	SkinExpressed as :Tin		
Dodecanoic acid, 1,1'-(dibutylstannylene) ester	STEL	0.2 mg/m3	
	SkinExpressed as :Tin		
Titanium oxide (TiO2)			National Institute for Occupational Safety and Health
	Potential Occupational Carcinogen		
Titanium oxide (TiO2)	TWA	15 mg/m3	Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants
	Form of exposure : total dust		
Titanium oxide (TiO2)	TWA	10 mg/m3	American Conference of Governmental Industrial Hygienists
	Expressed as :Titanium dioxide		

NIOSH IDLH (Immediately Dangerous to Life or Health Concentrations)

Components	CAS-No.	Concentration
Dodecanoic acid, 1,1'-(dibutylstannylene) ester	77-58-7	25 mg/m³
Titanium oxide (TiO2)	13463-67-7	5000 mg/m³

8.2 Exposure controls

Control measures

Engineering measures
- Ensure adequate ventilation.
- Apply technical measures to comply with the occupational exposure limits.

Individual protection measures

Respiratory protection
- Keep in a well-ventilated place.

Hand protection
- Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).
- Impervious gloves

Suitable material
- Nitrile or fluorinated rubber gloves.

Eye protection
- Chemical resistant goggles must be worn.
- Tightly fitting safety goggles

Skin and body protection
- Impervious clothing
- Full protective suit
- Change working clothes after each work-shift.
- Contaminated work clothing should not be allowed out of the workplace.

Hygiene measures
- Handle in accordance with good industrial hygiene and safety practice.
- Wash hands before breaks and at the end of workday.
- When using do not eat, drink or smoke.
- Eye wash bottles or eye wash stations in compliance with applicable standards.
- Ensure that eyewash stations and safety showers are close to the workstation location.
- Keep away from food and drink.

SECTION 9: Physical and chemical properties

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product information phone number in Section 1 for its exact specifications.

9.1 Information on basic physical and chemical properties

Appearance

Physical state: liquid

Color: white

Odor	ammoniacal
Odor Threshold	No data available
Molecular weight	Mixture
pH	No data available
Melting point/freezing point	No data available
Initial boiling point and boiling range	No data available
Flash point	140 °F (60 °C) Seta closed cup
Evaporation rate (Butylacetate = 1)	No data available
Flammability (solid, gas)	No data available
Flammability (liquids)	No data available
Flammability / Explosive limit	No data available
Autoignition temperature	No data available
Vapor pressure	Not applicable
Vapor density	No data available
Density	0.928 g/cm3
Relative density	No data available
Solubility	Water solubility: Not applicable, reacts with water
Partition coefficient: n-octanol/water	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

9.2 Other information

Non Volatiles by Weight	35 - 40 %

SECTION 10: Stability and reactivity

10.1 Reactivity

- Not classified as a reactivity hazard.

10.2 Chemical stability

- Stable under normal conditions.

10.3 Possibility of hazardous reactions

polymerization
- Hazardous polymerization does not occur.

10.4 Conditions to avoid

- Keep away from heat and sources of ignition.

10.5 Incompatible materials

- Water

10.6 Hazardous decomposition products

- Carbon dioxide (CO_2)
- Carbon monoxide
- Nitrogen oxides (NO_x)
- Silicon dioxide

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity	The product has a low acute toxicity According to the available data on the components. According to the classification criteria for mixtures. Unpublished reports and/or published data.
Acute inhalation toxicity	Not classified as hazardous for acute inhalation toxicity according to GHS. According to the available data on the components. According to the classification criteria for mixtures. Unpublished reports and/or published data.
Acute dermal toxicity	Not classified as hazardous for acute dermal toxicity according to GHS. According to the available data on the components. According to the classification criteria for mixtures. Unpublished reports and/or published data.
Acute toxicity (other routes of administration)	Not applicable
Skin corrosion/irritation	Corrosive to skin According to the available data on the components. According to the classification criteria for mixtures. Unpublished reports and/or published data.
Serious eye damage/eye irritation	Risk of serious damage to eyes. According to the available data on the components. According to the classification criteria for mixtures. Unpublished reports and/or published data.

Respiratory or skin sensitization

Organo-silane	Buehler Test - Guinea pig ≥ 15 % to < 60 % responding at > 0,2 % to ≤ 20 % topical induction dose Classified as a skin sensitizer sub-category 1B according to GHS criteria Method: OECD Test Guideline 406 Unpublished reports
Silicon Compound	Maximization Test - Guinea pig Responding animals in GPMT < 30% The substance or mixture is not considered to be sensitizing by skin contact. Method: OECD Test Guideline 406 Unpublished reports
Dodecanoic acid, 1,1'-(dibutylstannylene) ester	By analogy
	Maximization Test - Guinea pig ≥ 30 % responding at > 1 % intradermal induction dose Method: OECD Test Guideline 406 Unpublished reports
Titanium oxide (TiO2)	Local lymph node assay - Mouse negative Does not cause skin sensitization.
	Buehler Test - Guinea pig negative Does not cause skin sensitization.

Mutagenicity

Genotoxicity in vitro

Organo-silane	Ames test Strain: Salmonella typhimurium with and without metabolic activation
	negative Method: OECD Test Guideline 471 Unpublished reports

	Chromosome aberration test in vitro Strain: Chinese hamster lung cells with and without metabolic activation negative Method: OECD Test Guideline 473 Published data Unpublished reports Gene mutation assays in mammalian cells. Strain: Chinese hamster ovary cells with and without metabolic activation negative Method: OECD Test Guideline 476 Unpublished reports Gene mutation assays in mammalian cells. Strain: Chinese hamster lung cells with and without metabolic activation negative Unpublished reports
Silicon Compound	Mutagenicity (Salmonella typhimurium - reverse mutation assay) with and without metabolic activation negative Method: OECD Test Guideline 471 Unpublished reports By analogy Method: OECD Test Guideline 473 In vitro tests did not show mutagenic effects Unpublished reports By analogy Method: OECD Test Guideline 476 In vitro tests did not show mutagenic effects Unpublished reports
Dodecanoic acid, 1,1'-(dibutylstannylene) ester	Ames test Strain: Salmonella typhimurium and Escherichia coli with and without metabolic activation negative Method: OECD Test Guideline 471 Unpublished reports

	By analogy Chromosome aberration test in vitro Strain: Human lymphocytes with and without metabolic activation positive Method: OECD Test Guideline 473 Unpublished reports By analogy Gene mutation assays in mammalian cells. Strain: V79 with and without metabolic activation negative Method: OECD Test Guideline 476 Unpublished reports Gene mutation assays in mammalian cells. Strain: Chinese hamster lung cells with and without metabolic activation negative Method: OECD Test Guideline 476 Unpublished reports
Titanium oxide (TiO2)	Chromosome aberration test in vitro Strain: CHO with and without metabolic activation negative Unpublished reports Mouse lymphoma test / TK with and without metabolic activation negative Unpublished reports Mutagenicity (Salmonella typhimurium - reverse mutation assay) with and without metabolic activation negative Unpublished reports Mutagenicity (Escherichia coli - reverse mutation assay) with and without metabolic activation negative Unpublished reports In vitro tests did not show mutagenic effects

Genotoxicity in vivo

Organo-silane	In vivo micronucleus test - Mouse male and female Intraperitoneal injection Method: OECD Test Guideline 474 negative Unpublished reports
Dodecanoic acid, 1,1'-(dibutylstannylene) ester	By analogy Micronucleus test - Mouse male and female Oral Method: OECD Test Guideline 474 positive Gavage Unpublished reports
Titanium oxide (TiO2)	In vivo micronucleus test - Mouse male Intraperitoneal route negative Published data Chromosome aberration test in vivo - Mouse male Intraperitoneal route negative Published data In vivo tests did not show mutagenic effects

Carcinogenicity

The product is not considered to be carcinogenic.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.

Components	CAS-No.	Rating	Basis
Titanium oxide (TiO2)	13463-67-7	Group 2B: Possibly carcinogenic to humans	IARC

This product does not contain any ingredient designated as probable or suspected human carcinogens by:
NTP
OSHA

Toxicity for reproduction and development

Toxicity to reproduction / fertility

Organo-silane	Toxicity for repeated doses. - Rat, male and female, Oral General Toxicity Parent NOAEL: 600 mg/kg bw/day Fertility NOAEL: 600 mg/kg bw/day OECD Test Guideline 408 Gavage, no impairment of fertility has been observed, Unpublished reports

Silicon Compound	By analogy Rat, Oral OECD Test Guideline 422 no impairment of fertility has been observed, Unpublished reports
Dodecanoic acid, 1,1'-(dibutylstannylene) ester	 Reproduction / developmental toxicity screening test - Rat, female, Oral Fertility NOAEL: 1.7 - 2.4 mg/kg OECD Test Guideline 421 in feed, Effects on fertility, Unpublished reports

Developmental Toxicity/Teratogenicity

Organo-silane	Rat, Oral General Toxicity Maternal NOAEL: 100 mg/kg bw/day Teratogenicity NOAEL:100mg/kg bw/day Method: OECD Test Guideline 414 Gavage, Effects on the progeny are not considered significant as they were observed only in doses leading to maternal toxicity, Unpublished reports
Silicon Compound	By analogy Rat, Oral Method: OECD Test Guideline 422 no embryotoxic or teratogenic effects have been observed, Unpublished reports
Dodecanoic acid, 1,1'-(dibutylstannylene) ester	By analogy Rat, Oral General Toxicity Maternal NOAEL: 1 mg/kg bw/day Teratogenicity NOAEL:5mg/kg bw/day Method: OECD Test Guideline 414 Gavage, Teratogenic effects., Unpublished reports
Titanium oxide (TiO2)	Rat, Gavage General Toxicity Maternal NOAEL: 1,000 mg/kg Teratogenicity NOAEL:1,000mg/kg Method: OECD Test Guideline 414 No effect observed on development

STOT

STOT-single exposure	The substance or mixture is classified as specific target organ toxicant, single exposure, category 1 according to GHS criteria. According to the available data on the components. According to the classification criteria for mixtures. Unpublished reports and/or published data.
STOT-repeated exposure	The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1 according to GHS criteria. According to the available data on the components. According to the classification criteria for mixtures. Unpublished reports and/or published data.

The product itself has not been tested.

Experience with human exposure

Experience with human exposure : Inhalation

No data is available on the product itself.

Experience with human exposure : Skin contact

No data is available on the product itself.

Experience with human exposure : Eye contact

No data is available on the product itself.

Experience with human exposure : Ingestion

No data is available on the product itself.

CMR effects

Carcinogenicity

Organo-silane	Classification not possible from current data
Titanium oxide (TiO2)	Not classified as a carcinogen according to GHS criteria: the mechanism or mode of action of tumour formation is considered not relevant for humans.

Mutagenicity

Organo-silane	Not classified as mutagen according to GHS criteria.
Dodecanoic acid, 1,1'-(dibutylstannylene) ester	Classified as mutagen category 2 according to GHS criteria.

Reproductive toxicity

Organo-silane	Classification not possible from current data
Dodecanoic acid, 1,1'-(dibutylstannylene) ester	May damage fertility. May damage the unborn child.

Aspiration toxicity — No aspiration toxicity classification, According to the available data on the components, According to the classification criteria for mixtures.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic Compartment

Acute toxicity to fish	The product itself has not been tested.
Acute toxicity to daphnia and other aquatic invertebrates	The product itself has not been tested.
Toxicity to aquatic plants	The product itself has not been tested.
Toxicity to microorganisms	The product itself has not been tested.
Chronic toxicity to fish	The product itself has not been tested.
Chronic toxicity to daphnia and other aquatic invertebrates	The product itself has not been tested.

Sediment compartment

Toxicity to benthic organisms	The product itself has not been tested.

Terrestrial Compartment

Toxicity to soil dwelling organisms	The product itself has not been tested.
Toxicity to terrestrial plants	The product itself has not been tested.
Toxicity to above ground organisms	The product itself has not been tested.

M-Factor

Dodecanoic acid, 1,1'-(dibutylstannylene) ester	Acute aquatic toxicity = 1 Chronic aquatic toxicity = 1 (according to the Globally Harmonized System (GHS))

12.2 Persistence and degradability

Abiotic degradation

Stability in water	Conclusion is not possible for a mixture as a whole.
Photodegradation	Conclusion is not possible for a mixture as a whole.
Other Physicochemical reactions	Conclusion is not possible for a mixture as a whole.

Physical- and photo-chemical elimination

Physico-chemical removability	Conclusion is not possible for a mixture as a whole.

Biodegradation

Biodegradability	As (bio)degradability is not relevant for mixtures, all the components of the mixture were assessed individually (rapid degradability assessment available below).
Ratio BOD / COD	Conclusion is not possible for a mixture as a whole.
Ratio BOD / ThOD	Conclusion is not possible for a mixture as a whole.
Biochemical Oxygen Demand (BOD)	Conclusion is not possible for a mixture as a whole.
Dissolved organic carbon (DOC)	Conclusion is not possible for a mixture as a whole.
Chemical Oxygen Demand (COD)	Conclusion is not possible for a mixture as a whole.
Adsorbed organic bound halogens (AOX)	Conclusion is not possible for a mixture as a whole.

Degradability assessment

Organo-silane	The product is not considered to be rapidly degradable in the environment
Silicon Compound	The product is considered to be rapidly degradable in the environment

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water

Silicon Compound	Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.
Dodecanoic acid, 1,1'-(dibutylstannylene) ester	Inorganic part: Not applicable Organic component Due to the distribution coefficient n-octanol/water, accumulation in organisms is possible. Unpublished reports

Bioconcentration factor (BCF)

Organo-silane	Species: Cyprinus carpio (Carp) Bioconcentration factor (BCF): 3.4 Exposure time: 8 Weeks Temperature: 25 °C Concentration: 5 mg/l Method: OECD Test Guideline 305C Accumulation in aquatic organisms is unlikely. Unpublished reports
Titanium oxide (TiO2)	Species: Oncorhynchus mykiss (rainbow trout) Bioconcentration factor (BCF): 200 - 352 Exposure time: 14 Days Concentration: 0.1 mg/l Not potentially bioaccumulable Published data Species: Oncorhynchus mykiss (rainbow trout) Bioconcentration factor (BCF): 43 - 67 Exposure time: 14 Days Concentration: 0.5 mg/l Not potentially bioaccumulable Published data Species: Oncorhynchus mykiss (rainbow trout) Bioconcentration factor (BCF): 19 - 34 Exposure time: 14 Days Concentration: 1 mg/l Not potentially bioaccumulable Published data

12.4 Mobility in soil

Adsorption potential (Koc)	Conclusion is not possible for a mixture as a whole.
Known distribution to environmental compartments	No data available

12.5 Results of PBT and vPvB assessment

Organo-silane	Not classified as PBT substance. Not classified as vPvB.
Silicon Compound	Not classified as PBT substance. Not classified as vPvB.
Titanium oxide (TiO2)	Not applicable, inorganic substance

12.6 Other adverse effects

Ecotoxicity assessment

Short-term (acute) aquatic hazard	Harmful to aquatic life. According to the available data on the components. According to the classification criteria for mixtures. Unpublished reports and/or published data.
Long-term (chronic) aquatic hazard	Harmful to aquatic life with long lasting effects. According to the available data on the components. According to the classification criteria for mixtures. Unpublished reports and/or published data.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product Disposal

- The Company encourages the recycle, recovery and reuse of materials, where permitted. If disposal is necessary, The Company recommends that organic materials, especially when classified as hazardous waste, be disposed of by thermal treatment or incineration at approved facilities. All local and national regulations should be followed.

SECTION 14: Transport information

Transportation status: IMPORTANT! Statements below provide additional data on listed transport classification.
The listed Transportation Classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

DOT

14.1 UN number	UN 2920
14.2 Proper shipping name	CORROSIVE LIQUIDS, FLAMMABLE, N.O.S. (Ethanol, gamma-aminopropyltriethoxy silane)
14.3 Transport hazard class	8
Subsidiary hazard class	3,
Label(s)	8, (3,)
14.4 Packing group	
Packing group	II
ERG No	132
14.5 Environmental hazards	NO
Marine pollutant	

TDG

14.1 UN number	UN 2920
14.2 Proper shipping name	CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Ethanol, gamma-aminopropyltriethoxy silane)
14.3 Transport hazard class	8

Subsidiary hazard class	3
Label(s)	8 (3)
14.4 Packing group	
Packing group	II
ERG No	132
14.5 Environmental hazards	NO
Marine pollutant	

NOM

14.1 UN number	UN 2920
14.2 Proper shipping name	CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Ethanol, gamma-aminopropyltriethoxy silane)
14.3 Transport hazard class	8
Subsidiary hazard class	3
Label(s)	8 (3)
14.4 Packing group	
Packing group	II
ERG No	132
14.5 Environmental hazards	NO
Marine pollutant	

IMDG

14.1 UN number	UN 2920
14.2 Proper shipping name	CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Ethanol, gamma-aminopropyltriethoxy silane)
IMDG Code segregation group	Not Relevant
14.3 Transport hazard class	8
Subsidiary hazard class	3
Label(s)	8 (3)
14.4 Packing group	
Packing group	II
14.5 Environmental hazards	NO
Marine pollutant	
14.6 Special precautions for user	
EmS	F-E , S-C

For personal protection see section 8.

IATA

14.1 UN number	UN 2920
14.2 Proper shipping name	CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Ethanol, gamma-aminopropyltriethoxy silane)
14.3 Transport hazard class	8
Subsidiary hazard class:	3
Label(s):	8 (3)
14.4 Packing group	
Packing group	II
Packing instruction (cargo aircraft)	855
Max net qty / pkg	30.00 L
Packing instruction (passenger aircraft)	851
Max net qty / pkg	1.00 L
14.5 Environmental hazards	NO

14.6 Special precautions for user
For personal protection see section 8.

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transportation regulations for hazardous materials, it would be advisable to check their validity with your sales office.

SECTION 15: Regulatory information

15.1 Notification status

Inventory Information	Status
United States TSCA Inventory	- All substances listed as active on the TSCA inventory
Canadian Domestic Substances List (DSL)	- Listed on Inventory
Australia Inventory of Chemical Substances (AICS)	- Listed on Inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	- Listed on Inventory
Korea. Korean Existing Chemicals Inventory (KECI)	- Listed on Inventory
China. Inventory of Existing Chemical Substances in China (IECSC)	- Listed on Inventory
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	- Listed on Inventory
Taiwan Chemical Substance Inventory (TCSI)	- Listed on Inventory
New Zealand. Inventory of Chemical Substances	- All components are listed on the NZIOC inventory. The HSNO status of the product has not been assessed.
EU. European Registration, Evaluation, Authorisation and Restriction of Chemical (REACH)	- When purchased from a Solvay legal entity based in the EEA ("European Economic Area"), this product is

	compliant with the registration provisions of the REACH Regulation (EC) No. 1907/2006 as all its components are either excluded, exempt, and/or registered. When purchased from a legal entity outside of the EEA, please contact your local representative for additional information.

15.2 Federal Regulations

US. EPA EPCRA SARA Title III

SARA HAZARD DESIGNATION SECTIONS 311/312 (40 CFR 370)

Flammable (gases, aerosols, liquids, or solids)	Yes
Skin corrosion or irritation	Yes
Serious eye damage or eye irritation	Yes
Respiratory or skin sensitization	Yes
Germ cell mutagenicity	Yes
Reproductive toxicity	Yes
Specific target organ toxicity (single or repeated exposure)	Yes

The categories not mentioned are not relevant for the product.

Section 313 Toxic Chemicals (40 CFR 372.65)
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Section 302 Emergency Planning Extremely Hazardous Substance Threshold Planning Quantity (40 CFR 355)
This material does not contain any components with a section 302 EHS TPQ.

Section 302 Emergency Planning Extremely Hazardous Substance Reportable Quantity (40 CFR 355)
This material does not contain any components with a SARA 302 RQ.

Section 304 Emergency Release Notification Reportable Quantity (40 CFR 355)
This material does not contain any components with a section 304 EHS RQ.

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

This material does not contain any components with a CERCLA RQ.

15.3 State Regulations

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)

This product is not sold or intended to be sold as a "consumer product" as defined under California's Proposition 65 statute and regulations. If you require information, please contact your local sales representative.

SECTION 16: Other information

NFPA (National Fire Protection Association) - Classification

Health	3 serious
Flammability	2 moderate
Instability or Reactivity	1 slight

Further information

- Distribute new edition to clients

Date Prepared: 02/03/2020

Key or legend to abbreviations and acronyms used in the safety data sheet

- PEL — Permissible exposure limit
- STEL — Short-term exposure limit
- TWA — 8-hour, time-weighted average
- ACGIH — American Conference of Governmental Industrial Hygienists
- OSHA — Occupational Safety and Health Administration
- NTP — National Toxicology Program
- IARC — International Agency for Research on Cancer
- NIOSH — National Institute for Occupational Safety and Health
- ADR: — European Agreement on International Carriage of Dangerous Goods by Road.
- ADN: — European Agreement on the International Carriage of Dangerous Goods by Inland Waterways.
- RID: — European Agreement concerning the International Carriage of Dangerous Goods by Rail.
- IATA: — International Air Transport Association.
- ICAO-TI: — Technical Specification for Safe Transport of Dangerous Goods by Air.
- IMDG: — International Maritime Dangerous Goods.
- TWA: — Time weighted average
- ATE: — Estimated value of acute toxicity
- EC: — European Community number
- CAS: — Chemical Abstracts Service.
- LD50: — Substance that causes 50% (half) death in the test animals group (Median Fatal Dose).
- LC50: — Substance concentration causing 50% (half) death in the test animals group.
- EC50: — Effective Concentration of the substance causing the maximum of 50%.
- PBT: — Persistent, Bioaccumulative and Toxic substance.
- vPvB: — Very Persistent and Very Bioaccumulative.
- SEA: — Classification, labeling, packaging regulation
- DNEL: — Derived No Effect Level
- PNEC: — Predicted No Effect Concentration
- BHOT: — Specific Target Organ Toxicity

Not all acronyms listed above are referenced in this SDS.