

SAFETY DATA SHEET

Classified in accordance 29 CFR 1910.1200

1. Identification

Product identifier: Dynasylan® SIVO 210

Other means of identification

None.

Recommended restrictions

Recommended use: For industrial use Coupling agent Crosslinking agents Surface modifier

Restrictions on use: Not determined.

Manufacturer/Importer/Distributor Information

Company Name : Evonik Corporation
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Parsippany, NJ 07054
USA

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Fax : +1 973 929 8040

E-mail : product-regulatory-services@evonik.com

Emergency telephone number:

24-Hour Health : +1 800 424 9300 (CHEMTREC - US & CANADA)

Emergency : 800 681 9531 (CHEMTREC MEXICO)

+1 703 527 3887 (CHEMTREC WORLD)

2. Hazard(s) identification

Hazard Classification

Health Hazards

| | |
|-----------------------------------|-------------|
| Skin corrosion | Category 1B |
| Serious Eye Damage/Eye Irritation | Category 1 |
| Skin sensitizer | Category 1 |

Label Elements

Hazard Symbol:



| | |
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| Signal Word: | Danger |
| Hazard Statement: | Causes severe skin burns and eye damage. May cause an allergic skin reaction. |
| Precautionary Statements | |
| Prevention: | Do not breathe dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. |
| Response: | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. |
| Storage: | Store locked up. |
| Disposal: | Dispose of contents/ container to an approved waste disposal plant. |
| Hazard(s) not otherwise classified (HNOC): | None. |

3. Composition/information on ingredients

Mixtures

| Chemical Identity | Common name and synonyms | CAS number | Content in percent (%) [*] |
|--|--------------------------|--------------|-------------------------------------|
| 3-Aminopropyltriethoxysilane | | 919-30-2 | ≥25% |
| Bis(triethoxysilylpropyl)amine | | 13497-18-2 | >20% |
| 1-(3-(triethoxysilyl)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane | | 1184179-50-7 | ≥1 - ≤5% |

^{*} All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

The exact concentration has been withheld as a trade secret.

4. First-aid measures

Description of necessary first-aid measures

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| General information: | Remove contaminated or saturated clothing immediately and follow safe disposal procedures. |
| Inhalation: | If aerosol or mists are formed, take affected persons out into the fresh air. Possible discomfort include severe irritation of mucous lining (nose, throat, eyes), cough, sneezing and flow of tears. Call a physician immediately. If breathing difficulties occur: Keep patient half sitting with upper body raised. |

| | |
|--|---|
| Skin Contact: | Immediately wash with soap and water for at least fifteen minutes. Remove contaminated clothing and shoes. Obtain medical attention. Thoroughly wash clothing and shoes before reuse. |
| Eye contact: | Rinse eye thoroughly immediately with plenty of water for at least 10 minutes. Continue rinsing process with eye rinsing solution. Protect uninjured eye. For caustic burn of the eyes, call an ambulance and obtain immediate medical treatment from an ophthalmologist. |
| Ingestion: | If accidentally swallowed, rinse mouth thoroughly with water and afterwards, drink plenty of water. In case of discomfort, obtain medical attention. |
| Personal Protection for First-aid Responders: | As in any fire, wear self-contained positive-pressure breathing apparatus, (MSHA/NIOSH approved or equivalent) and full protective gear. |

Most important symptoms/effects, acute and delayed

Symptoms: None known.

Hazards: None known.

Indication of immediate medical attention and special treatment needed

Treatment: Allergic reactions cannot be excluded. Treatment of allergic reaction if necessary. If substance has been swallowed, apply therapy for chemical burn. Early endoscopy is recommended in order to assess mucosa lesions in the esophagus and stomach which may appear. If necessary, suck away left over substances.

5. Fire-fighting measures

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Alcohol resistant foam. Water spray. Carbon Dioxide. dry powder

Unsuitable extinguishing media: high volume water jet

Specific hazards arising from the chemical: Hazardous fumes in fires, specific to the product: Nitrogen Oxides

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Water used to extinguish fire should not enter drainage systems, soil or stretches of water. Ensure there are sufficient retaining facilities for water used to extinguish fire. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for fire-fighters: As in any fire, wear self-contained positive-pressure breathing apparatus, (MSHA/NIOSH approved or equivalent) and full protective gear.

6. Accidental release measures

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

Ensure adequate ventilation. Use personal protective equipment. Do not inhale vapors / aerosols.

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

Soak up with absorbent material, e.g., sand, silica gel, acid binder, universal binder or sawdust. Place in a marked, sealable container and dispose of in accordance with existing federal, provincial, state and local regulations.

Environmental Precautions:

Obey relevant local, state, provincial and federal laws and regulations. Do not contaminate any lakes, streams, ponds, groundwater or soil.

7. Handling and storage**Handling****Technical measures (e.g. Local
and general ventilation):**

Application, processing: ensure sufficient ventilation.

Safe handling advice:

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with eyes, skin, and clothing. If there is the possibility of skin/eye contact, the indicated hand/eye/body protection should be used. Use protective clothing / face shield if necessary. Do not breathe in vapours or aerosols. If workplace exposure limits are exceeded and/or larger amounts are released (leakage, spilling, dust) the indicated respiratory protection should be used. Provide adequate ventilation.

Contact avoidance measures:

No data available.

Hygiene measures:

When using, do not eat, drink or smoke. Wash face and/or hands before break and end of work. Take off immediately all contaminated clothing. Wash contaminated clothing before reuse.

Storage**Safe storage conditions:**

Keep away from sources of ignition - No smoking. Keep containers tightly closed in a cool, well-ventilated place. Protect from moisture.

Safe packaging materials:

No data available.

8. Exposure controls/personal protection**Control Parameters****Occupational Exposure Limits**

None of the components have assigned exposure limits.

**Appropriate Engineering
Controls**

Application, processing: ensure sufficient ventilation.

Individual protection measures, such as personal protective equipment**Eye/face protection:**

Use chemical splash goggles or face shield.

Skin Protection

| | |
|----------------------------------|--|
| Hand Protection: | <p>Material: Butyl rubber. Break-through time: >= 480 min Material: Fluorinated rubber (Viton) Break-through time: >= 480 min Additional Information: The above mentioned hand protection is based on knowledge of the chemistry and anticipated uses of this product but it may not be appropriate for all workplaces. A hazard assessment should be conducted prior to use to ensure suitability of gloves for specific work environments and processes prior to use., Selection of protective gloves to meet the requirements of specific workplaces., Suitability for specific workplaces should be clarified with protective glove manufacturers., Please observe that the daily duration of usage of a chemical protective glove is in practice far shorter due to the many influencing factors (e.g. temperature, mechanical strain on the glove material) than the permeation time determined acc. EN 374.</p> |
| Skin and Body Protection: | <p>When handling larger quantities: chemical protective suit, disposable protective suit A safety shower and eye wash fountain should be readily available. To identify additional Personal Protective Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29CFR1910.132) be conducted before using this product.</p> |
| Respiratory Protection: | <p>A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 or applicable federal/provincial requirements must be followed whenever workplace conditions warrant respirator use. NIOSH's "Respirator Decision Logic" may be useful in determining the suitability of various types of respirators.</p> |
| Hygiene measures: | <p>When using, do not eat, drink or smoke. Wash face and/or hands before break and end of work. Take off immediately all contaminated clothing. Wash contaminated clothing before reuse.</p> |

9. Physical and chemical properties

Appearance

| | |
|-------------------------------------|--|
| Physical state: | liquid |
| Form: | liquid |
| Color: | colourless to yellowish |
| Odor: | amine-like |
| Odor Threshold: | Not determined. |
| pH: | Not determined. |
| Freezing point: | -45 °C (ISO 3841) |
| Boiling Point: | 240 °C (1,013 hPa) (ASTM D-1120) |
| Flash Point: | > 95 °C (DIN EN ISO 2719 (Pensky-Martens, Closed Cup)) |
| Evaporation Rate: | Not determined. |
| Flammability (solid, gas): | Not determined. |
| Explosive limit - upper (%): | Not determined. |
| Explosive limit - lower (%): | Not determined. |
| Vapor pressure: | Not determined. |
| Vapor density (air=1): | No data available. |
| Density: | approx. 0.97 g/cm ³ (20 °C) (DIN 51757) |

| | |
|---|--|
| Relative density: | No data available. |
| Solubility in Water: | not miscible decomposition by hydrolysis |
| Solubility (other): | No data available. |
| Partition coefficient (n-octanol/water): | Not determined. |
| Self Ignition Temperature: | No data available. |
| Decomposition Temperature: | Not determined. |
| Kinematic viscosity: | No data available. |
| Dynamic viscosity: | 4.00 - 40.00 mPa.s (20 °C, DIN 53 015) |
| Other information | |
| Explosive properties: | No data available. |
| Oxidizing properties: | No data available. |
| Minimum ignition temperature: | 250 °C (DIN 51 794) |

10. Stability and reactivity

| | |
|--|---|
| Reactivity: | No dangerous reaction known under conditions of normal use. |
| Chemical Stability: | Stable under recommended storage conditions. |
| Possibility of hazardous reactions: | Exothermic reaction with: acids |
| Conditions to avoid: | Protect from moisture. |
| Incompatible Materials: | acids Water. |
| Hazardous Decomposition Products: | Ethanol in case of hydrolysis Alcohol formed by hydrolysis lowers the flash point of the product. |

11. Toxicological information

Information on likely routes of exposure

| | |
|----------------------|--------------------|
| Inhalation: | No data available. |
| Skin Contact: | No data available. |
| Eye contact: | No data available. |
| Ingestion: | No data available. |

Symptoms related to the physical, chemical and toxicological characteristics

| | |
|----------------------|--------------------|
| Inhalation: | No data available. |
| Skin Contact: | No data available. |
| Eye contact: | No data available. |
| Ingestion: | No data available. |

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

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|----------------------|--------------------------------------|
| Oral Product: | Acute toxicity estimate: 3,506 mg/kg |
|----------------------|--------------------------------------|

**Dermal
Product:**

Components:

| | |
|--------------------------------|--|
| 3-Aminopropyltriethoxysilane | LD 50 (Rabbit): > 2,000 mg/kg Based on available data, the classification criteria are not met. |
| Bis(triethoxysilylpropyl)amine | LD 50 (Rat): > 2,000 mg/kg (limit test) The substance or mixture has no acute dermal toxicity |

**Inhalation
Product:**

Acute toxicity estimate: > 40 mg/l Vapour

Repeated dose toxicity

Product: No data available.

Components:

| | |
|------------------------------|------------------------------|
| 3-Aminopropyltriethoxysilane | NOAEL (Rat, Oral): 200 mg/kg |
|------------------------------|------------------------------|

Skin Corrosion/Irritation

Product: Causes burns.

Serious Eye Damage/Eye Irritation

Product: Risk of serious damage to eyes.

Respiratory or Skin Sensitization

Product: May cause an allergic skin reaction.

Carcinogenicity

Product: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP, IARC, or OSHA.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogens present or none present in regulated quantities

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogens present or none present in regulated quantities

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended:

No carcinogens present or none present in regulated quantities

Germ Cell Mutagenicity

In vitro

Product: No data available.

Components:

3- no evidence of mutagenic effects

Aminopropyltriethoxysilane

Bis(triethoxysilylpropyl)amine
 Ames test (OECD 471): negative no evidence of mutagenic effects
 Genetic mutation in mammal cells (OECD 476): negative no evidence of mutagenic effects

In vivo

Product: No data available.

Reproductive toxicity

Product: No data available.

Components:

3- Animal testing did not show any effects on fertility.

Aminopropyltriethoxysilane

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Components:

3- Not classified

Aminopropyltriethoxysilane

Bis(triethoxysilylpropyl)amine
 Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Components:

3- Not classified

Aminopropyltriethoxysilane

Bis(triethoxysilylpropyl)amine
 Based on available data, the classification criteria are not met.

Aspiration Hazard

Product: No data available.

Components:

3- Not classified

Aminopropyltriethoxysilane

Bis(triethoxysilylpropyl)amine
 No evidence of aspiration toxicity

1-(3-

(triethoxysilyl)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane

Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Components:

3-Aminopropyltriethoxysilane LC0 (Brachydanio rerio, 96 h): > 934 mg/l

Bis(triethoxysilylpropyl)amine LC 50 (Scophthalmus maximus (turbot), 96 h): > 200 mg/l

Aquatic Invertebrates

Product: No data available.

Components:

3-Aminopropyltriethoxysilane EC 50 (Daphnia magna, 48 h): 331 mg/l

Bis(triethoxysilylpropyl)amine EC 50 (Acartia tonsa, 48 h): > 100 mg/l

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic Invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Components:

3-Aminopropyltriethoxysilane EC 50 (Desmodesmus subspicatus (green algae), 72 h): > 1,000 mg/l
 NOEC (Desmodesmus subspicatus (green algae), 72 h): 1.3 mg/l

Bis(triethoxysilylpropyl)amine EC 50 (Phaeodactylum tricornutum, 72 h): 118 mg/l
 NOEC (Phaeodactylum tricornutum, 72 h): 58.5 mg/l

Persistence and Degradability

Biodegradation

Product: No data available.

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)**Product:** No data available.**Partition Coefficient n-octanol / water (log Kow)****Product:** Log Kow: Not determined.**Mobility in soil:** No data available.**Other adverse effects:** An Expert Judgment stated that no classification is necessary based on present knowledge.**13. Disposal considerations****Disposal methods:** Waste must be disposed of in accordance with federal, state, provincial and local regulations.**Contaminated Packaging:** Do not reuse empty containers and dispose of in accordance with the regulations issued by the appropriate local authorities. If there is product residue in the emptied container, follow directions for handling on the container's label. Incorrect disposal or reuse of this container is illegal and can be dangerous. Other countries: observe the national regulations.**14. Transport information****Domestic regulation****49 CFR**

UN/ID/NA number : UN 3267

Proper shipping name : Corrosive liquid, basic, organic, n.o.s.
(3-aminopropyl-triethoxysilane)

Class : 8

Packing group : II

Labels : 8

ERG Code : 153

Marine pollutant : no

International Regulations**IATA-DGR**

UN/ID No. : UN 3267

Proper shipping name : Corrosive liquid, basic, organic, n.o.s.
(3-aminopropyl-triethoxysilane)

Class : 8

Packing group : II

Labels : 8

Packing instruction (cargo aircraft) : 855

Packing instruction (passenger aircraft) : 851

Remarks : ERG-Code 8L

IMDG-Code

UN number : UN 3267

Proper shipping name : CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.
(3-aminopropyl-triethoxysilane)

Class : 8

Packing group : II

Labels : 8

EmS Code : F-A, S-B

Marine pollutant : no

Remarks : Clear of living quarters.Keep separate from acids.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

None present or none present in regulated quantities.

US. Toxic Substances Control Act (TSCA) Section 5(a)(2) Final Significant New Use Rules (SNURs) (40 CFR 721, Subpt E)

None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Skin Corrosion or Irritation, Serious eye damage or eye irritation, Respiratory or Skin Sensitization

US. EPCRA (SARA Title III) Section 304 Extremely Hazardous Substances Reporting Quantities and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substances

Chemical Identity

 Ethanol
 Toluene

US. EPCRA (SARA Title III) Section 312 Extremely Hazardous Substances Reporting Quantities (40 CFR 355, Appendix A)

| | |
|---------------------------------|---|
| <u>Chemical Identity</u> | <u>Threshold Planning Quantity</u> |
|---------------------------------|---|

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required

None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

US State Regulations
US. California Proposition 65


WARNING: This product can expose you to chemicals including, Toluene which is [are] known to the State of California to cause birth defects or other reproductive harm.

 For more information go to www.P65Warnings.ca.gov.

US. New Jersey Worker and Community Right-to-Know Act

No ingredient regulated by NJ Right-to-Know Law present.

US. Massachusetts RTK - Substance List

No ingredient regulated by MA Right-to-Know Law present.

US. Pennsylvania RTK - Hazardous Substances

No ingredient regulated by PA Right-to-Know Law present.

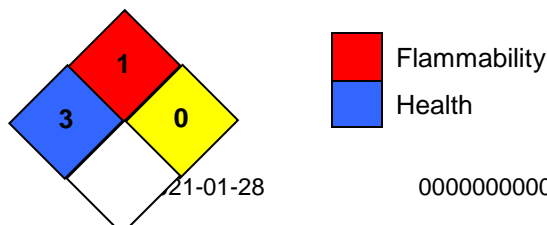
US. Rhode Island RTK

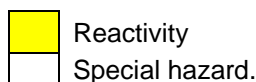
No ingredient regulated by RI Right-to-Know Law present.

16. Other information, including date of preparation or last revision
HMIS Hazard ID

| | | |
|----------------------------|--|---|
| Health | | 3 |
| Flammability | | 1 |
| Physical Hazards | | 0 |
| PERSONAL PROTECTION | | |

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; *Chronic health effect

NFPA Hazard ID




Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

Issue Date: 12/11/2019

Version #: 1.0

Further Information: No data available.

Revision Information Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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