

SAFETY DATA SHEET**Dynasylan® SIVO 210**

Material no.		Version	3.0 / US
Specification	157672	Revision date	05/26/2015
Order Number		Print Date	06/25/2015
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1. Identification**1.1. Product identifier**

Trade name Dynasylan® SIVO 210

1.2. Recommended use of the chemical and restrictions on useRelevant applications identified For industrial use
Function Coupling agent
Crosslinking agents
Surface modifier**1.3. Details of the supplier of the safety data sheet**Company Evonik Corporation USA
299 Jefferson Road
Parsippany, NJ 07054-0677
USA

Telephone 973-929-8000

Telefax 973-929-8040

Email address Product-Regulatory-Services@Evonik.com**1.4. 24 HOUR EMERGENCY TELEPHONE NUMBERS:****CHEMTREC - US & CANADA:** 800-424-9300

CHEMTREC MEXICO: 01-800-681-9531

CHEMTREC INTERNATIONAL: +1 703-527-3887 (collect calls accepted)

Product Regulatory Services : 973-929-8060**2. Hazards identification****2.1. Classification of the substance or mixture**

Classification according to Regulation 29CFR 1910.1200

Skin corrosion	Category 1B	H314
Serious eye damage	Category 1	H318
Skin Sensitisation	Category 1	H317

2.2. Label elementsStatutory basis
Symbol(s)

Classification according to Regulation 29CFR 1910.1200



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Signal word	Danger
Hazard statement	H314 - Causes severe skin burns and eye damage. H317 - May cause an allergic skin reaction.
Precautionary statement Prevention	P260 - Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. P264 - Wash skin thoroughly after handling. P272 - Contaminated work clothing should not be allowed out of the workplace. P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection.
Precautionary statement Reaction	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 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 - Immediately 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.
Precautionary statement Storage	P405 - Store locked up.
Precautionary statement Disposal	P501 - Dispose of contents/ container to an approved waste disposal plant.

2.3. Other hazards

None known

3. Composition/information on ingredients

• 3-Aminopropyltriethoxysilane	>= 25%
CAS-No.	919-30-2
Acute toxicity (Oral)	Category 4
Skin corrosion	Category 1B
Serious eye damage	Category 1
Skin Sensitisation	Category 1
• Bis(triethoxysilylpropyl)amine	> 20%
CAS-No.	13497-18-2
Skin irritation	Category 2
Eye irritation	Category 2A
• 1-(3-(triethoxysilyl)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane	>= 1% - <= 5%
CAS-No.	1184179-50-7
Skin irritation	Category 2
Eye irritation	Category 2A

Other information

This material is classified as hazardous under OSHA regulations.

4. First aid measures**4.1. Description of first aid measures**

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General advice

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.

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

None known

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

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**5.1. Extinguishing media**

Suitable extinguishing media: Alcohol-resistant foam, water spray, Carbon dioxide (CO₂), dry powder

Unsuitable extinguishing media: high volume water jet

5.2. Special hazards arising from the substance or mixture

Hazardous fumes in fires, specific to the product:
nitrogen oxides (NO_x)

5.3. Advice for firefighters

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.

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

6. Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

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

6.2. Environmental precautions

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

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6.3. 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.

7. Handling and storage**7.1. Precautions for safe handling**

Provide adequate ventilation.

7.2. Conditions for safe storage, including any incompatibilities**Advice on protection against fire and explosion**

Keep away from sources of ignition - No smoking.

Storage

Keep containers tightly closed in a cool, well-ventilated place. Protect from moisture.

8. Exposure controls/personal protection**8.1. Control parameters****Other information**

No substance-specific limiting value being known.

8.2. Exposure controls**Engineering measures**

Application, processing: ensure sufficient ventilation.

Personal protective equipment**Respiratory protection**

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.

Hand protection

Glove material for example, butyl-rubber

Material thickness 0.5 mm

Break through time \geq 480 min

Glove material for example, Fluorinated rubber (Viton)

Material thickness 0.4 mm

Break through time \geq 480 min

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.

Eye protection

Use chemical splash goggles or face shield.

Skin and body protection

When handling larger quantities: chemical protective suit, disposable protective suit

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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.

Hygiene measures

When using, do not eat, drink or smoke. Wash face and/or hands before break and end of work.

Remove immediately all contaminated clothing.

Wash contaminated clothing before re-use.

Protective measures

Handle in accordance with good industrial hygiene and safety practice.

Avoid contact with skin, eyes 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.

9. Physical and chemical properties**9.1. Information on basic physical and chemical properties**

physical state	liquid
Colour	colourless to yellowish
Form	liquid
Odour	amine-like
Odour Threshold	not determined
pH	not determined
Melting point/range	-45 °C
Method:	ISO 3841
Boiling point/range	240 °C (1013 hPa)
Method:	ASTM D-1120
Flash point	> 95 °C
Method:	DIN EN ISO 2719 (Pensky-Martens, Closed Cup)
Evaporation rate	not determined
Flammability (solid, gas)	not determined
Lower explosion limit	not determined
Upper explosion limit	not determined
Vapour pressure	not determined
Density	ca. 0.97 g/cm ³ (20 °C)
Method:	DIN 51757
Water solubility	not miscible decomposition by hydrolysis

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Partition coefficient: n- octanol/water not determined
Autoignition temperature 250 °C
Method: DIN 51 794

Thermal decomposition not determined

Viscosity, dynamic 4.00 - 40.00 mPa.s (20 °C)
Method: DIN 53 015

9.2. Other information

no data available

10. Stability and reactivity**10.1. Reactivity**

No dangerous reaction known under conditions of normal use.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Exothermic reaction with: acids

10.4. Conditions to avoid

Protect from moisture.

10.5. Incompatible materials

Acids, water

10.6. Hazardous decomposition products

Ethanol in case of hydrolysis

11. Toxicological information**11.1. Information on toxicological effects**

No toxicological studies are available on the mixture.

Acute oral toxicity Acute toxicity estimate : 3506 mg/kg
Method: Calculation method

Acute toxicity estimate : 3506 mg/kg
Method: Calculation method

Acute inhalation toxicity Acute toxicity estimate : > 40 mg/l / 4 h / vapour
Method: Calculation method

carcinogenicity assessment Contains no carcinogenic substances as defined by NTP, IARC and/or OSHA.

12. Ecological information

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12.1. Toxicity

No ecotoxicological studies are available on the mixture.

12.2. Persistence and degradability

Biodegradability No data available

12.3. Bioaccumulative potential

Bioaccumulation No data available

12.4. Mobility in soil

Mobility No data available

12.5. Other adverse effects

Further Information An Expert Judgment stated that no classification is necessary based on present knowledge.

13. Disposal considerations**13.1. Waste treatment methods****Product**

Waste must be disposed of in accordance with federal, state, provincial and local regulations.

Uncleaned 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**D.O.T. Road/Rail**

- | | |
|---|--|
| 14.1. UN number: | UN 3267 |
| 14.2. UN proper shipping name: | CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (3-aminopropyl-triethoxysilane) |
| 14.3. Transport hazard class(es): | 8 |
| 14.4. Packing group: | II |
| 14.5. Environmental hazards (Marine pollutant): | -- |
| 14.6. Special precautions for user: | No |

Air transport ICAO-TI/IATA-DGR

- | | |
|--------------------------------|--|
| 14.1. UN number: | UN 3267 |
| 14.2. UN proper shipping name: | Corrosive liquid, basic, organic, n.o.s. (3-aminopropyl- |

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- 14.3. Transport hazard class(es): triethoxysilane) 8
- 14.4. Packing group: II
- 14.5. Environmental hazards: --
- 14.6. Special precautions for user: Yes
- IATA-C: ERG-Code 8L
- IATA-P: ERG-Code 8L

Sea transport IMDG-Code/GGVSee (Germany)

- 14.1. UN number: UN 3267
- 14.2. UN proper shipping name: CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (3-aminopropyl-triethoxysilane)
- 14.3. Transport hazard class(es): 8
- 14.4. Packing group: II
- 14.5. Environmental hazards (Marine pollutant): --
- 14.6. Special precautions for user: Yes
- EmS: F-A,S-B
- Clear of living quarters.
- Keep separate from acids.
- 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: for transport approval see regulatory information

15. Regulatory information**US Federal Regulations****OSHA**

If listed below, chemical specific standards apply to the product or components:

- None listed

Clean Air Act Section (112)

If listed below, components present at or above the de minimus level are hazardous air pollutants:

- None listed

CERCLA Reportable Quantities

If listed below, a reportable quantity (RQ) applies to the product based on the percent of the named component:

- None listed

SARA Title III Section 311/312 Hazard Categories

The product meets the criteria only for the listed hazard classes:

- Acute Health Hazard

SARA Title III Section 313 Reportable Substances

If listed below, components are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

- None listed

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Toxic Substances Control Act (TSCA)

If listed below, non-proprietary substances are subject to export notification under Section 12 (b) of TSCA:

- None listed

State Regulations

The Listing requirements of the Right to Know (RTK) legislation varies by state. All information for NJ, PA, MA and other states can be derived from the listing of hazardous and non-hazardous components in section 2 and 15 of this MSDS.

California Proposition 65

A warning under the California Drinking Water Act is required only if listed below:

- None listed

An employer using HMIS/NFPA labeling must through training ensure that its employees are fully aware of the hazards of the chemicals used.

HMIS Ratings

Health :	3
Flammability :	1
Physical Hazard :	0

NFPA Ratings

Health :	3
Flammability :	1
Reactivity :	0

16. Other information**Further information**

Revision date 05/26/2015

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

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Legend

ACC	American Chemistry Council
ACGIH	American Conference of Governmental Industrial Hygienists
ACS	Advisory Committee on Sustainability
ADI	Acceptable Daily Intake
ASTM	American Society for Testing and Materials
ATP	Adaptation to Technical Progress
BCF	Bioconcentration factor
BOD	Biochemical oxygen demand
c.c.	closed cup
CAO	Cargo Aircraft Only
Carc	Carcinogen
CAS	Chemical Abstract Services
CDN	Canada
CEPA	Canadian Environmental Protection Act
CERCLA	Comprehensive Environmental Response – Compensation and Liability Act
CFR	Code of Federal Regulations
CMR	carcinogenic-mutagenic-toxic for reproduction
COD	Chemical oxygen demand
DIN	German Institute for Standardization
DMEL	Derived minimum effect level
DNEL	Derived no effect level
DOT	Department of Transportation
EC50	half maximal effective concentration
EPA	Environmental Protection Agency
ErC50	Reduction of Growth Rate
ERG	Emergency Response Guide Book
FDA	Food and Drug Administration
GHS	Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
GLP	Good Laboratory Practice
GMO	Genetic Modified Organism
HCS	Hazard Communication Standard
HMIS	Hazardous Materials Identification System
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Container
ICAO-TI	International Civil Aviation Organization- Technical Instructions
ICCA	International Council of Chemical Association
ID	Identification number
IMDG	International Maritime Dangerous Goods
IUPAC	International Union of Pure and Applied Chemistry
ISO	International Organization For Standardization
LC50	50 % Lethal Concentration
LD50	50 % Lethal Dose
L(EC50)	LC50 or EC50
LOAEL	Low est observed adverse effect level
LOEL	Low est observed effect level
MARPOL	International Convention for the Prevention of Pollution from Ships
NFPA	National Fire Protection Association
NOAEL	No observed adverse effect level
NOEC	no observed effect concentration
NOEL	no observed effect level
o. c.	open cup
OECD	Organisation for Economic Cooperation and Development
OEL	Occupational Exposure Limit
OSHA	Occupational Safety and Health Administration
PBT	Persistent, bioaccumulative, toxic
PEC	Predicted effect concentration
PNEC	Predicted no effect concentration
RQ	Reportable Quantity
SDS	Safety Data Sheet
STOT	Specific Target Organ Toxicity
UN	United Nations
vPvB	very persistent, very bioaccumulative

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voc volatile organic compounds
WHMIS Workplace Hazardous Materials Information System
WHO World Health Organization