

SAFETY DATA SHEET**Dynasylan® SIVO 202**

Material no.	99035454	Version	3.2 / US
Specification	154723	Revision date	07/12/2017
Order Number	06963099	Print Date	10/27/2018
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1. Identification**1.1. Product identifier**

Trade name Dynasylan® SIVO 202

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
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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

Flammable liquids	Category 4	H227
Skin irritation	Category 2	H315
Serious eye damage	Category 1	H318

2.2. Label elementsStatutory basis
Symbol(s)

Classification according to Regulation 29CFR 1910.1200



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Signal word	Danger
Hazard statement	H227 - Combustible liquid. H315 - Causes skin irritation. H318 - Causes serious eye damage.
Precautionary statement: Prevention	P210 - Keep away from heat/sparks/open flames/hot surfaces. No smoking. P264 - Wash skin thoroughly after handling. P280 - Wear protective gloves/ eye protection/ face protection.
Precautionary statement: Reaction	P302 + P352 - IF ON SKIN: Wash with plenty of water/ soap. 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. P332 + P313 - If skin irritation occurs: Get medical advice/ attention. P362 - Take off contaminated clothing and wash before reuse. P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
Precautionary statement: Storage	P403 + P235 - Store in a well-ventilated place. Keep cool.
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**Chemical nature**

Silane preparation

• 3-(Trimethoxysilyl)propylamine > 20% - < 100%	
CAS-No.	13822-56-5
Flammable liquids	Category 4
Skin irritation	Category 2
Serious eye damage	Category 1
• Bis(trimethoxysilylpropyl)amine > 10% - < 100%	
CAS-No.	82985-35-1
Serious eye damage	Category 1

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

Take off all contaminated clothing immediately.

Inhalation

If aerosol or mists are formed:

Move victims into fresh air.

In case of persistent discomfort: Consult doctor immediately.

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Skin contact

Wash off immediately with plenty of water.
 Consult a doctor in the event of permanent skin irritation.

Eye contact

With eye held open, thoroughly rinse immediately with plenty of water for at least 10 minutes.
 Continue rinsing process with eye rinsing solution.
 Protect unharmed eye.
 Call ambulance. (Cue: caustic burn of the eyes)
 Immediate further treatment in eye clinic/by eye doctor. continue rinsing eye until arrival at ophthalmic hospital.

Ingestion

Have the mouth rinsed with water.
 Only when patient fully conscious:
 Have patient drink plenty of water in small sips.
 Call a physician immediately.

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

After absorbing large amounts of substance:
 Liberation of reaction products (Methanol) can lead to symptoms of poisoning.
 Possible signs of poisoning:
 daze, dizziness, nausea, colicky abdominal pain, respiratory disturbance.
 Symptoms upon increasing intoxication: dysopia, loss of eyesight.

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

If required, therapy of irritative effect.

Treatment:

Early endoscopy in order to assess mucosa lesions in the oesophagus and stomach which may appear. If necessary, aspirate leftover substance.

Detection of substance (Methanol) possible in:

Blood

Antidote treatment: ethanol.

5. Fire-fighting measures**5.1. Extinguishing media**

Suitable extinguishing media: water spray, foam, 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) Combustible liquid. Vapors can travel to a source of ignition and flash back.
 Explosive mixtures may occur at temperatures at or above the flashpoint.

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

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6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

Additional advice

Remove sources of ignition and ventilate area.

Run off may create fire or explosion hazard in sewer.

Assure sufficient ventilation.

7. Handling and storage

7.1. Precautions for safe handling

Keep away from heat. Keep away from sparks, flames and other sources of ignition. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use with adequate ventilation. The need for grounding and bonding of containers in accordance with OSHA 29 CFR 1910.106 and NFPA 77 should be assessed for all product transfers. Follow all MSDS/label precautions even after the container is emptied because it may retain product residues. Wash thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Advice on protection against fire and explosion

The user must be sure to dissipate static charge by careful bonding and grounding of all equipment and personnel involved in fluid transfer with continuity checks to prove effectiveness. Additional precautions against fire and explosion are the use of inert gas to purge vapor space; dip-pipes while filling vessels, especially lined vessels; grounded tank level floats; reduced flow velocity; self-closing valves on transfer lines and flame arrestors in vent lines.

Additional guidance on fire and explosion protection may be found in various consensus standards, including NFPA 30, 69 and 77 and API 2003 as well as OSHA regulation 29CFR1910.106.

Follow all SDS/label precautions even after container is emptied because it may retain product residues.

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

Use this product preferably in a closed system, or use process enclosures, local exhaust ventilation or other engineering controls to minimize airborne exposure.

Personal protective equipment

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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	>= 480 min
Glove material	for example, Fluorinated rubber (Viton)
Material thickness	0.4 mm
Break through time	>= 480 min

Selection of protective gloves to meet the requirements of specific workplaces.

Suitability for specific workplaces should be clarified with protective glove manufacturers.

The information is based on our own tests, references from the literature and information from glove manufacturers, or derived by analogy with similar materials.

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.

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.

Eye protection

close-fitting protective goggles (e.g. closed goggles)

Skin and body protection

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

Avoid contact with skin, eyes and clothing. Do not inhale vapors or aerosols. Do not eat, drink, or smoke when using the product. Remove contaminated or saturated clothing.

Protective measures

Handle in accordance with good industrial hygiene and safety practice.

If workplace exposure limits are exceeded and/or larger amounts are released (leakage, spilling, dust) the indicated respiratory protection should be used.

If there is the possibility of skin/eye contact, the indicated hand/eye/body protection should be used.

Avoid contact with skin and eyes.

Do not breathe in vapours or aerosols.

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

physical state	liquid
Colour	nearly colourless
Form	liquid
Odour	amine-like
Odour Threshold	not determined
pH	not determined
Melting point/range	not determined

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Boiling point/range	not determined
Flash point	89 °C Method: DIN EN ISO 2719 (Pensky-Martens, Closed Cup)
Evaporation rate	not determined
Flammability (solid, gas)	no data available
Lower explosion limit	not determined
Upper explosion limit	not determined
Vapour pressure	not determined
Density	1.025 - 1.035 g/cm ³ (20 °C) Method: DIN 51757
Water solubility	not miscible decomposition by hydrolysis
Partition coefficient: n-octanol/water	not determined
Autoignition temperature	275 °C Method: DIN 51 974
Thermal decomposition	not determined
Viscosity, dynamic	3.5 - 4.5 mPa.s (20 °C) Method: DIN 53 015

9.2. Other information

Explosiveness Vapors can form explosive mixtures with air.

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

Keep away from heat and sources of ignition.
Protect from moisture.

10.5. Incompatible materials

Acids

10.6. Hazardous decomposition products

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Methanol in case of hydrolysis., Alcohol formed by hydrolysis lowers the flash point of the product.

11. Toxicological information
11.1. Information on toxicological effects

No toxicological studies are available on the mixture.

Acute oral toxicity	Acute toxicity estimate : > 5000 mg/kg Method: Calculation method
Acute dermal toxicity	Acute toxicity estimate : > 5000 mg/kg Method: Calculation method
Skin irritation	Irritating to skin.
Eye irritation	Risk of serious damage to eyes.
carcinogenicity assessment	Contains no carcinogenic substances as defined by NTP, IARC and/or OSHA.

12. Ecological information
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 No ecotoxicological studies are available on the mixture.
The data we have at our disposal do not necessitate identification concerning environmental hazard.

13. Disposal considerations
13.1. Waste treatment methods

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Product

Waste must be disposed of in accordance with federal, provincial, state and local regulations. Empty containers must be handled with care due to product residue. DO NOT HEAT OR CUT THE EMPTY CONTAINER WITH AN ELECTRIC OR GAS TORCH.

Uncleaned packaging

Packaging material should be recycled or disposed of in accordance with federal, state and local regulations.

14. Transport information

Not dangerous according to transport regulations.

- 14.1. UN number: --
- 14.2. UN proper shipping name: --
- 14.3. Transport hazard class(es): --
- 14.4. Packing group: --
- 14.5. Environmental hazards (Marine pollutant): --
- 14.6. Special precautions for user: Yes
- FOR USA ONLY: In packagings exceeding 450 L, this product must be classified, placarded, marked and shipped as Combustible Liquid to the USA.
- Not dangerous according to transport regulations.

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

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SARA Title III Section 311/312 Hazard Categories

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

- Acute Health Hazard
- Fire 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

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

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 :	2
Flammability :	2
Physical Hazard :	1

NFPA Ratings

Health :	2
Flammability :	2
Reactivity :	1

16. Other information

Further information

Revision date 07/12/2017

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(E)C50	LC50 or EC50
LOAEL	Lowest observed adverse effect level
LOEL	Lowest observed effect level
MARPOL	International Convention for the Prevention of Pollution from Ships
NFPA	National Fire Protection Association

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

