

SAFETY DATA SHEET**Dynasylan® 6490**

Material no.		Version	5.0 / US
Specification	116510	Revision date	05/29/2015
Order Number		Print Date	06/25/2015
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1. Identification**1.1. Product identifier**

Trade name Dynasylan® 6490
Chemical Name Polysiloxane, containing vinyl and methoxy groups

1.2. Recommended use of the chemical and restrictions on use

Relevant applications identified For industrial use
Function Coupling agent
Crosslinking agents

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**

Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
Flammable liquids Category 4 H227

2.2. Label elements

Statutory basis Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

hazard-defining component(s) (GHS)

- Tetramethyl orthosilicate

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Signal word	Warning
Hazard statement	H227 - Combustible liquid.
Precautionary statement Prevention	P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking. P280 - Wear protective gloves/ eye protection/ face protection.
Precautionary statement Reaction	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**

• NJTSR No.56705700001-7114P	>= 99%
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Trade Secret

Remarks Not a hazardous substance or mixture.

Other information

This material is classified as hazardous under OSHA regulations.

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

Remove contaminated or saturated clothing immediately and follow safe disposal procedures.

Inhalation

If aerosol or mists are inhaled, take affected persons out into the fresh air. In case of persistent discomfort or other symptoms, consult a physician immediately.

Skin contact

Immediately wash skin with soap and plenty of water. Remove contaminated clothing. Obtain medical attention immediately if symptoms occur. Wash clothing before reuse.

Eye contact

Keeping eyelid open, immediately rinse thoroughly for at least 5 minutes using plenty of water or, if necessary, eye rinsing solution.

In case of persistent discomfort: Consult an ophthalmologist.

Ingestion

If substance is accidentally swallowed, do not induce vomiting. If fully conscious, have patient rinse mouth with plenty of water and drink plenty of water in small sips. If unconscious, ensure person is in a stable position. Never give anything by mouth to an unconscious person. Obtain immediate medical attention.

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

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Symptoms

If large amount of substance is absorbed, liberation of reaction product (methanol) can lead to symptoms of poisoning. Possible signs of poisoning include daze, dizziness, nausea, colicky abdominal pain or respiratory disturbance. Symptoms of increasing intoxication include dysopia or loss of eyesight. Treatment may include immediate gastric lavage, antidote treatment or correction of acid-base balance. Detection of the substance (methanol) is possible in blood. Evidence shows that the treatment of methanol absorption is enhanced through the administration of ethanol, which should be given to produce a blood level of at least 0.1%. Ethanol diminishes the production of toxic metabolites of methanol. Obtain treatment of allergic reaction if necessary.

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

Treatment:

Immediate gastric lavage. Antidote treatment, correction of acid-base balance.

Detection of substance (Methanol) possible in:

Blood

Antidote treatment: ethanol.

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

Suitable extinguishing media: Use water spray or fog, foam, dry chemical or CO₂.

5.2. Special hazards arising from the substance or mixture

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.

Containers can build up pressure if exposed to heat (fire). Cool with water spray.

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**

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

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7.1. Precautions for safe handling

Wear personal protective equipment; see section 8. Vapors may spread long distances and travel to areas away from the work site before igniting or flashing back to the vapor source.

Keep away from heat, sparks, flames and other sources of ignition. Keep container tightly closed. Use only with adequate ventilation.

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

This material may have a low electrical conductivity and therefore may accumulate dangerous levels of static electricity. An ignitable vapor-air mixture can form inside storage tanks.

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.

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.

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

Storage

Keep container tightly closed in a dry and well-ventilated place.

Residual vapors might explode on ignition; do not apply heat, cut, drill, grind or weld on or near this container.

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

No substance-specific limiting value being known.

DNEL/DMEL values

Remarks not necessary (see chapter 15)

PNEC values

Remarks not necessary (see chapter 15)

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**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

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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

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.

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

Eye protection

Use chemical splash goggles or face shield.

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.

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

physical state	liquid
Colour	colourless
Form	liquid
Odour	aromatic
pH	not determined
Melting point/range	< -70.0 °C
Setting point	
Boiling point/range	ca. 220 °C (1013 hPa)
Method:	ASTM D-1120
Flash point	> 87 °C
Method:	DIN EN ISO 2719 (Pensky-Martens, Closed Cup)
Evaporation rate	not determined
Lower explosion limit	not determined
Upper explosion limit	not determined
Vapour pressure	2 hPa (20 °C)
Density	ca. 1 g/cm ³ (20 °C)
Method:	DIN 51757
Water solubility	Not miscible.

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Decomposition by hydrolysis.

Partition coefficient: n-octanol/water not determined

Autoignition temperature not determined

Thermal decomposition not determined

Viscosity, dynamic 2 - 4 mPa.s (20 °C)
Method: DIN 53 015

9.2. Other information

Other information 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 No dangerous reactions known.

10.4. Conditions to avoid

Keep away from heat and sources of ignition.
Vapours can form explosive mixtures with air.

10.5. Incompatible materials

water

10.6. Hazardous decomposition products

Methanol in case of hydrolysis.

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

Acute oral toxicity	No data available
	Possibly harmful. (methanol in case of hydrolysis)
Acute inhalation toxicity	No data available
Acute dermal toxicity	No data available
Skin irritation	No data available
	Possibly irritating.
Eye irritation	No data available

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	Possibly irritating.
Sensitization	No data available
Assessment of STOT single exposure	No data available
Assessment of STOT repeat exposure	No data available
Risk of aspiration toxicity	No data available
Gentoxicity in vitro	No data available
Carcinogenicity	No data available
Toxicity to reproduction	No data available
Further information	The toxicological data on this product have not been determined experimentally.

12. Ecological information**12.1. Toxicity****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.

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

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Product

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

Since empty containers retain product residue, follow MSDS and label warnings even after container is emptied.

Residual vapors might explode on ignition; do not apply heat, cut, drill, grind or weld on or near this container.

Uncleaned packaging

Packaging, that can not be reused after cleaning must be disposed or recycled in accordance with all federal, national and local regulations.

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 1993 |
| 14.2. UN proper shipping name: | Combustible liquid, n.o.s.(Vinyltrimethoxysilane) |
| 14.3. Transport hazard class(es): | C |
| 14.4. Packing group: | III |
| 14.5. Environmental hazards (Marine pollutant): | -- |
| 14.6. Special precautions for user: | Yes |
| ROAD: Not regulated in packages 450 liter or less. (CFR) | |
| RAIL: Not regulated in packages 450 liter or less. (CFR) | |

Air transport ICAO-TI/IATA-DGR**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: | -- |
| 14.6. Special precautions for user: | Yes |
| IATA-C: Not hazardous freight in air traffic (ICAO-TI / IATA-DGR). | |
| IATA-P: Not hazardous freight in air traffic (ICAO-TI / IATA-DGR). | |

Sea transport IMDG-Code/GGVSee (Germany)**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 |

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Not classified as hazardous sea cargo (IMDG code)

FOR USA ONLY: In packagings exceeding 450 L, this product must be classified, placarded, marked and shipped as Combustible Liquid to the USA.

- 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:

- 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

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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 :	1
Flammability :	2
Physical Hazard :	1

NFPA Ratings

Health :	1
Flammability :	2
Reactivity :	1

16. Other information**Further information**

Revision date 05/29/2015

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