SAFETY DATA SHEET

Classified in accordance 29 CFR 1910.1200

1. Identification

Product identifier: Dynasylan® 1146

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 2 Turner Place Piscataway, NJ 08854 USA
Telephone	:	+1 973 929 8000
Fax	:	+1 973 929 8040
E-mail	:	product-regulatory-services@evonik.com

Emergency telephone number:

24-Hour Health Emergency	:	+1 800 424 9300 (CHEMTREC - US & CANADA) 800 681 9531 (CHEMTREC MEXICO) +1 703 527 3887 (CHEMTREC WORLD)

2. Hazard(s) identification

Hazard Classification

Physical Hazards

Flammable liquids	Category 4

Environmental Hazards

Acute hazards to the aquatic environment	Category 3

Label Elements

Hazard Symbol: No symbol

Signal Word: Warning

Hazard Statement:

Combustible liquid.
Harmful to aquatic life.

Precautionary Statements

Prevention: Avoid release to the environment. Wear protective gloves/eye protection/face protection. Keep away from heat/sparks/open flames. - No smoking.

Response: In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

Storage: Store in a well-ventilated place. Keep cool.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Hazard(s) not otherwise classified (HNOC): Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment.

3. Composition/information on ingredients

Substances

Composition information of impurities and stabilizers

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%)*
Trimethoxypropylsilane		1067-25-0	<10%
methanol		67-56-1	<1%

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

Composition Comments: The exact concentration has been withheld as a trade secret.

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4. First-aid measures

Description of necessary first-aid measures

General information: 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: In case of contact, immediately flush eyes with plenty of water, or if necessary, with 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.

Personal Protection for First-aid Responders: No data available.

Most important symptoms and effects, both acute and delayed

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.

Hazards: None known.

Indication of immediate medical attention and special treatment needed

Treatment: 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

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Water spray, foam, dry powder or carbon dioxide.

Unsuitable extinguishing media: High volume water jet.

Special hazards arising from the substance or mixture: Hazardous fumes in fires, specific to the product: Nitrogen Oxides Combustible liquid. Vapors can travel to a source of ignition and flash back. Explosive mixtures may occur at temperatures at or above the flashpoint.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: As in any fire, wear self-contained positive-pressure breathing apparatus, (MSHA/NIOSH approved or equivalent) and full protective gear. Containers can build up pressure if exposed to heat (fire). Cool with water spray.

Special protective equipment for fire-fighters: No data available.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	For personal protection see section 8.
Accidental release measures:	Remove sources of ignition and ventilate area. Run off may create fire or explosion hazard in sewer. Assure sufficient ventilation.
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):	Provide for good ventilation if vapours/aerosols are formed. Application, processing: Provide good ventilation or extraction.
Safe handling advice:	For personal protection see section 8. Wash thoroughly after handling. Keep away from heat, sparks, flames and other sources of ignition. Keep container tightly closed. Use only with adequate ventilation. Vapors may spread long distances and travel to areas away from the work site before igniting or flashing back to the vapor source.
Contact avoidance measures:	No data available.

Storage

Safe storage conditions:	Take precautionary measures against static discharges. Keep away from sources of ignition - No smoking. When repairs of the production system are to be made (e.g. welding work), the section to be repaired must be essentially free of product.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. 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.Keep containers tightly closed in a cool, well-ventilated place. Protect from moisture. Residual vapors might explode on ignition; do not apply heat, cut, drill, grind or weld on or near this container.
Safe packaging materials:	No data available.

8. Exposure controls/personal protection

Control Parameters
Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values		Source
methanol	TWA	200 ppm		US. ACGIH Threshold Limit Values, as amended (03 2016)
	STEL	250 ppm		US. ACGIH Threshold Limit Values, as amended (03 2016)
	STEL	250 ppm	325 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards, as amended (2010)
	REL	200 ppm	260 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards, as amended (2010)
	PEL	200 ppm	260 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (03 2016)

Please refer to the latest edition of the appropriate source text and consult an industrial hygienist or similar professional, or local agencies, for further information.

Biological Limit Values
No biological exposure limits noted for the ingredient(s).

Appropriate Engineering Controls Provide for good ventilation if vapours/aerosols are formed. Application, processing: Provide good ventilation or extraction.

Individual protection measures, such as personal protective equipment

Eye/face protection: Use chemical splash goggles or face shield.

Skin Protection

Hand Protection: 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., Use impermeable gloves.

Skin and Body Protection: Safety showers and eye showers should be easily accessible. In order to determine further specifications applicable to the personal protection equipment, a hazard assessment according to the OSHA standards (29 CFR 1910.132) for personal protection equipment (PPE) is recommended before the product is used.

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.

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

Information on basic physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	clear to slightly opaque, colorless to yellowish
Odor:	amine-like
Odor Threshold:	No data available.
Freezing point:	No data available.
Boiling Point:	Approximate 516 °F/269 °C (1,013 hPa) (ASTM D-1120) Decomposition before boiling
Flammability:	No data available.

Upper/lower limit on flammability or explosive limits

Explosive limit - upper:	No data available.
Explosive limit - lower:	No data available.
Flash Point:	> 140 °F/> 60 °C (DIN EN ISO 2719)
Self Ignition Temperature:	No data available.
Decomposition Temperature:	No data available.
pH:	10.0 - 11.0 (20 g/l, 68 °F/20 °C)

Viscosity

Dynamic viscosity:	Approximate 35 mPa.s (68 °F/20 °C)
Kinematic viscosity:	No data available.
Flow Time:	No data available.

Solubility(ies)

Solubility in Water:	not miscible
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	< 3 (OECD 117)
Vapor pressure:	< 1 hPa (68 °F/20 °C) (dynamic method)
Relative density:	No data available.
Density:	Approximate 1.06 g/cm3 (68 °F/20 °C) (DIN 51757)
Bulk density:	No data available.
Relative vapor density:	No data available.

Particle characteristics

Particle Size:	No data available.
Particle Size Distribution:	No data available.
Specific surface area:	No data available.
Surface charge/Zeta potential:	No data available.
Shape:	No data available.
Crystallinity:	No data available.
Surface treatment:	No data available.

Other information

Minimum ignition temperature:	554 °F/290 °C (1,013 hPa, DIN 51794)
Peroxides:	Not applicable
Evaporation Rate:	No data available.

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:	Keep away from heat and sources of ignition.
Incompatible Materials:	Water. Acids.
Hazardous Decomposition Products:	Methanol in case of hydrolysis. Alcohol formed by hydrolysis lowers the flash point of the product.

11. Toxicological information

Information on toxicological effects

Information on likely routes of exposure

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

Acute toxicity (list all possible routes of exposure)

Oral
Product: LD 50 (Rat): > 2,000 mg/kg Not toxic after single exposure;

Dermal
Product: LD 50 (Rat): > 2,000 mg/kg Not toxic after single exposure;

Inhalation
Product: Not classified for acute toxicity based on available data.

Repeated dose toxicity
Product: NOAEL (Rat, Oral, 28 d): 1,000 mg/kg

Skin Corrosion/Irritation
Product: No data available.
Components:

Trimethoxypropylsilane	OECD 404 (Rabbit): Irritating.
methanol	Literature (Rabbit): Not irritating

Serious Eye Damage/Eye Irritation

Product:	No data available.
Components:	
Trimethoxypropylsilane	Not irritating OECD 405 Rabbit:
methanol	Not irritating Rabbit:

Respiratory or Skin Sensitization

Product:	Buehler Test, OECD 406 (Guinea Pig): Not a skin sensitizer.

Carcinogenicity

Product:	Contains no carcinogenic substances as defined by NTP, IARC and/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:	Ames test (OECD 471): negative; Chromosomal aberration (OECD 473): negative;

In vivo

Product:	No data available.
Components:	
Trimethoxypropylsilane	Micronucleus test (OECD 474) Oral (Mouse): negative (analogy)
methanol	Micronucleus test (OECD 474) Intraperitoneal (Mouse, Female, Male): negative Chromosomal aberration Intraperitoneal (Mouse, Female, Male): negative

Reproductive toxicity

Product:	No data available.
Components:	
methanol	Not classified

Specific Target Organ Toxicity - Single Exposure

Product:	No data available.
Components:	
Trimethoxypropylsilane	no evidence for hazardous properties
methanol	Dermal Oral Inhalation - vapor: optic nerve, Central nervous system. - Category 1 Causes damage to organs.

Specific Target Organ Toxicity - Repeated Exposure

Product:	No data available.
Components:	
Trimethoxypropylsilane	no evidence for hazardous properties
methanol	Not classified

Aspiration Hazard

Product:	No evidence of aspiration toxicity

Information on health hazards

Other hazards

Product:	No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: LC 50 (Oryzias latipes (Orange-red killifish), 96 h): > 100 mg/l

Aquatic Invertebrates

Product: EC 50 (Daphnia magna, 48 h): > 100 mg/l

Toxicity to Aquatic Plants

Product: EC 50 (Algae (Pseudokirchneriella subcapitata), 72 h): 25 mg/l (OECD 201)

Toxicity to microorganisms

Product: No data available.

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:

Trimethoxypropylsilane — NOEC (Desmodesmus subspicatus (green algae), 72 h): 913 mg/l (OECD 201)

Toxicity to microorganisms

Product: No data available.

Persistence and Degradability

Biodegradation

Product: 12.8 % (28 d, OECD 301 B), Not readily degradable.

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: not bioaccumulative

Partition Coefficient n-octanol / water (log Kow)

Product: Log Kow: < 3 (OECD 117)

Mobility in soil:

Product Adsorption on the floor: low.

Results of PBT and vPvB assessment:

Product No data available.

Other adverse effects:

Other hazards

Product: The data we have at our disposal do not necessitate identification concerning environmental hazard.

13. Disposal considerations

Disposal methods: 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.

Contaminated Packaging: Do not reuse empty containers and dispose of in accordance with the regulations issued by the appropriate local authorities. 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	:	NA 1993
Proper shipping name	:	Combustible liquid, n.o.s. (trimethoxypropylsilane, methanol)
Class	:	CBL
Packing group	:	III
Labels	:	NONE
ERG Code	:	128
Marine pollutant	:	no
Remarks	:	Not regulated in packages 450 liter or less.

International Regulations

UNRTDG

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

Remarks	:	Not hazardous freight in air traffic (ICAO-TI / IATA-DGR).

IMDG-Code

Not regulated as a dangerous good

Remarks	:	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.

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):

Chemical Identity
methanol

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Flammable (gases, aerosols, liquids, or solids), Hazards Not Otherwise Classified (HNOC)

US. EPCRA (SARA Title III) Section 304 Extremely Hazardous Substances Reporting Quantities and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substances
None present or none present in regulated quantities.

US. EPCRA (SARA Title III Section 313 Toxic Chemical Release Inventory (TRI) Reporting
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, methanol, 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.

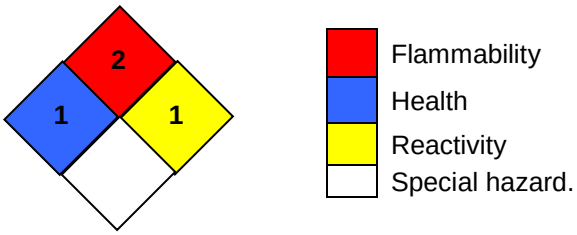
US. Massachusetts RTK - Substance List
No ingredient regulated by MA Right-to-Know Law present.

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

NFPA Hazard ID



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

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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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