SAFETY DATA SHEET

Classified in accordance 29 CFR 1910.1200

1. Identification

Product identifier: Dynasylan® F 8261

Chemical name:
Triethoxy(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl)silane

Other means of identification
CAS Number: 51851-37-7

Recommended restrictions
Recommended use: For industrial use Hydro- and oleophobizing agent Surface modifier
Restrictions on use: Not determined.

Manufacturer/Importer/Distributor Information

Company Name	:	Evonik Corporation 299 Jefferson Road Parsippany, NJ 07054 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

Health Hazards

Specific Target Organ Toxicity - Repeated Exposure	Category 2[1.]

Target Organs
1. Peripheral nervous system

Label Elements

Hazard Symbol:

Signal Word: Warning

Hazard Statement: May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements

Prevention: Do not breathe dust/fume/gas/mist/vapors/spray.

Response: Get medical advice/attention if you feel unwell.

Disposal: Dispose of contents/ container to an approved waste disposal plant.

Hazard(s) not otherwise classified (HNOC): None.

3. Composition/information on ingredients

Chemical name:
Triethoxy(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl)silane

Substances

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%)*
Triethoxy(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl)silane		51851-37-7	>=97 - <=100%

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

Composition information of impurities and stabilizers

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%)*
Tetraethyl silicate		78-10-4	<=3.0%

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

Composition Comments: fluoroalkylsilane

Composition Comments: This product contains a component that is subject to a TSCA Significant New Use Rule (SNUR). This product may be used in anti-graffiti coatings, industrial and commercial applications with proper personal protection equipment. The product may not be used in consumer products. These limitations are cited in the US Code of Federal Regulations 40 CFR 721.9504. If a product containing the regulated component is distributed further, it is required that the distributor ensure that these limitations are communicated to downstream users.

The exact concentration has been withheld as a trade secret.

4. First-aid measures

Description of necessary first-aid measures

General information: Remove contaminated, saturated clothing immediately.

Inhalation: If aerosol or mists are formed: Move victims into fresh air.

Skin Contact: Wash off with plenty of water and soap.

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: Have the mouth rinsed with water. After absorbing large amounts of substance: Consult a physician.

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

Most important symptoms/effects, acute and delayed

Symptoms: None known.

Hazards: None known.

Indication of immediate medical attention and special treatment needed

Treatment: After absorbing large amounts of substance: administration of activated charcoal. Acceleration of gastrointestinal passage

5. Fire-fighting measures

Suitable (and unsuitable) extinguishing media

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

Unsuitable extinguishing media: High volume water jet

Specific hazards arising from the chemical: Standard procedure for chemical fires. Possible formation of fluorine-containing fumes.

Special protective equipment and precautions for firefighters

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

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

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Do not inhale vapours / aerosols.

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:	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).
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):	Use this product preferably in a closed system, or use process enclosures, local exhaust ventilation or other engineering controls to minimize airborne exposure.
Safe handling advice:	Observe the rules usually applicable when handling chemicals. Assure sufficient ventilation.Handle in accordance with good industrial hygiene and safety practice. Wear suitable protective equipment. If workplace exposure limits are exceeded and/or larger amounts are released (leakage, spilling, dust) the indicated respiratory protection should be used. Do not breathe in vapours or aerosols. Avoid contact with eyes, skin, and clothing.Avoid contact with eyes, skin, and clothing.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. Follow all SDS/label precautions even after container is emptied because it may retain product residues.
Contact avoidance measures:	No data available.
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.

Storage

Safe storage conditions:	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.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.
Safe packaging materials:	No data available.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values		Source
Tetraethyl silicate	TWA	10 ppm		US. ACGIH Threshold Limit Values, as amended (03 2016)
	REL	10 ppm	85 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards, as amended (2010)
	PEL	100 ppm	850 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (03 2016)
	IDLH	700 ppm		US. NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended (10 2017)
	TWA	10 ppm	85 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended (1989)
	TWA	10 ppm	85 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended (06 2008)
	ST ESL		100 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended (06 2018)
	AN ESL		85 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended (06 2018)
	ST ESL		850 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended (06 2018)
	AN ESL		10 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended (06 2018)
	TWA PEL	10 ppm	85 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended (01 2015)

Hazardous components without workplace control parameters

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

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: Natural rubber. Break-through time: >= 30 min Additional Information: In case of contact through splashing:Material: Nitrile rubber. Break-through time: >= 30 min Additional Information: In case of contact through splashing: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., Selection of protective gloves to meet the requirements of specific workplaces., Suitability for specific workplaces should be clarified with protective glove manufacturers.
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.
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

Appearance	
Physical state:	liquid
Form:	Clear Liquid
Color:	colourless
Odor:	almost odourless
Odor Threshold:	not determined
pH:	5.5 (1,000 g/l, 20 °C)
Freezing point:	< -38.0 °C
Boiling Point:	220 °C (1,013 hPa) (DIN 51 751)
Flash Point:	108 °C (DIN EN ISO 2719 (Pensky-Martens, Closed Cup))
Evaporation Rate:	not determined
Flammability (solid, gas):	No data available.
Explosive limit - upper (%):	not determined
Explosive limit - lower (%):	not determined
Vapor pressure:	approx. 300 Pa (20 °C) (EC Method A.4) tested substance: Product 4 Pa (20 °C) (EC Method A.4) dynamic method tested substance: pure substance
Vapor density (air=1):	No data available.

Density:	1.334 g/cm3 (20 °C)
Relative density:	No data available.
Solubility in Water:	< 10 mg/l slow decomposition by hydrolysis
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	7.2 (QSAR) 7.5 (OECD Test Guideline 117)
Self Ignition Temperature:	245 °C (EC Method A.15)
Decomposition Temperature:	not determined
Kinematic viscosity:	No data available.
Dynamic viscosity:	3.5 mPa.s (20 °C, DIN 53 015)

Other information

Explosive properties:	Vapors can form explosive mixtures with air.
Oxidizing properties:	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:	No dangerous reactions known.
Conditions to avoid:	Keep away from heat and sources of ignition. Hydrolyses on contact with water. In the presence of oxygen and heat, the ethanol forming during the reaction may produce acetaldehyde. Material may form acetaldehyde when heated with inorganic pigments in the presence of air.
Incompatible Materials:	Water. Oxidizing substances
Hazardous Decomposition Products:	No data available.

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)

Oral
Product: LD 50 (Rat): > 2,000 mg/kg

Dermal
Product: LD 50 (Rat): > 2,000 mg/kg

Inhalation
Product: No data available.

Repeated dose toxicity
Product: NOAEL (Rat, Oral): 50 mg/kg (Target Organ(s): Peripheral nervous system)

Skin Corrosion/Irritation
Product: Not irritating OECD Test Guideline 404 (Rabbit): Not irritating

Serious Eye Damage/Eye Irritation
Product: Not irritating Rabbit: Not irritating

Respiratory or Skin Sensitization
Product: Buehler Test, OECD Test Guideline 406 (Guinea Pig): Not a skin sensitizer.

Carcinogenicity
Product: No data available.
Components:
Tetraethyl silicate — An Expert Judgment stated that no classification is necessary based on present knowledge.

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):
No carcinogens present or none present in regulated quantities

Germ Cell Mutagenicity

In vitro
Product: Ames test (OECD TG 471): negative
gene mutation (OECD TG 490): negative
Chromosomal aberration (OECD TG 473): negative

In vivo
Product: No data available.

Reproductive toxicity
Product: No data available.

Specific Target Organ Toxicity - Single Exposure
Product: No data available.

Specific Target Organ Toxicity - Repeated Exposure
Product: Category 2

Aspiration Hazard
Product: No data available.

Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish
Product: In the range of water solubility not toxic under test conditions.

Aquatic Invertebrates
Product: In the range of water solubility not toxic under test conditions.

Chronic hazards to the aquatic environment:

Fish
Product: No data available.

Aquatic Invertebrates
Product: No data available.

Toxicity to Aquatic Plants
Product: In the range of water solubility not toxic under test conditions.

Persistence and Degradability

Biodegradation
Product: In the range of water solubility: not toxic under test conditions.

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: 7.2 (QSAR)
Log Kow: 7.5 (OECD Test Guideline 117)

Mobility in soil: Adsorption on the floor: low.

Other adverse effects: 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, 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.

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

Not regulated as a dangerous good

Remarks : Not dangerous according to transport regulations.

International Regulations

UNRTDG

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

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

Not applicable for product as supplied.

15. Regulatory information

US Federal Regulations

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

Chemical Identity	Reportable quantity
Triethoxy(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl)silane	De minimis concentration: 1.0% One-Time Export Notification only.

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

This product contains a component that is subject to a TSCA Significant New Use Rule (SNUR). This product may be used in anti-graffiti coatings, industrial and commercial applications with

proper personal protection equipment. The product may not be used in consumer products. These limitations are cited in the US Code of Federal Regulations 40 CFR 721.9504. If a product containing the regulated component is distributed further, it is required that the distributor ensure that these limitations are communicated to downstream users.

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

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

Specific target organ toxicity (single or repeated exposure)

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

This material does not contain any components with a section 304 EHS RQ.
None present or none present in regulated quantities.

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

Not regulated.

Chemical Identity	Threshold Planning Quantity

Not regulated.

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

Not regulated.

No ingredient requiring a warning under CA Prop 65.

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

Chemical Identity
Tetraethyl silicate

US. Massachusetts RTK - Substance List

Chemical Identity
Tetraethyl silicate

US. Pennsylvania RTK - Hazardous Substances

Chemical Identity
Tetraethyl silicate

US. Rhode Island RTK

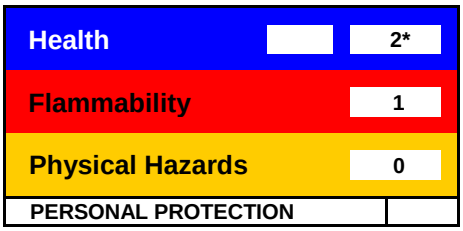
No ingredient regulated by RI Right-to-Know Law present.

Inventory Status:

US TSCA Inventory:	On or in compliance with the inventory

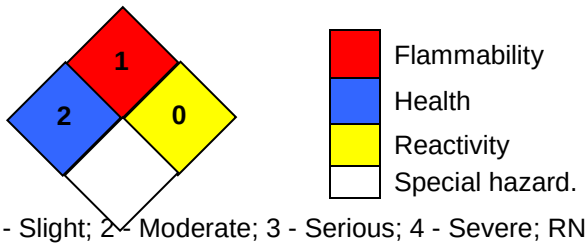
16.Other information, including date of preparation or last revision

HMIS Hazard ID



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

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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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