

SAFETY DATA SHEET

Classified in accordance 29 CFR 1910.1200

1. Identification

Product identifier: Dynasylan® PTEO

Chemical name:
Triethoxypropylsilane

Other means of identification

CAS Number: 2550-02-9

Recommended restrictions

Recommended use: For industrial use Surface modifier Raw material

Restrictions on use: Not determined.

Manufacturer/Importer/Distributor Information

Company Name : Evonik Corporation
2 Turner Place
Piscataway, NJ 08854
USA

Telephone : +1 732 981 5000

E-mail : product-regulatory-services@evonik.com

Emergency telephone number:

24-Hour Health : +1 800 424 9300 (CHEMTREC - US & CANADA)

Emergency 800 681 9531 (CHEMTREC MEXICO)

+1 703 527 3887 (CHEMTREC WORLD)

2. Hazard(s) identification

Hazard Classification

Physical Hazards

Flammable liquids Category 3

Flammable liquids Category 3

Health Hazards

Skin irritation Category 2

Skin irritation Category 2

Environmental Hazards

Acute hazards to the aquatic environment Category 3

Acute hazards to the aquatic environment Category 3

Label Elements

Hazard Symbol:



Signal Word: Warning

Hazard Statement: Flammable liquid and vapor.
 Causes skin irritation.
 Harmful to aquatic life.

Precautionary Statements

Prevention: Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof [electrical/ventilating/lighting/...] equipment. Use non-sparking tools. Take precautionary measures against static discharge. Wash thoroughly after handling. Avoid release to the environment. Wear protective gloves/eye protection/face protection.

Response: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. 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 approved waste disposal plant.

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

3. Composition/information on ingredients

Chemical name:
 Triethoxypropylsilane

Substances

Chemical Identity	CAS number	Content in percent (%) [*]
Triethoxypropylsilane	2550-02-9	>=90 - <=100%

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

A specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Description of necessary first-aid measures

General information: Remove contaminated or saturated clothing immediately and dispose of safely.

Inhalation:	If aerosol or mists are inhaled, take affected persons out into the fresh air. Possible discomforts include severe irritation of mucus lining (nose, throat, eyes), cough, sneezing and flow of tears. In case of persistent discomfort, obtain medical attention 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 swallowed, rinse mouth with water (only if the person is conscious). Call a physician immediately.
Personal Protection for First-aid Responders:	As in any fire, wear self-contained positive-pressure breathing apparatus, (MSHA/NIOSH approved or equivalent) and full protective gear.

Most important symptoms/effects, acute and delayed

Symptoms: None known.

Hazards: None known.

Indication of immediate medical attention and special treatment needed

Treatment: If required, therapy of irritative effect. 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: foam Water spray. Carbon Dioxide. dry powder

Unsuitable extinguishing media: high volume water jet

Specific hazards arising from the chemical: Combustible liquid. Vapors can travel to a source of ignition and flash back. Explosive mixtures may occur at temperatures at or above the flashpoint. Closed container may rupture if strongly heated. In case of fire cool endangered containers with water.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: No data available.

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

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment.

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:	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.
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

None of the components have assigned exposure limits.
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: Fluorinated rubber (Viton)
 Break-through time: ≥ 480 min
 Additional Information: 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. 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.

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
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Appearance

Physical state:	liquid
Form:	liquid
Color:	Colorless
Odor:	Aromatic
Odor Threshold:	not determined
pH:	No data available.
Freezing point:	< -100 °C (OECD TG 102)
Boiling Point:	approx. 175 °C (1,013 hPa) (DIN 51 751)
Flash Point:	57 °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: 80 Pa (20 °C) (AN-SOP 1024) pure substance

Vapor density (air=1):	No data available.
Density:	0.89 g/cm ³ (20 °C) (DIN 51757)
Relative density:	No data available.
Solubility(ies)	
Solubility in Water:	not miscible decomposition by hydrolysis
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	not determined
Self Ignition Temperature:	No data available.
Decomposition Temperature:	not determined
Kinematic viscosity:	No data available.
Dynamic viscosity:	not determined
Other information	
Explosive properties:	Vapors can form explosive mixtures with air. not explosive
Oxidizing properties:	No data available.
Minimum ignition temperature:	225 °C (1,013 hPa, DIN 51 794)

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.
Incompatible Materials:	Water.
Hazardous Decomposition Products:	Ethanol in case of hydrolysis Alcohol formed by hydrolysis lowers the flash point of the product.

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): > 5,110 mg/kg**Dermal****Product:** No data available.**Inhalation****Product:** LC 50 (Rat): > 27.892 mg/l Molecular Weight corrected, Aerosols, tested substance:, Structurally similar substance**Repeated dose toxicity****Product:** NOAEL (Rat, Oral): 940 mg/kg Molecular Weight corrected tested substance: Structurally similar substance
NOAEC (Rat): 2388 mg/m³ Molecular Weight corrected**Skin Corrosion/Irritation****Product:** Skin irritation OECD Test Guideline 404 (Rabbit): Skin irritation**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.
tested substance: Structurally similar substance**Carcinogenicity****Product:** No data available.**Components:**

Triethoxypropylsilane Not classified

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 tested substance: Structurally similar substance
gene mutation (OECD TG 476): positive tested substance: Structurally similar substance
gene mutation (OECD TG 476): negative tested substance: Structurally similar substance
Chromosomal aberration (OECD TG 473): positive tested substance: Structurally similar substance
Chromosomal aberration (OECD TG 473): negative tested substance: Structurally similar substance

In vivo

Product: Micronucleus test (OECD TG 474) Oral (Mouse): negative tested substance: Structurally similar substance
Micronucleus test (OECD TG 474) Oral: negative tested substance: Structurally similar substance

Reproductive toxicity

Product: No data available.

Components:

Triethoxypropylsilane Not classified

Specific Target Organ Toxicity - Single Exposure

Product: Not classified

Specific Target Organ Toxicity - Repeated Exposure

Product: Not classified

Aspiration Hazard

Product: No data available.

Other effects: No data available.

12. Ecological information**Ecotoxicity:****Acute hazards to the aquatic environment:****Fish**

Product: (Brachydanio rerio (zebrafish), 96 h): 80 mg/l tested substance: Structurally similar substance

Aquatic Invertebrates

Product: EC 50 (Daphnia magna (Water flea), 48 h): 21.5 mg/l tested substance: Structurally similar substance

Chronic hazards to the aquatic environment:**Fish**

Product: No data available.

Aquatic Invertebrates

Product: NOEC (Daphnia magna (Water flea), 21 d): > 100 mg/l tested substance: Structurally similar substance

Toxicity to Aquatic Plants

Product: EC 50 (Desmodesmus subspicatus (green algae), 72 h): > 819 mg/l tested substance: Structurally similar substance

Persistence and Degradability**Biodegradation**

Product: 54 % (28 d, (DOC; Die Away test / 92/69/EEC part C.4-A))

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential**Bioconcentration Factor (BCF)**

Product: low

Partition Coefficient n-octanol / water (log Kow)

Product: Log Kow: not determined

Mobility in soil:

Adsorption on the floor: low.

Other adverse effects:

No ecotoxicological studies are available.

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**

UN/ID/NA number : UN 1993
Proper shipping name : Flammable liquids, n.o.s.
(Propyltriethoxysilane)
Class : 3
Packing group : III

Labels : 3
ERG Code : 128
Marine pollutant : no
Remarks : In the U.S. this material may be classified as combustible liquid. Combustible liquids are not regulated in packages 450 liters or less. This applies for shipments by road and rail only.

International Regulations

IATA-DGR

UN/ID No. : UN 1993
Proper shipping name : Flammable liquid, n.o.s.
(Propyltriethoxysilane)
Class : 3
Packing group : III
Labels : 3
Packing instruction (cargo aircraft) : 366
Packing instruction (passenger aircraft) : 355
Remarks : Maximum Net Quantity per Package 220 L

IMDG-Code

UN number : UN 1993
Proper shipping name : FLAMMABLE LIQUID, N.O.S.
(Propyltriethoxysilane)
Class : 3
Packing group : III
Labels : 3
EmS Code : F-E, S-E
Marine pollutant : no

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)

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

Flammable (gases, aerosols, liquids, or solids), Skin Corrosion or Irritation

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

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

SARA 311/312 Hazardous Chemical

Chemical Identity

Threshold Planning Quantity

SARA 313 (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

No ingredient requiring a warning under CA Prop 65.

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.

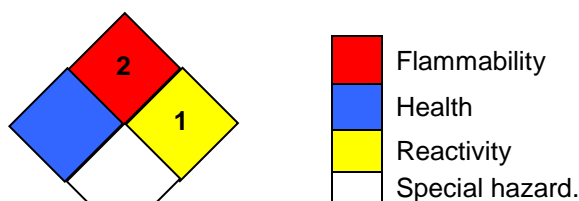
US. Pennsylvania RTK - Hazardous Substances

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
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NFPA Hazard ID

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

Issue Date: 07/03/2019

Version #: 1.0

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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