

SAFETY DATA SHEET

Classified in accordance with 29 CFR 1910.1200

1. Identification

Product identifier: Dynasylan® P**Other means of identification****CAS Number:** 682-01-9**Recommended restrictions****Recommended use:** For industrial use Crosslinking agents Surface modifier**Restrictions on use:** Not determined.**Manufacturer/Importer/Distributor Information****Company Name** : Evonik Corporation
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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 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: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid release to the environment. Wear protective gloves/ eye protection/ face protection.

Response: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

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

Disposal: Dispose of contents/ container to an approved facility in accordance with local, regional, national and international regulations.

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

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%) [*]
Tetrapropyl orthosilicate		682-01-9	<=100%

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

The exact concentration has been withheld as a trade secret.

4. First-aid measures

Description of first aid measures

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: Rinse thoroughly with plenty of water keeping eyelid open. In case of persistent discomfort: Consult an ophthalmologist.

Ingestion: Have the mouth rinsed with water. After absorbing large amounts of substance / In case of discomfort: Supply with medical care.

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

Most important symptoms and effects, both 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, foam, dry powder or carbon dioxide.

Unsuitable extinguishing media: High volume water jet.

Special hazards arising from the substance or mixture: Standard procedure for chemical fires. 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: 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.

Special protective equipment for fire-fighters: In case of fire: wear a self contained respiratory apparatus

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Keep away from sources of ignition - No smoking.

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

Local/Total ventilation: No data available.

Safe handling advice: 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 SDS/label precautions even after the container is emptied because it may retain product residues. Wash thoroughly after handling. 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. Do not breathe in vapours or aerosols. Avoid contact with skin and eyes. If there is the possibility of skin/eye contact, the indicated hand/eye/body protection should be used.

Contact avoidance measures: No data available.

Storage

Safe storage conditions: The product has an intermediate conductivity (static conductivity 100-10,000 pS/m) Liquids with a low conductivity (static conductivity < 100 pS/m) or intermediate conductivities (static conductivity 100 pS/m - 10,000 pS/m) might become electrostatically charged and thus present potential sources ignition. Germany: Technical Rules for Hazardous Substances - Prevention of the Risk of Ignition as a Result of Electrostatic Charges EU: NFPA 77, Recommended Practice on Static Electricity Take precautionary measures against static charges, keep away from sources of ignition. 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

None of the components have assigned exposure limits.

Biological Limit Values

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

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:

Safety glasses with side shields

Skin Protection

Hand Protection:

Additional Information: 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:

colorless to yellowish

Odor:

Aromatic

Odor Threshold:

No data available.

Freezing point:

< -148 °F/ < -100 °C

	Method: OECD 102
Boiling Point:	Approximate 439 °F/226 °C at 1,013 hPa Method: DIN 51751
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:	190 °F/88 °C Method: DIN EN ISO 2719
Auto-ignition temperature:	455 °F/235 °C 1,012.4 - 1,018.8 hPa Method: DIN 51794
Decomposition Temperature:	No data available.
pH:	No data available.
Viscosity	
Dynamic viscosity:	1 mPa.s at 68 °F/20 °C Method: DIN 53015
Kinematic viscosity:	1.51 mm ² /s at 68 °F/20 °C , Method: OECD 114
Flow Time:	No data available.
Solubility(ies)	
Solubility in Water:	not miscible decomposition by hydrolysis
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	3.4 at 68 °F/20 °C Method: QSAR
Vapor pressure:	0.26 Pa at 77 °F/25 °C Method: QSAR
Relative density:	No data available.
Density:	Approximate 0.92 g/cm ³ at 68 °F/20 °C Method: DIN 51757
Bulk density:	No data available.
Relative vapor density:	No data available.
Other information	
Explosive properties:	Vapours may form explosive mixtures with air.
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:	No dangerous reactions known.
Conditions to avoid:	Keep away from heat and sources of ignition. Vapours may form explosive mixtures with air. Protect from moisture.
Incompatible Materials:	Water.
Hazardous Decomposition Products:	propanol

11. Toxicological information

Information on likely routes of exposure

Inhalation:	Information on effects are given below.
Skin Contact:	Information on effects are given below.
Eye contact:	Information on effects are given below.
Ingestion:	Information on effects are given below.

Acute toxicity (list all possible routes of exposure)

Oral

Product:	LD 50, Rat, Female, Male, > 2,000 mg/kg, OECD 423, Not toxic after single exposure
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Dermal

Product:	No data available. Not classified for acute toxicity based on available data.
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Inhalation

Product:	LC 50, Rat, Female, Male, 4 h, 10 mg/l, Dust and mist, OECD 403, (analogy)
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Repeated dose toxicity

Product:	NOAEL Rat, Male, Oral, 28 d, 7 days a week, 10 mg/kg, (analogy) LOAEC, Mouse, Male, Inhalation - vapor, 28 d, 5 days/weeks, 6 hours/day, 426 mg/m ³ , (analogy) NOAEL Rat, Female, Oral, 28 d, 7 days a week, 50 mg/kg, (analogy)
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Skin Corrosion/Irritation

Product:	Not irritating, OECD 404, (Rabbit)
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Serious Eye Damage/Eye Irritation

Product:	Not irritating, OECD 405, Rabbit
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Respiratory or Skin Sensitization

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

Product:	Contains no carcinogenic substances as defined by NTP, IARC and/or OSHA. No evidence that cancer may be caused.
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IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogens present or none present in regulated quantities

ACGIH: US.ACGIH Threshold Limit Values:

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 1910.1001-1053), 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, (analogy)
gene mutation test, OECD 476: , negative, (analogy)

In vivo

Product: No data available.

Reproductive toxicity

Product: No evidence of effects of reproductive / developmental toxicity.

Specific Target Organ Toxicity - Single Exposure

Product: no evidence for hazardous properties

Specific Target Organ Toxicity - Repeated Exposure

Product: no evidence for hazardous properties

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, Brachydanio rerio (zebrafish), 96 h, > 245 mg/IOECD 203, (analogy)
NOEC, Brachydanio rerio (zebrafish), 96 h, >= 245 mg/IOECD 203, (analogy)

Aquatic Invertebrates

Product: EC 50, Daphnia magna, 48 h, > 75 mg/IOECD 202, (analogy)
NOEC, Daphnia magna, 48 h, >= 75 mg/IOECD 202, (analogy)

Toxicity to Aquatic Plants

Product: EC 50, Algae (Pseudokirchneriella subcapitata), 72 h, > 100 mg/l, OECD 201, growth rate (analogy)

Toxicity to microorganisms

Product: EC 50, local activated sludge, 3 h, > 100 mg/l, OECD 209, (analogy)

Chronic hazards to the aquatic environment:**Fish****Product:** No data available.**Aquatic Invertebrates****Product:** No data available.**Toxicity to microorganisms****Product:** EC 50, local activated sludge, 3 h, > 100 mg/l, OECD 209, (analogy)**Persistence and Degradability****Biodegradation****Product:** 98 %, 28 d, (DOC; Die Away test / 92/69/EEC part C.4-A), (analogy),
Readily biodegradable**BOD/COD Ratio****Product:** No data available.**Bioaccumulative potential****Bioconcentration Factor (BCF)****Product:** not bioaccumulative**Partition Coefficient n-octanol / water (log Kow)****Product:** 3.4, 20 °C, QSAR**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 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:**

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**Domestic regulation****49 CFR**

UN/ID/NA number : NA 1993
Proper shipping name : Combustible liquid, n.o.s.
(tetrapropyl orthosilicate)
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 : For USA only; packaging size more than 450 l:
COMBUSTIBLE LIQUID, N.O.S. (tetrapropyl orthosilicate), NA
1993, III, flash point 88°C

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 (on the basis of current knowledge of the product composition).

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 (on the basis of current knowledge of the product composition).

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053), as amended

None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

CERCLA Hazardous Substance List (40 CFR 302.4):

None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Flammable (gases, aerosols, liquids, or solids)

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 (on the basis of current knowledge of the product composition).

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

None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

US State Regulations

US. California Proposition 65

No ingredient requiring a warning under CA Prop 65.

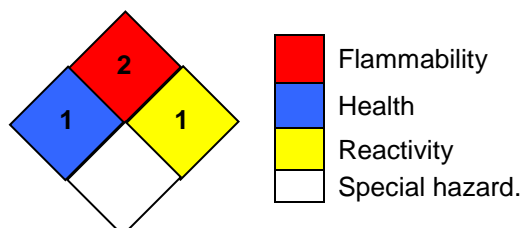
16. Other information, including date of preparation or last revision

HMIS Hazard ID

Health	1
Flammability	2
Physical Hazards	1
PERSONAL PROTECTION	

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

Version #: 1.2

Generation date: 04/22/2024

Date of first report version: 08/08/2019

Abbreviations and acronyms:

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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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