

SAFETY DATA SHEET

Classified in accordance 29 CFR 1910.1200

1. Identification

Product identifier: Dynasylan® MTMO

Chemical name:
3-Mercaptopropyltrimethoxysilane

Other means of identification
CAS Number: 4420-74-0

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
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USA

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Emergency telephone number:
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Emergency : +1 800 681 9531 (CHEMTREC MEXICO)
+1 703 527 3887 (CHEMTREC WORLD)

2. Hazard(s) identification

Hazard Classification

Physical Hazards

Flammable liquids Category 4

Health Hazards

Acute toxicity (Oral) Category 4

Skin sensitizer Category 1

Environmental Hazards

Acute hazards to the aquatic environment Category 2

Chronic hazards to the aquatic environment Category 2

Label Elements

Hazard Symbol:

Signal Word: Warning

Hazard Statement: Combustible liquid.
 Harmful if swallowed.
 May cause an allergic skin reaction.
 Toxic to aquatic life with long lasting effects.

Precautionary Statements
Prevention: Keep away from heat/sparks/open flames/hot surfaces. No smoking. Avoid breathing dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/eye protection/face protection.

Response: IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth. IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish. Collect spillage.

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:

3-Mercaptopropyltrimethoxysilane

Substances

Chemical Identity	CAS number	Content in percent (%) [*]
3-Mercaptopropyltrimethoxysilane	4420-74-0	

^{*} 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 follow safe disposal procedures.

Inhalation:	If aerosol or mists are formed, take affected persons out into the fresh air. Possible discomfort include severe irritation of mucous lining (nose, throat, eyes), cough, sneezing and flow of tears. Call a physician immediately.
Skin Contact:	Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Obtain medical attention. Wash clothing before reuse. Destroy or thoroughly clean contaminated shoes before reuse.
Eye contact:	Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Ingestion:	Have the mouth rinsed with water. 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: 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: Treatment Immediate gastric lavage. Antidote treatment, correction of acid-base balance. Detection of substance (Methanol) possible in: Blood Antidote treatment: ethanol. Allergic reactions cannot be excluded. Treatment of allergic reaction if necessary.

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.

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.

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:	Ensure adequate ventilation. 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, rivers, groundwater or soil.

7. Handling and storage**Handling**

Technical measures (e.g. Local and general ventilation):	Provide for good ventilation if vapors/aerosols are formed.
Safe handling advice:	Ventilators required at emission site. 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. Wash thoroughly after handling.
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

Provide for good ventilation if vapors/aerosols are formed.

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: \geq 480 min
 Material: Fluorinated rubber (Viton)
 Break-through time: \geq 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., Selection of protective gloves to meet the requirements of specific workplaces., Suitability for specific workplaces should be clarified with protective glove manufacturers., Use impermeable gloves., Personal protective equipment that provides a barrier to prevent dermal exposure to this substance is required.

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:	colorless to yellowish
Odor:	ester-like
Odor Threshold:	not determined
pH:	not determined
Freezing point:	not determined
Boiling Point:	85 °C (4 hPa) (DIN 51 356)
Flash Point:	85 °C (DIN 51758)
Evaporation Rate:	not determined
Flammability (solid, gas):	No data available.

Explosive limit - upper (%):	not determined
Explosive limit - lower (%):	not determined
Vapor pressure:	0.2 hPa (20 °C)
Vapor density (air=1):	No data available.
Density:	1.06 g/cm ³ (20 °C) (DIN 51757)
Relative density:	No data available.
Solubility(ies)	
Solubility in Water:	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:	2 mPa.s (20 °C, DIN 53 015)
Other information	
Explosive properties:	No data available.
Oxidizing properties:	No data available.
Minimum ignition temperature:	Not determined.

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:	Methanol 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): 933 mg/kg
LD 50 (Rat): 774 mg/kg

Dermal

Product: LD 50 (Rat): 2,608 mg/kg
LD 50 (Rat): 2,268 mg/kg

Inhalation

Product: No data is available on the product itself.

Repeated dose toxicity

Product: No data available.

Skin Corrosion/Irritation

Product: Not irritating (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): May cause sensitization by skin contact.

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):

No carcinogens present or none present in regulated quantities

Germ Cell Mutagenicity**In vitro**

Product: No data available.

In vivo

Product: No data available.

Reproductive toxicity

Product: No data available.

Components:

3-
Mercaptopropyltrimethoxy
silane

Not classified

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**Other effects:** No data available.**12. Ecological information****Ecotoxicity:****Acute hazards to the aquatic environment:****Fish****Product:** LC 50 (Brachydanio rerio (zebrafish), 96 h): 439 mg/l
LC0 (Brachydanio rerio (zebrafish), 96 h): 350 mg/l**Aquatic Invertebrates****Product:** EC 50 (Daphnia magna (Water flea), 48 h): 6.7 mg/l**Chronic hazards to the aquatic environment:****Fish****Product:** No data available.**Aquatic Invertebrates****Product:** No data available.**Toxicity to Aquatic Plants****Product:** EC 50 (Desmodesmus subspicatus (green algae), 72 h): 267 mg/l**Persistence and Degradability****Biodegradation****Product:** 51 %**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: not determined**Mobility in soil:** No data available.

Other adverse effects: Toxic to aquatic life with long lasting effects.

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. 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 : NA 1993

Proper shipping name : Combustible liquid, n.o.s.
(3-mercaptopropyl-trimethoxysilane)

Class : CBL

Packing group : III

Labels : NONE

ERG Code : 128

Marine pollutant : no

Remarks : Not regulated in packages 450 liter or less.

International Regulations

IATA-DGR

UN/ID No. : UN 3082

Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.
(3-mercaptopropyl-trimethoxysilane)

Class : 9

Packing group : III

Labels : 9MI

Packing instruction (cargo aircraft) : 964

Packing instruction (passenger aircraft) : 964

Environmentally hazardous : yes

Remarks : ERG-Code 9L

IMDG-Code

UN number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.

(3-mercaptopropyl-trimethoxysilane)

Class : 9

Packing group : III

Labels : 9

EmS Code : F-A, S-F

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):**Superfund Amendments and Reauthorization Act of 1986 (SARA)****Hazard categories**

Flammable (gases, aerosols, liquids, or solids), Acute toxicity (any route of exposure), Respiratory or Skin Sensitization

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

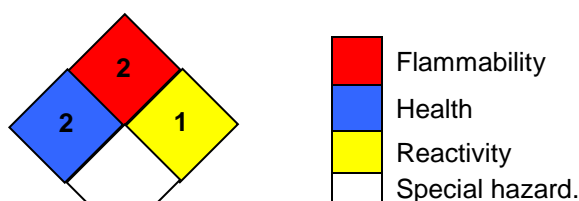
No ingredient regulated by PA Right-to-Know Law present.

US. Rhode Island RTK

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

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

NFPA Hazard ID



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

Issue Date: 07/09/2019

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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