SAFETY DATA SHEET

Classified in accordance 29 CFR 1910.1200

1. Identification

Product identifier: Dynasylan® AMEO-T

Other means of identification

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 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

Physical Hazards

Flammable liquids	Category 4

Health Hazards

Acute toxicity (Oral)	Category 4
Skin corrosion	Category 1B
Serious Eye Damage/Eye Irritation	Category 1
Skin sensitizer	Category 1

Label Elements

Hazard Symbol:

Signal Word: Danger

Hazard Statement: Combustible liquid.
Harmful if swallowed.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.

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. Wear protective gloves/protective clothing/eye protection/face protection.

Response: IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing 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. Store locked up.

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

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

3. Composition/information on ingredients

Mixtures

Chemical Identity	CAS number	Content in percent (%)*
3-Aminopropyltriethoxysilane	919-30-2	>=90 - <=100%
Bis(triethoxysilylpropyl)amine	13497-18-2	>=5 - <10%

* 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 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. If breathing difficulties occur: Keep patient half sitting with upper body raised.
Skin Contact:	Immediately wash with soap and water for at least fifteen minutes. Remove contaminated clothing and shoes. Obtain medical attention. Thoroughly wash clothing and shoes before reuse.
Eye contact:	Rinse eye thoroughly immediately with plenty of water for at least 10 minutes. Continue rinsing process with eye rinsing solution. Protect uninjured eye. For caustic burn of the eyes, call an ambulance and obtain immediate medical treatment from an ophthalmologist.
Ingestion:	If accidentally swallowed, rinse mouth thoroughly with water and afterwards, drink plenty of water. In case of discomfort, obtain medical attention.
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:	Allergic reactions cannot be excluded. Treatment of allergic reaction if necessary. If substance has been swallowed, apply therapy for chemical burn. Early endoscopy is recommended in order to assess mucosa lesions in the esophagus and stomach which may appear. If necessary, suck away left over substances.

5. Fire-fighting measures

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:	Water spray. Alcohol resistant foam. Carbon Dioxide. dry powder
Unsuitable extinguishing media:	High volume water jet
Specific hazards arising from the chemical:	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:	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. 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:	Use personal protective equipment. Avoid contact with the skin and the eyes.
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:	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:	No data available.

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

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: Additional Information: Use impermeable gloves.

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: In case of dusts/vapours/aerosols being formed or if the limit values like TLV are exceeded: use respiratory equipment with suitable filter (filter type ABEK) or wear a self contained respiratory apparatus Use only respiratory protection equipment with CE-symbol including four digit test number. The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used. Note time limit for wearing respiratory protective equipment. 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: No data available.

9. Physical and chemical properties

Appearance	
Physical state:	liquid
Form:	liquid
Color:	Yellow
Odor:	amine-like
Odor Threshold:	not determined
pH:	not determined
Freezing point:	not determined
Boiling Point:	> 68.0 °C (4 hPa) (DIN 51 356)
Flash Point:	80 - 90 °C (DIN EN ISO 2719 (Pensky-Martens, Closed Cup))
Evaporation Rate:	not determined
Flammability (solid, gas):	No data available.
Explosive limit - upper (%):	4.5 %(V) (literature value)
Explosive limit - lower (%):	0.8 %(V) (literature value)
Vapor pressure:	not determined
Vapor density (air=1):	No data available.
Density:	approx. 0.95 g/cm3 (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:	2 mPa.s (20 °C, DIN 53 015)
Other information	
VOC Content:	US. Clean Air Act Section 111 SOCMI Intermediate or Final Volatile Organic Compunds (VOC) - 40 CFR part 60.489: This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489). 40 CFR 51.100(s) - Definition - Volatile Organic Compounds (VOC) Exemptions: This product does not contain any VOC exemptions listed under the U.S. Clean Air Act Section 450.
Explosive properties:	Vapors can form explosive mixtures with air.
Oxidizing properties:	No data available.
Minimum ignition temperature:	265 °C (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:	Exothermic reaction with: acids

Conditions to avoid:	Keep away from heat and sources of ignition.
Incompatible Materials:	acids Water. Oxidizing substances
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:	Acute toxicity estimate: 1,656 mg/kg

Dermal

Product:

Components:

3-Aminopropyltriethoxysilane	LD 50 (Rabbit): > 2,000 mg/kg The substance or mixture has no acute dermal toxicity
Bis(triethoxysilylpropyl)amine	LD 50 (Rat): > 2,000 mg/kg (limit test) The substance or mixture has no acute dermal toxicity

Inhalation

Product:

Components:

3-Aminopropyltriethoxysilane	LC 50 (Rat): > 144 mg/l Vapour The substance or mixture has no acute inhalation toxicity, Dusts, mists and fumes
Bis(triethoxysilylpropyl)amine	The substance or mixture has no acute inhalation toxicity, Dusts, mists and fumes The substance or mixture has no acute inhalation toxicity, Vapour

Repeated dose toxicity

Product:	No data available.

Components:

3-Aminopropyltriethoxysilane	NOAEL (Rat, Oral): 200 mg/kg

Skin Corrosion/Irritation

Product: No data available.

Components:

3-Aminopropyltriethoxysilane	OECD Test Guideline 404 (Rabbit): Corrosive , <= 1 h Causes burns.
Bis(triethoxysilylpropyl)amine	OECD Test Guideline 404 (Rabbit): Irritating. Skin irritation

Serious Eye Damage/Eye Irritation

Product: No data available.

Respiratory or Skin Sensitization

Product: No data available.

Components:

3-Aminopropyltriethoxysilane	Buehler Test, OECD Test Guideline 406 (Guinea Pig): May cause sensitization by skin contact.
Bis(triethoxysilylpropyl)amine	Not Classified

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.

Components:

3-Aminopropyltriethoxysilane	not mutagenic
Bis(triethoxysilylpropyl)amine	No data available.

In vivo

Product: No data available.

Reproductive toxicity

Product: No data available.

Components:

3-Aminopropyltriethoxysilane	Not classified
Bis(triethoxysilylpropyl)amine	Not classified

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Components:

3-Aminopropyltriethoxysilane	Not classified
Bis(triethoxysilylpropyl)amine	Not classified

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Components:

3-Aminopropyltriethoxysilane	Not classified
Bis(triethoxysilylpropyl)amine	Not classified

Aspiration Hazard

Product: No data available.

Components:

3-Aminopropyltriethoxysilane	Not classified
Bis(triethoxysilylpropyl)amine	Not classified

Other effects: No results of animal experiments with the product available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Components:

3-Aminopropyltriethoxysilane	LC0 (Brachydanio rerio, 96 h): > 934 mg/l
Bis(triethoxysilylpropyl)amine	LC 50 (Scophtalmus maximus (turbot)): > 200 mg/l

Aquatic Invertebrates

Product: No data available.

Components:

3-Aminopropyltriethoxysilane	EC 50 (Daphnia magna, 48 h): 331 mg/l
Bis(triethoxysilylpropyl)amine	EC 50 (Acartia tonsa): > 200 mg/l

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:

3-Aminopropyltriethoxysilane	EC 50 (Desmodesmus subspicatus (green algae), 72 h): > 1,000 mg/l NOEC (Desmodesmus subspicatus (green algae), 72 h): 1.3 mg/l
Bis(triethoxysilylpropyl)amine	EC 50 (Phaeodactylum tricornutum, 72 h): 118 mg/l NOEC (Phaeodactylum tricornutum, 72 h): 58.5 mg/l

Persistence and Degradability

Biodegradation

Product: 67 % (28 d, (DOC; Die Away test - 79/831/EEC part C.4-A))

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: not bioaccumulative log Pow: see chapter 9

Partition Coefficient n-octanol / water (log Kow)

Product: Log Kow: not determined

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. No ecotoxicological studies are available.

13. Disposal considerations

Disposal methods:	No waste key number as per the European Waste Types List can be assigned to this product, since such classification is based on the (as yet undetermined) use to which the product is put by the consumer. The waste key number must be determined as per the European Waste Types List (decision on EU Waste Types List 2000/532/EC) in cooperation with the disposal firm / producing firm / official authority. 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 3267
Proper shipping name	:	Corrosive liquid, basic, organic, n.o.s. (3-aminopropyl-triethoxysilane)
Class	:	8
Packing group	:	II
Labels	:	8
ERG Code	:	153
Marine pollutant	:	no

International Regulations

IATA-DGR

UN/ID No.	:	UN 3267
Proper shipping name	:	Corrosive liquid, basic, organic, n.o.s. (3-aminopropyl-triethoxysilane)
Class	:	8
Packing group	:	II
Labels	:	8
Packing instruction (cargo aircraft)	:	855
Packing instruction (passenger aircraft)	:	851
Remarks	:	ERG-Code 8L

IMDG-Code

UN number	:	UN 3267
Proper shipping name	:	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (3-aminopropyl-triethoxysilane)
Class	:	8
Packing group	:	II
Labels	:	8
EmS Code	:	F-A, S-B
Marine pollutant	:	no
Remarks	:	Clear of living quarters.Keep separate from acids.

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), Acute toxicity (any route of exposure), Skin Corrosion or Irritation, Serious eye damage or eye irritation, 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

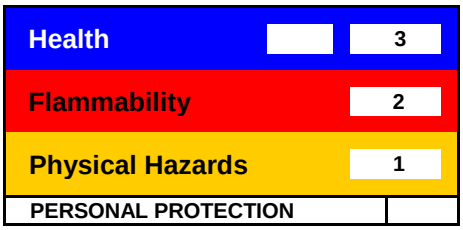
No ingredient regulated by PA Right-to-Know Law present.

US. Rhode Island RTK

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

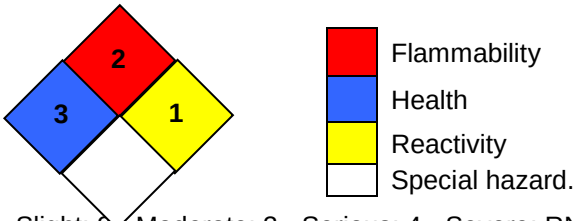
16.Other information, including date of preparation or last revision

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

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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