

SAFETY DATA SHEET

Classified in accordance with 29 CFR 1910.1200

1. Identification

Product identifier: Dynasylan® DAMO-T
Chemical name:
N-[3-(trimethoxysilyl)propyl]ethylenediamine

Other means of identification
CAS Number: 1760-24-3

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
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

Health Hazards

Serious Eye Damage/Eye Irritation	Category 1
Skin sensitizer	Category 1B
Specific Target Organ Toxicity - Single Exposure	Category 3 (Respiratory tract irritation.)

Environmental Hazards

Acute hazards to the aquatic environment	Category 2
---	------------

Label Elements

Hazard Symbol:



Signal Word: Danger

Hazard Statement:
Causes serious eye damage.
May cause an allergic skin reaction.
May cause respiratory irritation.
Toxic to aquatic life.

Precautionary Statements

Prevention: Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response: IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention. Specific treatment (see supplemental first aid instructions on this label). IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell. 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.

Storage: Store in a well-ventilated place. Keep container tightly closed. Store locked up.

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

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

3. Composition/information on ingredients

Chemical name:
N-[3-(trimethoxysilyl)propyl]ethylenediamine
Substances

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%) [*]
N-[3-(trimethoxysilyl)propyl]ethylenediamine		1760-24-3	>85 - <100%
Bis-Isomers	Trade Secret	Trade Secret	5 - <10%
Bis-Isomers	Trade Secret	Trade Secret	3 - <5%

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

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

4. First-aid measures

Description of first aid measures

General information:	Immediately remove contaminated clothing.
Inhalation:	If aerosol or mists are formed: Move to fresh air. Get medical attention if any discomfort continues.
Skin Contact:	Wash off immediately with plenty of water. If skin irritation persists, call a physician.
Eye contact:	With eye held open, thoroughly rinse immediately with plenty of water for at least 10 minutes. Continue rinsing process with eye rinsing solution. Protect unharmed eye. Call ambulance. (Cue: caustic burn of the eyes) Immediate further treatment in eye clinic/by eye doctor. continue rinsing eye until arrival at ophthalmic hospital.
Ingestion:	Have the mouth rinsed with water. Only when patient fully conscious: Have patient drink plenty of water in small sips. Get medical attention immediately.
Personal Protection for First-aid Responders:	No data available.

Most important symptoms and effects, both acute and delayed

Symptoms:	After absorbing large amounts of substance: Liberation of reaction products (Methanol) can lead to symptoms of poisoning. Possible signs of poisoning: daze, dizziness, nausea, colicky abdominal pain, respiratory disturbance. Symptoms upon increasing intoxication: dysopia, loss of eyesight.
Hazards:	None known.

Indication of immediate medical attention and special treatment needed

Treatment:	If required, therapy of irritative effect. Treatment Early endoscopy in order to assess mucosa lesions in the oesophagus and stomach which may appear. If necessary, aspirate leftover substance. 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: Water spray, foam, dry powder or carbon dioxide.

Unsuitable extinguishing media: High volume water jet.

Special hazards arising from the substance or mixture: Hazardous fumes in fires, specific to the product: Nitrogen Oxides

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.

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 skin and eyes.

Accidental release measures: No data available.

Methods and material for containment and cleaning up: Soak up with absorbent material, e.g., sand, silica gel, acid binder, universal binder or sawdust. Place in a marked, sealable container and dispose of in accordance with existing federal, provincial, state and local regulations.

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: Provide for good ventilation if vapours/aerosols are formed. Ensure good ventilation during processing.

Local/Total ventilation: No data available.

Safe handling advice: Provide good ventilation or extraction. Handle in accordance with good industrial hygiene and safety practice. Wear suitable protective equipment. Do not breathe in vapours or aerosols. If workplace exposure limits are exceeded and/or larger amounts are released (leakage, spilling, dust) the indicated respiratory protection should be used. Avoid contact with eyes, skin, and clothing. If there is the possibility of skin/eye contact, the indicated hand/eye/body protection should be used. Use protective clothing / face shield if necessary.

Contact avoidance measures: No data available.

Storage

Safe storage conditions: Normal measures for preventive fire protection. Keep containers tightly closed in a cool, well-ventilated place. Protect from moisture.

Safe packaging materials: No data available.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values		Source
methanol	TWA	200 ppm		ACGIH (03 2016)
	STEL	250 ppm		ACGIH (03 2016)
	STEL	250 ppm	325 mg/m ³	NIOSH (2010)
	REL	200 ppm	260 mg/m ³	NIOSH (2010)
	PEL	200 ppm	260 mg/m ³	OSHA Z1 (03 2016)

Please refer to the latest edition of the appropriate source text and consult an industrial hygienist or similar professional, or local agencies, for further information.

None of the components have assigned exposure limits.

Biological Limit Values

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

Appropriate Engineering Controls

Provide for good ventilation if vapours/aerosols are formed.
Ensure good ventilation during processing.

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: Use impermeable gloves., 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., The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Skin and Body Protection:	suitable protective clothing - Use disposable clothing if appropriate. 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:	Yellow
Odor:	amine-like
Odor Threshold:	No data available.
Freezing point:	No data available.
Boiling Point:	165.2 - 213.8 °F/74.0 - 101.0 °C at 4 hPa
Flammability:	Not applicable
Upper/lower limit on flammability or explosive limits	
Explosive limit - upper:	No data available.
Explosive limit - lower:	No data available.
Flash Point:	275 °F/135 °C Method: DIN EN ISO 2719
Auto-ignition temperature:	581 °F/305 °C Method: DIN 51794
Decomposition Temperature:	No data available.
pH:	10.2 at 68 °F/20 °C Concentration: 10 g/l
Viscosity	
Dynamic viscosity:	6 mPa.s at 68 °F/20 °C Method: DIN 53015
Kinematic viscosity:	No data available.

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):	Not applicable
Vapor pressure:	6 hPa at 68 °F/20 °C
Relative density:	No data available.
Density:	1.03 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:	Not explosive
Peroxides:	Not applicable

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 moisture. Keep away from heat and sources of ignition.
Incompatible Materials:	Acids. 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:	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, > 2,000 mg/kg, OECD 401, Not toxic after single exposure LD 50, Rat, 7,684 mg/kg, Literature, RTECS possibly harmful, (methanol in case of hydrolysis)
-----------------	--

Dermal

Product:	LD 50, Rat, > 2,000 mg/kg, OECD 402, Not toxic after single exposure
-----------------	--

Inhalation**Product:** Not classified for acute toxicity based on available data.**Repeated dose toxicity****Product:** NOAEL Rat, Female, Male, Oral, 28 day, 7 days a week, >= 500 mg/kg
NOAEC, Rat, Female, Male, Inhalation - dust and mist, 90 day, 5 days/weeks, 6 hours/day, 15 mg/m³**Skin Corrosion/Irritation****Product:** Not irritating, OECD 404, (Rabbit)**Serious Eye Damage/Eye Irritation****Product:** Risk of serious damage to eyes., OECD 405, Rabbit**Respiratory or Skin Sensitization****Product:** Maximization Test, OECD 406, Guinea Pig, Skin sensitizer**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

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:** Bacterial reverse mutation assay, OECD 471: , negative
gene mutation test, OECD 476: , negative**In vivo****Product:** Micronucleus test, OECD 474, Intraperitoneal, Mouse, Female, Male, negative**Reproductive toxicity****Product:** No data available.**Components:**N-[3-(trimethoxysilyl)propyl]ethylenediamine
no evidence of reproductiontoxic properties**Specific Target Organ Toxicity - Single Exposure****Product:** Category 3 with respiratory tract irritation.**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: EC 50, Danio rerio, 96 h, 597 mg/IOECD 203
LC 0, Danio rerio, 96 h, 344 mg/IOECD 203

Aquatic Invertebrates

Product: EC 50, Daphnia magna, 48 h, 81 mg/IOECD 202

Toxicity to Aquatic Plants

Product: EC 50, Desmodesmus subspicatus (green algae), 72 h, 8.8 mg/l, OECD 201

Toxicity to microorganisms

Product: EC 10, Pseudomonas putida, 16 h, 25 mg/l, DIN 38412 part 8

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic Invertebrates

Product: NOEC, Daphnia magna, 21 d, > 1 mg/l, OECD 211

Toxicity to microorganisms

Product: EC 10, Pseudomonas putida, 16 h, 25 mg/l, DIN 38412 part 8

Persistence and Degradability

Biodegradation

Product: 39 %, 28 d, (DOC; Die Away test / 92/69/EEC part C.4-A), Not readily degradable.

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: low

Partition Coefficient n-octanol / water (log Kow)

Product: , Not applicable

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: Toxic to aquatic life.

13. Disposal considerations

Disposal methods: Waste must be disposed of in accordance with federal, state, provincial and local regulations.

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)

None present or none present in regulated quantities.

US. Toxic Substances Control Act (TSCA) Section 5(a)(2) Proposed 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 1910.1001-1053), as amended

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

Serious eye damage or eye irritation, Respiratory or Skin Sensitization, 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

None present or none present in regulated quantities.

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



WARNING: This product can expose you to chemicals including, methanol which is [are] known to the State of California to cause birth defects or other reproductive harm.

For more information go to www.P65Warnings.ca.gov.

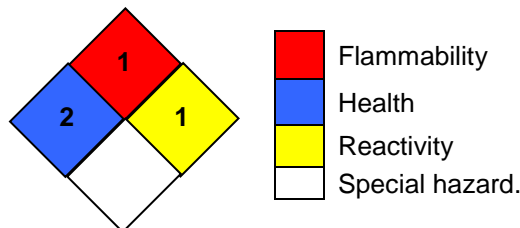
16. Other information, including date of preparation or last revision

HMIS Hazard ID

Health		3
Flammability		1
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 #: 2.1
Generation date: 02/09/2024
Date of first report version: 05/30/2019

Abbreviations and acronyms:

ACGIH: US. ACGIH Threshold Limit Values, as amended
 NIOSH/GUIDE: US. NIOSH: Pocket Guide to Chemical Hazards, as amended
 OSHA_TRANS: US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended
 ACGIH / STEL: Short Term Exposure Limit (STEL):
 ACGIH / TWA: Time Weighted Average (TWA):
 NIOSH/GUIDE / REL: Recommended exposure limit (REL):
 NIOSH/GUIDE / STEL: Short Term Exposure Limit (STEL):
 OSHA_TRANS / PEL: Permissible exposure limit:

AIC - 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.

Disclaimer: This information and any recommendations, technical or otherwise, are presented in good faith and believed to be correct as of the date prepared. Recipients of this information and recommendations must make their own determination as to its suitability for their purposes. In no event shall Evonik assume liability for damages or losses of any kind or nature that result from the use of or reliance upon this information and recommendations. EVONIK EXPRESSLY DISCLAIMS ANY REPRESENTATIONS AND WARRANTIES OF ANY KIND, WHETHER EXPRESS OR IMPLIED, AS TO THE ACCURACY, COMPLETENESS, NON-INFRINGEMENT, MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE (EVEN IF EVONIK IS AWARE OF SUCH PURPOSE) WITH RESPECT TO ANY INFORMATION AND RECOMMENDATIONS PROVIDED. Reference to any trade names used by other companies is neither a recommendation nor an endorsement of the corresponding product, and does not imply that similar products could not be used. Evonik reserves the right to make any changes to the information and/or recommendations at any time, without prior or subsequent notice.