

Product name: Dynasylan® MEMO

SAFETY DATA SHEET

Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name:
Dynasylan® MEMO

Additional identification

Chemical name: 3-Trimethoxysilylpropyl methacrylate
Chemical formula: C₁₀H₂₀O₅Si
INDEX No. -
CAS-No. 2530-85-0
EC No. 219-785-8
REACH Registration No.: 01-2119513216-50-0002

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: For industrial use
Coupling agent
Crosslinking agents
Surface modifier

Uses advised against: Not determined.

1.3 Details of the supplier of the safety data sheet

Company Name : Evonik Operations GmbH
Rellinghauser Str. 1-11
45128 Essen
Germany

Telephone : +49 6181 59 4787

E-mail : sds-hu@evonik.com

1.4 Emergency telephone number:

24-Hour Health Emergency : +49 7623 919191

National Poison Information Service (NPIS)
England, Scotland and Wales: NHS: 111

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

The product has not been classified as hazardous according to the legislation in force.

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Not classified

2.2 Label Elements Not applicable
2.3 Other hazards
PBT/vPvB data

Not a PBT, vPvB substance as per the criteria of the REACH Regulation.

SECTION 3: Composition/information on ingredients
3.1 Substances
Chemical name: 3-Trimethoxysilylpropyl methacrylate

INDEX No.:
CAS-No.: 2530-85-0

EC No.: 219-785-8

REACH Registration No.: 01-2119513216-50-0002

Chemical name	Concentration	CAS-No.	EC No.	UK-REACH Registration No.	REACH Registration No.	M-Factor:	Notes
3-Trimethoxysilylpropyl methacrylate		2530-85-0	219-785-8		01-2119513216-50	No data available.	

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

This substance has workplace exposure limit(s).

This substance is listed as SVHC.

Classification

Chemical name	Classification	Notes
3-Trimethoxysilylpropyl methacrylate	Classification: None known. Supplemental label information: None known.	Not applicable

SECTION 4: First aid measures
4.1 Description of first aid measures

Inhalation: If aerosol or mists are formed: If necessary: Provide with fresh air.

Skin Contact: Wash off with plenty of water and soap.

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

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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.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms: None known.

Hazards: None known.

4.3 Indication of immediate medical attention and special treatment needed

Treatment: After absorbing large amounts of substance: administration of activated charcoal. Acceleration of gastrointestinal passage

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Water spray, foam, dry powder or carbon dioxide.

Unsuitable extinguishing media: High volume water jet.

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

5.3 Advice 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: In case of fire: wear a self contained respiratory apparatus

SECTION 6: Accidental release measures

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

6.1.1 For non-emergency personnel: No data available.

6.1.2 For emergency responders: No data available.

6.2 Environmental Precautions: Do not allow entrance in sewage water, soil stretches of water, groundwater, drainage systems.

6.3 Methods and material for containment and cleaning up: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Transfer into suitable containers. To be disposed of in compliance with existing regulations.

6.4 Reference to other sections: For personal protection see section 8. For disposal considerations see section 13.

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SECTION 7: Handling and storage
7.1 Precautions for safe handling

Technical measures:	No data available.
Local/Total ventilation:	Application, processing: Provide good ventilation or extraction.
Safe handling advice:	Provide good ventilation or extraction. Handle in accordance with good industrial hygiene and safety practice. The personal protective equipment used must meet the requirements of Regulation (EU) 2016/425 and amendments (CE certification). If workplace exposure limits are exceeded and/or larger amounts are released (leakage, spilling, dust) the indicated respiratory protection should be used. If there is the possibility of skin/eye contact, the indicated hand/eye/body protection should be used. Do not breathe in vapours or aerosols. Avoid contact with skin and eyes.
Contact avoidance measures:	No data available.

7.2 Conditions for safe storage, including any incompatibilities

Safe storage conditions:	Normal measures for preventive fire protection. Keep containers tightly closed in a cool, well-ventilated place. Protect from heat and exposure to direct sunlight. Protect from moisture.
Safe packaging materials:	No data available.

7.3 Specific end use(s): Applications; see Section 1. No further information available

SECTION 8: Exposure controls/personal protection
8.1 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).

DNEL-Values

Critical component	Type	Route of Exposure	Health Warnings	Remarks
3-Trimethoxysilylpropyl methacrylate	General population	Oral	Systemic, long-term; 4 mg/kg	Acute toxicity
	General population	Inhalation	Systemic, long-term; 0.18 mg/m ³	Repeated dose toxicity
	Workers	Inhalation	Systemic, long-term; 130 mg/m ³	Repeated dose toxicity
	General population	Inhalation	Systemic, long-term; 26 mg/m ³	Acute toxicity
	General population	Oral	Systemic, long-term; 0.05 mg/kg	Repeated dose toxicity
	General population	Inhalation	Local, long-term; 0.1 mg/m ³	Repeated dose toxicity
	Workers	Inhalation	Local, long-term; 0.6 mg/m ³	Repeated dose toxicity
	General population	Inhalation	Systemic, short-term; 26400 mg/m ³	Acute toxicity

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	Workers	Dermal	Systemic, long-term; 0.14 mg/kg	Repeated dose toxicity
	General population	Oral	Systemic, long-term; 0.14 mg/kg	Repeated dose toxicity
	General population	Inhalation	Systemic, long-term; 0.5 mg/m ³	Repeated dose toxicity
	Workers	Inhalation	Systemic, long-term; 1 mg/m ³	Repeated dose toxicity
	General population	Eyes	Local effect;	No hazard identified
	Workers	Eyes	Local effect;	No hazard identified
	General population	Dermal	Systemic, long-term; 0.14 mg/kg	Repeated dose toxicity
	General population	Dermal	Systemic, long-term; 0.05 mg/kg	Repeated dose toxicity

8.2 Exposure controls
Appropriate Engineering Controls:

Application, processing: Provide good ventilation or extraction.

Individual protection measures, such as personal protective equipment (PPE)
Eye/face protection:

Safety glasses

Hand Protection:

Material: Butyl rubber.
 Break-through time: \geq 480 min
 Glove thickness: 0.5 mm
 Material: Fluorinated rubber (Viton)
 Break-through time: \geq 120 min
 Glove thickness: 0.5 mm
 Additional Information: 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., The information is based on our own tests, references from the literature and information from glove manufacturers, or derived by analogy with similar materials., Be aware that in daily use the durability of a chemical resistant protective glove can be notably shorter than the break through time measured according to EN 374, due to the numerous outside influences (e.g. temperature).

Skin and Body Protection:

No special protective equipment required.

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/vapor/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.

Hygiene measures:

When using, do not eat, drink or smoke. Wash face and/or hands before break and end of work. Immediately remove contaminated clothing. Wash contaminated clothing before reuse.

Environmental Controls:

see section 6.

SECTION 9: Physical and chemical properties

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9.1 Information on basic physical and chemical properties**Appearance**

Physical state:	liquid
Form:	liquid
Color:	colorless to yellowish
Odor:	slightly aromatic
Odor Threshold:	No data available.
Freezing point:	< -20 °C
Boiling Point:	255 °C at 1,013 hPa Method: DIN 51 356
Flammability:	No data available.
Upper/lower limit on flammability or explosive limits	
Explosive limit - upper:	5.4 %(V)
Explosive limit - lower:	0.9 %(V)
Flash Point:	110 °C Method: DIN EN ISO 2719
Auto-ignition temperature:	No data available.
Decomposition Temperature:	No data available.
pH:	No data available.

Viscosity

Dynamic viscosity:	2.8 mPa.s at 20 °C Method: DIN 53015
Kinematic viscosity:	No data available.

Solubility(ies)

Solubility in Water:	not miscible decomposition by hydrolysis
Partition coefficient (n-octanol/water):	2.1 at 21 °C Method: OECD 107
Vapor pressure:	< 0.1 hPa at 20 °C
Relative density:	1.05 Method: OECD 109
Density:	1.05 g/cm ³ at 20 °C Method: OECD 109
Relative vapor density:	No data available.

9.2 Other information

Explosive properties:	Not explosive
Self-ignition:	275 °C 1,013.5 - 1,030.7 hPa Method: EC Method A.15
Peroxides:	Not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity:	No dangerous reaction known under conditions of normal use.
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Product name: Dynasylan® MEMO

10.2 Chemical Stability:	Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions:	Exothermic reaction with: Peroxides.
10.4 Conditions to avoid:	Keep away from direct sunlight. Protect from moisture.
10.5 Incompatible Materials:	Peroxides. Water.
10.6 Hazardous Decomposition Products:	Methanol in case of hydrolysis. Alcohol formed by hydrolysis lowers the flash point of the product.

SECTION 11: Toxicological information
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11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

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
Components:	
3-Trimethoxysilylpropyl methacrylate	LD 50, Rat, Female, Male, > 2,000 mg/kg, OECD 423 Not toxic after single exposure, No classification

Dermal

Product:	LC 50, Rat, Female, Male, > 2,000 mg/kg, OECD 402, Not toxic after single exposure
Components:	
3-Trimethoxysilylpropyl methacrylate	LC 50, Rat, Female, Male, > 2,000 mg/kg, OECD 402 Not toxic after single exposure, No classification

Inhalation

Product:	LC 0, Rat, Female, Male, 4 h, > 2.28 mg/l, Dust and mist, OECD 403, Not toxic after single exposure, maximum concentration in the test: no animals died.
Components:	
3-Trimethoxysilylpropyl methacrylate	Dust and mist, Not toxic after single exposure, No classification Vapour, Not toxic after single exposure, Not applicable

Repeated dose toxicity

Product:	No data available.
Components:	
3-Trimethoxysilylpropyl methacrylate	No data available.

Skin Corrosion/Irritation

Product:	Not irritating, OECD 404, (Rabbit)
Components:	

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3-Trimethoxysilylpropyl methacrylate Not irritating, OECD 404, Rabbit

Serious Eye Damage/Eye Irritation

Product: Not irritating, OECD 405, Rabbit

Components:
3-Trimethoxysilylpropyl methacrylate Not irritating, OECD 405, Rabbit

Respiratory or Skin Sensitization

Product: Local Lymph Node Assay (LLNA), OECD 429, Mouse, Not a skin sensitizer.

Components:
3-Trimethoxysilylpropyl methacrylate Local Lymph Node Assay (LLNA), OECD 429, Mouse, Not a skin sensitizer.

Carcinogenicity

Product: No evidence that cancer may be caused.

Components:
3-Trimethoxysilylpropyl methacrylate No evidence that cancer may be caused.

Germ Cell Mutagenicity

In vitro

Product: Ames test, OECD 471: , negative
Chromosomal aberration, OECD 473: , positive
Genetic mutation in mammal cells, OECD 476: , negative

Components:
3-Trimethoxysilylpropyl methacrylate Ames test, OECD 471: , negative
Chromosomal aberration, OECD 473: , positive
gene mutation test, OECD 476: , negative

In vivo

Product: Micronucleus test, OECD 474, Intraperitoneal, Mouse, Female, Male, negative

Components:
3-Trimethoxysilylpropyl methacrylate Micronucleus test, OECD 474, Intraperitoneal, Mouse, Female, Male, negative

Reproductive toxicity

Product: no evidence of reproductiontoxic properties

Components:
3-Trimethoxysilylpropyl methacrylate no evidence of reproductiontoxic properties

Specific Target Organ Toxicity - Single Exposure

Product: no evidence for hazardous properties

Components:
3-Trimethoxysilylpropyl methacrylate no evidence for hazardous properties

Specific Target Organ Toxicity - Repeated Exposure

Product: no evidence for hazardous properties

Components:

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Aquatic Invertebrates

Product: No data available.

Components:
 3-Trimethoxysilylpropyl methacrylate No data available.

Toxicity to Aquatic Plants

Product: NOEC (Desmodesmus subspicatus (green algae), 72 h): 322 mg/l (OECD 201)

Components:
 3-Trimethoxysilylpropyl methacrylate NOEC (Desmodesmus subspicatus (green algae), 72 h): 322 mg/l (OECD 201)

Toxicity to microorganisms

Product: EC 10, Pseudomonas putida, 16 h, 2,200 mg/l, DIN 38412 part 8
 NOEC, local activated sludge, 3 h, 1,000 mg/l, OECD 209

Components:
 3-Trimethoxysilylpropyl methacrylate EC 10, Pseudomonas putida, 16 h, 2,200 mg/l, DIN 38412 part 8
 NOEC, activated sludge, 3 h, 1,000 mg/l, OECD 209

12.2 Persistence and Degradability
Biodegradation

Product: 74 %, 28 d, OECD 301 F, The product is easily biodegradable.

Components:
 3-Trimethoxysilylpropyl methacrylate 74 %, 28 d, OECD 301 F, The product is easily biodegradable.

12.3 Bioaccumulative potential
Bioconcentration Factor (BCF)

Product: not bioaccumulative

Components:
 3-Trimethoxysilylpropyl methacrylate not bioaccumulative

Partition Coefficient n-octanol / water (log Kow)

Product: 2.1, 21 °C, OECD 107

Components:
 3-Trimethoxysilylpropyl methacrylate 2.1, 21 °C, OECD 107

12.4 Mobility in soil:

Product Adsorption on the floor: low.

Components:
 3-Trimethoxysilylpropyl methacrylate Adsorption on the floor: low.

12.5 Results of PBT and vPvB assessment:

Product Not a PBT, vPvB substance as per the criteria of the REACH Regulation.

Components:
 3-Trimethoxysilylpropyl methacrylate Non-classified vPvB substance,
 Non-classified PBT substance

12.6 Other adverse effects:

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Other hazards

Product:

The data we have at our disposal do not necessitate identification concerning environmental hazard.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

General information:

No data available.

Disposal methods:

With respect to local regulations, e.g. dispose of to suitable waste incineration plant. 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.

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.

SECTION 14: Transport information

14.1 UN/ID No.

Not regulated as a dangerous good

14.2 UN proper shipping name

Not regulated as a dangerous good

14.3 Transport hazard class(es)

Not regulated as a dangerous good

14.4 Packing group

Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Remarks : Not dangerous according to transport regulations., Protect against heat. As cool as possible. Minimum distance to heat sources under deck (e.g. heatable fuel tanks): 1 container position.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

Product name: Dynasylan® MEMO

UK. REACH, Annex XIV, Substances Subject to Authorization (Authorization List), as amended: None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

UK. UK REACH Candidate List of substances of very high concern (SVHCs) for Authorisation: None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

UK. POPs List. SI Persistent Organic Pollutants Regulations 3106/2007, amended by UK POPs (Amendment) (EU Exit) Regulations 2020 (No. 1358), as amended: None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

Regulation 1005/2009/EC on substances that deplete the ozone layer, Annex I, Controlled Substances: None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

Regulation 1005/2009/EC on substances that deplete the ozone layer, Annex II, New Substances: None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

UK EXP1: UK. GB PIC List, Regulation (EU) 649/2012 as amended by EU Exit Regulations S.I. 2019/720 and S.I. 2020/1567, as amended: None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

UK EXP2: UK. GB PIC List, Regulation (EU) 649/2012 as amended by EU Exit Regulations S.I. 2019/720 and S.I. 2020/1567, as amended: None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

UK EXP3: UK. GB PIC List, Regulation (EU) 649/2012 as amended by EU Exit Regulations S.I. 2019/720 and S.I. 2020/1567, as amended: None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

UK BAN: UK. GB PIC List, Regulation (EU) 649/2012 as amended by EU Exit Regulations S.I. 2019/720 and S.I. 2020/1567, as amended: None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

EU. Directive 2012/18/EU (SEVESO III) on major accident hazards involving dangerous substances, Annex I: Not applicable

15.2 Chemical safety assessment:

No exposure or risk assessment is required for this product since it is not classified for health or environmental risks.

International regulations

Montreal protocol

Not applicable

Stockholm convention

Not applicable

Rotterdam convention

Not applicable

Kyoto protocol

Not applicable

SECTION 16: Other information

Product name: Dynasylan® MEMO

Abbreviations and acronyms:

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; EIGA - European Industrial Gases Association; 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; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; 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; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Notes:

Not applicable	Not applicable
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Key literature references and sources for data: No data available.

Training 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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Disclaimer:

This information and all further technical advice is based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used.