SAFETY DATA SHEET
Dynasylan® MEMO

Material no. 121736
Specification
Order Number

Version 4.0 / US
Revision date 05/23/2015
Print Date 06/11/2015
Page 1 / 11

1. Identification

1.1. Product identifier
Trade name Dynasylan® MEMO
Chemical Name 3-Trimethoxysilylpropyl methacrylate
CAS-No. 2530-85-0

1.2. Recommended use of the chemical and restrictions on use
Relevant applications identified For industrial use
Function Coupling agent
Crosslinking agents
Surface modifier

1.3. Details of the supplier of the safety data sheet
Company Evonik Corporation USA
299 Jefferson Road
Parsippany, NJ 07054-0677
USA
Telephone 973-929-8000
Telefax 973-929-8040
Email address Product-Regulatory-Services@Evonik.com

1.4. 24 HOUR EMERGENCY TELEPHONE NUMBERS:
CHEMTREC - US & CANADA: 800-424-9300
CHEMTREC MEXICO: 01-800-681-9531
CHEMTREC INTERNATIONAL: +1 703-527-3887 (collect calls accepted)
Product Regulatory Services: 973-929-8060

2. Hazards identification

2.1. Classification of the substance or mixture
Classification according to Regulation 29CFR 1910.1200
Remarks Not a hazardous substance or mixture.

2.2. Label elements
Statutory basis Classification according to Regulation 29CFR 1910.1200
Remarks Not a hazardous substance or mixture.

2.3. Other hazards
None known

3. Composition/information on ingredients
4. First aid measures

4.1. 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
In case of contact, immediately flush eyes with plenty of water. Obtain medical attention if irritation develops.

Ingestion
If accidentally swallowed, rinse mouth thoroughly with water and afterwards, drink plenty of water. In case of discomfort, obtain medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms
None known

4.3. Indication of any immediate medical attention and special treatment needed

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

5. Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media: water spray, foam, Carbon dioxide (CO2), dry powder

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

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.
6. Accidental release measures

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

6.2. Environmental precautions
Obey relevant local, state, provincial and federal laws and regulations. Do not contaminate any lakes, streams, ponds, groundwater or soil.

6.3. 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.

7. Handling and storage

7.1. Precautions for safe handling
Provide good ventilation or extraction.

7.2. Conditions for safe storage, including any incompatibilities
Advice on protection against fire and explosion
Normal measures for preventive fire protection.

Storage
Keep containers tightly closed in a cool, well-ventilated place.
Protect from heat and exposure to direct sunlight
Protect from moisture.

8. Exposure controls/personal protection

8.1. Control parameters
Other information
None known

DNEL/DMEL values
Remarks not necessary (see chapter 15)

PNEC values
Remarks not necessary (see chapter 15)

8.2. Exposure controls
Engineering measures
Application, processing: Provide good ventilation or extraction.

Personal protective equipment
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.

Hand protection
Glove material for example, butyl-rubber
Material thickness 0.5 mm
Break through time >= 480 min
Glove material for example, Fluorinated rubber (Viton)
Material thickness 0.5 mm
Break through time $\geq 120$ min

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.

**Eye protection**
Use chemical splash goggles or face shield.

**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.

**Hygiene measures**
Avoid contact with skin, eyes and clothing.
Do not inhale vapors / aerosol. Remove contaminated or saturated clothing.

### 9. Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid $(20 ^\circ C)$ $(1013 \text{ hPa})$</td>
</tr>
<tr>
<td>Colour</td>
<td>colorless to yellowish</td>
</tr>
<tr>
<td>Form</td>
<td>liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>slightly aromatic</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>not determined</td>
</tr>
<tr>
<td>pH</td>
<td>not determined</td>
</tr>
<tr>
<td>Melting point/range</td>
<td>$&lt; -20 ^\circ C$</td>
</tr>
<tr>
<td>Boiling point/range</td>
<td>$255 ^\circ C$ $(1013 \text{ hPa})$</td>
</tr>
<tr>
<td>Method</td>
<td>DIN 51 356</td>
</tr>
<tr>
<td>Flash point</td>
<td>$110 ^\circ C$</td>
</tr>
<tr>
<td>Method</td>
<td>DIN EN ISO 2719 (Pensky-Martens, Closed Cup)</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>not determined</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>0.9 % (V)</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>5.4 % (V)</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>$&lt; 0.1 \text{ hPa}$ $(20 ^\circ C)$</td>
</tr>
<tr>
<td>Vapour density</td>
<td>not determined</td>
</tr>
<tr>
<td>Density</td>
<td>$1.04 \text{ g/cm}^3$ $(20 ^\circ C)$</td>
</tr>
<tr>
<td>Method</td>
<td>DIN 51757</td>
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<tr>
<td>Water solubility</td>
<td>not miscible</td>
</tr>
</tbody>
</table>
decomposition by hydrolysis

Partition coefficient: n-octanol/water
log Pow: 2.1 (21 °C)
Method: OECD TG 107

Autoignition temperature: not determined

Thermal decomposition: not determined

Viscosity, dynamic: 2.8 mPa.s (20 °C)
Method: DIN 53 015

9.2. Other information
Explosiveness: not explosive

10. Stability and reactivity

10.1. Reactivity
No dangerous reaction known under conditions of normal use.

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.

11. Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity
LD50 Rat: > 2000 mg/kg
Method: OECD TG 423
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity
LC0 Rat: > 2.28 mg/l / 4 h / Aerosol
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity
maximum concentration in the test: no animals died.

Acute dermal toxicity
LC50 Rat: > 2000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity
Skin irritation
Rabbit
No skin irritation
Method: OECD Test Guideline 404

Eye irritation
Rabbit
No eye irritation
Method: OECD Test Guideline 405

Sensitization
Maximization test Guinea pig: Does not cause skin sensitisation.
Method: OECD Test Guideline 406
Test substance: Structurally similar substance

Assessment of STOT single exposure
Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.

Assessment of STOT repeat exposure
Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Risk of aspiration toxicity
No evidence of aspiration toxicity

Gentoxicity in vitro
Ames test Salmonella typhimurium negative
Method: OECD TG 471
chromosomal aberration Chinese hamster (CHO K1 -cells) positive
Method: OECD TG 473
Genetic mutation in mammal cells TK +/- mouse lymphoma cell (L5178Y) negative
Method: OECD TG 476

Gentoxicity in vivo
chromosomal aberration Mouse intraperitoneal (i.p.) negative
Method: OECD TG 474

Carcinogenicity
No data available

Toxicity to reproduction
Prenatal development toxicity study Oral Rat NOAEL F1: > 5200 mg/kg
Method: OECD TG 414

12. Ecological information

12.1. Toxicity
Toxicity to fish
LC50 Brachydanio rerio: > 1042 mg/l / 96 h
Method: OECD 203

LC0 Brachydanio rerio: 1042 mg/l / 96 h
Method: OECD TG 203

Toxicity in aquatic invertebrates
EC50 Daphnia magna: > 876 mg/l / 48 h
Method: OECD TG 202
Toxicity to algae
EC50 Desmodesmus subspicatus (green algae): > 536 mg/l / 72 h
Method: OECD TG 201

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

Toxicity to bacteria
EC 10 Pseudomonas putida: 2200 mg/l / 16 h
Method: DIN 38412 part 8

NOEC local activated sludge: 1000 mg/l / 3 h
Method: OECD TG 209

Toxicity in other terrestrial non-mammals
LC50 Eisenia fetida foetida: > 1000 mg/kg / 14 d
Method: EC 88/302

12.2. Persistence and degradability
Biodegradability
Exposure time: 28 d
Result: 74 % Readily biodegradable.
Method: Directive 92/69/EEC C.4-D

12.3. Bioaccumulative potential
Bioaccumulation not bioaccumulative

12.4. Mobility in soil
Mobility Adsorption on the floor: low.

12.5. Other adverse effects
Further Information The data we have at our disposal do not necessitate identification concerning environmental hazard.

13. Disposal considerations
13.1. Waste treatment methods
Product
Waste must be disposed of in accordance with federal, state and local regulations. Incineration is the preferred method.

Uncleaned 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
Not dangerous according to transport regulations.

14.1. UN number: --
14.2. UN proper shipping name: --
14.3. Transport hazard class(es): --
14.4. Packing group: --
14.5. Environmental hazards (Marine pollutant): --
14.6. Special precautions for user: Yes
   Not dangerous according to transport regulations.

15. Regulatory information

US Federal Regulations

OSHA

If listed below, chemical specific standards apply to the product or components:

- None listed

Clean Air Act Section (112)

If listed below, components present at or above the de minimus level are hazardous air pollutants:

- None listed

CERCLA Reportable Quantities

If listed below, a reportable quantity (RQ) applies to the product based on the percent of the named component:

- None listed

SARA Title III Section 311/312 Hazard Categories

The product meets the criteria only for the listed hazard classes:

- No SARA Hazards

SARA Title III Section 313 Reportable Substances

If listed below, components are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

- None listed

Toxic Substances Control Act (TSCA)

If listed below, non-proprietary substances are subject to export notification under Section 12 (b) of TSCA:

- None listed
State Regulations

The Listing requirements of the Right to Know (RTK) legislation varies by state. All information for NJ, PA, MA and other states can be derived from the listing of hazardous and non-hazardous components in section 2 and 15 of this MSDS.

California Proposition 65

A warning under the California Drinking Water Act is required only if listed below:

- None listed

An employer using HMIS/NFPA labeling must through training ensure that its employees are fully aware of the hazards of the chemicals used.

HMIS Ratings

- Health: 1
- Flammability: 1
- Physical Hazard: 1

NFPA Ratings

- Health: 1
- Flammability: 1
- Reactivity: 1

16. Other information

Further information

Revision date: 05/23/2015

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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<tr>
<td>Material no.</td>
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<tr>
<td>Specification</td>
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<tr>
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voc  
volatile organic compounds

WHMIS  
Workplace Hazardous Materials Information System

WHO  
World Health Organization