

# Dynasylan® 1401

## N-(2-aminoethyl)-3-aminopropylmethyldimethoxysilane

### Technical data

Properties and test methods	Value	Unit	Method
Density (20 °C / 68 °F)	approx. 0.97	g/cm <sup>3</sup>	DIN 51757
Boiling point (1013 hPa / 760 Torr)	approx. 254-271 / 489-520	°C / °F	DIN 51751
Flash point	approx. 90 / 194	°C / °F	DIN 51758

### Registrations

#### Dynasylan® 1401

EINECS/ELINCS (EU):	Yes
AICS (Australia):	Yes
DSL/NDSL (Canada):	Yes
PICCS (Philippines):	Yes
TSCA (USA):	Yes
IECS (P.R. China):	Yes
ENCS (Japan):	Yes
ECL (South Korea):	Yes
REACH (Europe)	Registered

Dynasylan® 1401 is a bifunctional organosilane possessing reactive amino groups and hydrolyzable inorganic methoxysilyl groups.

The dual nature of its reactivity allows Dynasylan® 1401 to bind chemically to both inorganic materials (e.g. glass, metals, fillers) and organic polymers (e.g. thermosets, thermoplastics and elastomers), thus functioning as an adhesion promoter, surface modifier and as a reactant for product modification.

Dynasylan® 1401 is a clear yellow liquid with an amine-like odor. It is soluble in alcohols and aliphatic or aromatic hydrocarbons.

### Safety and handling

Before considering the use of Dynasylan® products please read its Safety Data Sheet (SDS) thoroughly for safety and toxicological data as well as for information on proper transportation, storage and use. The Safety Data Sheet is available after registration on our website [www.dynasylan.com](http://www.dynasylan.com) or upon request from your local representative, customer service or from Evonik Operations GmbH, Product Safety Department, E-MAIL [sds-hu@evonik.com](mailto:sds-hu@evonik.com).

### Packaging, storage and shelf life

Dynasylan® 1401 is supplied in 25 kg pails or in 200 kg drums.

In the unopened container Dynasylan® 1401 has a shelf life of at least 12 months.

## Properties and applications

Dynasylan® 1401 can be used in many applications.

Examples are:

- additive for cold-curing phenolic and furan foundry resins to improve the flexural strength of the sand-resin composites while maintaining the shelf life of the resin over long periods
- starting material in the synthesis of amino-functional silicones
- additive to phenolic resin binders for mineral fiber insulating materials
- primer for additive to sealants and adhesives
- additive and/or primer for improving the adhesion of paints and coatings to the substrate

Important product effects that can be achieved through the use of Dynasylan® 1401 include:

- improved mechanical properties, e.g. strength, impact strength and modulus of elasticity
- improved moisture and corrosion resistance
- improved electrical properties, e.g. dielectric constant, volume resistivity

Dynasylan® 1401 can also improve processing properties such as

- adhesion

## Reactivity

In the presence of water, the methoxy groups of Dynasylan® 1401 hydrolyze to form reactive silanol groups which can bond to a variety of inorganic substrates. The organophilic diamino group of Dynasylan® 1401 can react with a suitable polymer.

The hydrolysis of Dynasylan® 1401 takes place autocatalytically. The pH of the hydrolysate is about 10-11.

Dynasylan® 1401 may be used with such polymers as phenolic, furan resins and silicones.

Dynasylan® 1401 can undergo reactions with ketones or ester solvents. The silane or silanized substrates can react with carbon dioxide to form the corresponding carbonates or carbamates, respectively. Product modifications are possible through co-condensation with polysiloxanes (textile auxiliaries).

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**Europe/Middle-East/Africa****Evonik Operations GmbH**

Silanes Business Line  
Rodenbacher Chaussee 4  
63457 Hanau-Wolfgang  
Germany  
FAX +49 6181 59 713915  
dynasytan@evonik.com  
www.dynasytan.com

**Asia / Pacific****Evonik (SEA) Pte. Ltd.**

Silanes Business Line  
3 Internatioanl Business Park  
#07-18, Nordic European  
Centre  
Singapore 609927  
PHONE +65 6809 6906  
FAX +65 6809 6699  
dynasytan@evonik.com  
www.dynasytan.com

**Asia / Pacific****Evonik Japan Co. Ltd**

Silanes Business Line  
12th Floor Monolith Building  
2-3-1, Nishi-Shinjuku-ku  
Tokyo 163-0912  
Japan  
PHONE +81 353 23 7446  
FAX +81 353 23 7397  
dynasytan@evonik.com  
www.dynasytan.com

**North America****Evonik Corporation**

Silanes Business Line  
299 Jefferson Road  
Parsippany, NJ 07054  
USA  
PHONE (TOLL FREE) +1 800 237 67  
45  
PHONE +1 973 929 8513  
dynasytan@evonik.com  
www.dynasytan.com

**Asia / Pacific****Evonik Specialty  
Chemicals (Shanghai) Co. Ltd.**

Silanes Business Line  
55, Chungdong Road  
Xinzhuang Industry Park  
Shanghai 201108  
P.R. China  
PHONE +86 21 61191-399  
FAX +86 21 61191-648  
dynasytan@evonik.com  
www.dynasytan.com

**Asia / Pacific****Evonik India Pvt. Ltd.**

Silanes Business Line  
Krislon House  
Saki Vihar Road, Anderi (E)  
Mumbai - 400 072  
India  
PHONE +91 226 7238 809  
FAX +91 226 7238 811  
dynasytan@evonik.com  
www.dynasytan.com

**North America****Silbond Corporation**

9901 Sand Creek Highway  
Weston, MI 49289  
USA  
PHONE +1 732 981 5004  
FAX +1 732 981 5275  
dynasytan@evonik.com  
www.dynasytan.com

**Asia / Pacific****Evonik Korea Ltd.**

Silanes Business Line  
3F (Nongshim Sungmookwan  
B/D)  
112 Yeouidaebang-Ro  
Dongjak-Gu  
Seoul, 07057  
Korea  
PHONE +82 2320 4773  
FAX +82 2783 2520  
dynasytan@evonik.com  
www.dynasytan.com

**Region Central and South America****Evonik Brasil Ltda.**

Silanes Business Line  
Rua Arquiteto Olavo Redig de Campos,  
105  
Torre A - 04711-904 São Paulo- SP  
Brazil  
PHONE +55 11 3146 9627  
dynasytan@evonik.com  
www.dynasytan.com

**Asia / Pacific****Evonik Taiwan Ltd.**

Silanes Business Line  
Artist Construction Bldg.  
9F, No. 133  
Min Sheng East Road, Sec 3  
Taipei, 105 Taiwan, R.O.C.  
Taiwan 10596  
PHONE +886 227 17 1242 #247  
FAX +886 227 17 2106  
dynasytan@evonik.com  
www.dynasytan.com