

Dynasylan® HYDROSIL 1151

Aqueous oligomeric aminoalkylfunctional silane hydrolysate

Technical data

Properties and test methods	Value	Unit	Method
Amine content as NH ₂	2.7 - 3.1	wt.-%	SAA 1078
Color	< = 50	mg Pt-Co-l	ISO 6271
Content of solids	19.0 - 22.0	wt.-%	DIN-38409-H1-1
Density (20°C)	1.06 - 1.08	g/cm ³	DIN 51757
Flash point	> = 95	°C	DIN EN 22719
pH (20°C)	10 - 11.4	-	DIN 19268
Viscosity (20°C)	< 10	mPas	DIN 53015

Registrations

Dynasylan® HYDROSIL 1151

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

Dynasylan® HYDROSIL 1151 is an amino-functional silane which acts as an adhesion promoter between inorganic materials (for example glass, metals and fillers) and organic polymers (thermosets, thermoplastics and elastomers).

Dynasylan® HYDROSIL 1151 is a colorless to slightly yellowish aqueous solution with an amine-like odor, miscible, with alcohols or water.

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 or upon request from your local representative, customer service or from Evonik Operations GmbH, Product Safety Department, E-MAIL sds-hu@evonik.com.

Packaging, storage and shelf life

Dynasylan® HYDROSIL 1151 is supplied in 25 kg PE cans, 200 kg drums and 1.000 kg IBC.

It is recommended to store Dynasylan® HYDROSIL 1151 above 4°C.

However, singular freezing does not influence the product quality. Frozen product is re-useable after complete thawing and homogenization. Accurate stirring is sufficient for homogenization.

Dynasylan® HYDROSIL 1151 has a shelf life of minimum 12 months from delivery in an originally sealed drum or IBC.

Properties and applications

Dynasylan® HYDROSIL 1151 is an important additive in many applications. Particular advantages arise in water-based systems.

Examples:

- glass fibre/glass fabric composites: as size constituent or finish
- glass and metal primers
- mineral fibre insulating materials, abrasives: as additive to phenolic resin binders
- foundry resins: as an additive to cold-curing phenolic and furane resins
- sealants and adhesives: as primer or additive mineral-filled composites: for pretreatment of fillers and pigments or as additive
- paints and coatings: as additive and primer for improving adhesion to the substrate.

The most important effects which can be achieved using Dynasylan® HYDROSIL 1151 are: improvement in product properties, such as

- mechanical properties, for example flexural strength, tensile strength, impact strength and modulus of elasticity
- moisture and corrosion resistance

improvement in processing properties, such as

- adhesion
- better filler dispersion
- high flash point

Reactivity

Dynasylan® HYDROSIL 1151 is a bifunctional organic compound in which the functional silanol groups can be bonded to an inorganic substrate; the organophilic amino group can interact with a suitable polymer. The particular advantage of Dynasylan® HYDROSIL 1151 compared with the corresponding aminofunctional alkoxy silanes is its nonflammability, the fact that no volatile organic constituents are released and the fact that no particular equipment safety precautions are necessary. Dynasylan® HYDROSIL 1151 can be diluted with water in all proportions. The hydrolysates are long-term stable.

Examples of suitable inorganic substrates are glass, glass fibres, glass wool, mineral wool, silicic acid, quartz, sand, cristobalite, wollastonite and mica; also suitable are aluminium trihydroxide, kaolin, talc, other silicate fillers, metal oxides and metals. Examples of particularly suitable polymers are epoxy resins, polyurethanes, phenolic resins, furane resins, melamine resins, PA, PBT, PC, EVA, PP, PVAC, acrylates and silicone.

Processing

Dynasylan® HYDROSIL 1151 can be applied advantageously in water-based binder systems or for substrate pretreatment. It can also be used as a constituent of aqueous sizes or as an additive.

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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