

Dynasylan® HYDROSIL 1151

Aqueous 3-aminopropylsilane hydrolysate

Technical data

Properties and test methods	Value	Unit	Method
Refractive index n(20,D)	approx. 1.371	-	DIN 51423
Viscosity (20 °C)	approx. 3.7	mPa·s	DIN 53015
pH (20 °C, 1:1 in H ₂ O)	10-12	-	DIN 19268
Density (20 °C)	approx. 1.06	g/cm ³	DIN 51757
Flash point	80	°C	EN 22719

Registrations

Dynasylan® HYDROSIL 1151

DSL/NDL (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

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. **Dynasylan®** HYDROSIL 1151 contains about 40% active silane content in water.

Safety and handling

Before considering the use of Dynasylan® and Protectosil® products please read its Material Safety Data sheet (MSDS) thoroughly for safety and toxicological data as well as for information on proper transportation, storage and use. The Material 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 Industries AG, Product Safety Department, E-MAIL sds-im@evonik.com.

Packaging and storage

Dynasylan® HYDROSIL 1151 is supplied in 25 kg and 200 kg drums and 1.000 kg bulk containers. In the originally sealed drum **Dynasylan®** HYDROSIL 1151 has a shelf life of at least 1 year. It is recommended to store **Dynasylan®** HYDROSIL 1151 above freezing temperatures.

Properties and application

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 alkoxysilanes 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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