

Product Information

Dynasylan® SIVO 121

Wood Surface Impregnation Agent

CAS NUMBER

confidential

PRODUCT DESCRIPTION

Dynasylan® SIVO 121 is a multifunctional, nearly VOC-free, water-borne silane system.

It can act most prominently as a hydrophobizing or olephobizing agent for plain wood surfaces or weathered, originally scumble paint treated wood surfaces.

Dynasylan® SIVO 121 does not contain solvents and, contrary to functional alkoxysilanes, does not release alcohols upon hydrolysis when applied. Dynasylan® SIVO 121 boasts of a high proportion of already active silanol functions. Consequently a chemical coupling to the wood substrate as well as high crosslinking density due to the formation of two- and three-dimensional networks is obtained. Fluoroalkyl-functional groups contained in Dynasylan® SIVO 121 provide strong hydro- and oleophobic surface properties (low energy surfaces).

TYPICAL APPLICATIONS

Dynasylan® SIVO 121 - containing wood preservation agents can be painted, rolled or sprayed. In a spray application it is mandatory to minimize the generation of Aerosol emissions by suited procedures (e.g. application of HPLV spray processes, air driven low pressure spray processes. Consecutive application steps should be carried out wet-in-wet as a dried coat of Dynasylan® SIVO 121 will almost immediately exhibit a strong repelling effect. Consequently a second application step would therefore be much less effective.

Recommended dosage during application: For a full range effectiveness and durability (up to 1500 h of QUV-stability in transparent systems) 300 g/m² of undiluted Dynasylan® SIVO 121 are necessary. That amount can be applied by either one-step or multi-step procedures, depending on the absorptiveness of the wood substrate.

In a quantity of 70 - 150 g/m² Dynasylan® SIVO 121 will exhibit a QUV-stability of 300 - 900 h with regard to hydro- and oleophobic surface activity (corresponding to approx. 1 - 3 years of exterior weathering in an average European climate). AS a minimum concentration we recommend a preparation of 1 part Dynasylan® SIVO 121 and 1 part of dilution agent (= organic solvent water additive).

Temperature of treated substrates should stay in the range of 5 - 50 °C. Dynasylan® SIVO 121 is sensitive to freezing temperatures. Frozen material can flocculate upon defrosting and may in part loose its beneficial properties. Dynasylan® SIVO 121 - containing wood preservation agents should not be applied on wet wood surfaces (humidity < 18% recommended). Crosslinking on wet substrates will be incomplete and thus full efficiency may not be achieved.

To a certain degree Dynasylan® SIVO 121 will impart yellowing on bright wood surfaces. This will by no means influence the hydro-/oleophobic performance of the products. However, the issue must be taken into consideration once a certain optical appearance is of importance during the formulation of transparent, colorless wood preservation agents.

As a fully crosslinked impregnating coating, Dynasylan® SIVO 121 is extremely resistant against all kinds of atmo-

Typical Properties

Property	Unit	Value
Appearance -		yellowish, slightly turbid liquid
Chemical Name		functional oligosiloxane; hydro- / oleophobic treatment for wood treatment
Density (20 °C) DIN 51757	g/cm ³	1.01-1.01
Flash Point, min. DIN 51755	°C	90
pH Value at 20 °C, 1:1 in water, ASTM D-1120		4-4
Viscosity (20 °C) DIN 53015	mPa·s	1-1

The data represents typical values (no product specification)

spheric exposure (UV-irradiation, rainfall, temperature changes) but imparts only a relatively weak UV-absorbing strength. Decomposition of lignin by UV light will be delayed but not prevented. Typical greying of wood under the influence of UV light may thus be delayed by Dynasylan® SIVO 121 but will not be inhibited. If a strong UV-protection is desired in the final formulation, additional UV absorbers need to be introduced. With this regard the addition of pigments (e.g. most prominently iron oxides) can be recommended.

BENEFITS & ADVANTAGES

Dynasylan® SIVO 121 can be physically mixed with water at any desired concentration. Alcohols and ketons can be added as required to improve spreading on the wooden surface. However, compatibility of other usual coating additives for water-borne systems such as wetting agents, defoamers or binder systems has to be checked. It is recommended to draw special attention to the shelf life of such preparations. Sometimes conservation agents may have to be applied in order to prevent the build-up of microorganisms (e.g. mildew). The compatibility of additional biocides towards Dynasylan® SIVO 121 needs to be evaluated.

Final statements on the realistic persistence of the final formulation can only be derived from respective outdoor weathering tests. Nevertheless, results of QUV testing according to DIN EN ISO 11507 will exhibit a good correlation.

HANDLING & PROCESSING

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 on our website <https://silanes.evonik.com/en> or upon request from your local

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

PACKAGING

Dynasylan® SIVO 121 is supplied in 25,2 kg pails and 201,2 kg drums.

STORAGE

Being a water-borne system, Dynasylan® SIVO 121 must be stored above 0° C. Moreover, storage temperature should stay below 40° C.

SHELF LIFE

In originally, unopened containers Dynasylan® SIVO 121 has a shelf life of min. 12 months after delivery.

Registration Listings

Registry	Status
Australia (AIIC)	No
Canada (DSL)	Information on Request
China (IECSC)	Yes
European Union (EINECS/ELINCS)	Yes
Japan (ENCS)	Information on Request
South Korea (KECL)	Yes
Philippines (PICCS)	Information on Request
United States of America (TSCA)	Information on Request

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