

Dynasylan® F 8263

Fluoroalkysilane formulation, ready-for-use in i-propanol

Technical data

Properties and test methods	Value	Unit	Method
Viscosity (20 °C)	2	mPa.s	DIN 53015
Flash point	21	°C	DIN EN ISO 13736
Density (20 °C)	0.80	g/cm ³	DIN 51757

Registrations

Dynasylan® F 8263

EINECS/ELINCS (EU):	Yes
AICS (Australia):	Yes
DSL/NDL (Canada):	*
PICCS (Philippines):	No
TSCA (USA):	Yes; for professional or industrial use only. It is
a violation of federal law for this product to be	distributed to or used by consumers (40CFR721.3)
IECS (P.R. China):	Yes
ENCS (Japan):	*
ECL (South Korea):	Yes
* = available on request	

Dynasylan® F 8263 acts as a surface modifier on oxidic, carboxy- and hydroxyfunctional substrates (e.g. glass, ceramic).

Dynasylan® F 8263 is a colorless liquid. It can be diluted in alcohols and various other organic solvents, e.g. n-hexane, xylol, acetone or ethyl acetate.

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 Resource Efficiency GmbH, Product Safety Department, E-MAIL sds-hu@evonik.com.

Packaging, storage and shelf life

Dynasylan® F 8263 is supplied in drums and containers containing 20 kg, 150 kg and 750 kg.

In the original closed container, the shelf life of Dynasylan® F 8263 is min. 6 months from delivery.

Properties and applications

Dynasylan® F 8263 can be used highly beneficial in a vast variety of commercial applications:

- Anti-soiling, water-repellent, UV-resistant coating of float glass (constructive glazing)
- Treatment of automotive glass (wiperless windshield)
- Coatings on polymers
- Anti-soiling coatings of ceramic and enamel

Reactivity

Dynasylan® F 8263 is a bifunctional organic compound: The silicon functional alkoxy groups can react with oxides, hydroxy and carboxy functions on the surface of a substrate. They hydrolyze with water and can establish a permanent chemical bond by elimination of ethanol/water. The fluoroalkylfunctional group provides a low energy surface.

Excellent hydrophobic and oleophobic surface properties can also be achieved by treatment with commercial fluorocarbon surfactants and resins. However, besides providing these properties Dynasylan® F 8263 can bond chemically to the surface thus creating a Si-O-substrate - bond. Subsequently, horizontal crosslinking takes place, predominantly upon evaporation of the solvent. Finally 2- and 3-dimensional networks are formed.

Dynasylan® F 8263 is a ready-for-use product and can be directly applied on a surface. Subsequently, stable coatings with a thickness of some nanometers are formed.

Through a special catalyst system which is part of the formulation, Dynasylan® F 8263 can establish coatings on several at least slightly polar polymers, like polymamide, PMMA and polycarbonate.

Processing

Surfaces need to be absolutely clean and degreased before treatment!

For a primer treatment (e.g. on glass) Dynasylan® F 8263 can be applied by polishing with a paper pad (or soft cotton cloth, sponge etc.), which had been previously soaked with the formulation. It is important to maintain a homogeneous liquid film on the whole surface to be treated. A contact time of at least 2 minutes with the surface is required. If the liquid starts to evaporate, thus leaving some exposed domains, additional Dynasylan® F 8263 has to be added. Proper conditions have to be evaluated in detail according to the specific kind and reactivity of the surface.

Hydro-/oleophobicity almost immediately appears upon treatment (autophobic effect) and the phenomenon will increase further over a couple of minutes. Complete crosslinking will take hours to several days at room temperature because the process will be continued long after the treated area has become visibly dry. However, a nearly complete crosslinking can be accelerated by heating the workpiece at 80–150 °C for several hours in a drying oven. Thereafter, eventually formed silicon spots on the surface can be removed by polishing with a smooth pad which had been previously impregnated with a few drops of ethanol.

Polishing aids (sponge, pads) have to be clean and dry before use and reuse is only recommended upon careful cleaning. The formed polysiloxane film is completely invisible and will not lead to any optical impairment on the substrate.

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