Product information

Dynasylan® GLYMO

3-Glycidyloxypropyltrimethoxysilane

Technical data

Properties and test methods	Value	Unit	Method
Boiling point (0.7 hPa / 0.5 torr)	approx. 90/ 194	°C / °F	DIN 51356
Flash point	approx. 122/ 252	°C / °F	EN 22719
Ignition temperature	approx. 400/ 750	°C / °F	DIN 51794
Viscosity (20 °C/ 68 °F)	approx. 3.7/ 3.5	mPa·s / cSt	DIN 53015
Density (20 °C/ 68 °F)	approx. 1.07	g/cm³	DIN 51757
Refractive index n(20, D)	approx. 1.429	-	DIN 51423

Registrations

Dynasylan® GLYMO

DSL/NDSL (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® GLYMO is a bifunctional organosilane possessing a reactive organic epoxide and hydrolyzable inorganic methoxysilyl groups.

The dual nature of its reactivity allows **Dynasylan®** GLYMO to bind chemically to both inorganic materials (e.g. glass, metals, fillers) and organic polymers (e.g. thermosets, thermoplastics, elastomers), thus functioning as an adhesion promoter, crosslinking agent and/or surface modifier.
Dynasylan® GLYMO is a colorless low-viscosity liquid with a slight terpentine-like odor. It is soluble in alcohols, ketones and aliphatic or aromatic hydrocarbons.

Safety and handling

Before considering the use of **Dynasylan®** 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® GLYMO is supplied in 25 kg, 210 kg drums and 1.000 kg bulk containers. In the unopened container **Dynasylan®** GLYMO has a shelf life of at least one year.

Properties and application

Dynasylan® GLYMO is an essential ingredient in the products of many industries. Examples are:

- glass fiber/glass fabric composites: as a finish or a size ingredient
- foundry resins: as an additive to polyurethane resins
- sealants and adhesives: as a primer or additive
- mineral filled composites: for pretreatment of fillers and pigments or as an additive to the polymer
- paints and coatings: as an additive and as a primer for improving adhesion to the substrate, especially glass and metal
- improved shelf life over aminosilanes in polyurethanes

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

- improved mechanical properties, such as flexural strength, tensile strength, impact strength and modulus of elasticity
- improved moisture and corrosion resistance
- improved electrical properties, for example dielectric constant, volume resistivity

Dynasylan® GLYMO can also improve such processing properties as

- filler dispersion
- rheological behavior (i.e. viscosity reduction) Newtonian behavior
- increased filler loading
- non yellowing

Reactivity

In the presence of water, the methoxy groups of **Dynasylan®** GLYMO hydrolyze to form reactive silanol groups which can bond to a variety of inorganic substrates. The organophilic glycidyl end of **Dynasylan®** GLYMO can react with a suitable polymer. Hydrolysis of **Dynasylan®** GLYMO can be catalyzed by organic acids such as acetic acid. Examples of suitable inorganic substrates are glass, glass fibers, quartz, cristobalite and metals. **Dynasylan®** GLYMO may be used with such polymers as epoxy, phenolic, polyurethanes, PVAC, acrylates, polysulfides.

Processing

Dynasylan® GLYMO may be used as a constituent of an aqueous size, neat, or added to the polymer matrix as an additive. A chemical modification can be achieved by reaction with suitable functional monomers or polymers.

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