Product Information

Dynasylan® HYDROSIL 2978

aqueous oligomeric aminoalkyl- and vinylbenzylamino-functional silane hydrolysate with multifunctional properties

PRODUCT DESCRIPTION

Dynasylan® HYDROSIL 2978 is an aqueous oligomeric multifunctional product, that contains

- reactive secondary amino groups
- reactive styrenic double bonds
- antistatic cationic centers
- and reactive silanol groups.

The multifunctional nature of its reactivity enables Dynasylan® HYDROSIL 2978 to bind and interact with inorganic and organic substrates, thus functioning as an adhesion promoter and surface modifier. Dynasylan® HYDROSIL 2978 is a slightly yellow to darker yellow-orange liquid. It is easily dilutable in water, while pH value is already acidic and does not need specific control.

Typical Properties

Property	Unit	Value
Color Gardner, ISO 4630		≤9.0
Density (20 °C) DIN 51757	g/cm³	~1.09-1.11
Flash Point DIN EN 22719	°C	≥95
pH Value (20 °C) DIN 19268		~2.5-4.0
Viscosity (20 °C) DIN 53015	mPa·s	~70-700

The data represents typical values (no product specification)

TYPICAL APPLICATIONS

Dynasylan® HYDROSIL 2978 is a mulitfunctional organic compound in which the silanol groups can be bonded to an inorganic substrate and the organophilic amino groups can interact with a suitable polymer or resin.

Examples of suitable inorganic substrates are:

- glass, glass fibers, glass beads and glass wool
- mineral wool
- metals
- and various fillers like quartz, wollastonite or ATH

Examples of suitable polymers or resins are:

- Thermosets like epoxy, phenolic, furanic and melaminic resins
- Thermoplastics like PA, PBT, EVA, PPS, MAPE, MAPP, PVB, acrylates
- Elastomers like silicones

Dynasylan® HYDROSIL 2978 finds application in many industries. Advantages arise in water-based systems.

Examples are:

- as a size constituent of glass fiber/glass fabric composites or mineral wool insulating materials
- as a primer or additive for sealants and adhesives
- as a pretreatment or an additive to mineral-filled thermoplastic compounds
- as a glass and metal primer
- as a primer and/or additive for paints and varnishes to improve adhesion to the substrat

Product Composition

Product Composition	Unit	Value
Chloride (Cl) Content	wt%	≤9.5
Solids Content	wt%	36-38

The data represents typical values (no product specification)

BENEFITS & ADVANTAGES

Dynasylan® HYDROSIL 2978 is an aqueous oligomeric multifunctional product, that contains

- reactive secondary amino groups
- reactive styrenic double bonds
- antistatic cationic centers
- and reactive silanol groups.

Important product effects that can be achieved through the use of Dynasylan® HYDROSIL 2978 are:

- Improved mechanical properties: e.g. flexural strength, tensile strength, impact toughness, modulus of elasticity
- improved electrical properties: e.g. dielectric constant, specific volume resistance
- improved temperature stability at the inorganic/organic interphase (>300°C)

Important processing effects that can be achieved through the use of Dynasylan® HYDROSIL 2978 are:

- better polymer wetting
- elongated gelation time of resins
- immediate solubility in water

Advantages that can be realized compared to conventional organoalkoxy functional silanes:

Improved workplace safety

- flash point of product is >=95°C
- only < 1 wt.-% alcohols are liberated during processing by Dynasylan® HYDROSIL 2978

Less complex processing parameters

- process conditions are not bound to ignition limits of the liberated alcohols
- more reliable process due to prevented steps of hydrolysis and condensation of the alkoxysilanes
- better space-time yield due to a ready to use aqueous, oligomeric product
- no additional removal or separation of the released alcohol needed

Easy application and formulation

- product can be directly mixed in water based polymer, filler or binder systems

DOSAGE

Dynasylan® HYDROSIL 2978 may be used for substrate pretreatment, for example as a primer (approx. 1-10 wt.% solution), as a constituent of an aqueous size, or neat. It can be added to an aqueous mixture or sprayed onto fillers or surfaces for application (1-2.5 actives phf).

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.

Please consult your local Evonik representative to discuss exact handling (e.g. dilution, wetting, curing temperature) of Dynasylan® HYDROSIL 2978 with a technical expert to achieve the best possible results in your application.

PACKAGING

Dynasylan® HYDROSIL 2978 is supplied in 25 kg PE cans and 200 kg drums.

STORAGE

It is recommended to store Dynasylan® HYDROSIL 2978 above 4°C.

Dynasylan® HYDROSIL 2978 has a flash point > =95°C and can be stored and transported advantageously according to different local requirements, compared to flammable liquids (Category 2, 3 and 4), as the most established monomeric alkoxysilane materials are.

SHELF LIFE

Dynasylan® HYDROSIL 2978 has a shelf life of at least 12 months from delivery in an originally sealed can or drum.

Registration Listings	
Registry	**Status**
Canada (DSL)	Information on Request
China (IECSC)	Yes
EU (REACH)	Exempted
UK (UK-REACH)	Exempted
Japan (ENCS)	Restrictions apply
Taiwan (TCSI)	Yes
USA (TSCA)	Yes

Disclaimer

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