

Product Information

VPS 4721

Epoxy functional silane resin

PRODUCT DESCRIPTION

VPS 4721 is a bifunctional organosilane with a reactive organic epoxide and hydrolyzable inorganic methoxysilyl groups. The dual nature of its reactivity allows VPS 4721 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. VPS 4721 is a nearly colorless liquid. It is soluble in alcohols, ketones and aliphatic or aromatic hydrocarbons.

Typical Properties

Property	Unit	Value
Chemical Name		Epoxy functional silane resin; 1,1,3,5,7,7-hexamethoxy-1,3,5,7-tetrakis(3-(oxiran-2-ylmethoxy)propyl)tetrakisiloxane
Flash Point, min. DIN EN ISO 2719	°C	95
Viscosity (25 °C) DIN 53019	mPa·s	~750-1350

The data represents typical values (no product specification)

TYPICAL APPLICATIONS

VPS 4721 is a novel ingredient for special formulations and can be used in many applications in different 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
- as an additive for polymer dispersions

BENEFITS & ADVANTAGES

Important product effects that can be achieved through the use of VPS 4721 as an additive 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
- better adhesion on substrates
- crosslinking of suitable polymers and polymer dispersions
- improved storage stability of formulations

VPS 4721 can be used for

- filler dispersions
- viscosity reduction
- increased filler loading
- non yellowing

DOSAGE

In the presence of water, the methoxy groups of VPS 4721 hydrolyze to form reactive silanol groups which can bond to a variety of inorganic substrates. The organophilic glycidyl end of VPS 4721 can react with a suitable polymer. Hydrolysis of VPS 4721 can be catalyzed by organic acids such as acetic acid. Examples of suitable inorganic substrates are

- glass,
 - glass fibers,
 - quartz,
 - cristobalite
- and metals.

VPS 4721 may be used in epoxy resins, phenolic resins, polyurethanes, PVAC, acrylates, polysulfides.

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://www.evonik.com/en/company/businesslines/se.html> or

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

PACKAGING

VPS 4721 is supplied in 25 kg, 180 kg drums and 1.000 kg bulk containers.

STORAGE

Please do not store above 35 °C or in the direct sunlight.

SHELF LIFE

In the unopened container VPS 4721 has a shelf life of min. 12 months from delivery.

Registration Listings

Registry

Status

EU (EINECS/ELINCS)

Information on Request

Disclaimer

This information and all further technical advice are based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third-party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used.

Evonik Operations GmbH

Smart Effects
Rodenbacher Chaussee 4
63457 Hanau
Germany
ask-se@evonik.com
ask-se-asia@evonik.com
ask-se-america@evonik.com
www.evonik.com/smarteffects