Technical Data Sheet

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Silfluo LS-AS312

Latent Aminosilane (Ketimine Dialkoxy Silane)

Description:

Silfluo LS-AS312 is 3-(1,3-Dimethylbutylidene)aminopropylmethyldiethoxysilane, a latent aminosilane. The molecule contains a ketimine-blocked amine structure and a methyldiethoxysilyl group.
The ketimine structure reduces immediate amine reactivity under dry conditions.
In the presence of moisture, the ketimine group hydrolyzes and generates primary amine functionality.
The methyldiethoxysilyl group hydrolyzes and participates in siloxane formation or bonding to hydroxylated inorganic surfaces under suitable moisture, pH, and catalyst conditions.
Compared with trialkoxysilanes, the dialkoxysilane structure gives lower crosslink density and more controlled network formation.
Used as latent adhesion promoter, reactive silane additive, or curing support additive in one-component polyurethane, epoxy, adhesive, sealant, coating, composite, and filler treatment systems.
Storage stability, amine release behavior, cure profile, adhesion, modulus, elongation, and by-product profile require verification in the target formulation.

Typical Physical Properties

Silfluo Code:	LS-AS312
Chemical Name:	3-(1,3-dimethylbutylidene)aminopropylmethyldiethoxysilane
Synonyms	N-(1,3-Dimethylbutylidene)-3-(methyldiethoxysilyl)-1-propanamine
Molecular Formula:	$C_{14}H_{31}NO_2Si$
Molecular Weight:	273.49
Appearance:	Pale yellow to brown transparent liquid
Purity (by GC, %):	95 min
Density (25°C, g/cm³):	0.93
Refractive Index (n25/D):	1.437

Applications:

1. One-component polyurethane sealants and adhesives

Used as latent adhesion promoter or curing support additive in 1K polyurethane systems. Verify cartridge stability, cure profile, adhesion, foaming tendency, modulus, and elongation in the target formulation.

2. Epoxy adhesives and sealants

Used in epoxy adhesive and sealant systems requiring latent amine functionality and dialkoxysilane reactivity. Verify cure behavior, pot life, adhesion, and storage stability before use.

3. Flexible sealant and coating systems

Used in sealant and coating formulations requiring controlled crosslinking and flexible cured properties. Verify impact resistance, flexibility, wet adhesion, and film properties by application testing.

4. Composite and filler treatment

Used for glass fiber, mineral filler, and inorganic surface treatment. Verify dispersion, compatibility, interfacial adhesion, and composite properties in the target polymer system.

5. Inks and casting resin systems

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Used in printing ink and casting resin systems requiring latent amine functionality and alkoxysilane reactivity. Verify moisture resistance, adhesion, mechanical properties, and storage stability in the final formulation.

6. Moisture-sensitive formulations

Used where delayed amine reactivity or moisture-triggered amine generation is required. Verify compatibility, dosage, and by-product profile by formulation testing.

Packing

In 200L drum and 1000L IBC.

Safety and Storage

Store in a cool, dry, well-ventilated environment. Keep away from direct sunlight, heat, and open flames.

The ketimine structure is moisture-sensitive; premature moisture exposure causes hydrolysis, releasing MIBK and active amines.

Keep away from acids and alkalis; both accelerate hydrolysis.

Assess MIBK and ethanol VOC, toxicity, and workplace exposure per local regulations.

Shelf life: 12 months minimum from manufacture date when stored at ⩽ 25°C in original tightly sealed unopened containers.

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