Technical Data Sheet

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Silfluo LS-AS312

Latent Aminosilane (Ketimine Dialkoxy Silane)

Description:

Silfluo LS-AS312 is a highly specialized, moisture-activated latent aminosilane, chemically identified as 3-(1,3-Dimethylbutylidene)aminopropylmethyldiethoxysilane. Unlike standard highly reactive aminosilanes, this advanced molecule features a blocked amine (ketimine) structure derived from methyl isobutyl ketone (MIBK), intricately coupled with a flexible dialkoxy (methyldiethoxy) silyl group. In anhydrous (water-free) conditions, it remains completely inert toward isocyanate and epoxy resins, providing exceptional in-can stability for one-component (1K) formulations. Upon exposure to atmospheric moisture, it rapidly hydrolyzes to release evaporating MIBK and a highly active primary amine, triggering a rapid, deep-section cure. The specific dialkoxy architecture strictly promotes linear chain extension, making it the ultimate crosslinker and adhesion promoter for formulating highly elastic, low-modulus industrial sealants.

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

Features

1. Latent Curing (Exceptional In-Can Stability): The advanced ketimine blocking technology completely prevents premature crosslinking with -NCO (polyurethane) or oxirane (epoxy) groups, empowering formulators to design true 1K systems with drastically extended shelf lives.
2. Moisture-Triggered Reactivity: Upon application, ambient moisture seamlessly unblocks the amine, rapidly accelerating the curing kinetics and ensuring excellent, bubble-free deep-section curing.
3. High Flexibility & Low Modulus: The unique methyldiethoxy configuration deliberately limits crosslink density and promotes linear chain extension. This results in significantly softer, highly elastic, and low-modulus elastomers capable of absorbing severe dynamic joint stress.
4. Superior Interfacial Adhesion: Acts as a powerful adhesion promoter, driving robust, moisture-resistant covalent bonds to difficult inorganic substrates (glass, metals, fillers) while fully integrating into the organic elastomeric matrix.

Applications:

1. Premium 1K Polyurethane & Epoxy Sealants: The absolute material of choice for formulating high-performance, one-component architectural and automotive sealants. It perfectly balances prolonged shelf life inside the cartridge with ultra-fast, reliable curing upon extrusion.
2. Flexible Heavy-Duty Coatings: Serves as an advanced crosslinking additive in heavy-duty PU and epoxy protective coatings, dramatically enhancing the film's impact resistance, flexibility, and unprimed wet adhesion to metallic substrates.
3. Advanced Composite Modification: Utilized to chemically treat glass fibers and mineral fillers, significantly improving their dispersion, matrix compatibility, and interfacial bonding strength within flexible plastic and rubber compounds.
4. Specialty Inks & Casting Resins: Enhances the moisture resistance, mechanical toughness, and long-term substrate adhesion of specialized printing inks and industrial casting resins.

Packing

In 200L drum and 1000L IBC.

Safety and Storage

Keep in a cool, strictly dry, and well-ventilated environment, aggressively avoiding direct sunlight, heat, and open flames. CRITICAL: This product is a latent curing agent. It is extremely sensitive to ambient moisture and will prematurely "unblock" (releasing MIBK and active amines) if improperly sealed. Keep strictly away from acids and alkalis, as they act as aggressive catalysts for premature hydrolysis. The shelf life is a minimum of 12 months from the date of manufacture when stored at or below 25° C in tightly sealed, original unopened containers.