Technical Data Sheet

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Silfluo LS-533

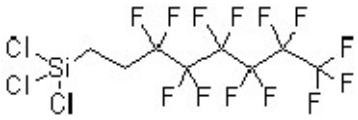
Ultra-Low Surface Energy Fluoro-Silane (C6-Perfluoro)

Description

Silfluo LS-533 is a high-performance fluoroalkyl trichlorosilane, chemically known as [2-(Perfluorohexyl)ethyl]trichlorosilane.

This specialty silane is engineered for high-end surface modification where extreme hydrophobicity and oleophobicity are required. The perfluorinated C6 chain provides one of the lowest surface energies available in organosilicon chemistry. It is a critical reagent in the fabrication of microfluidic devices, self-assembled monolayers (SAMs), and anti-fouling coatings for sensitive electronic and optical substrates.

Typical Physical Properties

Silfluo Code:	LS-533
Chemical Name:	Tridecafluorooctyl)trichlorosilane
Synonyms	
CAS No. :	78560-45-9
EINECS No. :	278-947-6
Molecular Weight:	481.54
Appearance:	Colorless transparent liquid
Purity (by GC, %)	97.0 min
Density (ρ20°C, g/cm³)	1.639
Refractive Index (n25/D)	1.351
Boiling Point:	84-85°C
Flash Point:	Above 70 °C closed cup
Chemical Structure:	

Features

1. Extreme Surface Tension Reduction: Effectively lowers the surface energy of substrates, providing superior water and oil repellency (Superhydrophobicity).
2. High-Efficiency SAM Formation: Readily forms high-density Self-Assembled Monolayers (SAMs) on silicon, glass, and metal oxide surfaces via vapor-phase or solution-phase deposition.
3. Exceptional Anti-Sticking Properties: Provides a highly effective release layer for soft lithography and nanoimprint lithography (NIL), preventing polymer adhesion to molds.
4. Chemical & Thermal Resistance: The C-F bond is one of the strongest in organic chemistry, imparting excellent stability against harsh chemicals and UV degradation.

Applications

1. Microfluidic Device Fabrication

Extensively used for the silanization of silicon or glass masters in soft lithography. It creates a robust release layer that facilitates the clean removal of PDMS (Polydimethylsiloxane) membranes, essential for manufacturing multi-layer microfluidic chips.

2. Self-Assembled Monolayers (SAMs)

Used to form chemically patterned surfaces for quantitative analysis of surfactants and polymers. It is a preferred reagent for creating cell-adhesive micropatterns and studying neuritogenesis or other cell-surface interactions.

3. Advanced Surface Modification

Applied to steel, glass, and electronic substrates to create superhydrophobic and omniphobic (all-liquid repellent) coatings. This is critical for anti-fouling, anti-icing, and corrosion protection in high-precision industries.

Packaging

In 500g, 1000g, 25kg pail, 200kg drum.

Safety and Storage

Keep in a cool and dry place and avoid storage in direct sunlight. Shelf life is min. 9 months. It is shipped as hazardous substance.