Agricultural Silicone Penetrant Silfluo LA-11

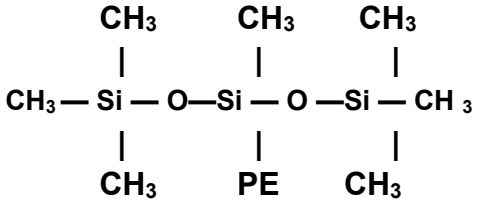
High Performance Polyehter Modified Trisiloxane

Description:

Agricultural silicone spreading and penetrating agent Silfluo LA-11 is a 100% active, nonionic organosilicone adjuvant formulated to drastically reduce the surface tension of agricultural spray liquors. Functioning as a premium super-spreader, it drives aqueous solutions down to <21.0 mN/m (at 0.1 wt%), ensuring comprehensive coverage on highly hydrophobic or waxy foliage. Notably, LA-11 features a unique low-foaming profile compared to conventional trisiloxane ethoxylates, minimizing equipment disruption during intense tank agitation.

Performance equivalent to Momentive Silwet L-77

Typical Technical Properties:

Silfluo Code:	LA-11
Chemical Name: Synonyms:	Polyether-Modified Trisiloxane Trisiloxane Ethoxylate (TSE), Superspreading Surfactant, Agricultural Silicone Adjuvant; Methoxy-terminated /Methyl-capped polyether-modified trisiloxane
Main Content:	Polyalkyleneoxide Modified Heptamethyltrisiloxane
CAS NO.:	27306-78-1
Appearance:	Clear, colorless to pale yellow liquid
Active Content (%):	100
Viscosity (25°C, mPa·s):	10 - 30
Refractive Index (at 25°C):	1.440 - 1.450
Surface Tension (0.1% aq., 25°C, mN/m):	< 21.0 mN/m
Cloud Point (1.0 wt% aq., °C):	< 10
Ionic Nature:	Nonionic
Chemical Structure:	 PE: Polyether

Mechanism of Action

Unlike standard carbon-based surfactants, the highly flexible siloxane backbone of Silfluo LA-11 triggers an immediate collapse of spray droplet surface tension. This results in extreme spreading behavior and facilitates the physical transport of active ingredients directly into plant stomata. This "stomatal flooding" guarantees rapid internal absorption, providing exceptional rainfastness and systemic delivery even under challenging weather conditions.

Tank-mix Application Guidelines

Silfluo LA-11 operates efficiently at extremely low dosage rates, typically between 0.025% and 0.1% (e.g., 5g per 20kg of spray solution).

Recommended Use Rates:

Plant Growth Regulators: 0.025% - 0.05%
Herbicides: 0.025% - 0.15%
Insecticides: 0.025% - 0.1%
Fungicides: 0.015% - 0.05%
Fertilizers and Trace Elements: 0.015% - 0.1%

Preparation Protocol:

1. Fill the mixing tank to 80% capacity with water.
2. Introduce and thoroughly dissolve the required agrochemicals.
3. Incorporate the precise dosage of Silfluo LA-11.
4. Top off with the remaining water and agitate gently to minimize any potential foam generation.

Operational Optimization:

Spray Volume Reduction: Integrating Silfluo LA-11 empowers operators to safely cut total spray water volumes by 30% to 50%, while reducing active pesticide usage by 20% to 30% due to enhanced bioavailability.
Equipment Setup: Employ fine-droplet, small-aperture nozzles to maximize the stomatal penetration effect.
pH Stability Window: Optimal stability is achieved when the tank mix pH is maintained strictly between 6.0 and 8.0. Spray solutions must be utilized within 24 hours of preparation to prevent siloxane bond degradation.

IN-CAN FORMULATION CRITERIA

When utilized as an inbuilt formulation additive, Silfluo LA-11 requires rigorous pH buffering (strictly between pH 6.5 and 7.5) to prevent hydrolysis. Formulators are advised to use concentrations ranging from 0.5% to 8.0% by weight depending on the matrix. Accelerated thermal aging and compatibility tests are mandatory to verify long-term phase stability prior to commercial release.

Package &Storage:

In 20Kg, 200Kg Plastic barrel or 1000kg, or up to clients request.

Keep in cool, dry and ventilated place. Keep away from sunlight and fire sources. Keep in unopened containers, shelf life is 24 months from the date of production. It is shipped as non-hazardous substance.

Storage beyond the shelf life does not necessarily mean that the product is no longer usable. In this case however, the properties required for the intended use must be checked for quality assurance reasons.