Technical Data Sheet

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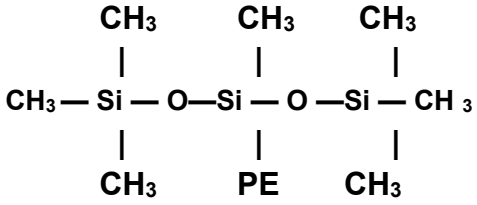
Agricultural Organosilicone Adjuvant LA-12

Description:

Agricultural silicone spreading and penetrating agent Silfluo LA-12 is a 100% active, nonionic polyether-modified trisiloxane engineered as a high-performance foliar wetting agent. Designed to depress the surface tension of aqueous tank mixes to an ultra-low <20.5 mN/m (at 0.1 wt%), it maximizes droplet spread on hydrophobic leaf cuticles. This physical modification accelerates the translaminar and stomatal infiltration of active ingredients, significantly enhancing spray coverage and application efficacy.
Performance equivalent to Momentive Silwet L-77

Typical Technical Properties:

Silfluo Code:	LA-12
Chemical Name: Synonyms:	Polyether-Modified Trisiloxane Organosilicone Surfactant, Foliar Wetting Agent, Agrochemical Adjuvant
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):	< 20.5 mN/m
Cloud Point (1.0 wt% aq., °C):	< 10
Ionic Nature:	Nonionic
Chemical Structure:	 PE: Polyether

Mechanism of Action

The unique heptamethyltrisiloxane architecture of Silfluo LA-12 eliminates droplet surface tension barriers. This allows for ultra-low contact angles on waxy plant cuticles, driving immediate translaminar uptake.

Consequently, it imparts excellent rainfastness within minutes of application and amplifies the bioavailability of systemic pesticides, herbicides, and foliar fertilizers.

TANK-MIX APPLICATION GUIDELINES

Silfluo LA-12 is highly efficacious at ultra-low concentrations. Standard usage rates range from 0.025% to 0.1% of the total spray volume (e.g., 5 grams per 20 liters of aqueous mixture).

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%
Foliar Fertilizers / Micronutrients: 0.015% - 0.1%

Preparation Protocol:

Fill the spray tank with 80% of the calculated water volume.
Introduce all dry or liquid agrochemicals and agitate until completely dissolved or uniformly suspended.
Add the exact dosage of Silfluo LA-12 into the mixture.
Add the remaining 20% water and agitate mildly to achieve homogeneity while controlling foam generation.

Application Optimization:

Volume Reduction: The integration of Silfluo LA-12 permits operators to reduce total water volume by 30% to 50% without compromising coverage.
Nozzle Selection: Utilize fine-spray, small-aperture nozzles to optimize droplet velocity and coverage area.
Stability Window: Tank mixtures must be maintained between pH 6.0 and 8.0. Apply the prepared solution within 24 hours to prevent hydrolytic degradation of the siloxane bonds.

IN-CAN FORMULATION CRITERIA

Silfluo LA-12 is fully compatible as an inbuilt adjuvant for concentrated agrochemical formulations. It must be strictly buffered within a pH range of 6.5 to 7.5 to prevent hydrolysis. Formulators typically incorporate LA-12 at 0.5% to 8.0% by weight. Extensive phase stability and compatibility testing across the full intended temperature range is mandatory prior to commercial deployment.

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.