Agricultural Silicone Surfactant Silfluo LA-10

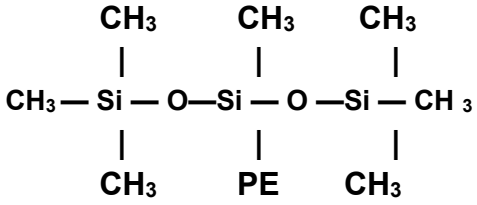
Polyether-Modified Trisiloxane

Description:

Silfluo LA-10 is a nonionic, polyether-modified trisiloxane. It functions as an agricultural silicone surfactant designed to reduce the surface tension of aqueous spray mixtures. By lowering surface tension to <21 mN/m at a concentration of 0.1 wt%, it facilitates spray coverage on hydrophobic plant foliage and promotes the rapid uptake of agrochemicals via stomatal infiltration.

Performance equivalent to Momentive Silwet L-408, Dow Xiameter OFX-0067 (DC 67)

Typical Technical Properties:

Silfluo Code:	LA-10
Chemical Name: Synonyms:	Polyether-Modified Trisiloxane Trisiloxane Ethoxylate (TSE), Superspreading Surfactant, Agricultural Silicone Adjuvant; Hydroxyl-terminated polyether-modified trisiloxane
Main Content:	Polyalkyleneoxide Modified Heptamethyltrisiloxane
CAS NO.:	67674-67-3
Appearance:	Clear, colorless to pale yellow liquid
Active Content (%):	100
Viscosity (25°C, mPa·s):	25 - 45
Specific Gravity (25°C, g/cm³):	1.01 - 1.03
Surface Tension (0.1% aq., 25°C, mN/m):	20.8 ± 0.5
Cloud Point (1.0 wt% aq., °C):	< 10
Ionic Nature:	Nonionic
Chemical Structure:	 PE: Polyether

Mechanism of Action

The trisiloxane backbone of Silfluo LA-10 enables a reduction in the contact angle of spray droplets on waxy leaf surfaces. This physical modification expands the wetting area. Concurrently, the reduced surface

tension allows the formulation to penetrate plant stomata, rendering the active ingredients rainfast shortly after application. This mechanism improves the delivery of systemic active ingredients into the plant tissue and enhances penetration into dense crop canopies.

Applications & Typical Use Rates

Silfluo LA-10 achieves peak performance at concentrations between 0.01% and 0.1%. It is recommended to initiate testing at 0.1% and subsequently reduce the concentration to the minimum effective level for the specific application.

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 Micronutrients: 0.015% - 0.1%

Processing & Formulation Guidelines

Mixing Sequence:
Fill spray tank with 80% of the required water volume.
Add agrochemicals (Pesticides, Herbicides, or Fertilizers) and agitate until fully dissolved.
Add the calculated volume of Silfluo LA-10.
Add remaining water to reach 100% volume and mix thoroughly.

Application Optimization:

Water Volume: The use of Silfluo LA-10 typically allows for a reduction in total spray water volume by 30% to 50% compared to standard applications.
Nozzle Selection: Small-aperture nozzles are recommended to optimize droplet distribution and increase spray velocity for enhanced penetration.
pH Window: Maintain spray mixtures between pH 6.0 and 8.0. Apply the solution within 24 hours of preparation to prevent siloxane bond hydrolysis.

IN-CAN FORMULATION GUIDELINES

Silfluo LA-10 is compatible as a component in concentrated agrochemical formulations provided the system is buffered to pH 6.5 - 7.5. Chemical degradation (hydrolysis) occurs rapidly at pH levels <= 5.0 or >= 9.0. It is recommended for use at 0.5% to 8.0% of the total formulation weight. Compatibility and long-term stability testing in the specific chemical matrix is mandatory before commercialization.

Package &Storage:

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

Keep in a cool, dry, and well-ventilated environment, strictly avoiding direct sunlight and ignition sources. The shelf life is 24 months from the date of manufacture when stored in original unopened containers. Classified and transported as a non-hazardous substance.