

## Silwet\* 641

### Description

Silwet 641 concentrate is a synergistic combination of nonionic and organosilicone surfactants allowing formulators to develop a potentially cost-effective adjuvant mix using methyl soyate, which has been shown to not have the environmental impact of many other surfactants. Developed to provide superior spreading on most foliar surfaces, this property and the fast penetration through the cuticular layer, delivered by the methyl soyate, are well matched for the creation of a unique product for a very effective spray application of pesticide treatments. This optimized concentrate offers additional typical advantages to growers. Organosilicone surfactants are well known for requiring much lower water use in pesticide spray applications than conventional surfactants since they provide better foliar spreading and rainfastness. In addition, the dual action of methyl soyate and Silwet 641 concentrate can enable lower adjuvant use rates than conventional spray adjuvants.

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### Key Features and Benefits

- enhanced spreading
- low dynamic surface tension for enhanced foliar contact
- formulated without NPE
- easy to disperse
- the components in Silwet 641 concentrate meet the requirements of the U.S. EPA regulation 40 CFR 180.910, and are therefore exempt from tolerances in food when used as an inert ingredient in agricultural applications in accordance with the other conditions of that regulation.

### Typical Physical Properties

Property	Unit	Value
Appearance	-	Colorless, clear to slightly hazy liquid

Spread Diameter (0.25%)	mm	48
Viscosity at 25 °C	cPs	70
Aqueous pH (10%)	-	6.8
Cloud Point	°C	45

Typical data are average. Actual results may vary.

Typical data shall not be used as product specifications.

**Potential Applications**

Silwet 641 concentrate may be considered for use as a surfactant component in methylated seed oil based adjuvants. It can be added directly to such formulations to provide better spreading during spray applications. Typical formulation use levels range from 10% to 30% depending on the spreading/uptaking properties desired.

Silwet 641 concentrate should not be used with mineral oil or standard vegetable oil.

Table 1: Typical Guide Formulations for Silwet 641 concentrate

Ingredients	MSO Spreader formulation [weight%]	MSO Spreader formulation [weight%]	Notes
Silwet 641 concentrate	10.0	20.0	Spreader-penetrant
Methylated Seed Oil	90.0	80.0	Penetrant
<u>Procedure</u>			
Charge Silwet 641 concentrate and Methylated Seed Oil. Mix well until fully homogeneous			

Table 2: Typical Recommended Dosages for Silwet 641 Concentrate/MSO Formulations

Formulation	Dosage [weight%]	Volume L/ha	Notes
Silwet 641 concentrate/MSO 10/90	0.50-1.00	100-200	Hard to wet crops/weeds <sup>1</sup>
	0.50-1.00	100-300	Easy to wet crops/weeds <sup>2</sup>
Silwet 641 concentrate/MSO 20/80	0.50	100-200	Hard to wet crops/weeds
	0.25	100-300	Easy to wet crops/weeds
Silwet 641 concentrate/MSO 30/70	0.25-0.50	100-200	Hard to wet crops/weeds
	0.25	200-300	Easy to wet crops/weeds

Formulation	Dosage [L/ha]	Volume	Notes
Silwet 641 concentrate/MSO 10/90	0.5-2.0	100-200	Hard to wet crops/weeds <sup>1</sup>
	0.5-3.0	100-300	Easy to wet crops/weeds <sup>2</sup>
Silwet 641 concentrate/MSO 20/80	0.5-1.0	100-200	Hard to wet crops/weeds
	0.25-0.75	100-300	Easy to wet crops/weeds
Silwet 641 concentrate/MSO 30/70	0.25-1.0	100-200	Hard to wet crops/weeds
	0.5	200-300	Easy to wet crops/weeds

<sup>1</sup> e.g.Canola, most grasses, cereals

<sup>2</sup> e.g. Apple, Soy, Variegated thistle

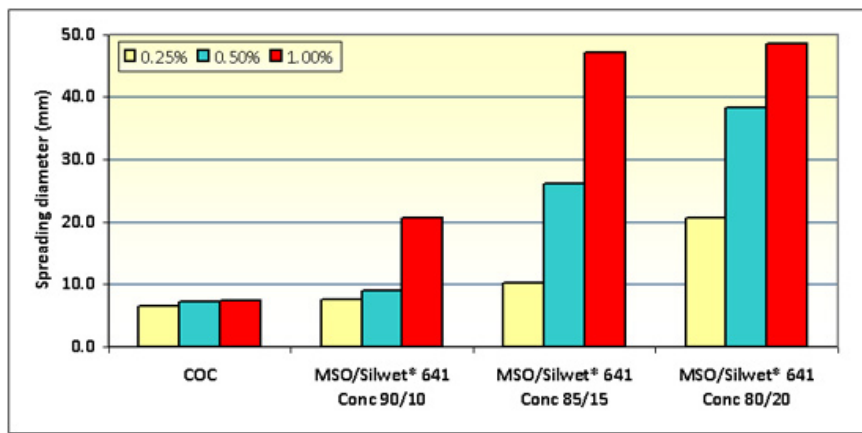


Figure 1: Spreading diameter of formulations comprising 10 to 20% of Silwet 641 Concentrate and 80 to 90%MSO

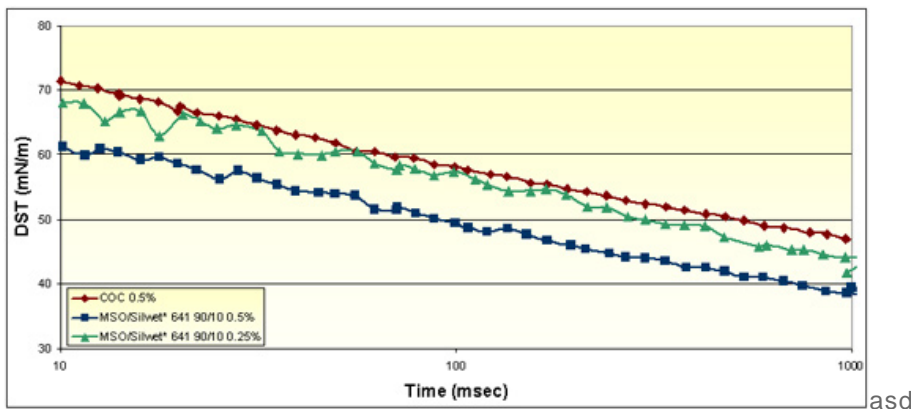


Figure 2: Dynamic Surface Tension (DST) of 10% Silwet 641 Concentrate/90% MSO Formulation

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 Typical data shall not be used as product specifications.

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#### **Patent Status**

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