



Agrilan[®] 855 dispersing agent



A powerful and flexible
polymeric dispersing agent

Nouryon

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Introducing Agrilan[®] 855 dispersing agent, a powerful and flexible polymeric dispersing agent, offering enhanced stability and performance in complex SC and SE formulations. As a versatile comb polymer, ideal for dispersing hydrophobic pesticides, Agrilan[®] 855 dispersing agent offers superior dispersing in SC and SE formulations, more flexibility to use with multiple active ingredients, and improved processing and milling abilities.

Key benefits

- Proven performance in difficult SC and SE formulations
- Effective stability control with complex water-insoluble actives
- Compatible with many active ingredients, allowing for multi-active formulations
- Outstanding crystal-growth inhibition
- Significantly lowers viscosity in the milling process
- EPA TSCA Polymer Exemption compliant
- FIFRA approved inert under 180.960
- REACH Regulation (EC) No 1907/2006 compliant

Overcoming challenges with difficult SC formulations

Creating effective SC formulations with various active ingredients can create multiple challenges. For example, several active ingredients include the challenges below.

- **Low melting points (MP)**
Example, pyraclostrobin: MP <60°C, multiple crystal forms
- **Higher loading and lower melting points lead to grinding difficulties**
Example, 600 g/l Imidacloprid SC
- **Crystal growth and formulation instability**
Example, Crystallization growth occurs, causing formulation instability and storage issues
- **Incompatibility when mixing multiple active ingredients**
Creates instability and formulation separation

Better performance in difficult SC formulations

In challenging SC formulations, Agrilan[®] 855 dispersing agent offers better formulation stability and lower viscosity levels, even under less-than-ideal physical conditions, such as prolonged storage and fluctuating temperatures. Agrilan[®] 855 dispersing agent prevents formulations from breaking down, separating or gelling – even when stored in either hot or cold temperatures.

Enhanced performance in SE formulations

Suspoemulsion (SE) formulations combine two active ingredients with different physical properties into one formulation using a combination of SC and concentrated aqueous emulsion (EW) technologies.

Agrilan[®] 855 dispersing agent improves the stability and performance of SE formulations from the start of manufacturing through the field application process. The powerful dispersant capabilities improve manufacturing efficiencies, and storage stability, and reduce formulation separation that results in sprayer nozzle clogging.



Proven test results

Improved stability in low-melting actives

Agrilan® 855 dispersing agent is a high-performing dispersing agent that offers better reliability in challenging SC formulations, even under extreme physical conditions such as fluctuating storage temperatures. Whether kept in hot or cold storage, Agrilan® 855 dispersing agent prevents formulations from breaking down or gelling.

Trial results demonstrate how irreversible sediment forms in a commercial benchmark formulation stored at higher temperatures. Agrilan® 855 dispersing agent showed little to no sediment formation after being stored at high temperatures.

Below is a trial formulation including:

- Pyraclostrobin (active)
- Ethylan® NS-500LQ wetting agent
- Agrilan® 789 and Agrilan® 855 dispersing agents
- Other components



Commercial

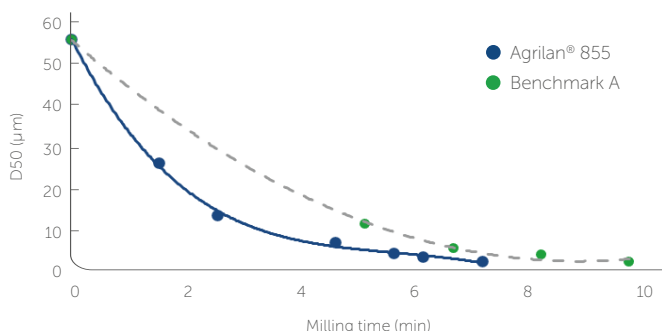
Benchmark A

Agrilan® 855

Improves milling and ease of manufacturing

Agrilan® 855 dispersing agent is an effective milling aid for difficult formulations with high-loading active ingredients. Agrilan® 855 dispersing agent maintains optimal viscosity during the milling process, resulting in a faster production of a high-quality finished product. After milling, Agrilan® 855 dispersing agent continues to maintain smaller particle size, even in varying storage temperatures.

600 g/L Imidacloprid SC – particle size reduction by milling



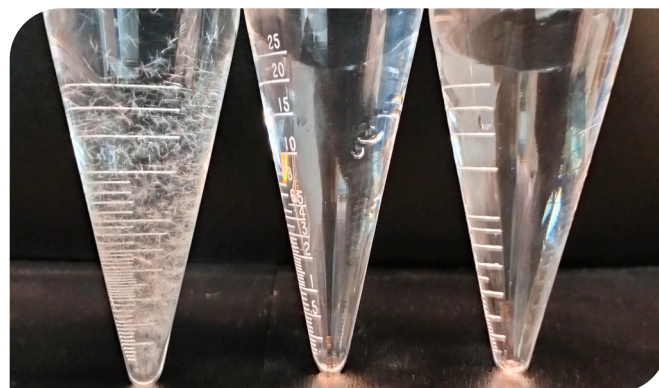
Agrilan® 855 dispersing agent – **2.94 µm (D50) in 7 mins**
Excellent viscosity before, during and after the milling
Smooth texture, stable formulation

Benchmark A – **3.07 µm (D50) in 9.5 mins**
Reached the desired particle size only after longer time of milling

Crystal Inhibition 200g/L Imidacloprid SL

Agrilan® 855 dispersing agent demonstrates the ability to prevent crystal growth when diluting Imidacloprid SL into water.

No crystallization observed after 24 hours for both Agrilan® 855 dispersing agent and Benchmark A.



No dispersing agent

Benchmark A, 4%

Agrilan® 855, 4%

Imidacloprid 200 g/L SL in NMP/DMSO, when 1% added to standard water

Better tank-side stability with multiple active ingredients

When mixing Atrazine SC with glyphosate SL at tank side with various dispersants used in Atrazine SC:

- Commercial Atrazine SC (unknown dispersant) destabilized significantly (TSI values of 16.8 and 14.8)
- Benchmark A showed good stability (TSI value of 2.2) when amine-based adjuvant was used in glyphosate SL; however, significant destabilization (TSI value of 21.4) when amide-based adjuvant was used in glyphosate SL
- Agrilan® 855 dispersing agent showed very good stability in both Glyphosate SL formulations (TSI values of 2.0 and 1.7)

Turbiscan stability index (TSI)*

Tank-mix: 1% Atrazine SC + 1% Glyphosate SL

SC in tank	Dispersant	Glyphosate SL	
		Amine-based adjuvant	Amide-based adjuvant
Atrazine 4L (460 g a.i./L)	Commercial	16.8	14.8
Atrazine SC (500 g a.i./L)	Benchmark A	2.2	21.4
Atrazine SC (500 g a.i./L)	Agrilan® 855	2.0	1.7

* TSI is the backscattering variation over 30 minutes due to destabilization. A lower TSI value indicates a more stable sample.

Formulation guide

Guide Formulation #1, Imidacloprid, 600 g/L SC

Formulation A.I. concentration, 49.6% (w/w)

Technical A.I. concentration 97% (w/w)

Ingredient	Function	% (w/w)
Imidacloprid	Active ingredient	51.09
Agrilan® 855	Dispersant	5.00
Ethylan® NS-500LQ	Wetting agent	1.00
Propylene Glycol	Anti-freezing	5.00
Anti-foam	Anti-foam	0.80
Water	Carrier	36.76
Xanthan gum, 2%	Thickener	0.25
Biocide	Preservative	0.10

Guide Formulation #1, Sulfentrazone, 600 g/L SC

Formulation A.I. concentration, 42.0% (w/w)

Technical A.I. concentration 92% (w/w)

Ingredient	Function	% (w/w)
Sulfentrazone	Active ingredient	45.65
Agrilan® 855	Dispersant	3.00
Ethylan® NS-500LQ	Wetting agent	2.00
Propylene Glycol	Anti-freezing	5.00
Anti-foam	Anti-foam	0.20
Water	Carrier	43.85
Xanthan gum, 2%	Thickener	0.20
Biocide	Preservative	0.10

Guide Formulation #2, Atrazine, 500 g/L SC

Formulation A.I. concentration, 46.0% (w/w)

Technical A.I. concentration 97% (w/w)

Ingredient	Function	% (w/w)
Atrazine	Active ingredient	47.42
Agrilan® 855	Dispersant	3.00
Ethylan® NS-500LQ	Wetting agent	2.00
Propylene Glycol	Anti-freezing	5.00
Anti-foam	Anti-foam	0.20
Water	Carrier	42.08
Xanthan gum, 2%	Thickener	0.20
Biocide	Preservative	0.10

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Nouryon

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