



Ethylan™ X4 and Ethylan™ X6 surfactants



Optimized narrow range
ethoxylates for hard surface
cleaning applications

Nouryon

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Advances in nonionic cleaning agents are increasingly guided by growing regulatory and societal demands for environmentally responsible solutions. Modern formulations must demonstrate efficacy under cold wash conditions to reduce energy consumption and require fewer rinse cycles to minimize water usage. These imperatives are driving innovations that prioritize cleaning efficiency, controlled foam behavior, and rapid wetting.

The power of multi-branched alcohol ethoxylates

Multi-branched alcohol ethoxylates, such as those used in Ethylan™ X4 and Ethylan™ X6 surfactants, deliver a unique balance of performance and formulation flexibility that linear and mono-branched ethoxylates cannot match.

Compared to linear and mono-branched alternatives, multi-branched ethoxylates provide faster wetting and naturally lower foam profiles – key advantages for both household products, where consumer experience is critical, and industrial and institutional (I&I) cleaning applications, where equipment compatibility and cost-in-use drive purchasing decisions.

The unique structure of multi-branched ethoxylates improves water solubility and lowers the need for hydrotropes, enabling the design of high-active concentrates. At the same time, branching disrupts crystallization and reduces gel formation, ensuring stable formulations across a wide pH and temperature range.

Properties of fatty alcohol ethoxylates

Hydrophobe	Linear	Branched	Branched
Branching	-	mono	multi
Type		propyl	methyl
EO, mol	4	5	4.5
Cloud point ¹ , °C	55-59	47-53	53-55
CC	0.7	0.4	0.7
Wetting, sec ²	11	3	5
Hydrotrope / Degreaser ratio	0.5	0.6	0.3
Foam height at 25°C, mm ³	99	9	10
(0, 30, 60 sec)	90	1	2
	82	1	2
Foam height at 50°C, mm ³	33	11	17
(0, 30, 60 sec)	20	2	2
	14	1	2

¹ 5% in 25% aqueous butyldiglycol solution

² Draves method

³ Ross Miles method

Precise surfactant design

As a pioneer in NREs, we now bring two new solutions – Ethylan™ X4 and Ethylan™ X6 surfactants, which are based on multi-branched C₁₀ alcohol.

Features	Ethylan™ X4 surfactant	Ethylan™ X6 surfactant
EO degree	4.5	6.0
Appearance, 20°C	clear liquid	clear liquid
Biodegradability	readily	readily
Clear point, °C	5	17
Cloud point, °C	55-59 (BDG)	60-63 (BDG)
Density at 20°C	970 kg/m ³	985 kg/m ³
HLB	11.1	12.5
Pour point, °C	-12	-9
Solubility, water	dispersible	dispersible
Viscosity at 20°C, mPa.s	30	30
Labelling		 

Cleaning formulations with the products:

- Deliver superior wetting and degreasing properties, reducing soil removal time with less mechanical force
- Reduce hydrotrope need, improving formulation economy and clarity
- Display extremely low foaming profile, especially at lower temperatures enabling faster rinsing, water and energy savings, and reduced equipment pressure

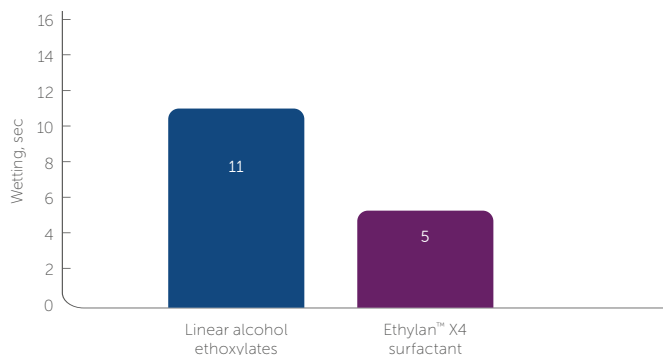
Ethylan™ X4 and Ethylan™ X6 surfactants offer additional key advantages related to NREs inherent properties, including low odor, low viscosity for easier handling and synergistic compatibility with hydrotropes, allowing enhanced formulation flexibility. They are readily biodegradable and suitable for EU Ecolabel, offering formulators a versatile a high-performance, sustainable alternative to conventional alcohol ethoxylates.

* Sold in the Americas and Asia Pacific regions under the brand name Ethylan™ X4 SA and Ethylan™ X6 SA.

Ethylan™ X4 surfactant

Ethylan™ X4 surfactant is a narrow range ethoxylate with an ethoxylation degree of 4.5, based on multi-branched C₁₀ alcohol chemistry. Its optimized molecular distribution provides a low and unstable foam profile, ensuring cleaning solutions work efficiently even under high agitation and circulation.

Wetting results vs linear alcohol ethoxylates

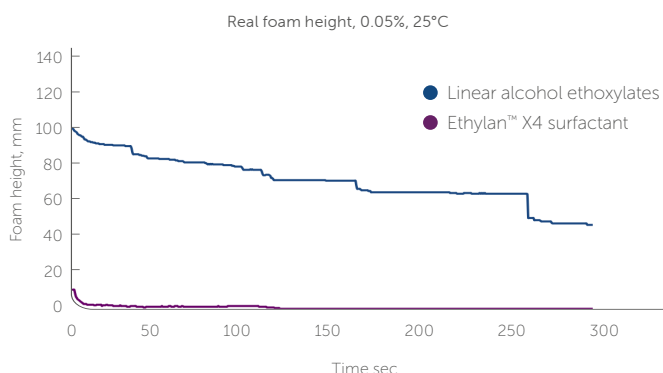


Automatic scrubbing results (after 10 swipes)



The extremely rapid wetting properties of Ethylan™ X4 surfactant translates into faster rinsing and less mechanical strain on machines or individuals, which leads to lower operational costs. In fact, Ethylan™ X4 surfactant cleans twice as fast as other alcohol ethoxylates currently offered.

Foaming results vs linear alcohol ethoxylates



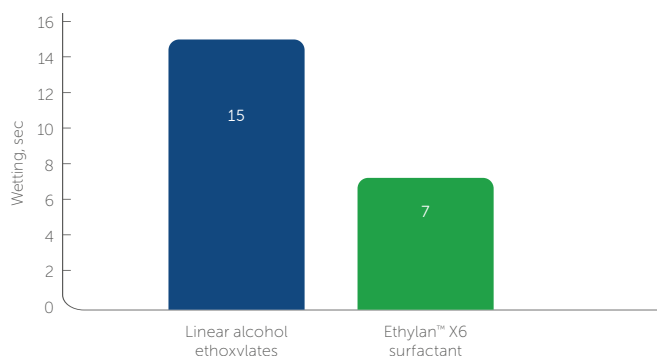
Ethylan™ X4 surfactant provides a naturally ultra-low and unstable foam profile compared to linear alcohol ethoxylates, which can generate excessive and stable foam.

The foaming profile ensures cleaning formulations deliver shorter rinse cycles, water and energy savings, and less mechanical stress on equipment.

Ethylan™ X6 surfactant

Ethylan™ X6 surfactant is a narrow range ethoxylate with an ethoxylation degree of 6.0 EOs, engineered from multi-branched C₁₀ alcohol chemistry. It offers a balanced hydrophilic-lipophilic profile that enhances wetting across both greasy and particulate soils. Its controlled foam and excellent solubility supports concentrated and refill formats, giving formulators the tools to create eco-friendly, high-performing products.

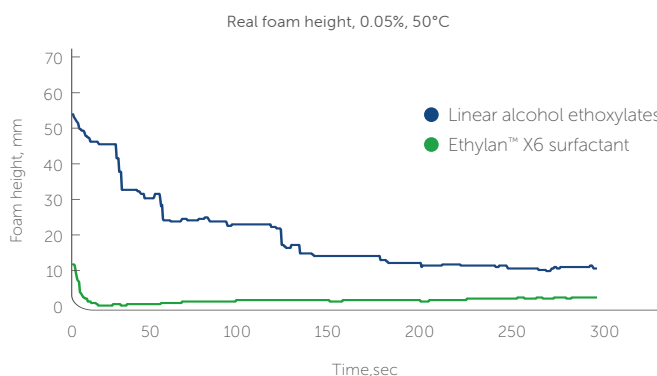
Wetting results vs linear alcohol ethoxylates



Ethylan™ X6 surfactant excels in wetting performance compared with other alcohol ethoxylates, enabling cleaning formulations to rapidly cover large areas and penetrate soils at the microscopic level.

Ethylan™ X6 surfactant provides balanced foam performance, ensuring that cleaning solutions deliver the right sensory experience alongside technical efficiency. Its differentiated narrow range chemistry versus other alcohol ethoxylates in the market ensures consistent foam control, helping formulators design products that not only work effectively on soils but also meet consumer expectations for effortless cleaning and spotless results.

Foaming results vs linear alcohol ethoxylates



Contact us directly for detailed product information and sample request
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