Berol® 360 and Berol® 366 surfactants

Next generation, more sustainable high performance degreasers

Berol® 360 and Berol® 366 surfactants represent a new generation of vegetable based narrow range ethoxylates (NREs) designed for high performance household, industrial, and institutional cleaning applications. These surfactants help formulators create products that deliver exceptional cleaning power while meeting the growing demand for more responsible, sustainable solutions.

High performance NRE surfactants

Berol® 360 and Berol® 366 are unique NRE surfactant degreasers engineered to deliver outstanding cleaning efficiency across a wide range of formulations.

- Berol® 360 surfactant is optimized for demanding industrial and institutional (I&I) applications where maximum degreasing performance is essential
- Berol® 366 surfactant is tailored for household cleaning products, offering strong cleaning power with a milder, more user friendly profile

To further strengthen the sustainability profile of the portfolio, we have introduced Berol® 360 MAX and Berol® 366 MAX surfactants. With a renewable carbon index of 100%, these MAX versions deliver the same trusted performance while offering an enhanced environmental footprint. Their development reflects our ongoing commitment to delivering high performance cleaning technologies that align with evolving sustainability expectations across both consumer and industrial markets.

All products in the Berol® 360/366 surfactant portfolio, including the MAX versions, are manufactured from sustainably derived, vegetable based raw materials. As an active member of the Roundtable on Sustainable Palm Oil (RSPO), we are committed to responsible sourcing to reduce upstream environmental impact. The full range is available with RSPO Mass Balance certification and meets ingredient level requirements*.

* Regulatory data for third-party ecolabel evaluations available on request

Key benefits

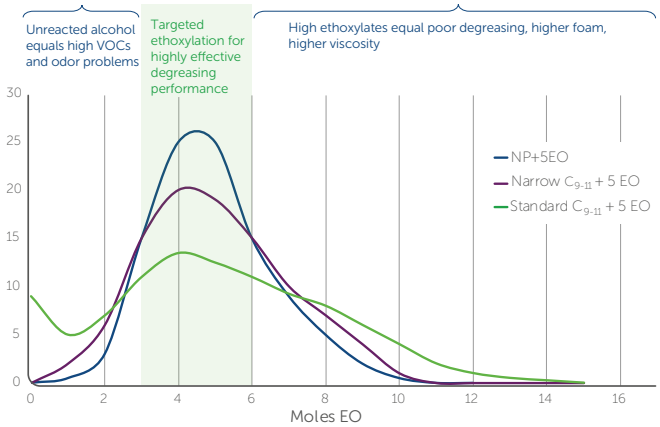
- Proven, efficient degreasing performance with better handling characteristics than standard ethoxylates in both household and I&I applications
- Performance comparable to synthetic NREs, with added consumer and regulatory advantages: low odor, low viscosity, higher biobased content and RSPO certification
- A novel choice for formulators developing greener cleaning products
- Supports consumer demand for more sustainable cleaning solutions
- Can be incorporated into formulations eligible for third party sustainability labels

Why narrow range ethoxylates?

Compared with standard fatty alcohol ethoxylates, NREs offer:

- A higher proportion of targeted ethoxylation for optimized degreasing performance
- Lower levels of unreacted alcohol, reducing odor
- Lower levels of higher ethoxylates, which can cause excessive foaming, viscosification, and reduced cleaning efficiency

Comparison of our NREs with standard ethoxylates and NPE



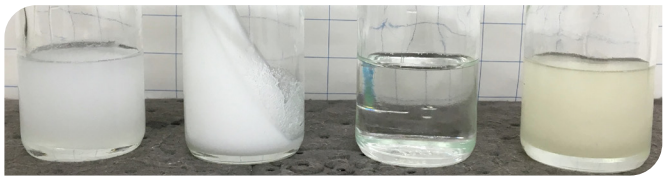
Better material handling

NREs exhibit significantly lower viscosity at reduced temperatures, enabling easier handling and processing in cooler climates. Their lower viscosity also improves dissolution rates during formulation. Additionally, NREs generate less foam than standard ethoxylates, allowing for more vigorous agitation during processing.

Appearance at 0°C

Viscosity at 0°C/32°F – standard vs. narrow range process

Standard process | Narrow range process



C_{9-11} 4EO Std	C_{9-11} 6EO Std	Berol® 360	Berol® 366
Highly viscous	Thick paste	Clear mobile liquid	Slightly viscous

Summary of typical properties of vegetable based NREs

	CMC, g/l	Wetting[1], sec	Foam height[2], mm	HLB	Cloud point, °C
Berol® 360	0.04	11	26-2	10.5	55-59 (BDG)
Berol® 366	0.03	15	59-5	12.1	24-29 (water) 54-59 (water)

[1] According to Draves, at 0.1% and 25°C
[2] According to Ross-Miles, at 0.05% and 50°C, immediately and after 5 minutes

Suggested framework formulations

I&I Alkaline degreaser	Household All purpose cleaner
5.0% Berol® 360	2.0% Berol® 366
3.5% Berol® R648 NG[1]	1.0% Berol® R648 NG[1]
10% Dissolvine® 100-S[2]	0.4% Dissolvine® GL-47-S
0.5% NaOH	balance water
balance water	
Use conc: 1:20-1:60	Ready to use (trigger spray)

[1] or Berol® R648 PO
[2] or Dissolvine® GL-47-S

The formulations shown above may use either Berol® R648 NG or Berol® R648 PO surfactants. Both versions deliver comparable performance; Berol® R648 PO surfactant is available with RSPO Mass Balance certification.

The chelating agent can be selected as Dissolvine® 100-S (EDTA) or Dissolvine® GL-47-S (GLDA). While both provide effective metal ion control, Dissolvine® GL-47-S offers a more environmentally preferred, readily biodegradable alternative.

Contact us directly for detailed product information and sample request
website | nouryon.com/markets/cleaning
email | cleaning@nouryon.com

Nouryon

Nouryon is a global, specialty chemicals leader. Markets and consumers worldwide rely on our essential solutions to manufacture everyday products, such as personal care, cleaning goods, paints and coatings, agriculture and food, pharmaceuticals, and building products. Furthermore, the dedication of approximately 8,200 employees with a shared commitment to our customers, business growth, safety, sustainability and innovation has resulted in a consistently strong financial performance. We operate in over 80 countries around the world with a portfolio of industry-leading brands. Visit our website and follow us @Nouryon and on LinkedIn.

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June 2026

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