

AkzoNobel Surface Chemistry

Berol[®] 609

The perfect sustainable fit for NP9 replacement



Direct drop-in replacement for NP9

The smart chemistry of Berol 609 is designed to match the key properties of NP9 while providing many additional benefits. It is the heart of high performance degreasing.

Berol 609 delivers the excellent cleaning performance of NP9 without all of the environmental concerns and with no need to modify your existing formulations. Berol 609 dissolves faster in cold water, reducing processing times and is much easier to handle at low temperatures.

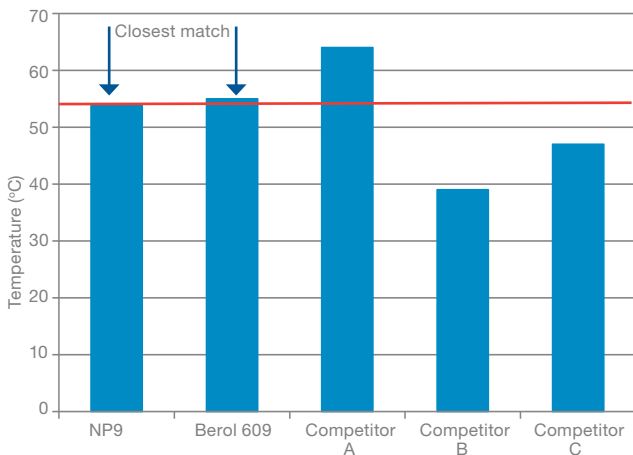
Berol 609 exceeds the degreasing power of other leading NP9 replacements. Berol 609 is an alcohol ethoxylate that was carefully designed to be a direct drop-in replacement for NP9 in aqueous cleaning formulations, so no further changes are needed to maintain the performance of your existing formulation. Besides, the product has a lower pour point and viscosity than NP9 resulting in easier handling for you.

Ready-to-use in your Safer Choice formulation

Berol 609 is an environmentally friendly product with 0% VOC, specially developed to meet the demands of tomorrow. It is listed on CleanGredients and is acceptable for use in Safer Choice cleaning formulations. AkzoNobel is striving to deliver long lasting solutions to the global market with products that reduces our environmental footprint and raw material consumption.

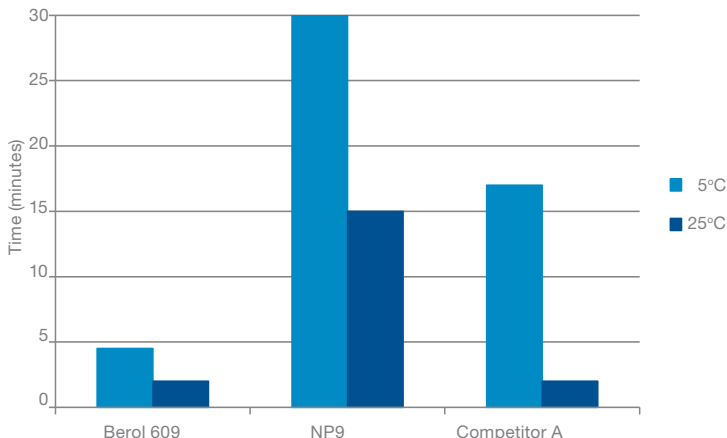


Cloud points of NP9 replacers (1% surfactant in water)



Berol 609 most closely matches the cloud point of NP9 compared to other alcohol ethoxylates (Competitors A, B, C) used to replace NP9

Dissolving rates



Berol 609 dissolves much faster in cold water than NP9 and competitive NP9 replacers (5% surfactant in water, stirred @ 400rpm)

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Berol is a registered trademark of the AkzoNobel group.

Berol 609 cleaning formulations have superior stability at elevated storage temperatures

Surfactant	Room temperature	1 day at 40°C	1 day at 50°C
Berol 609	Clear	Clear	Clear
NP9	Clear	Clear	Slightly hazy
Competitor B	Hazy	Cloudy	Cloudy
Competitor C	Clear	Clear	Cloudy

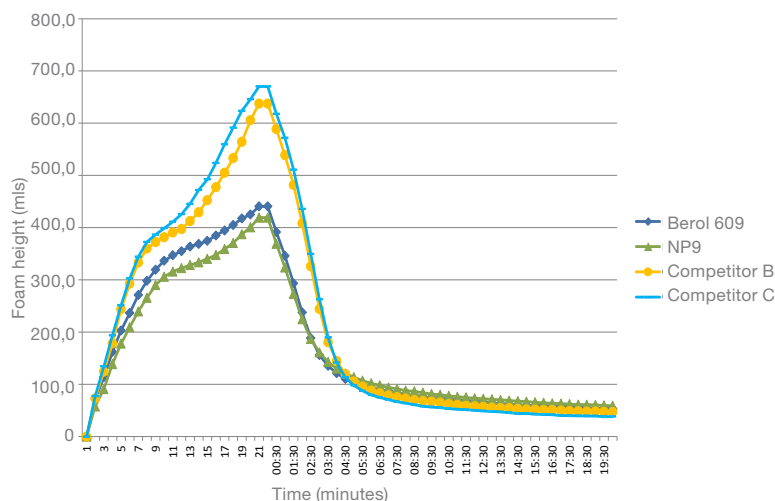
Formulations

- 1% surfactant as supplied
- 1.5% Dissolvine 100-S (~40% Na₄EDTA, aqueous solution)
- Balance water to 100%

The low CMC of Berol 609 enables good fragrance emulsification

Product name	CMC (mg/l) at 25°C
Berol 609	57.4
NP9	61.4
Competitor B	113.2
Competitor C	290.5

SITA foam profile of 0.1% surfactant in water at 25°C



Berol 609 exhibits lower foaming than competitive NP9 replacers for better rinsability.

SITA foam profile of 0.1% surfactant in water at 25°C (stirred 20 x 10 seconds @1000rpm to build foam, foam decay measured every 15 seconds for 30 minutes in total).

Berol 609 is perfect for a wide range of applications

- Multi-purpose hard surface cleaners
- Industrial cleaners (heavy duty degreasers, metal cleaning)
- Vehicle & engine cleaning
- Anywhere you are looking to replace NP9 without losing performance

Summary

- Direct drop-in replacement for NP9 - no need to modify existing formulations
- Dissolves faster in cold water reducing processing time
- Low CMC enables good fragrance emulsification
- Low foam in water & formulation for better rinsability
- Ready to use in your Safer Choice formulation

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