

Technical Information

Surface Chemistry

Subwet 2105

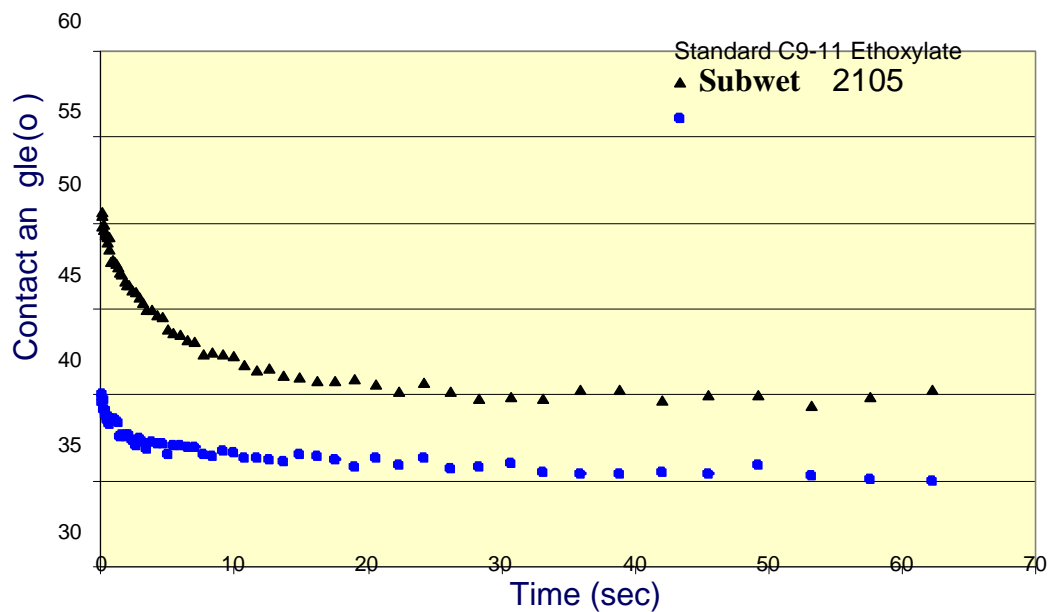
Biodegradable, narrow range ethoxylated surfactant for water-based cleaning applications

Subwet 2105 is a biodegradable, narrow range nonionic surfactant, based on a synthetic primary alcohol, intended for use in water based cleaners.

The advantage of **Subwet 2105** compared with other ethoxylates:

- Improved aquatic toxicity
- Excellent wetting
- Lower foam than standard alcohol ethoxylates
- Low residual alcohol
- Low odor
- Readily biodegradable
- Low dynamic surface tension/Low dynamic contact angle

Subwet 2105 is an efficient surfactant for cleaning. The following graph shows the dynamic contact angle of the **Subwet 2105** compared with a standard ethoxylated alcohol. It aligns at the interface for optimal cleaning.

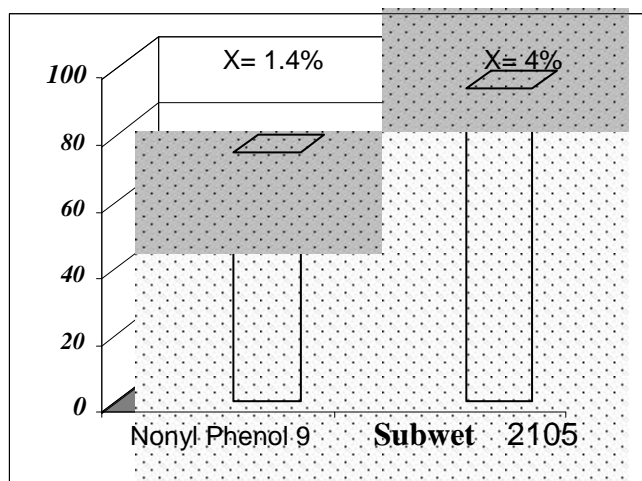


Degreasing Performance

Subwet 2105 Following is a direct comparison of the degreasing action found with **Subwet 2105**. On a pound for pound basis, it is far superior to nonyl phenol 9 mole ethoxylate, as shown following:

Formula:

Hydrotrope - Witcolate™ D-510	X%
Sodium Metasilicate	4%
Sodium EDTA (40%)	7%
Nonionic	1.5%
Water	to 100%



Ecological Information:

Subwet 2105 has a very mild ecotox profile, at listed below:

Toxicological data:

LD50 oral Rat 2,000 mg/kg

Ecotoxicological data: LC 50 96 hours fish 10 - 100 mg/l

EC50 72 hours algae 10 - 100 mg/l

EC50 48 hours Daphnia 10 - 100 mg/l

Biodegradation:

Readily biodegradable >60% BOD 28 days,
Closed Bottle Test (OECD 301D)

Typical Data & Properties

Chemical/Physical data	Typical values
Active content	100%
Appearance, 20°C	clear liquid
Clear point	0°C
Density, 20°C	968 kg/m ³
Flash point	>100°C
Pour point	-9°C
Viscosity, 20°C	30 cP

Specifications

Cloud Point:	47 - 53°C
Color:	200
Hazen max	
pH (1% in water):	5 - 8
water content:	<1%

Surface active characteristics	Typical values
Foam height according to Ross-Miles, 50°C, 0.05%	initial: 5 mm 5 min: 0 mm
[Griffin] HLB value	11.6
[Du Noüy] Surface tension @25°C, 0.1%	27.0 mN/m
[Draves] Wetting @25°C, 0.1%	3 seconds

Solubility (5% Subwet 2105)

2-propanol	soluble
Ethanol	soluble
Low aromatic solvent	soluble
Propylene glycol	soluble
Water	dispersible
White spirit	soluble

Technical Data

Subwet 2105 is an excellent wetting agent and emulsifier in cleaning products.

Subwet 2105 is suitable for use in cleaning products such as liquid detergents and all-purpose cleaners.

Subwet 2105 is suitable for use in water based cleaners, for hard surfaces e.g. vehicle cleaning, RTU cleaners, heavy duty cleaners.

Handling

Subwet 2105 should always be homogenized before use, unless entire amount is used.

How to use Subwet 2105

1. Add water
2. Dissolve salts
3. Add **Subwet** 2105
4. Heat to desired cloud point
5. Add a hydrotrope if needed until solution becomes clear.

