

XELLAN[®]-CLEANER

TECHNICAL DATA SHEET

a SLES-kin EQUIVALENT

Anionic surface-active agents (surfactants) are the main active component in production of liquid detergents. These are primarily alkylsulfates and sulfonates, as well as alkylethoxysulfate, which are the main micelle-forming surfactants with the highest production volume and assortment. The most popular anionic surfactant is sodium lauryl ether sulfate (SLES).

We would like to bring to your attention our new innovation – **XELLAN[®]–CLEANER** – **an effective substitute of SLES**. **XELLAN[®]–CLEANER** has excellent emulsifying and washing properties and can be used in formulations of liquid detergents as an *alternative* instead of the classic sodium lauryl ether sulfate (SLES). **XELLAN[®]–CLEANER** has excellent foaming properties, as well as the ability of thickening by electrolytes (NaCl). Qualitative characteristics of the product are indicated in the table:

Specification of **XELLAN[®]–CLEANER**

Description	Specification		
	grade <i>Power</i>	grade <i>Active</i>	grade <i>Plus</i>
Appearance	<i>Homogeneous paste</i>	<i>Homogeneous thick liquid</i>	
Relative foaming capacity *, %	≥ 100%		
Relative detergency *, %	≥ 160%	≥ 140%	≥ 100%
Thickening ability by electrolyte (NaCl)	<i>Thickenable</i>		
pH value (5% aquatic solution at 20°C)	≥ 7.0		

^{*} - a relative value is indicated in comparison with the standard SLES

The distinctive feature of **XELLAN[®]–CLEANER** is its relative low cost, which allows producers of liquid detergents to form new economical formulations of liquid detergent compositions and to obtain the maximum economic effect. Consumers are able to exclude more expensive SLES from detergent formulations and achieve similar consumer properties of their compositions using the modifications of **XELLAN[®]–CLEANER** as the primary surfactant.



XELLAN[®]–CLEANER is fully water-soluble. We recommend a temperature of 40-45⁰C for better dissolution of the product in water.

For best results the quantity of **XELLAN[®]–CLEANER** in detergents formulations should be ***not less than 7% by mass*** - as the primary surfactant. Also, the combination with other popular components is effective – LABSA, cocamidopropylbetaine (CAPB), cocamide DEA (CDEA), aminoxide, Na₂-EDTA, HEDPA, etc. to achieve the required consumer properties of detergent compositions.

At production of compositions using **XELLAN[®]–CLEANER**, as a viscosity regulator of the compositions, for their thickening it is recommended to use aquatic solutions of sodium chloride (NaCl).

The commodity form of **XELLAN[®]–CLEANER** has a thick consistency. Recommended temperature for product pumping is 45-50⁰C. For pumping the product to a mixer, it is recommended to use a gear pump or other available for a consumer methods.

Our specialists are ready to provide technical support for customers concerning adaptation of **XELLAN[®]–CLEANER** to various formulations of liquid detergents.





XELLAN[®]—CLEANER
POWER

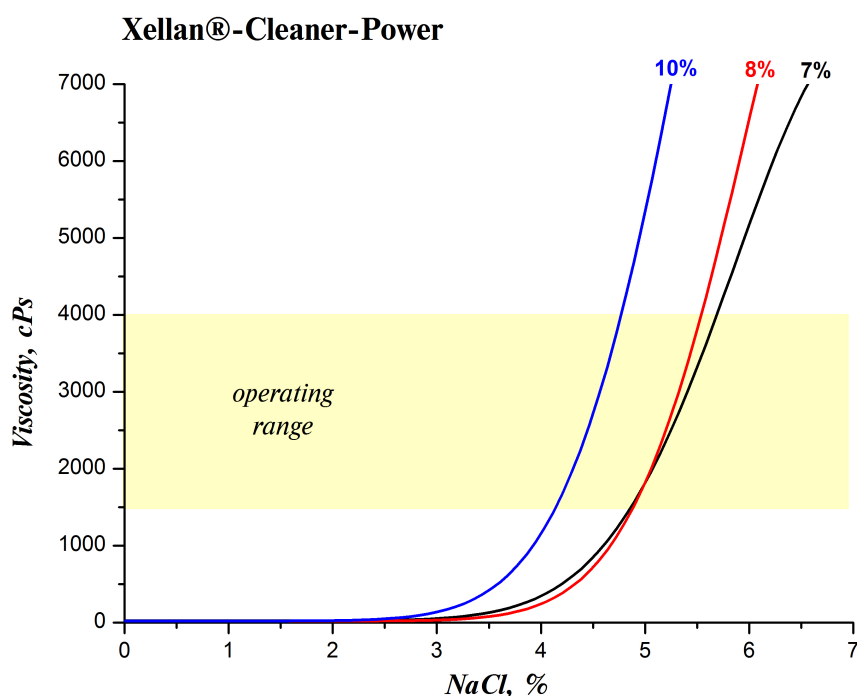
a SLES-kin EQUIVALENT

XELLAN[®]-CLEANER (grade POWER) is a water-soluble homogeneous paste. Recommended temperature for dissolution in water is 40-45°C, recommended temperature for pumping is 45-50°C.

XELLAN[®]-CLEANER (grade POWER) may be used as an alternative to SLES. The product has an excellent detergency power and greatly surpass SLES.

The recommended quantity of the product in detergents formulations should be **not less than 7% by mass** - as the primary surfactant. **XELLAN[®]-CLEANER (grade POWER)** in aquatic solutions is compatible with LABSA, Na₂-EDTA, HEDPA in case of **pH of the solution is above 7**; sodium hydroxide (NaOH) is recommended as pH regulator.

As a viscosity regulator for detergents based on **XELLAN[®]-CLEANER (grade POWER)** for their thickening it is recommended to use aquatic solutions of sodium chloride (NaCl). The diagram indicates the curves of thickening with sodium chloride of 7%-, 8%-, 10% - aquatic solutions of **XELLAN[®]-CLEANER (grade POWER)**.



The curves of thickening with sodium chloride of aquatic solutions of **XELLAN[®]-CLEANER (grade POWER)**.
3 samples were tested with mass fraction in water of **XELLAN[®]-CLEANER (grade POWER)** in 7%-, 8%- and 10%.

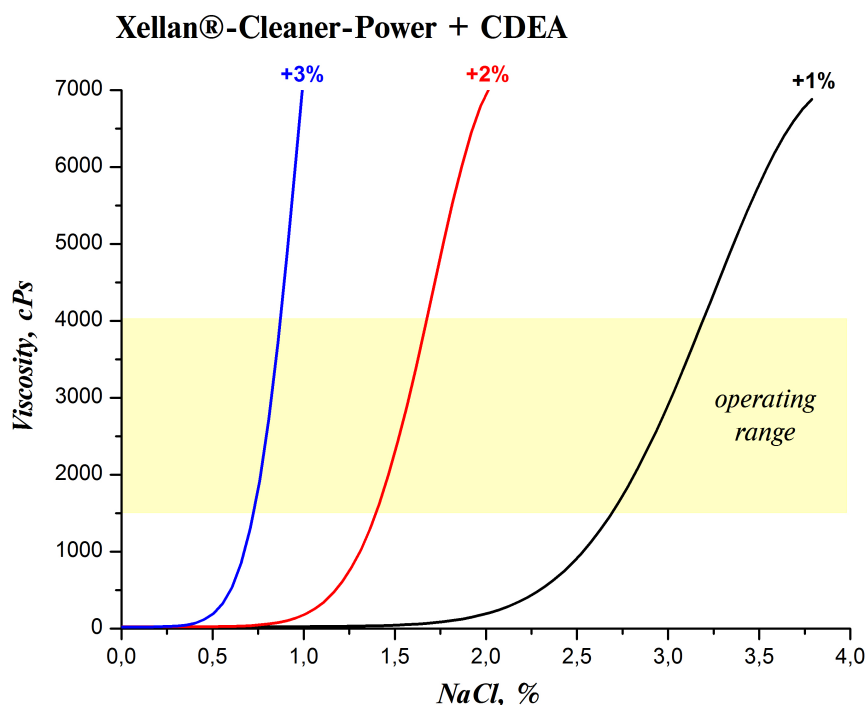
NaCl concentration(%) is indicated in recalculation on 100%-substance.

Operating range is a standard range of viscosity of liquid detergents
(selected within 1500-4000 cPs)



To achieve the required consumer properties of detergent compositions, the combination of **XELLAN[®]-CLEANER (grade POWER)** with *cocamidopropylbetaine (CAPB)*, *CDEA (cocamide DEA)* and *aminoxide* is allowed.

It is recommended to use CDEA in amount of 1-3% by mass in detergent formulations to obtain homogeneous thick compositions with good wetting ability. The diagram indicates the curves of thickening with sodium chloride of 7%-aquatic solutions of **XELLAN[®]-CLEANER (grade POWER)** with addition of 1%-, 2%-, 3%- of CDEA.



The curves of thickening with sodium chloride of 7%-aquatic solution of **XELLAN[®]-CLEANER (grade POWER)** with addition of CDEA in 1%, 2%, 3%.

NaCl concentration(%) is indicated in recalculation on 100%-substance.

Operating range is a standard range of viscosity of liquid detergents (selected within 1500-4000 cPs)





XELLAN[®] – CLEANER
ACTIVE

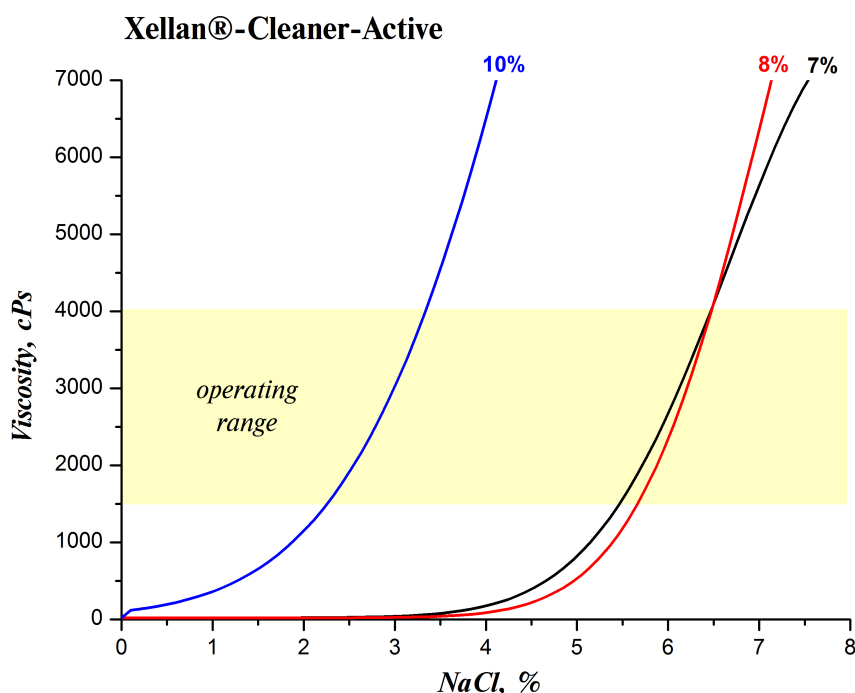
a SLES-kin EQUIVALENT

XELLAN[®]-CLEANER (grade ACTIVE) is a water-soluble homogeneous thick liquid. Recommended temperature for dissolution in water is 40-45⁰C, recommended temperature for pumping is 45-50⁰C.

XELLAN[®]-CLEANER (grade ACTIVE) may be used as an alternative to SLES. The product has an excellent detergency and foaming power, not inferior to SLES.

The recommended quantity of the product in detergents formulations should be **not less than 7% by mass** - as the primary surfactant. **XELLAN[®]-CLEANER (grade ACTIVE)** in aquatic solutions is compatible with LABSA, Na₂-EDTA, HEDPA in case of **pH of the solution is above 7**; sodium hydroxide (NaOH) is recommended as pH regulator.

As a viscosity regulator for detergents based on **XELLAN[®]-CLEANER (grade ACTIVE)** for their thickening it is recommended to use aquatic solutions of sodium chloride (NaCl). The diagram indicates the curves of thickening with sodium chloride of 7%-, 8%-, 10% - aquatic solutions of **XELLAN[®]-CLEANER (grade ACTIVE)**.



The curves of thickening with sodium chloride of aquatic solutions of **XELLAN[®]-CLEANER (grade ACTIVE)**.

3 samples were tested with mass fraction in water of **XELLAN[®]-CLEANER (grade ACTIVE)** in 7%-, 8%- and 10%.

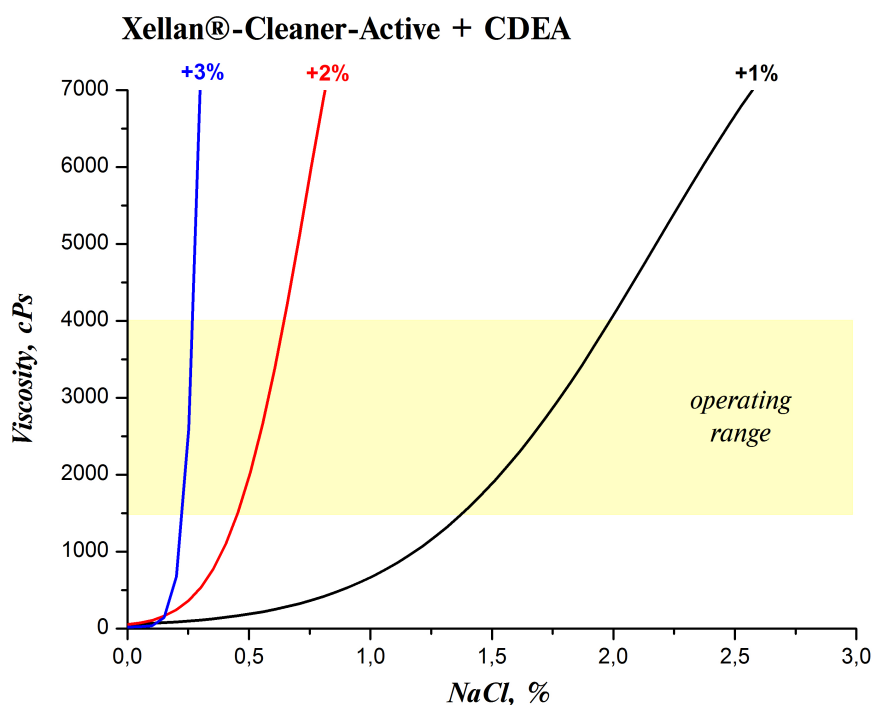
NaCl concentration(%) is indicated in recalculation on 100%-substance.

Operating range is a standard range of viscosity of liquid detergents
(selected within 1500-4000 cPs)



To achieve the required consumer properties of detergent compositions, the combination of **XELLAN[®]-CLEANER (grade ACTIVE)** with *cocamidopropylbetaine (CAPB)*, *CDEA (cocamide DEA)* and *aminoxide* is allowed.

It is recommended to use CDEA in amount of 1-3% by mass in detergent formulations to obtain homogeneous thick compositions with good wetting ability. The diagram indicates the curves of thickening with sodium chloride of 7%-aquatic solutions of **XELLAN[®]-CLEANER (grade ACTIVE)** with addition of 1%-, 2%-, 3%- of CDEA.



The curves of thickening with sodium chloride of 7%-aquatic solution of **XELLAN[®]-CLEANER (grade ACTIVE)** with addition of CDEA in 1%, 2%, 3%.

NaCl concentration(%) is indicated in recalculation on 100%-substance.

Operating range is a standard range of viscosity of liquid detergents (selected within 1500-4000 cPs)





XELLAN[®]—CLEANER
PLUS

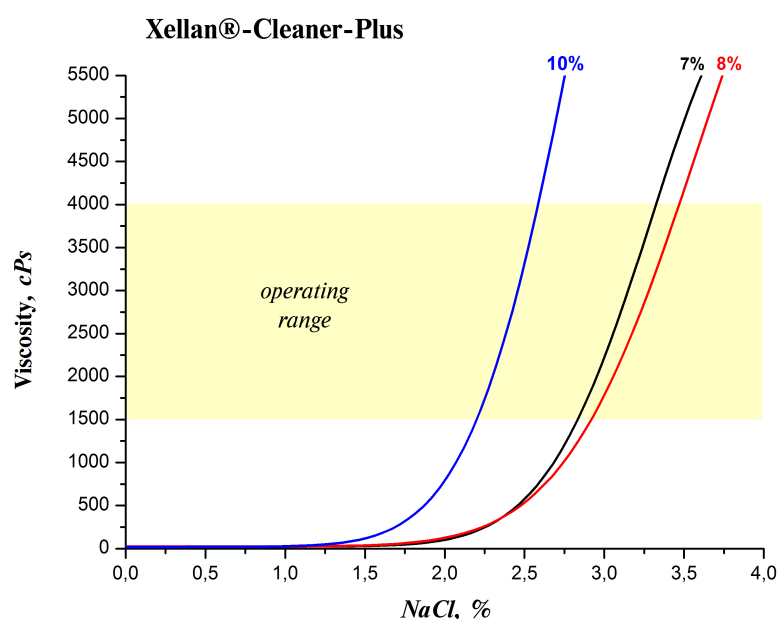
a SLES-kin EQUIVALENT

XELLAN[®]-CLEANER (grade PLUS) is a water-soluble homogeneous thick bright-yellow liquid. Recommended temperature for dissolution in water is 40-45°C, recommended temperature for pumping is 45-50°C.

XELLAN[®]-CLEANER (grade PLUS) is designed for using as an alternative to SLES for cheap detergents production. The product has an excellent detergency and foaming power, not inferior to SLES. At thickening by sodium chloride (NaCl) it forms homogeneous thick compositions. Best results in formulations may be achieved in a combination with CDEA (cocamide DEA).

The recommended quantity of the product in detergents formulations should be **not less 7% by mass** - as the primary surfactant. **XELLAN[®]-CLEANER (grade PLUS)** in aquatic solutions is compatible with LABSA, Na₂-EDTA, HEDPA in case of **pH of the solution is above 7**; sodium hydroxide (NaOH) is recommended as pH regulator.

As a viscosity regulator for detergents based on **XELLAN[®]-CLEANER (grade PLUS)** for their thickening it is recommended to use aquatic solutions of sodium chloride (NaCl). The diagram indicates the curves of thickening with sodium chloride of 7%-, 8%-, 10% - aquatic solutions of **XELLAN[®]-CLEANER (grade PLUS)**.



*The curves of thickening with sodium chloride of aquatic solutions of **XELLAN[®]-CLEANER (grade PLUS)**.*

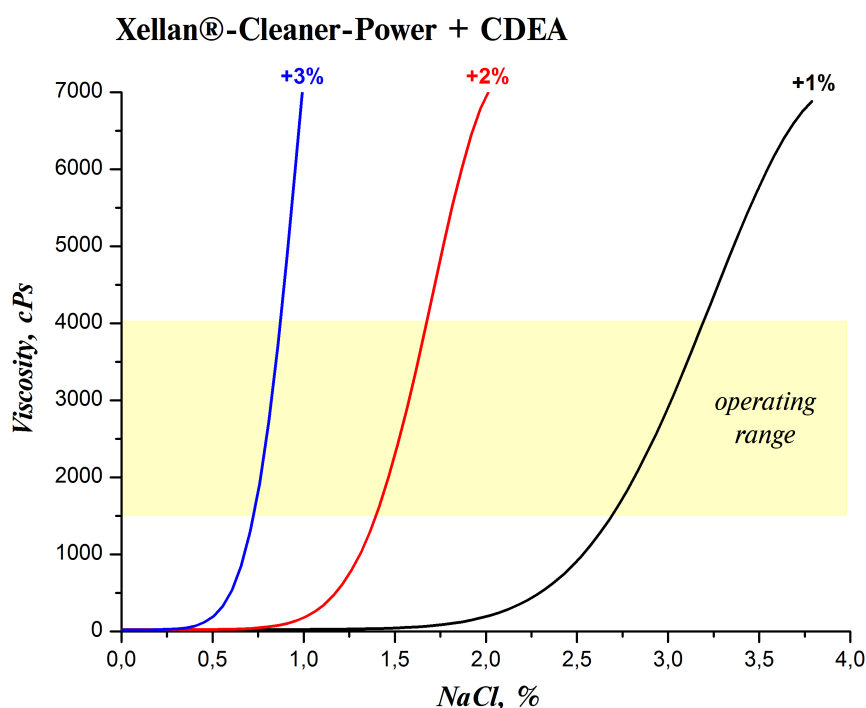
*3 samples were tested with mass fraction in water of **XELLAN[®]-CLEANER (brand PLUS)** in 7%-, 8%- and 10%.*

NaCl concentration(%) is indicated in recalculation on 100%-substance.

*Operating range is a standard range of viscosity of liquid detergents
(selected within 1500-4000 cPs)*



To achieve the best consumer properties of detergent compositions, the combination of **XELLAN®-CLEANER (grade PLUS)** with *CDEA (cocamide DEA)* in the amount of 1-3% by mass is recommended to obtain homogeneous thick compositions of detergents with the required viscosity and good wetting ability. The diagram indicates the curves of thickening with sodium chloride of 7%-aquatic solutions of **XELLAN®-CLEANER (grade PLUS)** with addition of 1%-, 2%-, 3%- of *CDEA*.



*The curves of thickening with sodium chloride of 7%-aquatic solution of **XELLAN®-CLEANER (grade PLUS)** with addition of CDEA in 1%, 2%, 3%.*

NaCl concentration(%) is indicated in recalculation on 100%-substance.

*Operating range is a standard range of viscosity of liquid detergents
(selected within 1500-4000 cPs)*

