

### Description

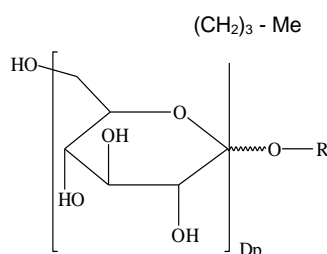
SIMULSOL SL 4 is an alkylpolyglucoside, a non-ionic non ethoxylated surfactant prepared from glucose and alcohol.

SIMULSOL SL 4 is a viscosity reducer of formulations containing surfactants.

Alkylpolyglucoside similarity with natural compounds leads to very favourable toxicological and ecotoxicological behaviour.

Simulsol SL 4 can be used in various applications in Agro, HI&I and oilfield.

### Chemical formula



### Identity card

Analytical data	Standard limits	Method
Appearance 20°C	Limpid liquid	S 52 180
Colour (Gardner)	7 max	S 52 150
HLB	16.3	
Solid content	49 to 51%	S 52 034
pH	5 to 7	NFT 73 206
Freezing point	-6°C	
Aerobic biodegradability	Readily	OCDE 301F
Anaerobic biodegradability	>100% (56 days)	ISO 11734
Shelf life	1095	
Labels	Suitable for Ecolabel DID listed TSCA Dfe-US CleanGredients list: underways	

- *Non ionic surfactant*
- *No cloud point*
- *Readily biodegradable*
- *Suitable for highly alkaline or electrolytic media*
- *Reduces the viscosity of surfactants formulations with no alteration of performances*
- *Very limited up to no foam production*
- *Contributes to surface tension reduction*
- *Easy to handle : liquid form*
- *No flash point*
- *Compatible with non-ionic, anionic and cationic surfactants*
- *Suitable for Ecolabel, TSCA listed*

## Technical properties

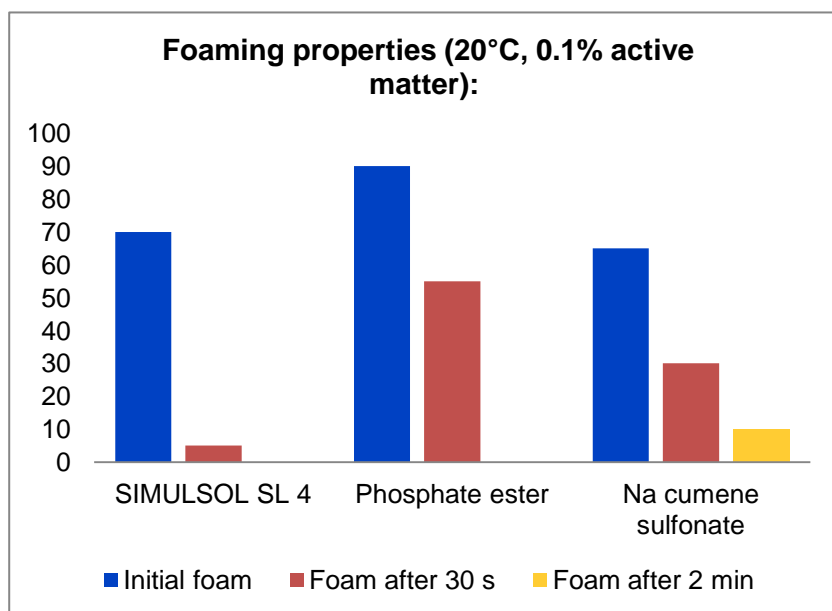
### 1- Viscosity reducer

SIMULSOL SL 4 allows a significant reduction of the viscosity of surfactant formulations and is particularly advantageous versus conventional viscosity modifiers.

To prevent any microbiological growth we recommend adding biocides.

### 2- Limited foam production

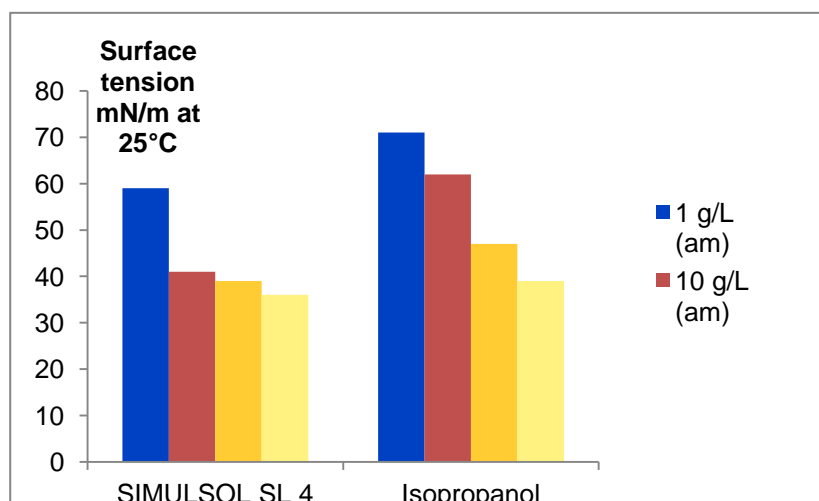
SIMULSOL <sup>TM</sup> SL 4 produces less foam than sodium cumene sulfonate and phosphate ester



Method: foaming properties have been measured using a bubbling method and expressed as the volume (in mL) of initial foam, foam after 30 seconds and foam after 2 minutes.

### 3- Surface tension reduction

Surface tension values obtained for aqueous solutions of SIMULSOL SL 4 and isopropanol.



SIMULSOL SL 4 has better surface tension reduction properties than isopropanol: 10 g / L (active matter) of SIMULSOL SL 4 is sufficient to decrease surface tension down to 40 mN/m whereas 100 g/L is needed to obtain the same value with isopropanol.

#### 4- Other properties

Compared to viscosity reducers like ethanol and isopropanol, SIMULSOL SL 4 has no flash point.

In opposite to cumene sulfonates and phosphate esters, SIMULSOL SL 4 is compatible with anionic and cationic surfactants.

SIMULSOL SL 4 is extremely stable upon heating and in highly alkaline solutions.

### Potential applications

	Compounds	%	Appearance Recommended Ratio Range
Wine vats cleaning	NaOH 100 % Na gluconate 50 % SIMULSOL SL 4	92 7.5 0.5	Powder 2 to 5 %
Aluminium glazing (e.g : Metal containers in Perfumery )	NaOH 50 % Na gluconate 50 % SIMULSOL SL 4 Water	80 6 1 qs	Liquid 1 to 2 % at 60 ° C by spraying
Autoclave cleaning (e.g. : cans)	SIMULSOL SL 4 Dequest 2000 Monoethanolamine Water	38 1 1 qs	Liquid 0.05 to 0.5 % at 120 ° C
Stainless steel Degreasing by aspersion	Na Tripolyphosphate Na metasilicate, 5H <sub>2</sub> O SIMULSOL SL 4	60 36 3	Powder 0.5 to 1 % at 60 °C by spraying
Stainless steel Degreasing by ultrasonics	Na Tripolyphosphate Na metasilicate, 5H <sub>2</sub> O SIMULSOL SL 55 SIMULSOL SL 4	29 58 9 3	Powder 1 % at 60 ° C
Brewery vats cleaning (stone beer remover)	EDTA Monoethanolamine SIMULSOL SL 4 Water	25 20 2 ds	Liquid 10 to 30 % by spraying
Industrial Dishwashing machine detergent	Na EDTA 40 % NaOH 50 % SIMULSOL SL 4 Water	50 12 2 qs	Liquid 0.5 to 1 % at 80 ° C
Chain Lubricant (e.g. : bottling chain)	Oleic acid KOH 100% SIMULSOL SL 4 Na EDTA Water	8 1.5 8 2 qs	Liquid 1 to 2 %

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