

Lutensol®		TO 79	TO 8	TO 89	TO 10	TO 109
Physical form (23 °C)		Liquid	Liquid	Liquid	Liquid	Liquid
Degree of ethoxylation		approx. 7	approx. 8	approx. 8	approx. 10	approx. 10
Concentration	%	approx. 90	approx. 100	approx. 90	approx. 100	approx. 85
Cloud point (EN 1890)*						
Method A	°C	–	approx. 60	approx. 60	approx. 70	approx. 70
Method B	°C	–	approx. 46	approx. 46	approx. 54	approx. 54
Method C	°C	–	approx. 35	approx. 35	approx. 43	approx. 43
Method D	°C	approx. 72	approx. 80	approx. 80	approx. 81	approx. 81
Method E	°C	approx. 70	approx. 80	approx. 80	approx. 82	approx. 82
Molar mass (calculated from hydroxyl number)	g/mol	approx. 500	approx. 600	approx. 600	approx. 630	approx. 630
pH (5% in water)**		approx. 7	approx. 7	approx. 7	approx. 7	approx. 7
Density (DIN 51757, 23 °C)	g/cm <sup>3</sup>	approx. 0.99	approx. 1.01	approx. 1.02	approx. 0.97 (60 °C)	approx. 1.02
Dropping point (DIN 51801)	°C	<5	approx. 22	<5	approx. 25	approx. 5
Congeaing point (ISO 2207)	°C	<5	approx. 10	<5	approx. 14	<5
Melting point	°C				approx. 21	
Viscosity (EN 12092, 23 °C, Brookfield, 60 rpm)	mPa·s	approx. 110	approx. 150	approx. 120	approx. 30 (60 °C)	approx. 150
Hydroxyl number (DIN 53240)	mgKOH/g	approx. 110	approx. 95	approx. 95	approx. 90	approx. 90
Hydrophilic-lipophilic balance		approx. 12	approx. 13	approx. 13	approx. 13.5	approx. 13.5
Flash point (DIN 51376)	°C	>100	>100	>100	>100	>100
Wetting power (EN 1772, in distilled water with 2 g/l soda ash at 23 °C)						
0.5 g/l	s	approx. 60	approx. 70	approx. 90	approx. 80	approx. 80
1.0 g/l	s	approx. 20	approx. 25	approx. 30	approx. 30	approx. 35
2.0 g/l	s	approx. 5	approx. 10	approx. 10	approx. 10	approx. 10
Foam formation (EN 12728, 40 °C, 2 g/l in water with 1.8 mmol Ca <sup>2+</sup> -ions/l, after 30 sec)	cm <sup>3</sup>	approx. 50	approx. 550	approx. 550	approx. 600	approx. 600
Surface tension*** (EN 14370, 1 g/l in distilled water at 23 °C)	mN/m	approx. 27	approx. 28	approx. 28	approx. 28	approx. 29

\* Cloud point according to EN 1890:

Method A : 1 g of surfactant + 100 g of distilled water

Method B : 1 g of surfactant + 100 g of NaCl solution (c = 50 g/l)

Method C : 1 g of surfactant + 100 g of NaCl solution (c = 100 g/l)

Method D : 5 g of surfactant + 45 g of diethylene glycol monobutyl ether solution (c = 250 g/l)

Method E : 5 g of surfactant + 25 g of diethylene glycol monobutyl ether solution (c = 250 g/l)

\*\* The pH of the Lutensol® TO types can decrease during storage, but this does not have any effect on their performance.

\*\*\* Applying Harkins-Jordan correction.