Technical Information

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08_130222e-02/Page 1 of 6
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Dehydol® LT 7

Nonionic surfactant for detergent and cleaner industry.

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We create chemistry

Chemical character

Dehydol® LT 7 is a nonionic surfactant. It is an alkyl polyethylene glycol ether made from a C_{12}-/C_{18}-alcohol and ethylene oxide.

It conforms to the following formula:

$$RO(CH_2CH_2O)_xH$$

R = C_{12} to C_{18} Alkyl
x = 7

The numeric code in the product name indicates in general the degree of ethoxilation.

PRD-No.*

30528454

* BASF's commercial product numbers.

Appearance

Dehydol® LT 7 is a cloudy liquid at room temperature and tends to form sediment.

Dehydol® LT 7 becomes clear liquid at 40 °C.

Handling and Storage

Handling ONLY packaged goods

a) Dehydol® LT 7 should be stored indoors in a dry place.
Storage rooms must not be overheated (see flash point).

b) Dehydol® LT 7 is hygroscopic due to its good solubility in water, with the result that it may absorb moisture very quickly. Drums must be resealed each time they are opened.

c) The storage temperature should not be allowed to fall substantially below 20 °C. The congealing point of Dehydol® LT 7also needs to be taken into account.

d) Dehydol® LT 7 is a cloudy liquid and tends to form sediment, it becomes clear liquid at 40 °C.

e) Liquid that has solidified or that shows signs of sedimentation should be heated to 50 – 70 °C and homogenized before it is processed.
Please mix sufficiently prior to use.

f) Drums or IBCs that have solidified or that have begun to precipitate should be reconstituted by gentle heating, preferably in a heating cabinet.
The temperature must not be allowed to exceed 70 °C.
Please mix sufficiently prior to use.
This also applies if drums are heated by external electrical elements.
Internal electrical elements should not be used because of the localized anomalies in temperature that they cause.

g) Please refer to the latest Safety Data Sheet for detailed information on product safety.

Handling ONLY bulk goods

a) The storage temperature for bulk product must be between min. +30 °C and max. +70 °C. Storage temperatures above 70 °C may cause an increase of color number.

b) Dehydol® LT 7 is hygroscopic due to its good solubility in water, with the result that it may absorb moisture very quickly.

c) Dehydol® LT 7 must be blanketed with nitrogen if it is stored in heated tanks (at 50 – 60 °C) to prevent it from encountering air contact. Constant, gentle stirring helps to prevent it being discolored as a result of prolonged contact with electrical elements or external heating coils.

d) Dehydol® LT 7 is a cloudy liquid and tends to form sediment, it becomes clear liquid at 40 °C.

e) Liquid that has solidified or that shows signs of sedimentation should be heated to 50 – 70 °C and homogenized before it is processed. Please mix sufficiently prior to use.

f) Please refer to the latest Safety Data Sheet for detailed information on product safety.

Materials

The following materials can be used for tanks and drums:

a) Stainless steel 1.4541 – AISI 321 (X6 CrNiTi 18-10)

b) Stainless steel 1.4571 – AISI 316 Ti (X6 CrNiMoTi 17-12-2)

c) Stainless steel 1.4306 – AISI 304 L (X2 CrNi 19-11)

d) HDPE – high density polyethylene

e) LDPE – low density polyethylene

Shelf life

Provided it is stored properly and drums are kept tightly sealed, Dehydol® LT 7 has a shelf life of at least 24 months in its original packaging.

Properties

Some physical properties are listed in the table below. These are typical values only and not all of them are monitored on a regular basis. They are correct at the time of publication and do not necessarily form part of the product specification. A detailed product specification is available on request or via BASF's WorldAccount: https://worldaccount.basf.com (registered access).

Dehydol® LT 7	**Unit**	**Value**
Physical form (25 °C)		liquid
Degree of ethoxilation		approx. 7
Concentration	%	approx. 100
Cloud points (EN 1890)*		
Method A	°C	approx. 53
Method B	°C	approx. 42
Method C	°C	approx. 33
Method D	°C	approx. 80
Method E	°C	approx. 79
Average molar mass (from OH number)	g/mol	approx. 510
pH value (EN 1262, solution B)**		approx. 7
Density (DIN 51757)		
20 °C	g/cm³	approx. 0.99
40 °C	g/cm³	approx. 0.97
70 °C	g/cm³	approx. 0.95
Dropping point (DIN 51801)	°C	approx. 28
Congealing point (ISO 2207)	°C	approx. 15
Viscosity (EN 12092, 40 °C, Brookfield, 60 rpm)	mPa·s	approx. 40
Hydroxyl number (DIN 53240)	mg KOH/g	approx. 110
HLB value		approx. 12
Flash point (ISO 2592)	°C	approx. 210
Wetting (EN 1772, distilled water, 23 °C, 2 g Soda ash/L)		
0.5 g/L	s	approx. 120
1.0 g/L	s	approx. 70
2.0 g/L	s	approx. 25
Foam volume (EN 12728, 40 °C, 2 g/l water at a hardness of 1.8 mmol Ca-ions/l, after 30 s)	cm³	approx. 280
Surface tension (EN 14370, 1 g/L in distilled water, 23 °C)***	mN/m	approx. 29

* *Cloud point EN 1890:*
Method A: 1 g of surfactant + 100 g of dist. 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 butyldiglycol solution (c = 250 g/L)
Method E: 5 g of surfactant + 25 g of butyldiglycol solution (c = 250 g/L)

** *The pH value of Dehydol® LT 7 can decrease during storage, but this does not have any effect on its performance.*

*** *Applying Harkins-Jordan correction.*

Solubility

Details on the solubility of Dehydol® LT 7 in various solvents are given in the table below.

Solubility of the Dehydol® LT 7 (10% at 25 °C)

Distilled water	+
Potable water (2.7 mmol Ca^{2+}-Ions/l)	+
Caustic msoda (5%)	+
Hydrochloric acid (5%)	+
Salt solution (5%)	+
Solvent naphtha	–
Ethanol, Isopropanol	+
Aromatic hydrocarbons	+

+ = *clear solution*
± = *sparingly soluble (insoluble sediment)*
○= *insoluble (phase separation)*
– = *forms an opaque soluble, homogeneous emulsion*

Viscosity

The relationship between viscosity and temperature is always an important point to consider when Dehydol® LT 7 is stored or shipped. This is shown in the following table (mPa·s, Brookfield LVT):

Temperature (°C)	Viscosity (mPa·s)
0	solid
10	$>10^5$
20	$>10^5$
23	500
30	100
40	40
50	25
60	<20

We would recommend the preparation of 10 – 25% stock solutions of Dehydol® LT 7 if it is to be used in the form of very dilute solutions, or if it is to be added to other solutions. This makes it very much easier to dilute it later on.

Dehydol® LT 7 can form fairly stiff gels at certain concentrations when water is added. The figures below were measured using a Brookfield-Viscosimeter at 23 °C and 60 rpm.

The viscosity of Dehydol® LT 7 at 23 °C as a function of concentration in water (all values in mPa·s)

Water content (%)	Viscosity (mPa·s)
0	500
10	150
20	30000
30	50000
40	$>10^5$
50	$>10^5$
60	$>10^5$
70	800
80	40
90	<20

The numbers reported h ave to be regarded as maximum values; the values measured immediately after mixing will be lower than the numbers reported.

Safety

Detailed information on the product described in this leaflet can be found in our relevant Health and Safety Information (Material Safety Data Sheet) available via BASF's WorldAccount: https://worldaccount.basf.com (registered access).

We are not aware of any ill effect that can result from using Dehydol® LT 7 for the purpose for which it is intended and from processing it in accordance with current practices.

According to the experience that we have gained over many years and other information at our disposal, Dehydol® LT 7 does not exert harmful effects on health, provided it is used properly, due attention is given to the precautions necessary for handling chemicals, and the information and advice given in our Safety Data Sheets are observed.

Labelling

Please consult the current Safety Data Sheets for information on the classification and labelling of our products and other information relevant to safety.

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