Technical Information

March 2014

WF-No. 3707

Demelan® VPC

® = Registered trademark of BASF in many countries.

Nonionic surfactant for detergent and cleaner industry, and for the chemical and allied industry

BASF

We create chemistry

Chemical character

Demelan® VPC is a blend of ethoxylated fatty alcohols and ethoxylated fatty amines.

PRD-No.*

30600719

* BASF's commercial product numbers.

Properties

Demelan® VPC is a cloudy liquid at room temperature and tends to form sediment. Demelan® VPC becomes clear liquid at approx. 40 °C.

Demelan® VPC	Unit	Value
Physical form (23 °C)		Liquid
Active matter (100% - water content)		approx. 95
Water content (DIN 13267)	%	approx. 5
Amine value (DIN 16945)	mg KOH/g	approx. 112
Cloud points (EN 1890)*		
Method D	°C	approx. 66
Method E	°C	approx. 58
pH value (EN 1262, solution A)**		approx. 10
Density (DIN 51757, 40 °C)	g/cm³	approx. 0.93
Pourpoint (ISO 3016)	°C	approx. 15
Viscosity (EN 12092, 23 °C, Brookfield, 60 rpm)	mPa·s	approx. 250
Flash point (ISO 2592)	°C	approx. 200
Wetting (EN 1772, distilled water, 23 °C, 2 g Soda ash/l)		
0.5 g/l	s	>300
1.0 g/l	s	>300
2.0 g/l	s	>300
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. 20
Surface tension (EN 14370, 1 g/l in distilled water, 23 °C)***	mN/m	approx. 29

The above information is correct at the time of going to press. It does not necessarily form part of the product specification. A detailed product specification is available from your local BASF representative.

* *Cloud point EN 1890:*
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 Demelan® VPC can decrease during storage, but this does not have any effect on its performance.*

*** *Applying Harkins-Jordan correction.*

Solubility

Details on the solubility of Demelan® VPC in various solvents are given in the table below:

Solubility of Demelan® VPC (10% at 23 °C)

Distilled water	–
Potable water (2.7 mmol Ca^{2+}-Ions/l)	–
Caustic soda (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 Demelan® VPC is stored or shipped. This is shown in the following table (mPa·s, Brookfield LVT):

Viscosity at °C	Demelan® VPC
0	solid
10	$>10^5$
20	350
23	250
30	160
40	80
50	50
60	30

We would recommend the preparation of 10 – 25% stock solutions of Demelan® VPC 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.

Demelan® VPC 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 Demelan® VPC at 23 °C as a function of concentration in water (all values in mPa·s):

Water content in %	Demelan® VPC
0	250
10	$>10^5$
20	$>10^5$
30	$>10^5$
40	50000
50	40000
60	30000
70	3000
80	400
90	4000

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

Storage

a) Demelan® VPC should be stored indoors in a dry place. Storage rooms must not be overheated.

b) Demelan® VPC 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 pourpoint of Demelan® VPC also needs to be taken into account.

d) Demelan® VPC is a cloudy liquid and tends to form sediment, it becomes clear liquid at approx. 40 °C

e) Liquid that has solidified or that shows signs of sedimentation should be heated to max. 40 °C and homogenized before it is processed. Please mix sufficiently prior to use.

f) Drums 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 40 °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) Demelan® VPC must be blanketed with nitrogen if it is stored in heated tanks (at 35 – 40 °C) to prevent it from coming into contact with air. Constant, gentle stirring helps to prevent it being discolored as a result of prolonged contact with electrical elements or external heating coils.

Materials

The following materials can be used for tanks and drums:

a) Stainless steel 1.4541 - AISI 321 stainless steel (X6 CrNiTi 1810)
b) Stainless steel 1.4571 - AISI 316 Ti stainless steel (X6 CrNiMoTi 17122)
c) Stainless steel 1.4306 - AISI 304 L stainless steel (X2 CrNi 1911)

Shelf life

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

Safety

We know of no ill effects that could have resulted from using Demelan® VPC 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, Demelan® VPC 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.

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

Note

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