
Technical Information

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® = Registered trademark of BASF
in many countries.

Sokalan® HP 20

Multifunctional, cationic polyethylene imine for the detergents and cleaners industry.

Chemical nature

Sokalan® HP 20 is a multifunctional polyethylene imine (PEI).

PRD-No.*

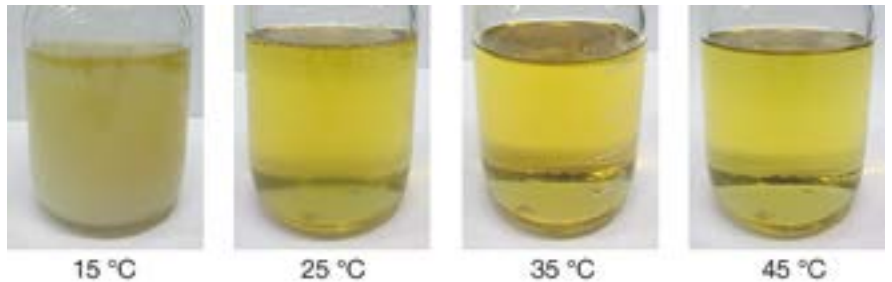
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* BASF's commercial product numbers.

Appearance

Sokalan® HP 20 is a clear to slightly cloudy, yellowish to brownish liquid at room temperature and tends to form sediment in the coldness. See pictures at temperatures below.

Appearance at various temperatures:

**Handling and Storage****Handling ONLY packaged goods**

- Sokalan® HP 20 should be stored in a dry place in its original sealed packaging.
- Sokalan® HP 20 can slightly separate during the storage time. The product must be homogenized before it is processed. It must be mixed sufficiently prior to use.
- The storage temperature must be between min. +20 °C and max. +40 °C. Storage temperatures above +40 °C will cause an increase of the color number. At low temperatures (approx. +20 °C) Sokalan® HP 20 forms crystals and becomes solid. Drums or IBCs containing solidified product or liquid that have begun to precipitate or separated should be reconstituted by gentle heating, preferably in a heating cabinet. Warming up to about +25 °C to +40 °C allows the product to become liquid again. It must be mixed 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 can cause.
- Sokalan® HP 20 must be protected from sunlight and high temperatures to avoid discoloration and the formation of surface films.
- Sokalan® HP 20 must be blanketed with nitrogen if it is stored to prevent air contact. Air contact can cause discoloration.
- Please refer to the latest Safety Data Sheet for detailed information on product safety.

Handling ONLY bulk containers

- a) The storage temperature for bulk product must be between min. +35 °C and max. +50 °C. Storage temperatures above +40 °C cause an increase of the color number. At low temperatures (approx. < +30 °C) Sokalan® HP 20 forms crystals and becomes solid.
- b) Sokalan® HP 20 can slightly separate during the storage time. The product must be homogenized before it is processed. It must be mixed sufficiently prior to use.
- c) Sokalan® HP 20 must be protected from high temperatures (> +50 °C) to avoid discoloration and the formation of surface films.
- d) Sokalan® HP 20 must be blanketed with nitrogen if it is stored in heated tanks (at max. +50 °C) to prevent air contact. Air contact can cause discoloration. Constant, gentle stirring helps to prevent it being discolored as a result of prolonged contact with electrical elements or external heating coils.
- e) Please refer to the latest Safety Data Sheet for detailed information on product safety.

Materials

Sokalan® HP 20 should be stored in tanks made from the following materials:

- 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)
- d) HDPE - high density polyethylene
- e) LDPE – low density polyethylen

Materials made of copper and copper-containing alloys cause discoloration and are therefore unsuitable.

Shelf life

Provided it is stored properly and drums are kept tightly sealed, Sokalan® HP 20 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).

Sokalan® HP 20 is a modified polyethylene imine in aqueous solution and completely miscible with water.

Sokalan® HP 20	Unit	Value
Physical form (25 °C)		liquid
Concentration (ISO 3251)	%	approx. 80
Water content (ISO 760, K.Fischer)	%	approx. 20
Hydroxyl No. (ASTM E 1899-08)	mg KOH/g	≥ 61.0
Transmission, 440 nm, 16% aqueous solution (DIN EN 1557)	%	≥ 69.0
pH value (DIN 19268, as is)		approx. 10
Density (DIN 51757, method 3, 25 °C)	g/cm ³	approx. 1.12
(DIN 51757, method 3, 40 °C)	g/cm ³	approx. 1.11
(DIN 51757, method 3, 50 °C)	g/cm ³	approx. 1.10
Pour point (ISO 3016)	°C	approx. 15
Boiling point	°C	> 100
Viscosity (Brookfield, ISO 2555, 15 °C)	mPa·s	> 100000
(Brookfield, ISO 2555, 20 °C)	mPa·s	approx. 1050
(Brookfield, ISO 2555, 25 °C)	mPa·s	approx. 850
(Brookfield, ISO 2555, 40 °C)	mPa·s	approx. 350
(Brookfield, ISO 2555, 50 °C)	mPa·s	approx. 250
(Brookfield, ISO 2555, 60 °C)	mPa·s	approx. 150
Color Gardner (EN 1557, 25°C)		approx. 5
Surface Tension (EN 14370, 1g/l, demin. water, 25 °C)	mN/m	approx. 60

Safety

We are not aware of any ill effect that can result from using Sokalan® HP 20 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, Sokalan® HP 20 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.

Labeling

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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