Technical Information

Polyquart® PN 60

Multifunctional cationic polyethyleneimine
for the Detergents- and Cleaners Industry.

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Chemical nature	Polyquart® PN 60 is a modified polyethyleneimine PEI.
PRD-No.*	30693069 * BASF's commercial product numbers.
Appearance	Polyquart® PN 60 is a clear, colorless to yellowish liquid.

Handling and Storage

Handling

a) Polyquart® PN 60 should be stored indoors in a dry place. Storage rooms must have a maximum temperature of +40 °C.
b) Polyquart® PN 60 must be protected from sunlight and high temperatures (max. +40 °C) to avoid discoloration and the formation of surface films.
c) Polyquart® PN 60 is a clear liquid and tends to separate in the coldness. This is a reversible process. It becomes a clear liquid at approx. +25 °C. Liquid that has solidified or that shows signs of sedimentation must be heated to max +40 °C and homogenized before it is processed. It must be mixed sufficiently prior to use.
d) Polyquart® PN 60 must be blanketed with nitrogen if it is stored to prevent air contact. Air contact can cause discoloration.
e) Please refer to the latest Safety Data Sheet for detailed information on product safety.

Shelf life

Polyquart® PN 60 has a shelf life of at least 12 months in its original packaging.

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

Containers of low alloy steel, copper or copper alloys cause discoloration and are therefore unsuitable.

Properties

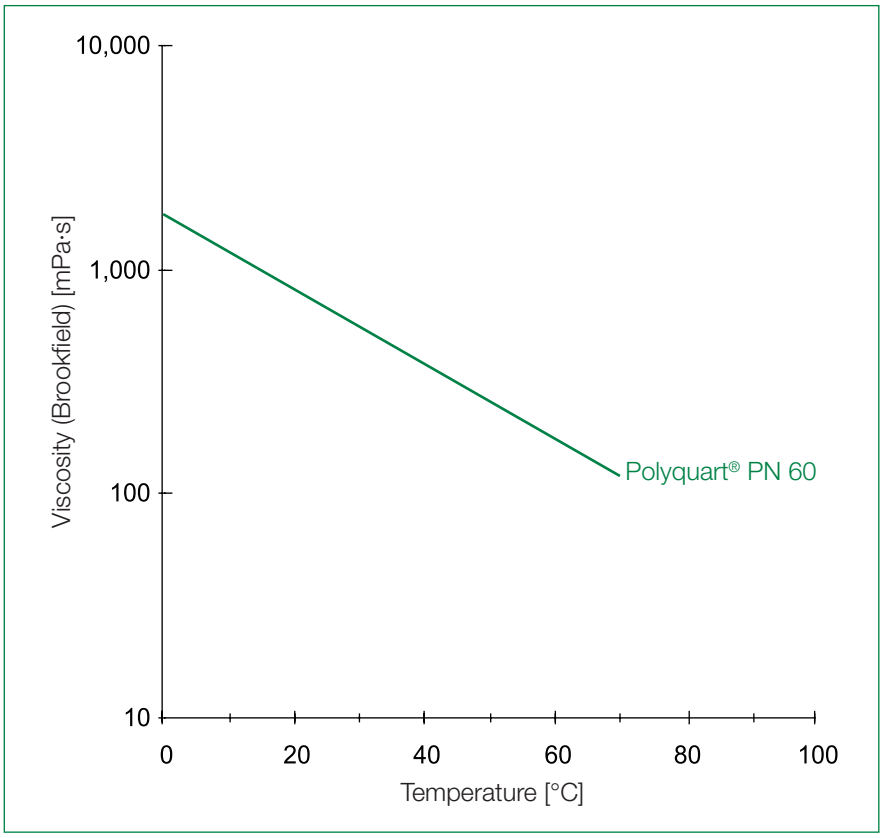
Some physical properties are listed in the table below. These are typical values only and not all of them are monitored on a regular basis. They are correct at the time of publication and do not necessarily form part of the product specification. A detailed product specification is available on request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

Polyquart® PN 60 is a modified polyethyleneimine in aqueous solutions and is miscible with water in all proportions.

Polyquart® PN 60	**Unit**	**Value**
Physical form (25 °C)		liquid
Viscosity (EN 12092, Brookfield, 25 °C, as is)	mPa·s	approx. 500
Concentration (dry content) (ISO 3251,1 g, 120 °C, 4 h)	%	approx. 40
Water content (= 100%-concentration (dry content))	%	approx. 60
Refractive index (DIN 51423-1, 25 °C)		approx. 1.418
pH value (DIN 19268, 10% dry substance in dist. H_2O)		approx. 4
Density (DIN 51757, method 3, 25 °C)	g/cm³	1.13
Iodine color (EN 1557, 25 °C)		approx. 10
Monomeric ethyleneimine (BASF method)	ppm	max. 1
Pour point (ISO 3016)	°C	approx. -10

Viscosity

It is important for the transport, storage and processing of Polyquart® PN 60 to know how its viscosity changes with temperature and concentration. The graph below shows the viscosity of Polyquart® PN 60 as a function of temperature.



Solubility

Polyquart® PN 60 is soluble in water.

The following solubility data are of a general nature only and can vary according to the amount of Polyquart® PN 60 to be dissolved. Aldehydes, ketones and chlorinated hydrocarbons are unsuitable as solvents, since they are likely to react with Polyquart® PN 60. With acids, typical neutralization reactions occur.

Distilled water	+
Methanol, Ethanol, n-Propanol, Isopropanol	–
n-Hexane	–
Ethyl acetate	–
Toluene, Xylene	–

+ = *soluble*
– = *insoluble*
O = *partially soluble*

Compatibility

Polyquart® PN 60 is compatible with cationic and nonionic systems. In anionic systems, the addition of Polyquart® PN 60 can result in incompatibilities (gelatinization, precipitation). The compatibility can generally be improved by selecting the appropriate molecular weight or by adding ammonia.

Polyquart® PN 60 may change the coloristic properties of dyes and pigments.

Safety and Labeling

Please refer to the safety data sheet for information on classification & labeling, safe use, handling and transport.

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