
Technical Information

March 2015

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WF-No. 5973

Agnique[®] CSO-20

® = Registered trademark of BASF

Chemical character	Castor oil, ethoxylated
PRD-No.*	30530711 * BASF's commercial product numbers.
Appearance	Agnique® CSO-20 is a slightly cloudy, yellowish to yellow liquid at room temperature and tends to separate or form sediment in cold. Agnique® CSO-20 becomes a clear liquid at approx. 40 °C.
Storage	<ol style="list-style-type: none">Agnique® CSO-20 should be stored indoors in a dry place. Storage rooms must not be overheated.Agnique® CSO-20 is hygroscopic with the result that it may absorb moisture very quickly. Drums must be resealed each time they are opened.The separated or solid product (sediment) should be heated to 50 – 70 °C and homogenized before it is processed. Please mix sufficiently prior to use.Drums that have solidified 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.Agnique® CSO-20 must be blanketed with nitrogen if it is stored in heated tanks (at 50 – 70 °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: <ol style="list-style-type: none">Stainless steel 1.4541 – AISI 321 stainless steel (X6 CrNiTi 1810)Stainless steel 1.4571 – AISI 316 Ti stainless steel (X6 CrNiMoTi 17122)Stainless steel 1.4306 – AISI 321 L stainless steel (X2 CrNi 1911)
Shelf life	Provided it is stored properly and drums are kept tightly sealed, Agnique® CSO-20 has a shelf life of at least two years 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.

	Unit	Value
Physical form (23 °C)		yellowish liquid
Concentration	%	approx. 100
Density (DIN 51757, method 3, 20 °C)	g/cm ³	approx. 1.03
Density (DIN 51757, method 3, 50 °C)	g/cm ³	approx. 1.01
Viscosity (EN 12092, Brookfield, LVT, 60 °C)	mPa·s	approx. 110
Congealing point (ISO 2207)	°C	approx. 4
Saponification number (ISO 3681)	mg KOH/g	approx. 85
pH value (EN 1262, solution B)**		approx. 7
Cloud point (EN 1890, method E)*	°C	approx. 66
Water content (EN 13267)	%	max. 0.3
Flash point (ISO 2592)	°C	approx. 290
Surface tension (EN 14370, 1 g/l in distilled water, 23 °C)***	mN/m	approx. 39

* Cloud point EN 1890:

Method E: 5 g of surfactant + 25 g of butyldiglycol solution (c = 250 g/l)

** The pH value of Agnique® CSO-20 can decrease during storage, but this does not have any effect on its performance.

*** Applying Harkins-Jordan correction.

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.

Solubility

The solubility of Agnique® CSO-20 at 23 °C (10% solution)

Distilled water	o
Potable water (2.9 mmol Ca ²⁺ -ions/l)	o
Caustic soda (5%)	-
Hydrochloric acid (5%)	-
Salt solution (5%)	-
Alcohols	+
Petroleum oils	-
Aromatic hydrocarbons	+

+ = clear solution

- = insoluble (phase separation)

o = forms an opaque soluble, homogeneous emulsion

Application

Agnique® castor oil ethoxylates are biodegradable and derived from natural sources. Typically, they are used as non-ionic emulsifiers often matched with anionic counterparts such as CaDDBS to give optimum stability in formulations such as EC, EW, SE, and OD. In addition, Agnique® CSO products show wetting and adjuvancy properties.

Safety

We know of no ill effects that could have resulted from using Agnique® CSO-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, Agnique® CSO-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.

Labelling

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

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