Technical Information
Oilfield Chemicals

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Basoflux® PI 41T

Paraffin inhibitor for crude oil

Description

Basoflux® PI 41T is a hydrophobically modified polycarboxylate, with medium molecular weight and relative chain-lengths of C_{22+}, dissolved in Solvesso 150 ND (Naphthalene Depleted)

Principal uses

Basoflux® PI 41T is used as a paraffin inhibitor in the crude oil production segment, with a primary aim to inhibit paraffin deposition, and a secondary function of pour point depression.

The compatibility with all other Basoflux® paraffin inhibitor chemistries makes Basoflux® PI 41T an excellent performance booster as a Pour Point Depressant (PPD) and a wax inhibitor in light to heavy crude oils.

While conducting pour point testing, it is highly recommended to dose the paraffin inhibitor into the crude oil sample above the wax appearance temperature (WAT).

The paraffin inhibitor treat rate is crude oil dependent, typically ranging from several hundred ppm to greater than 2000 ppm for more challenging and highly paraffinic crude oils.

Basoflux® PI 41T is a viscous product. At ambient temperatures the usage of on-site heating is required. In addition, due to the naphthalene-depleted solvent, the product has a higher flash point than Toluene and Xylene, resulting in less hazardous handling.

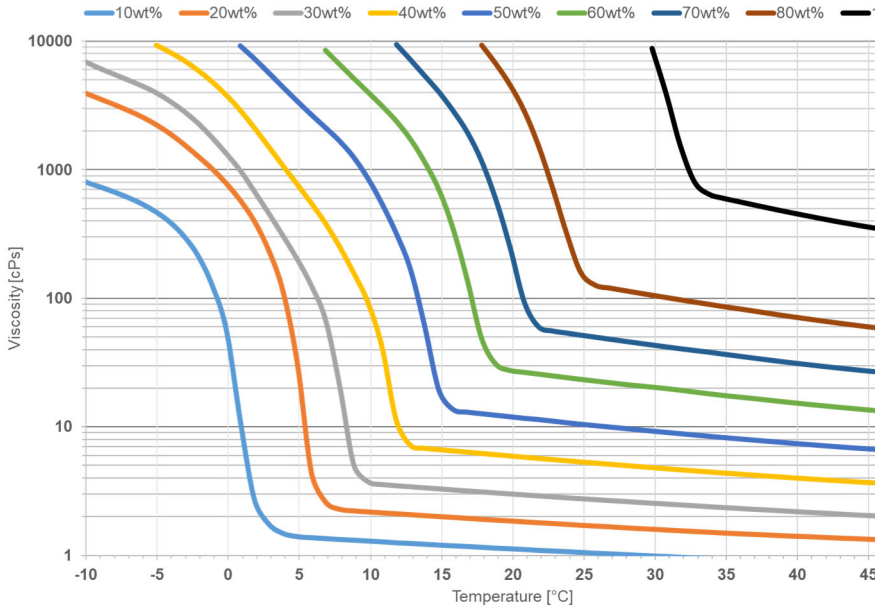
Typical properties

Appearance at 23 °C:	Light brown waxy solid
Relative molecular weight	Medium
Relative chain length	C_{22+}
Active concentration (%)	75 % +/- 1 %
Density (g/cm³)	Approx. 0.9
Viscosity (mPa.s @ 45 °C)	~ 365
Melting point (°C)	~ 42 °C
Pour point (°C)	~ 34 °C
Flash point (°C):	> 61 °C
Organic solvent	Solvesso 150 ND

Application

Basoflux® PI 41T can be applied in the field by dilution with typical solvents such as naphtha based aromatic solvents, but also aliphatic mineral spirits.

The viscosities using Xylene are displayed in the graph below.



Solubility & Stability

Solubility behaviour of the Basoflux® PI 41T after 28 days with respect to time, temperature, and dilution factor is shown below.

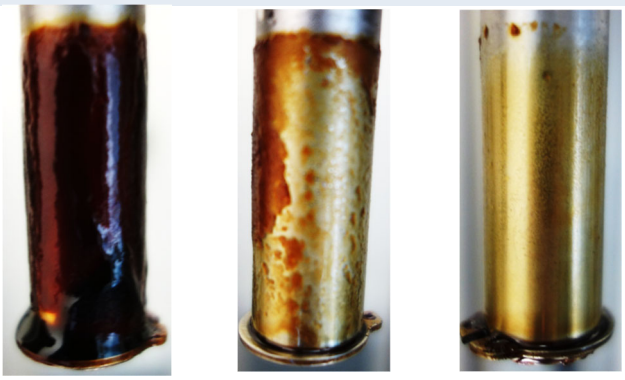
Product	Solvent	Xylene			Solvesso 150 ND		
[%]	[%]	4 °C	25 °C	40 °C	4 °C	25 °C	40°C
100	0	S	S	S	S	S	S
80	20	S	S	L	S	S	L
70	30	S	S	L	S	S	L
60	40	S	S	L	S	S	L
50	50	S	T	L	S	S	L
40	60	S	L	L	S	T	L
30	70	S	L	L	S	L	L
20	80	S	L	L	S	L	L
10	90	S	L	L	S	L	L

Legend: S: solid, L: liquid, T: turbid

Performance

Basoflux® PI 41T has been extensively tested on performance in the laboratory and has been selected for various applications, often in combination with other Basoflux® grades to benefit from the synergistic effects Basoflux® PI 41T has on a range of Basoflux® paraffin inhibitors.

Product	Blank	Incumbent	PI 41
Dosage (ppm)	0	1000	1000
Inhibition	-	78 %	85 %



Basoflux® PI 41T paraffin inhibitor performance testing on a crude oil sample (provided by a service company) that demonstrates excellent performance. The customer challenged BASF to develop a better performing paraffin inhibitor than the incumbent.

Storage

Store in unopened original containers in a well-ventilated place. Keep container dry.

Shelf life

Basoflux® PI 41T is at least stable for 36 months in its sealed original packaging

Packing

Basoflux® PI 41T is available in standard ~200-liter steel drums. Other packaging such as 1,000 liters IBC's or 20-ton ISO containers, can be considered subject to discussion.

Handling

The recommendation to remove Basoflux® PI 41T from a drum is by heating, either (1) in a water bath at ~70°C, (2) in a heated room (40 to 50°C) or (3) with a heating jacket. Exposure of Basoflux® PI 41 to prolonged and excessive heat may cause product deterioration.

Liquid Basoflux® PI 41T can be prepared by dilution in aromatic solvents such as Toluene, Xylene and solvent naphtha. Liquid products are stable, clear yellow solutions at 25°C or higher. It is not recommended for injection temperatures below 18°C due to precipitation of the inhibitors that leads to phase separation or solidification at a much lower temperature.

Health & Safety

Please refer to the Safety Data Sheet (SDS) for detailed information concerning product's hazards and appropriate protective measures in the workplace

Technical service

Advice and assistance in the application and performance of Basoflux® PI 41T is given by representatives of BASF who are experienced in oilfield applications.

Note

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.

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