BASF
We create chemistry

BASF Oilfield Chemicals

High-Performance Paraffin Control

Basoflux®

Go with the ~~flow~~ flux!

Paraffin inhibitors that maximize oil flow

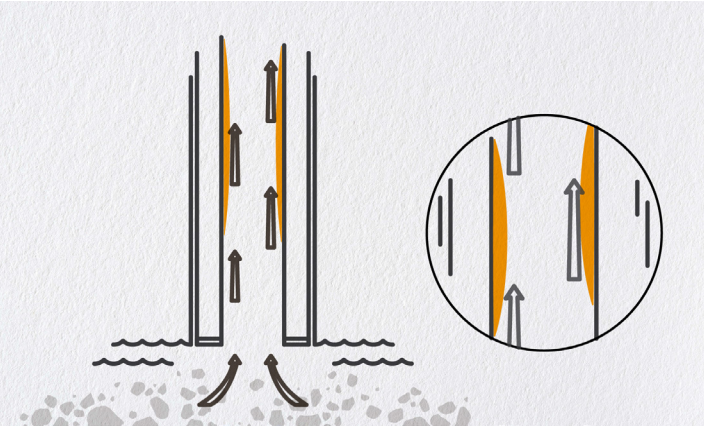
Our portfolio of high-performance, high-quality paraffin inhibitors have proven effectiveness in multiple applications worldwide.

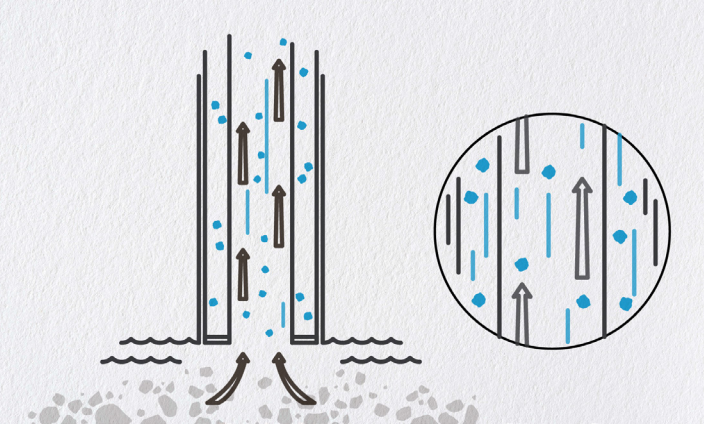
Discover how your Basoflux® journey could start today ...

Introduction

In oil & gas production, the formation of paraffin crystals can cause unwanted production challenges, that often lead to reduced production volumes or production downtime. These challenges can include paraffin deposition in downhole production wells, and increased viscosity in oil transportation systems which slows down the flow of oil.

BASF has developed a broad range of high-performance wax control additives that mitigate paraffin deposits and can lower the pour point of paraffinic crude oil.





Function guide

For additives to be effective wax control agents, their molecular structure must contain ‘paraffinic chains’ to allow them to interact with paraffins. They can be characterized by their function in solving wax related issues.

Pour Point Depressants

Additives that reduce the pour point of crude oils are known as Pour Point Depressants (PPD’s) or flow improvers. Upon cooling, wax separates out as plate-like crystals or needles. These crystals interact to trap the oil, resulting in increased viscosity or even solidification of the oil phase. PPD’s affect the crystallization process and prevent the formation of such interactions, thereby reducing the pour point.

Wax Inhibitors

Additives that quantitively affect the wax deposition in e.g. cold-finger tests are referred to as Wax Inhibitors. Wax inhibitors generally influence the crystal morphology, therefore reducing the deposition rate.

Paraffin Dispersants

Paraffin dispersants can reduce the amount of wax deposits in flowlines by different mechanisms depending on their chemical nature. Dispersants are typical surfactant structures but some polymeric wax control additives also display dispersing properties.

Basoflux® Product Line Overview

The current Basoflux® product line is designed to support the oilfield service industry to meet their customer's expectation on reliable flow assurance. BASF continuously invests in improving this offering and is offering a range of products.

Basoflux® PI 1019 and PI 1020
- Two novel hyperbranched polyester products with varying modified carbon chains.
- Applied as stand-alone products, or in synergy with other Basoflux® grades, these hyperbranched products perform exceptionally well.

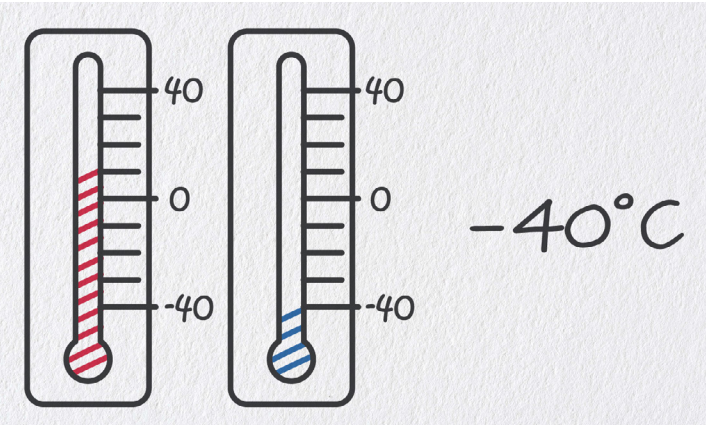
Basoflux® PI 3120
- Polyacrylate product that complements all other Basoflux® grades.

Basoflux® PI 40T, PI 41T and PI 45
- PI 40T and PI 41T are two legacy products that continue to show excellent performance mainly as deposition preventors in a wide array of crude oils.
- PI 45 is a novel development that has a much broader carbon chain distribution and therefore inhibits a broader range of paraffins.

Basoflux® RD 5119T and RD 5120T
- Two legacy products that continue to show excellent performance as PPD's or deposition prevention in a wide array of crude oils.
- These products do not contain toluene and the solvent is naphthalene-depleted, which assures access to markets where toluene is regulated and cannot be imported.
- Both products have a higher flash point than toluene or xylene, which allows for easier re-packing and blending, and handling in general will be less hazardous.

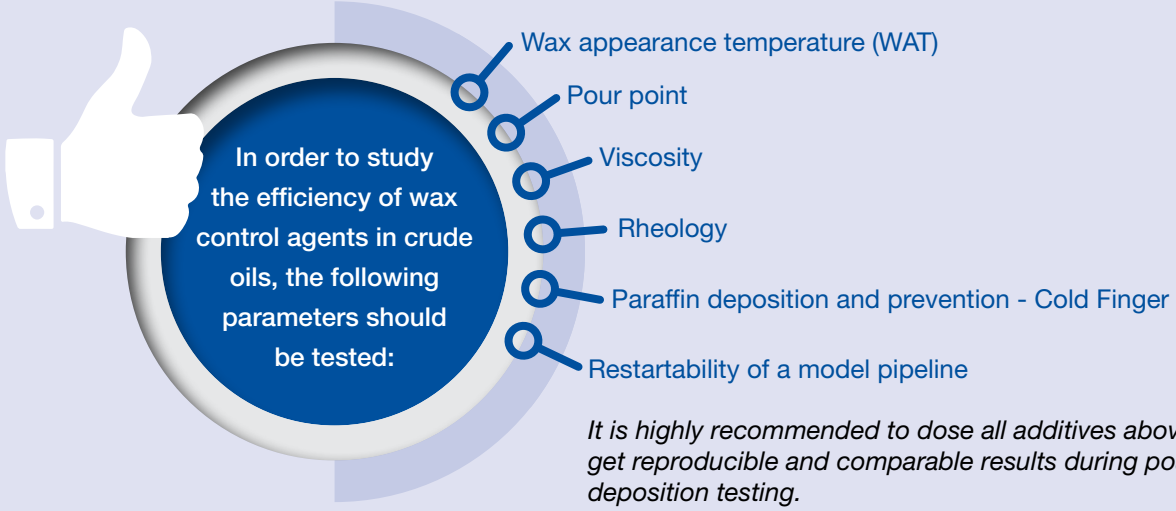
Basoflux® PI 6320
- A novel dispersion product based on our PI 3120 polyacrylate chemistry.
- The micelle particles are ~200 nanometer resulting in a very thermally stable product.
- This product is winterized till minus 12 °C and can be further winterized till below minus 40 °C by adding glycol.
- Application for downhole can be considered.

Basoflux® PI 6410
- A novel dispersion product based on our Basoflux® PI 41T
- The micelle particles are ~200 nanometer resulting a very thermally stable product.
- This product is winterized till minus 38°C, and can be further winterized to below minus 40°C by adding glycol.
- Application for downhole can be considered.



Product	Form	Chemistry	Active content (%)	Melting point (°C)	Application		
					Wax inhibitor	PPD	Yield stress improver
PI 1019	liquid	Hyperbranched Polyester	50	15 - 16 (59 - 61 °F)	••	••	•••
PI 1020	waxy	Hyperbranched Polyester	50	26 - 38 (82 - 101 °F)	••	••	•••
PI 3120	waxy solid	Poly Acrylate	50	38 - 39 (101 - 103 °F)	•	••	•••
PI 40T	waxy solid	Modified Poly Carboxylate	75	45 - 50 (113 - 122 °F)	•••	••	•
PI 41T	waxy solid	Modified Poly Carboxylate	75	~50 (~122 °F)	•••	••	•
PI 45	waxy solid	Modified Poly Carboxylate	75	35 - 42 (95 - 108 °F)	•••	••	•
RD 5119T	liquid to waxy	EVA-Acrylate Coploymer	50	17 - 23 (62 - 74 °F)	•	•••	••
RD 5120T	waxy solid	EVA-Acrylate Coploymer	50	30 - 40 (86 - 122 °F)	•	•••	••
PI 6320	liquid	Poly Acrylate Dispersion	34	-12 (10 °F)	•	••	•••
PI 6410	liquid	Modified Poly Carboxylate Dispersion	~30	~-38 (~-36 °F)	•••	••	•

Initial recommendation



It is highly recommended to dose all additives above the WAT to get reproducible and comparable results during pour point and wax deposition testing.

Synergy

Basoflux® products often demonstrate synergistic effects when blended together in a specific ratio, i. e. the combined performance of two or more products is greater than the sum of the individual products. BASF subject matter experts can advise you about this during testing.

Bringing Innovation

BASF has developed new, innovative products that meet stringent application requirements.

We have tweaked molecules to reduce the melting point of polymers, while maintaining the same performance.

Additionally, new winterized dispersion products have recently been developed to achieve much lower temperatures, and successfully launched into the oil and gas industry.

Basoflux® PI 41T, a globally recognized paraffin inhibitor, has been winterized to -40C into an stable aqueous dispersion named Basoflux® PI 6410.

Technical Support

In every paraffin related project, the applicable crude oil will need testing to determine which Basoflux® products perform best, and to formulate the end solution.

How BASF works with you from a technical aspect will depend on your needs:

Option 1

You can choose to do this formulation work by yourself, in which case we will send you a Basoflux® test kit and our experts will offer support to ensure you develop a best-in-class solution.

Option 2

Alternatively, you can request that BASF does this formulation work for you. In this case, we will send you an IATA canister + return box, for you to collect the oil in and send to our laboratory.

Supply Chain
Once your solution has made it through the field trial and you're ready to order regular Basoflux® supply, BASF can support you by evaluating optimal stocking points to reduce lead times.

Selected Basoflux® products are already in stock at various locations around the world.

For further information visit our website:
www.oilfield-chemicals.basf.com

Product availability may vary by region.