PORLA analyser for the refinery industry

Heavy fuel oil and crude oils stability and compatibility analyser with automatic measurement sequence

Improving profitability of refinery processes

The Porla analyser is a result of co-development with a major Finnish oil refining company, as well as many other refineries and industry professionals.
It complies fully with ASTM standard D7112.

The analyser is used for blending optimisation in crudes, feed stocks, heavy oils and bitumen as well as the maximisation of oil refining process profitability.

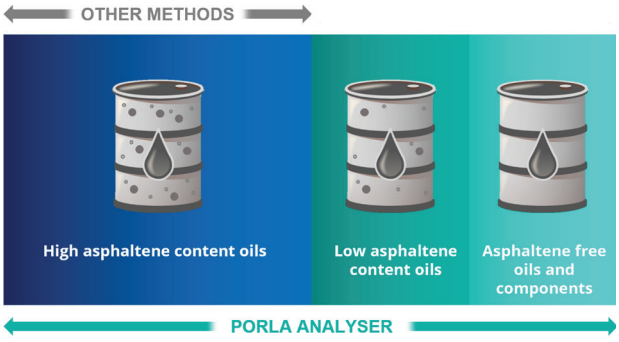
As an important part of the Auramarine portfolio the product is further developed together with clients, resulting in enhanced reliability, easier user experience and full customer support.

Auramarine provides the solution

Auramarine's Porla analyser is an easy, reliable and fast analysis instrument that improves profitability of refinery processes by enabling refineries to select more economic mixtures of crude oils with no risk of fouling problems.

The fast, automated, analysis cycle saves working time and increases testing process productivity.

Auramarine's Porla analyser enables prediction of compatible blending ratios between different oils by measuring their blending compatibility parameters. Blending parameters can be measured even for an oil that contains no asphaltenes. Unlike other comparable analysers, Porla analyser is capable of measuring stability and compatibility parameters of oils that have a very low asphaltene content (down to 0.05 %).



Weighing the sample

Very often also oils with low asphaltene content are subject to stability and compatibility issues which can cause clogging and result in severe problems in use.

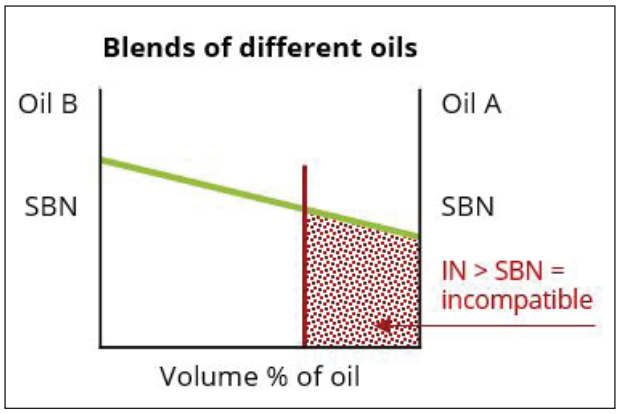
The analyser is suitable also for high asphaltene content fuels analysis.

Technical details:

Operational Specifications	Measurement ranges	1-7 P-Value (stability value) 0-100% Solvent Equivalent
	Detection limit of asphaltenes	0.05%
	Measurement temperature	20 - 70 ºC
	Sample carousel	4 positions, with sample heating
	Analysis duration	Normally full cycle takes approx. 45 minutes and borderline cases up to 90 minutes.
Utilities	Electric power	110 or 230 V, 50/60 Hz
	Solvents	Paraffinic and aromatic solvents
Physical Specifications	Weight	38 kg
	Dimensions	H 453 mm, W 585 mm, D 464 mm
Sample Specifications	Sample size	20 - 40 g of oil directly from tank or other storage

Properties

- The system enables proactive testing of fuel compatibility
- Determination of stability and compatibility parameters In (insolubility number) and Sbn (solubility blending number)
- ASTM test method D7112 since 2005
- Possibility to use different paraffinic and aromatic solvent combinations
- The system will self-clean at the end of each test procedure

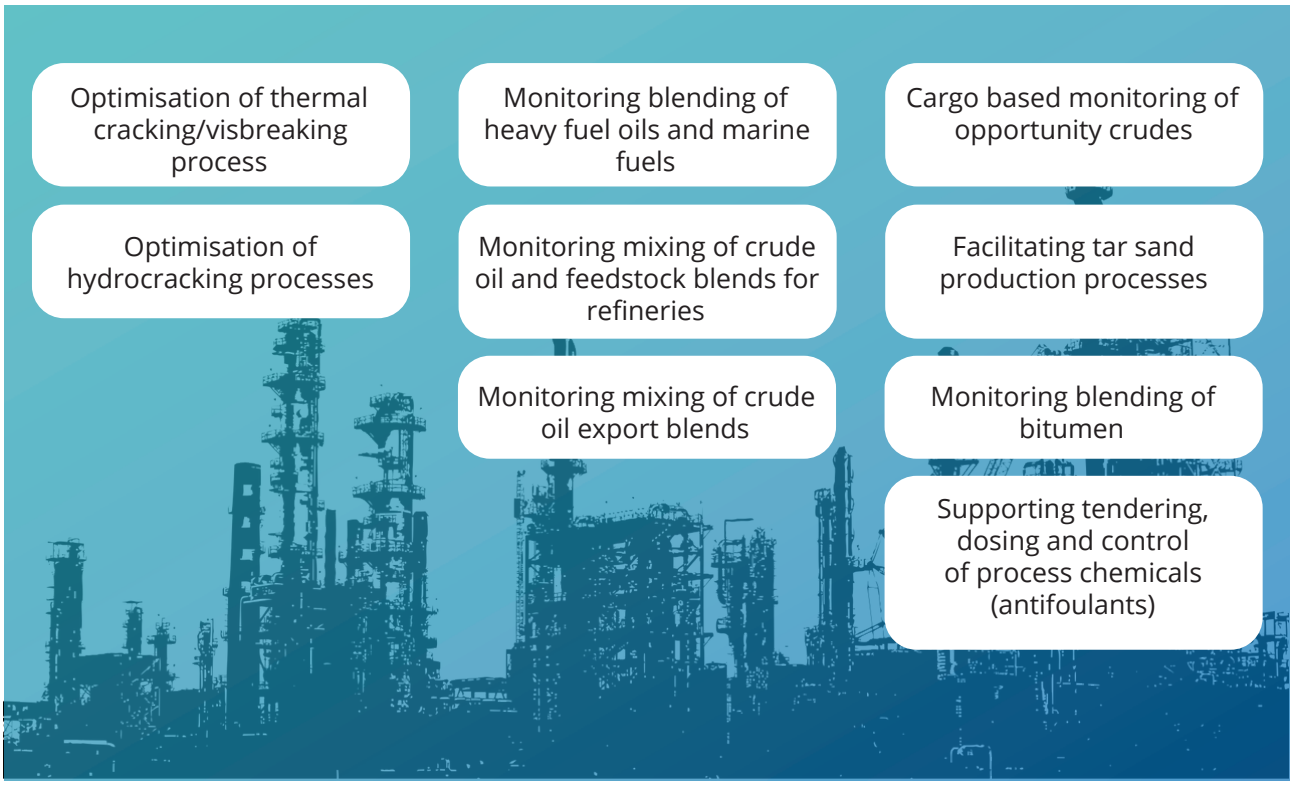


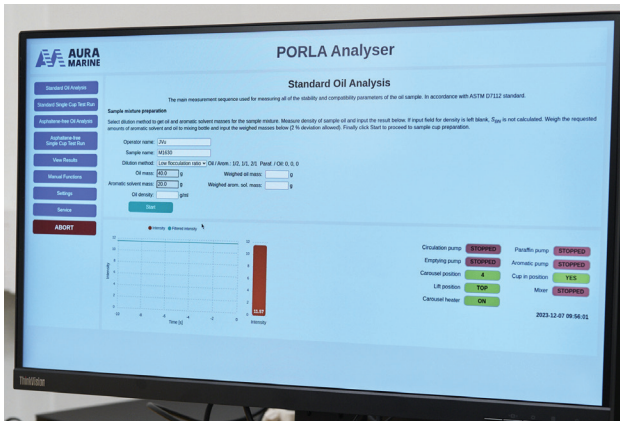
Fuel compatibility

Advantages

- **Requires only a few minutes of active operator time, test results in 45-90 minutes**
- **More accurate than manual methods**
- **No removal of coke particles by filtration required prior to analysis**
- **Accurate tool for optimisation of visbreaker and hydrocracker processes**
- **Enables refineries to select more economic mixtures of crude oils with minimised risk of fouling problems**
- **Determines full set of stability and compatibility parameters (FRmax, Xmin, P, Pa, Po, FR5/1, TE, In and Sbn) by one run**
- **Reporting also ExxonMobil heavy and crude oil blending model parameters In (insolubility number) and Sbn (solubility blending number)**
- **Capable of analysing stability and compatibility parameters of low asphaltene content oils**
- **Offers a unique method to analyse compatibility parameters of asphaltene-free oils**

Applications for refineries





Accessories and maintenance

Auramarine provides the users a complete range of consumables needed to operate the Porla system, ensuring repeatable and reliable results.

Please contact Auramarine to find out the recommended replacement intervals for your Porla analyser parts. We provide prisms, pumps, solvents, sample bottles, sample containers. Scales are also available.

You can benefit from our technical support and sample analysis services are available upon request.

In addition, it is possible to opt for an analyser unit maintenance contract.

Definition of parameters

Porla analyser analyses the following values, including the important P-value (stability):

- P-value, state of peptisation of asphaltenes in the oil (stability of oil)
- Pa, peptisability of asphaltenes
- Po, peptising power of the oil medium
- FR5/1, solvent equivalent number
- FRmax, max. flocculation ratio i.e. minimum required solvency power of a solvent mixture to keep the asphaltenes in an oil colloidally dispersed
- Xmin, volume of paraffin needed to flocculate asphaltenes in 1 gram of pure oil sample
- IN, insolubility number, measure of oil's insolubility to paraffinic solvent
- SBN, solubility blending number, measure of how good the oil is as a solvent

ID 789350

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Watch the video on YouTube:

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