Intrinsic Stability of Asphaltenes

Crude Oils, Residues, Heavy & Marine Fuel Oils

SV10 – Automated S-value ASTM D7157

Methods:
ASTM D7157
ISO PAS 23263
CIMAC guidelines

- **3 independent test positions**
- **Fully automated operation:**
  - **Dilution**
  - **Titration**
  - **Cleaning**
- **No contact with solvents**
- **Measures at controlled temperature**
- **Low level of asphaltenes capability <0.4%**
- **User friendly, fast test time (typical: 20 mn)**

AD Systems revolutionizes routine test for quantifying the intrinsic stability of the asphaltenes in an oil by introducing the **SV10, the first fully automated S-value** instrument complying with ASTM D7157**.** With a **unique temperature controlled high precision measuring cell** (License TOTAL RC*), the SV10 brings **major improvements in handling, safety, accuracy and test duration**. Straightforward and user friendly, the SV10 does not require any specific expertise or intervention of operator during the test. **The SV10 eliminates all safety risks** linked to the manipulation of hazardous solvents. All test procedure: dilution with toluene (can be heated up to 100°C for heavy samples), titration with heptane and post-test cleaning is unattended. The instrument comes pre-programmed for all typical sample types described in ASTM D7157, while versatile software allows fully customized tests.

Applications

The **intrinsic stability (S-value)** of an oil containing asphaltenes (residual refinery streams, fuel oils, marine fuels and crude oils) is an indication of the stability or available solvency power with respect of asphaltenes peptization. **The higher is the S-value, the less risk of asphaltenes precipitation.**

- S-value, So and Sa results reported by the SV10 allow to monitor and optimize the operation parameters of distillation, cracking (thermal, hydrocracking) and visbreaking units in a refinery.
- Sa and So results will help to optimize blending operations.
- Beyond the ASTM D7157 standard report of **S-value, So , and Sa**, the SV10 calculates additional values as **IN (Insolubility Number)** and **SBN (Solubility Blending Number)**, as well as the estimation of stability reserve and blending potential, allowing to predict compatibility and increase efficiency of blending operations.

The SV10 is the valuable analytical tool for the research, refineries, blenders and traders.

AD systems
POWERED by INNOVATION

Principle

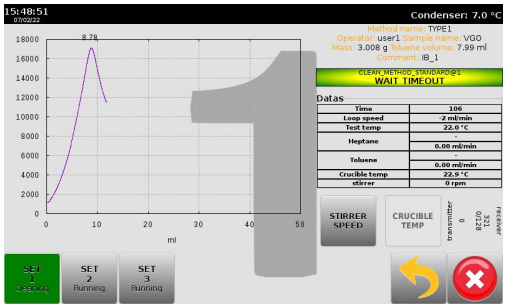
3 different quantities of sample are diluted with toluene (aromatic solvent). Then, by titrating those 3 mixes with heptane (paraffinic solvent), the asphaltenes flocculate. A specially designed high precision measuring cell (License TOTAL RC*) detects accurately the flocculation point. Finally, the stability results are automatically computed.

Operation

Running a test with the SV10 is straightforward and very easy. The operator just has to:

(**1**) weight the sample(s)
(**2**) position up to 3 samples in parallel on the SV10
(**3**) close the door and initiate the test(s)

Test **procedure is automated: toluene dilution, heptane titration, detection of the flocculation point and cleaning**. Detection curves are displayed in real time. The software computes oil stability parameters by regression analysis of selected titration tests.



Benefits

The SV10 is a standalone fully automated instrument using state-of-the-art modern technology. Thanks to its **temperature controlled high precision measuring cell** (License TOTAL RC*) combined with simplified weighting procedure and automated toluene dilution, the **SV10 significantly improves the test precision**.

Unattended test run, simultaneously on the 3 positions, allows to **get fast result** with minimal **operator time**.

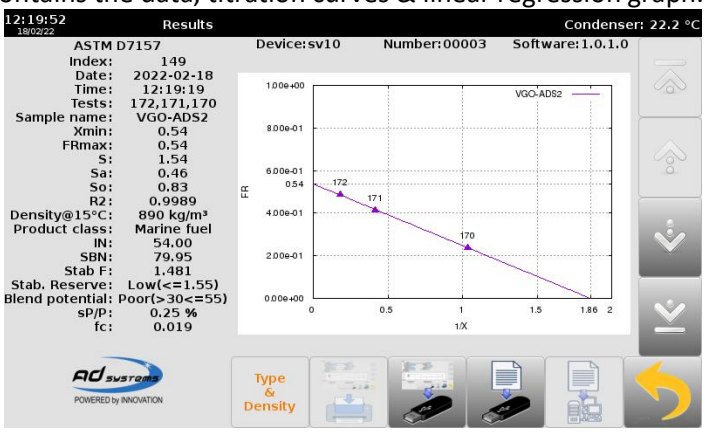
In addition, the **SV10 eliminates all safety risks** linked to the handling of hazardous solvents.

Every test is **fully documented and traceable.**

The reduced test time, automation and enhanced precision allow **huge financial benefits for refineries** while **reducing the risk of sludge formation, filter plugging and loss of pipes efficiency** in downstream operations.

Reporting

A detailed report of titrations and S-value determinations are displayed and saved in the built-in database. The report contains the data, titration curves & linear regression graph.



Reports can be printed, transmitted to LAN/LIMS or copied to an USB stick.

Ordering information	Description
AA410-001	SV10 – 3 positions S-Value instrument Delivered with glassware ready for operation

Technical specifications	Description
Test method	ASTM D7157
S-value range	1.05 to 15.00
Resolution	0.01
Interface	7" full-color touch screen
Test temp.	From 15°C to 60°C
Reported results	S-value, Sa, So, Xmin, FRmax, R^{2}, IN, SBN Stability reserve, Blending potential
Languages	English, French, Russian
Results storage	Up to 100 000 results database (8 GB) USB stick, LAN
Communication	USB (2), Ethernet (1)
Printing	USB graphic printer (optional)
Dimensions	440 x 620 x 700 mm (17"x 24"x 28")
Weight	55 kg (110 lb)
Power supply	100/240 V – 50/60 Hz – 750 W

We reserve the right to alter specifications without notification

Your local distributor:

For additional information:

AD Systems
Allée de Cindais - 14320 Saint André sur Orne - France
☎ +33 (0)2 31 75 02 68
Email: sales@adsystems-sa.com
www.adsystems-sa.com