

WSI Analyser SA9000-0

Water Separation Characteristics of Aviation Turbine Fuels

ASTM D8073; IP 624

ASTM D1655, Appendix XI; JIG Bulletin 121

- Approved method, ASTM D8073
- Approved for use, ASTM D1655, Appendix XI
- Approved for use in testing Water Separation Properties of Jet fuel (revised MSEP protocol)
- Substantial cost saving per test
- Fully automated sample handling
- Consistent sample preparation
- 10 minute test duration
- High resolution optical water detector



• Aviation •

WSI Water Separation Instrument

The WSI was developed in conjunction with industry stakeholders to rapidly and precisely measure for the presence of surfactants, with a minimum of training in a wide range of locations. ASTM and EI test methods have been developed and are now approved for use in accordance with ASTM D1655 Appendix XI.

The water coalescing property of filter materials is reduced by surfactants which inhibit the ability of the filter to remove water droplets from the fuel- i.e wet fuel passing through the filter. The WSI is designed to predict filter coalescer failure. The instrument is fully automatic with simple touch screen operation. The WSI features a patented Sonic Mixing Technology which eliminates any variables with water droplet size and ensures the same amount of energy is applied to each sample.

Filter cartridges use API/EI 1581 5th edition filter material which is less sensitive to weak surfactants and eliminates uncertainty over static dissipator additives, but is responsive to the presence of ester based additives.

Key Features

- ASTM D1655, Appendix XI, approved for use
- Substantial cost saving per test
- Fully automated sample handling
- Simple operation for non-chemists
- User friendly interface
- Patented Ultra Sonic Mixer
- 10 minute test duration
- Minimal operator time required (under 3 minutes)
- Sonic mixing sequences providing consistent water droplet size and stable emulsion
- Featuring an API/EI 1581 5th edition filter material
- High resolution optical water detector measuring to <1ppm water concentration

Instrument Applications

Marine and truck offloading/loading terminals

Fuel being transferred throughout the distribution line by different modes of transport are often required to meet ASTM D1655 Table 1 specifications. The WSI provides a rapid screening process decreasing waiting time.

Pipeline distribution terminals

The WSI is ideal for testing water separability at pipeline distribution terminals due to its simplicity and short test duration ensuring a smooth flowing distribution.

Field base operators (airports)

Rapid screening of fuel filterability is an extremely important parameter, as the fuel enters the wing of the aircraft, it must meet ASTM D1655.



Principles of Operation

The WSI features fully automated sample handling and therefore requires minimal operator time with 3 simple steps.

To operate the instrument, a sample is poured into the test beaker and a filter cartridge fitted.

Using a simple user friendly interface, users are then required to enter sample, operator and filter id's and then press start!

Whilst in operation, the sample is emulsified with dyed water using the ultra sonic mixer.

Once emulsified, the sample is passed through the filter cartridge to remove any entrained water and then to the detector. Results are calculated from the detector reading and displayed on screen as the Water Separation Index (WSI). A high WSI, such as 100, indicates the sample coalesces easily and is relatively free of surfactants.



WSI SA9000-0	
Measurement range	50-100 Water Separation Index (WSI)
Conductivity	0-2000 pS / m (factory option)
Temperature range	15°C to 35°C
Sample size	230ml
Power	Universal, AC 85-265 VAC 42-63 Hertz
Outputs	USB, digital display, FAT compatible files
Size (HxWxD)	38 x 31 x 35 cm
Weight	8 kg