

# D-2 Incorporated

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## Water Separation Instrument WSI Product Brochure

Part Number: WSI  
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## The WSI Water Separation Instrument's Automated Measurement is the future of the Oil and Gas Industry as it saves labor, increases precision, decreases wait time.

### Advantages of the D-2 WSI

1. ASTM D8073-16 Listed
2. Automated measurement technology, no human error, no user training.
3. Accurate test of water separation characteristics of jet fuel
4. Rapid Screening, takes 10 minutes to run, no operator oversight needed
5. Single Result, readings not impacted by weak surfactants such as SDA.
6. Replicates true surfactant impact on fuel filterability, more precise, no false negatives, API 5<sup>th</sup> Edition Filter Materials.
7. Sonic Mixer automates sample mixing: produces uniform emulsification.
8. Labor Saving - far easier to use, quicker to run with no false negatives or positives.
9. USB Data output capability, 100% data storage in PC FAT compatible files that are Date and Time stamped.
10. Unit monitors consumables and waste levels, eliminating the need for operator oversight.
11. Field verification standards, field calibration is possible.
12. Lower cost per sample run due to simpler and less disposables used for each run. Saving the operator expendable expenses.
13. See [www.d-2inc.com](http://www.d-2inc.com) for WSI Water Separation Instrument Demonstration Video on youtube!
14. Reliability in the results, the improved accuracy and ergonomics make the device and the new WSI the only test for fuel filterability determinations.



## **D-2 Incorporated WSI Providing a next generation test to better model field filter stand performance method:**

A new industry test for fuel water separability, a test that better predicts full-scale filter stand performance. A test that readily discriminates weak from strong surfactant interference in filter performance. A test that is not sensitive to approved additives, but, rapidly and repeatedly detects the presence of non-approved additives. A test that uses modern 5<sup>th</sup> Edition API materials in line with the same materials used in your filter stand. Seta Analytics, D-2 Inc. has developed a test method and new technology in order to provide a unique solution. The WSI, short for Water Separation Instruments a modern fully automated water separation test for your laboratory.

One of the most beneficial advantages to our WSI is the fully automated sample handling. To operate the instrument a sample is and test filter is mounted, test is fully automated by the press of the start test button. All actions are reported to the screen right up to final report, in and internal SD memory card a full data coded data file is recorded. Our unit uses a patented Sonic Mixing Technology that allows us to eliminate any variables with water droplet size and ensures the same amount of energy is applied to each sample. Truly eliminating the many issues with human sample preparation by automating the process, which greatly increases accuracy.

The elimination of weak surfactant's affect on the results eliminates any false negatives or changing of values when SDA is present. By eliminating the problems associated with weak surfactants we have greatly increased the precision and eliminated the need to change the values if SDA is present. An optional built in conductivity sensor can also be added to record user fuel conductivity.

Our unit has an easy to use modern touch screen display. This display walks the user through the process and alerts them to any issues with the sample. Our unit fully automates the process, thus eliminating the many issues that can arise from human interaction in test variables. Even solvent waste bottles are monitored and the device will alert when they are full.

A low cost molded expendable filter lowers the sample disposable cost. The ability to use low cost disposables WSI will save the user considerable operating cost, in addition to the reduction in labor and training associated with current manual methods.

Solvent is generally available for Laboratory Grade Isopropyl Alcohol IPA Propanol.

## Why Measure Filterability of Distillate Fuels and Hydro-Carbon Chemicals?

Filters are an integral part of the fuel system. They remove dirt and water from the fuel so the engines in the aircraft can be always provided with “fit for purpose fuel”. The ability to rapidly and accurately establish if a fuel will degrade these filters is an important element of a critically monitored fuel delivery system. The WSI and its accurate replication of field fuel stand performance is an important element of a critical aviation fuel delivery system. Now, a new test method that is far more accurate and easy to run is available and will likely be adopted into the fuel industry for safety and cost reasons.

### WSI Specifications:

Measurement Range: 50-100 WSI Units

Conductivity: 0-2,000 pS/m

Temperature: 15°C to 35°C

Sample Size: 230 mL

### Standard WSI Water Separation Instrument

\*Repeatability:  $0.1915 * (X + 16.393)$  mg/kg

\*Reproducibility:  $0.3894 * (X + 8.9616)$  mg/kg

Resolution: 0.1 (Digital Readout), 0.1°C, 0.1 pS/m

Sensor Type: 1 PPB Water Detector Optic, Platinum, AC Flow Thru

Calibration: SRM Materials, High and Low Values. NIST Traceable & ASTM D2624

Environmental Storage Temp: -40°C to 80°C

Power: Universal, AC 85-264 VAC 42-63 Hertz

Outputs: USB, Digital Display, FAT Compatible files

ASTM D8073-16 Test Method Listed

Markings: CE, ROHS, UL

WSI Water Separation Instrument is the future of testing filterability of fuel.



# Water Separation Instrument Applications and Support



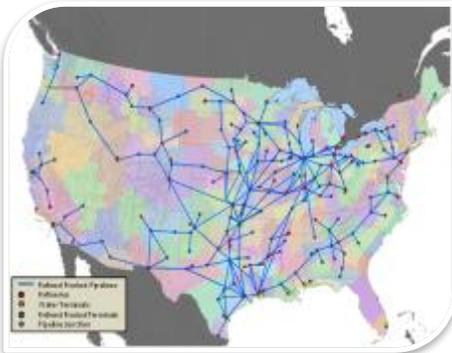
## Refinery Run Down Lines

In the future you may be able to use the WSI at your refinery run down line will ensure all the fuel leaving your refinery will pass the Table 1 specifications for Water Separation.



## Marine and Truck Offloading and Loading Terminals

When fuel is transferred from one mode of transport to another it often is required to meet Table 1 specs. With our WSI at your terminal, we can fully automate this process. Our rapid screening process decreases wait time, also eliminates any down time due to false negatives.



## Pipeline Distribution Terminals

Pipeline Distribution Terminals are an ideal location for use of the WSI. Due to transfer of product these facilities must meet the specifications when transferring fuel. By increasing the accuracy and decreasing the wait time, your distribution terminals will run more smoothly.



## Fixed Base Operators (Airports)

Rapid screening of fuel filterability is extremely important for airports. As the fuel enters the wing of the aircraft, it must be fit for use. First thing sampled in an incident is the fuel; make sure your fuel; passes the test for filterability with the WSI.



## D-2 Incorporated Direct Customer Support

Fully Supports all of our equipment with direct technical support. We are an ISO 9001:2008 Quality Certified Manufacturer. All of our equipment and services are covered by our one year limited warranty.

# Fuel Filterability

## WSI Water Separation Instrument

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