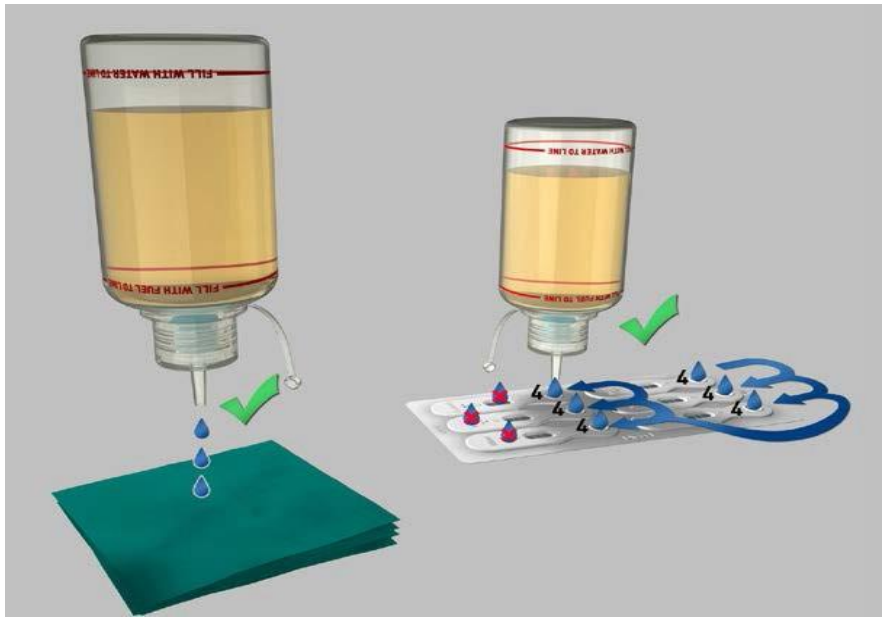
INNOVATIVE MICROBIAL FUEL TESTING

CONIDIA

FUELSTAT® is a Test for Detecting Microbial Contamination in Jet/Diesel Fuel



It works by simply adding water, fuel or a fuel/water mixture from storage tanks to the supplied bottle with blue extraction fluid.
(ALWAYS keep bottle inverted during test)
This will be explained in demonstration

The tester has to remove 4 drops onto a paper towel to remove fuel In tip.
Then add four drops of the sample into 6 wells and
come back to test after 10 minutes to get result

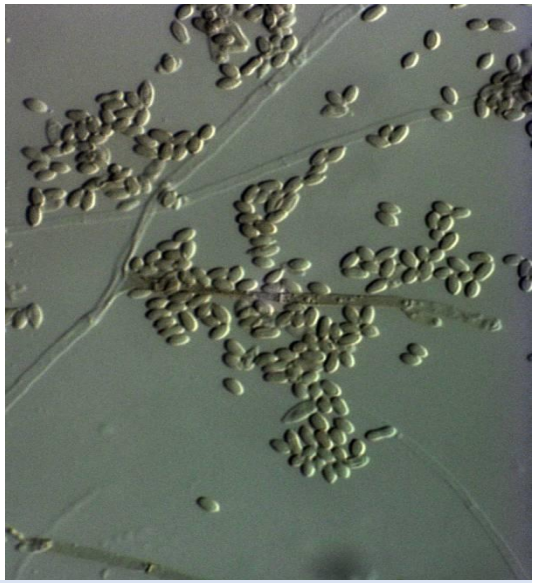
Following the easy to understand instructions supplied with each kit the tester records the result or uses the Fuelstat Result Phone App which provides a green, yellow or red indicator along with gps, time and date, inspector' name, fuel lot, tank ID etc.

FUELSTAT® RESINAE PLUS

FUELSTAT® DIESEL PLUS

What is Microbial Contamination?

Microbial Contamination occurs when a consortium of organisms (bugs) combine and grow in a fuel system feeding on the fuel.



These bugs include bacteria, yeasts and moulds. The lead organism is most often *Hormoconis resinae* (H Res)

What is Microbial Contamination?

Organisms live predominantly in the water phase and feed off the fuel. They will be found in differing concentrations in a fuel sample and water sample.

Water
Free or entrained

Micro-organisms
Bacteria Yeasts Moulds

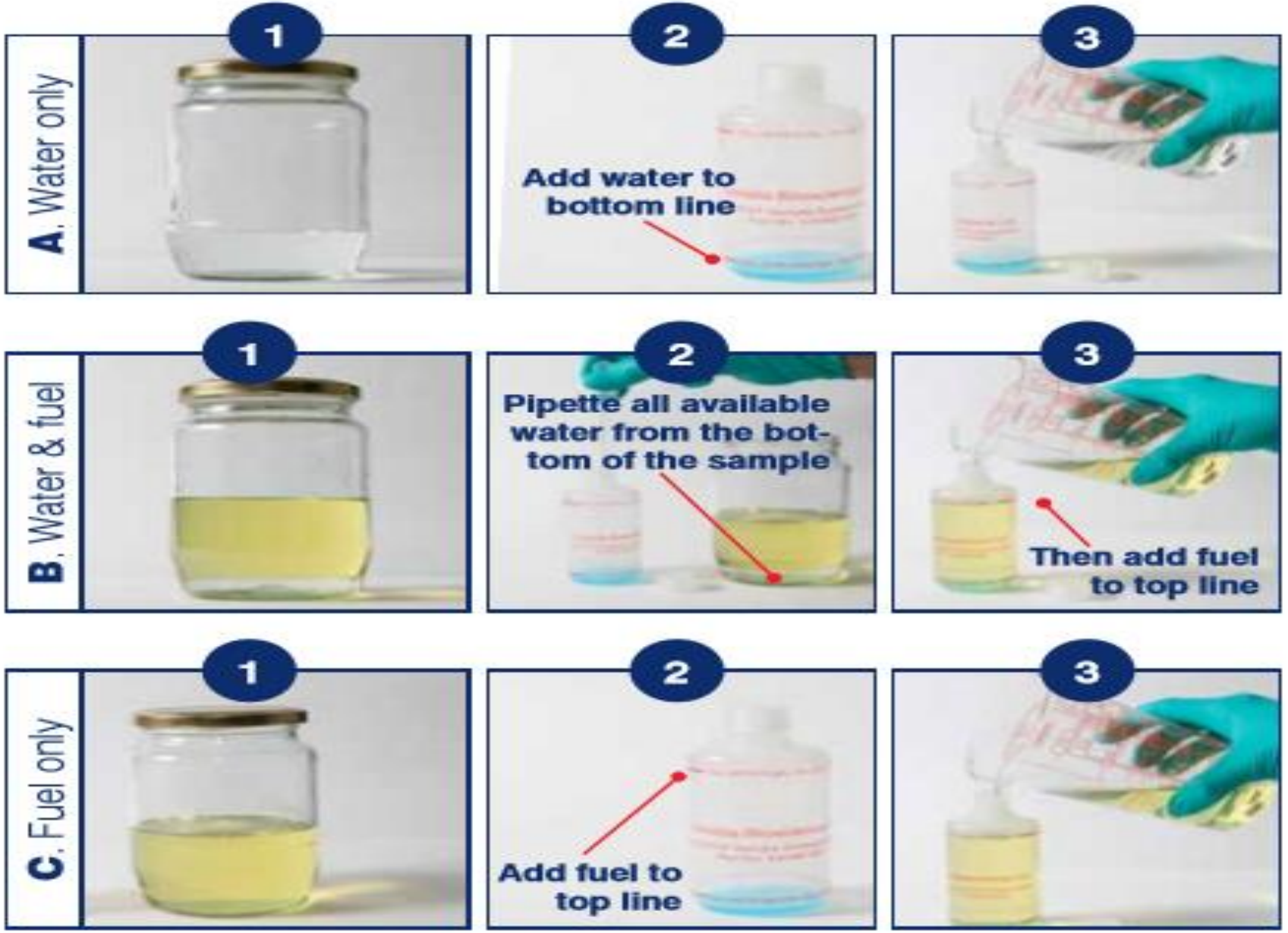
IATA lay down limits of acceptable levels of contamination in water and fuel.

More of this later……

What the Tester is Required to Do

- Put on protective gloves and get clean sample jar
- Take a sample and observe for free or entrained water
- Or if no free water is gained from fuel sample note that this is fuel only sample
- Place fuel sample on flat clean work table
- Open FUELSTAT® pack and place items onto table
- Have some tissues available

Filling the Sample Bottle



Using Sample Bottle

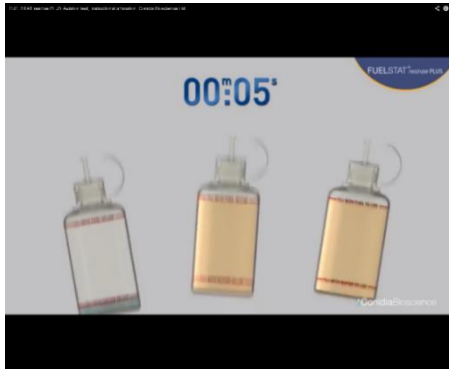
1.Shake the bottle for 5 seconds.

2.Invert the bottle and allow the blue solution to settle completely into the dropper.

3.Keep the bottle inverted, gently remove the cap from the top of the bottle, and discard 4 initial drops onto tissue. The remaining blue extraction liquid in the bottle is needed for the test.

4. Keep the bottle inverted and place 4 drops of the blue extraction liquid in each of the 6 sample wells of the test paddles, squeezing gently as required. Do not place water or fuel in the sample wells. Notice that the sample well will turn blue.

1



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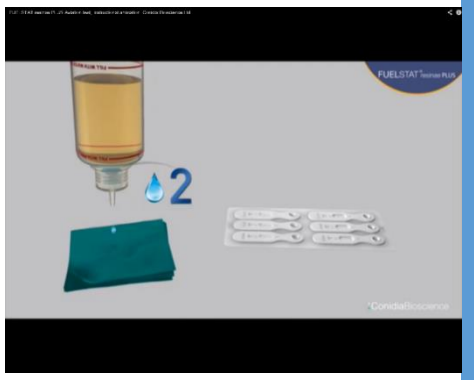

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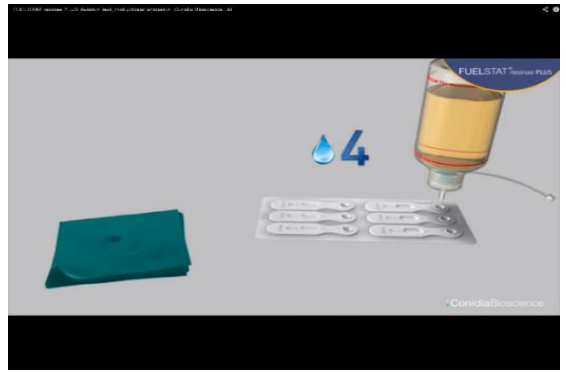
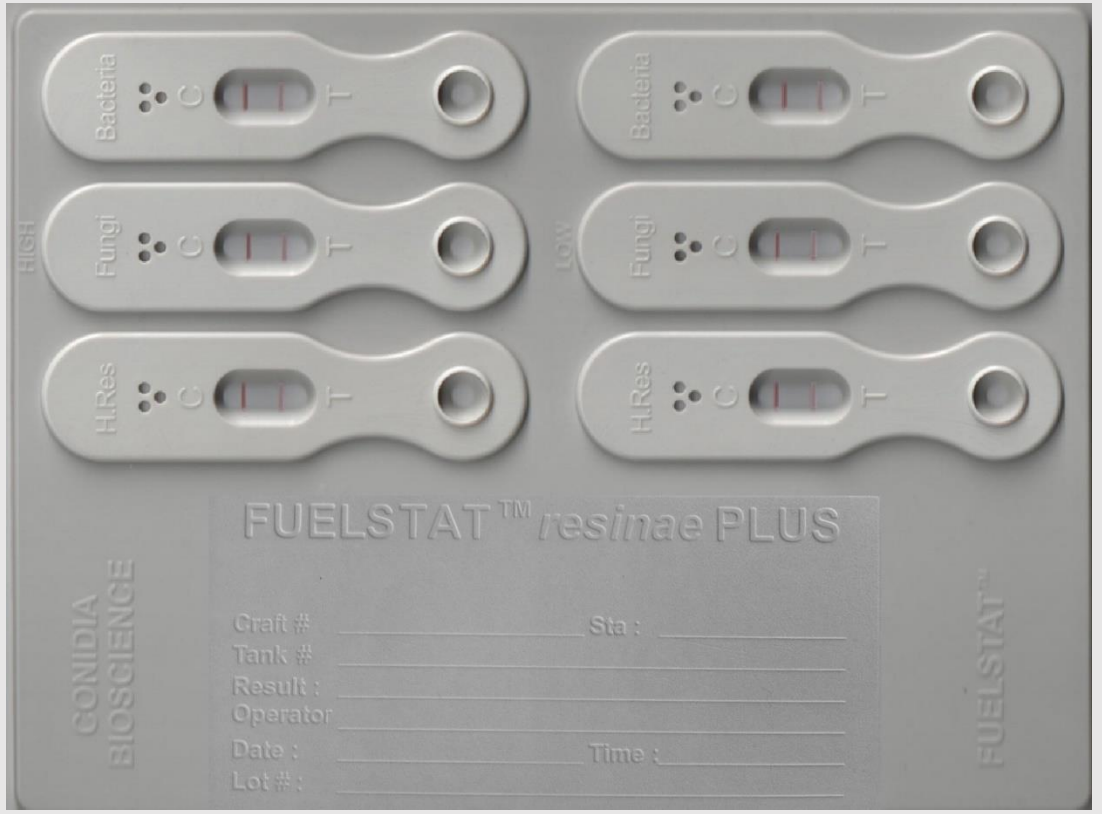


Negative Result

6 Control lines and 6 Test

lines visible

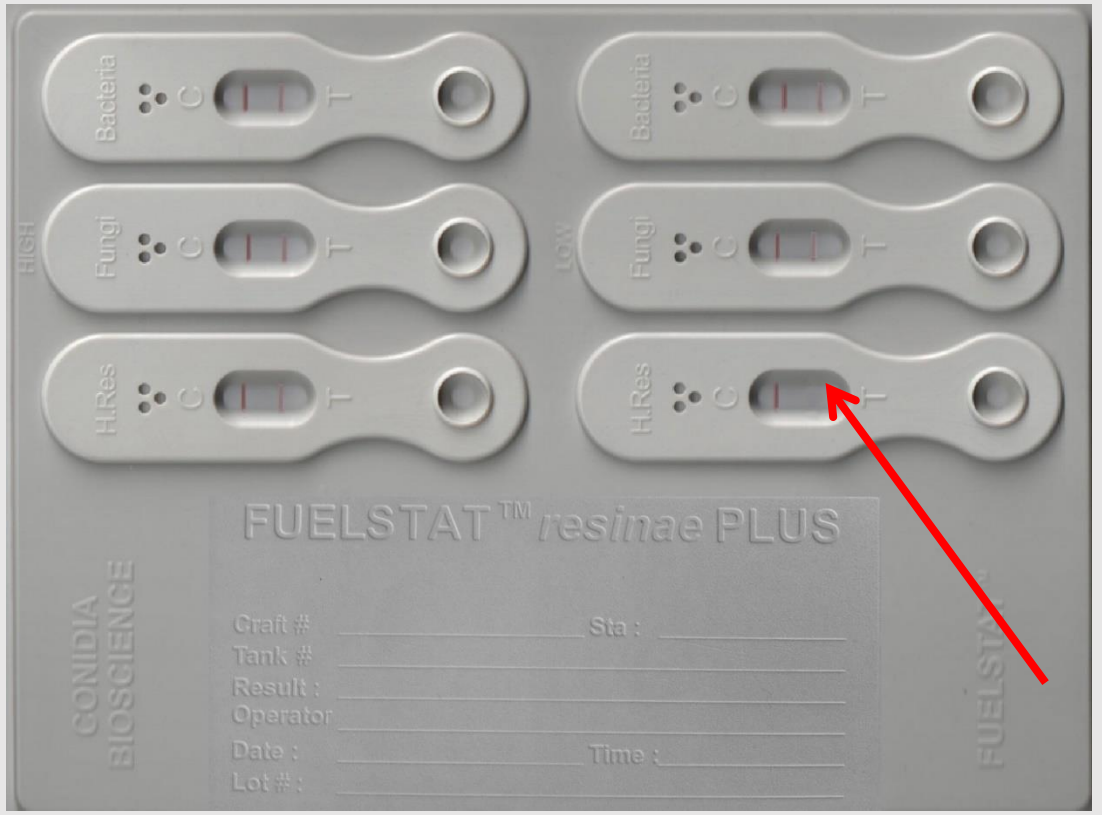
“Lines are good” -Negative



1, 2 or 3 Low Positive Moderate Result

6 Control lines visible; and a test line on all the “HIGH” LFDs, but no line visible on 1, 2 or 3 of the LOW LFDs

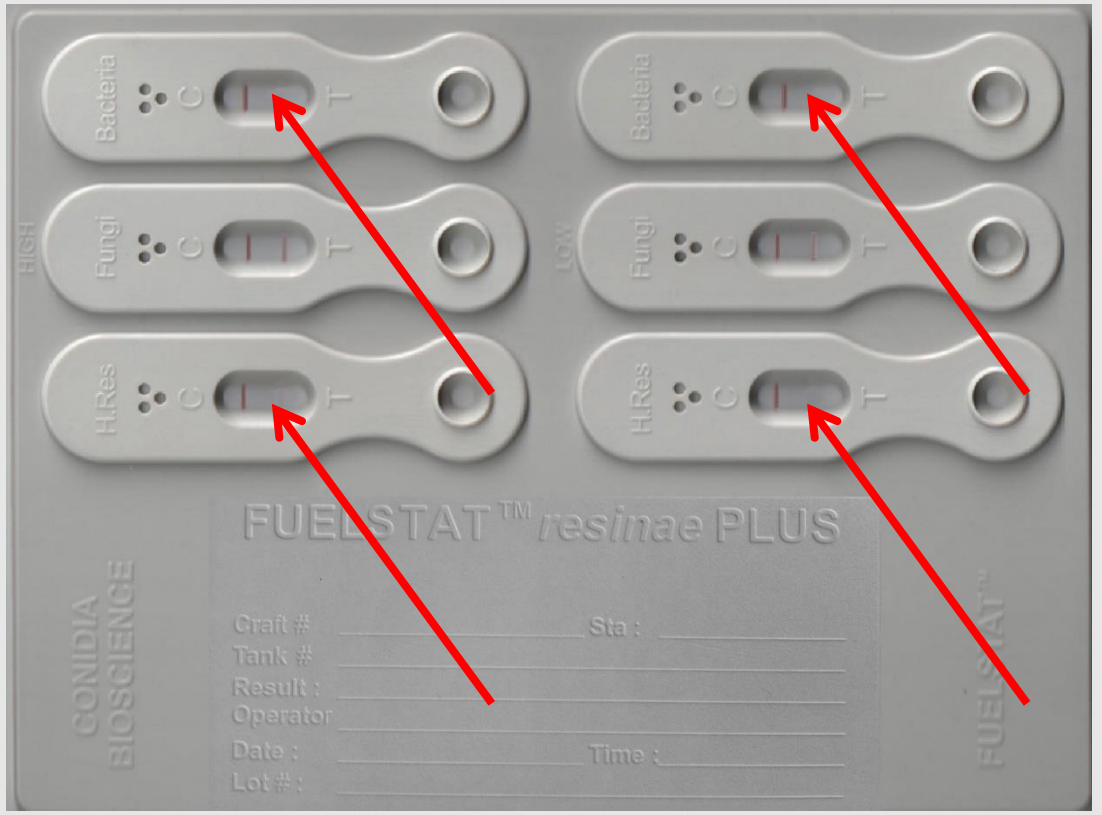
This is known as Moderate Result Highlight to Engineer to follow Maintenance Manual



1, 2 or 3 High Positive Result, Indicating Heavy Contamination

6 Control lines visible; no test lines visible on 1, 2 or 3 HIGH LFDs and their corresponding LOW LFD

This is known as Heavy Contamination. Highlight to Engineer to follow maintenance manual

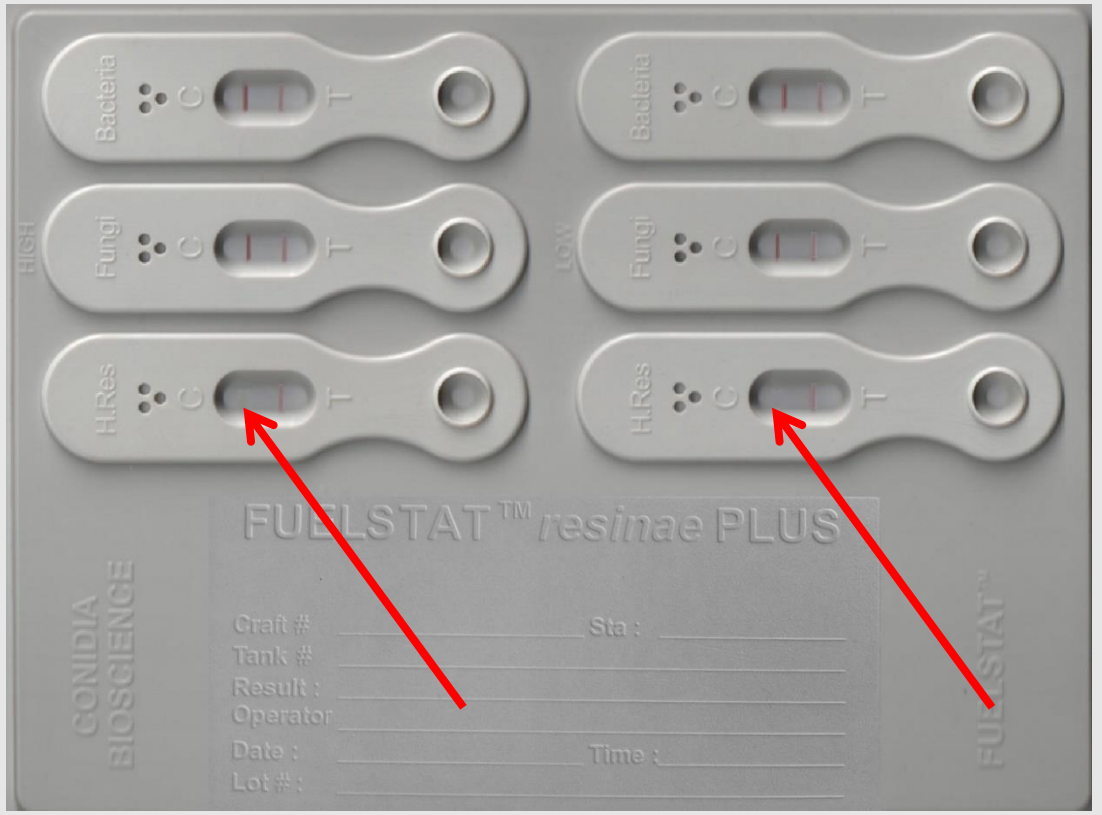


Failed Test

Any Control Line not visible (irrespective of “Test lines” appearing)

Two main reasons;

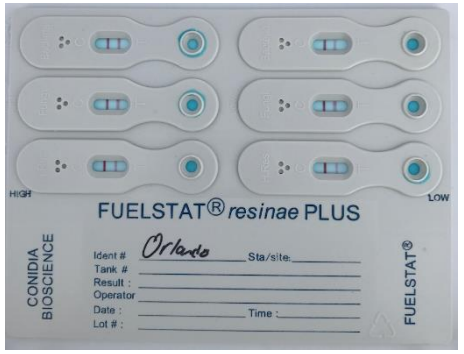
1. Fuel has been dropped onto viewing pane
2. Sample bottle has to be kept inverted at all times



FUELSTAT® Diesel & Jet Fuel Test Kits

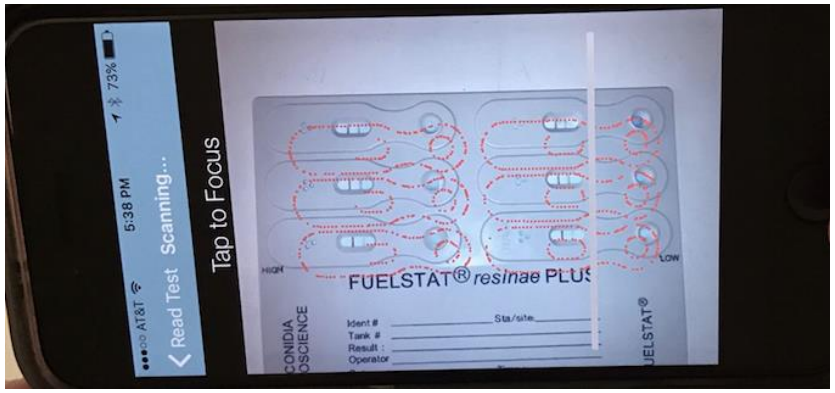
Quick, Easy and Accurate Test for Microbial Contamination

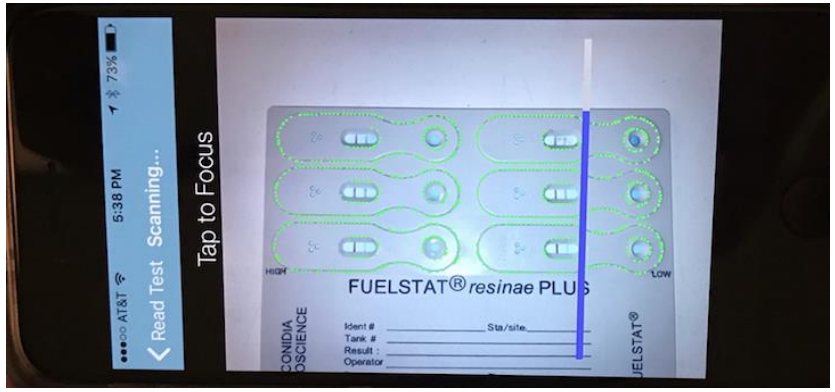
"EZ" Test Instructions



6. Control & Test lines appear (or not!)

7a. Interpret the results using the test instructions, or…





7b. Let the FUELSTAT mobile App Interpret the results.

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www.FUELSTAT.us

Why FUELSTAT®?

Negligible – too little to worry about

Moderate – treat fuel with approved biocide

Heavy – empty and clean tank

- Simple
- Rapid – Results in as little as 10 Minutes
- On-Site so no re-visit costs necessary
- No Special Skills, Handling or Disposal requirements
- No Capital Equipment
- Cannot be Cross Contaminated
- As part of a maintenance programme warranties can be maintained
- Proven technology

LET'S TAKE A LOOK!

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Quick, Easy and Accurate Test for Microbial Contamination

"EZ" Test Instructions

8. Record and email results for Intervention & Counter Measures

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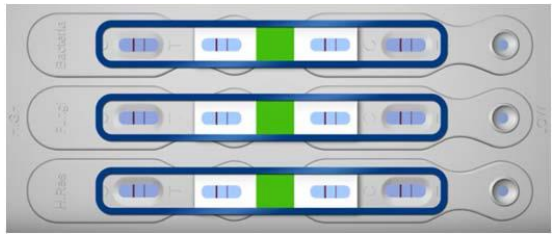
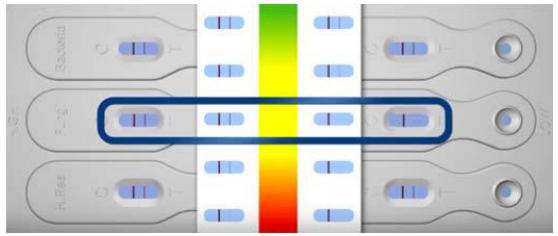
Quick, Easy and Accurate Test for Microbial Contamination

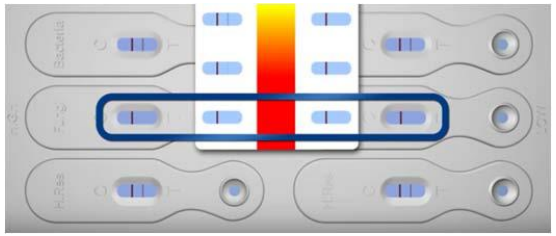
Intervention & Counter Measures:



NEGLIGIBLE
Test again in 6 or less months



MODERATE
Treat fuel in tank and retest



HEAVY
Clean tank, polish fuel and retest

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Test to Protect Your Assets

Why is speed of testing for Microbial contamination so important?

ASTM D6469 – 14 Standard Guide for Microbial Contamination in Fuels and Fuel Systems, Section 8.5 states:

"Samples for Microbiological testing should be kept on ice for transport to the laboratory. Tests should be performed within 4 h and no later than 24 h after sampling. Samples stored at higher temperatures, or for longer times, can show the presence of microbial contamination that does not represent actual fuel system conditions."

Where do I get Help?

FUELSTAT® is manufactured by Conidia Bioscience Limited in UK.

Conidia Inc.

Boston, MA 02109

Mike Devine 1-781-733-7633

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NEW PRODUCT INTRO.

Answers with the Speed of Sound

- **Based on patented ultrasonic technology, software and a proprietary database of acoustic fingerprints.**
- **One can rapidly identify the type of liquid within a pipe or container without opening or sampling.**
- **The proprietary acoustic fingerprint database currently allows for the identification of over 200-300 liquids.**
- **New materials can be added to our material database as needed.**
- **The common fuels used in automotive, aviation and industrial applications are in the database.**
- **The acoustic sensors can be embedded into tanks and pipes providing real-time information.**
- **The technology can be used to constantly monitor coolants, lubricants and fuels used in equipment and reciprocating machines to identify potential degradation or non-conforming material.**
- **Machine learning algorithms can be employed in certain situations to determine their degradation patterns and support predictive maintenance scheduling.**

Non Intrusive Ultrasonic Testing

used for the

Rapid Inspection of Liquid Materials

Works on AST & UST Applications

PERCEPTIVE
SENSOR TECHNOLOGIES

Fall 2018

Portable Test Unit

Applications:

- **To test and identify fluids inside barrels, totes and other containers.**
- **Manifest verification and inventory control support applications.**
- **Plant maintenance including locating pipe clogs and fill levels.**

PERCEPTIVE
SENSOR TECHNOLOGIES

Drop Probe Sensor Unit

Applications:

- **To test and identify fluids within a tank on an as needed basis.**
- **Ability to identify different products as well as layered materials.**
- **Marked cables of up to 50 feet in length (metric or US/Imperial markings).**
- **Works on above and below ground tanks as well as containers.**

PERCEPTIVE
SENSOR TECHNOLOGIES