FUELSTAT®

:ConidiaBioscience

FUEL STORAGE & SUPPLY

On the spot testing for microbial contamination is good for business and profits

TRIED.TESTED.TRUSTED.

FUELSTAT® provides rapid detection of microbial contamination in fuel

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Is sending samples to a lab for microbial fuel tests worthwhile or economical?

Traditionally, fuel testing methods have depended on fuel samples being sent to a specialist laboratory for analysis. The next step is a waiting period of up to 4-7 days, or longer to get the results.

Sending the fuel samples to the lab isn't simple. ASTM D6469 highlights that if a sample is to be tested for microbial contamination and cannot be tested on-site, it should be transported on ice and tested within 24hrs or the sample may no longer be a true representation of the environment from which it came. Delays cause varying results which may cause an increased risk to you or your customer's asset.

- Why take the risk?...
- Why wait 4-7 days for a test report?

FUELSTAT® SOLUTION TEST. RESULT. REPORT

within 15 minutes

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FUEL STORAGE & SUPPLY

- Does your fuel contain dangerous levels of microbial contamination?
- FUELSTAT® can quickly help you find out!

FUELSTAT® is used across many aspects of the Fuel Supply Chain from refinery to wing in the aviation sectors, or to point of use for marine, transportation and power generation sectors for applications such as:

- Regular testing of fuel supply infrastructures such as pipelines, hydrants, holding tanks for jet fuel and diesel supply as per JIG/industry or internal operations guidelines
- Reactive testing of supply infrastructure when microbial contamination is suspected
- Proof of fuel being clear of microbial contamination prior to loading/unloading
- De-fuelling operations on behalf of clients

Tough markets demand efficient processes that are not always visible to clients

In an increasingly litigious environment providing chain of custody proof of fuel quality is becoming increasingly important throughout the fuel supply chain, but rapid, on-site microbiological testing using FUELSTAT® can also have several operational benefits:

- Taking only minutes, not days, provides ability for fast remedial action if necessary
- Treat only what needs treating, helping to reduce overall maintenance costs
- Minimise potential of cross contaminating other assets, thus reducing downtime
- Protection of reputation when used at time of fuel hand over

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MICROBIAL CONTAMINATION IN FUEL

If you're a user or supplier of jet or diesel fuels, microbial contamination can pose a serious threat to you and your customers.

Once this microbial contamination starts to develop, it can get out of control quickly. The micro-organisms produce a thick, slimy material called biomass, which clogs engines and stops them from working properly. Biomass can also influence metal corrosion, causing permanent damage to tanks and mechanical parts. If left for a prolonged period of time without treatment, it can cause:

- Rejected fuel deliveries
- Corrosion and tank leakage
- Blocked filters
- Customer increased fuel consumption, blocked injectors and Engine failures

HOW DO YOU MANAGE THE RISKS OF JET AND DIESEL FUEL MICROBIAL CONTAMINATION?

There is no way to completely prevent microbes from entering fuel. These microbes are all around us, in the air and on surfaces, and can enter the fuel in numerous ways once it leaves the refinery. Most importantly, even the well-maintained fuel delivery systems will experience condensation - and when water gets into fuel, microbes do too. If severe microbial contamination is discovered in your fuel, it can be treated with specialist fuel cleansers and biocides. However, this procedure can cost many thousands of dollars and usually requires taking your fuel and generators out of action. To minimise the risks, there are three key activities you need to do:

1. Remove water from tanks
2. Store fuel correctly
3. **Test for fuel microbial contamination regularly...**

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THE SOLUTION IS AS SIMPLE AS 1-2-3

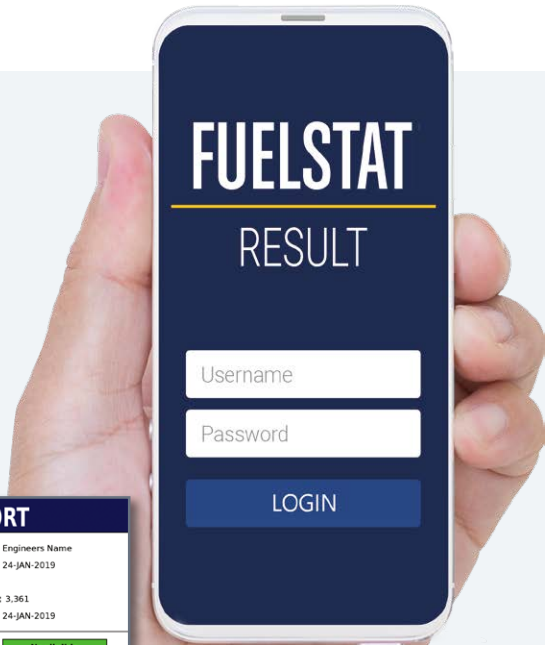
FUELSTAT® PLUS

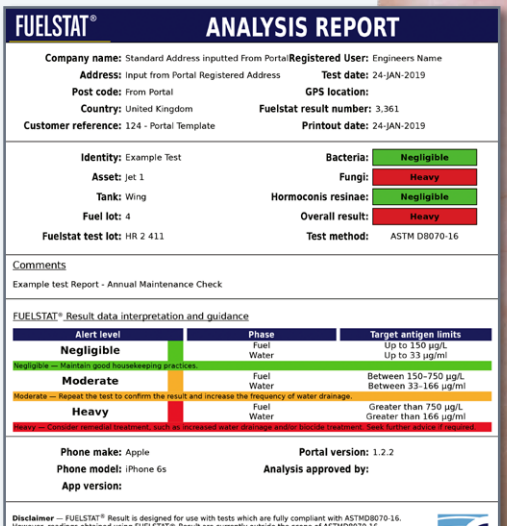
- The ultra-simple test that just requires ***4 drops*** of sample
- ***15 minutes*** to result as opposed to 4-7 days!
- ***'Test at the tank'*** technology - no laboratory required
- No requirement for additional ***equipment*** or ***sterility measures***

In critical times, you need a fast, convenient testing method - one that doesn't require multiple people to complete the process. Using FUELSTAT®, a single person can conduct tests at the tank after minimal training from our instructional videos. FUELSTAT® is based on immunoassay antibody tests. Just as a pregnancy test searches only for markers of human chorionic gonadotropin, FUELSTAT® only searches for the markers of bacteria and fungi that can grow in jet and diesel fuel and can potentially cause both operational downtime, corrosion and in worse case safety issues.

FUELSTAT® RESULT

- The easy to use app that gives ***immediate visual verification*** of result
- ***Reduces risk*** of misinterpretation
- No need for additional equipment other than a smartphone
- Fully ***detailed report*** can be instantly produced in PDF format





FUELSTAT® **ANALYSIS REPORT**

Company name:	Standard Address inputted From Portal	**Registered User:**	Engineers Name
Address:	Input from Portal Registered Address	**Test date:**	24-JAN-2019
Post code:	From Portal	**GPS location:**	
Country:	United Kingdom	**Fuelstat result number:**	3,361
Customer reference:	124 - Portal Template	**Printout date:**	24-JAN-2019

Identity:	Example Test	**Bacteria:**	Negligible
Asset:	Jet 1	**Fungi:**	Heavy
Tank:	Wing	**Hormoconis resinae:**	Negligible
Fuel lot:	4	**Overall result:**	Heavy
Fuelstat test lot:	HR 2 411	**Test method:**	ASTM D8070-16

Comments

Example test Report - Annual Maintenance Check

FUELSTAT® Result data interpretation and guidance

Alert level	Phase	Target antigen limits
Negligible	Fuel	Up to 150 µg/L
	Water	Up to 33 µg/ml
Negligible — Maintain good housekeeping practices.		
Moderate	Fuel	Between 150–750 µg/L
	Water	Between 33-166 µg/ml
Moderate — Repeat the test to confirm the result and increase the frequency of water drainage.		
Heavy	Fuel	Greater than 750 µg/L
	Water	Greater than 166 µg/ml
Heavy — Consider remedial treatment, such as increased water drainage and/or biocide treatment. Seek further advice if required.		

Phone make:	Apple	**Portal version:**	1.2.2
Phone model:	iPhone 6s	**Analysis approved by:**	
App version:			

Disclaimer — FUELSTAT® Result is designed for use with tests which are fully compliant with ASTMD8070-16.

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Who we are:

FUELSTAT® fuel tests are developed, manufactured and marketed by Conidia Bioscience Ltd. Based in UK, Conidia Bioscience was founded in the early 2000's by experts in immunoassay techniques and holds the internationally patented intellectual property for FUELSTAT®.

Where to find us:

FUELSTAT® is distributed globally by a network of specialist distributors covering the major sectors. To arrange for a distributor to support you simply contact info@conidia.com.

Hammonds®

HAMMONDS FUEL ADDITIVES, INC.

Houston, Texas • (800) 548-9166

www.biobor.com

ASTM INTERNATIONAL

FUELSTAT® meets the ATSM International D8070-16 Standard

JIG jigonline.com

FUELSTAT® is listed as an approved product by Joint Inspection Group

STRATEGIC PARTNER IATA INTERNATIONAL AIR TRANSPORT ASSOCIATION

FUELSTAT® is listed as a recommended product by IATA. Conidia Bioscience is a Strategic Partner with IATA

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