FUELSTAT®

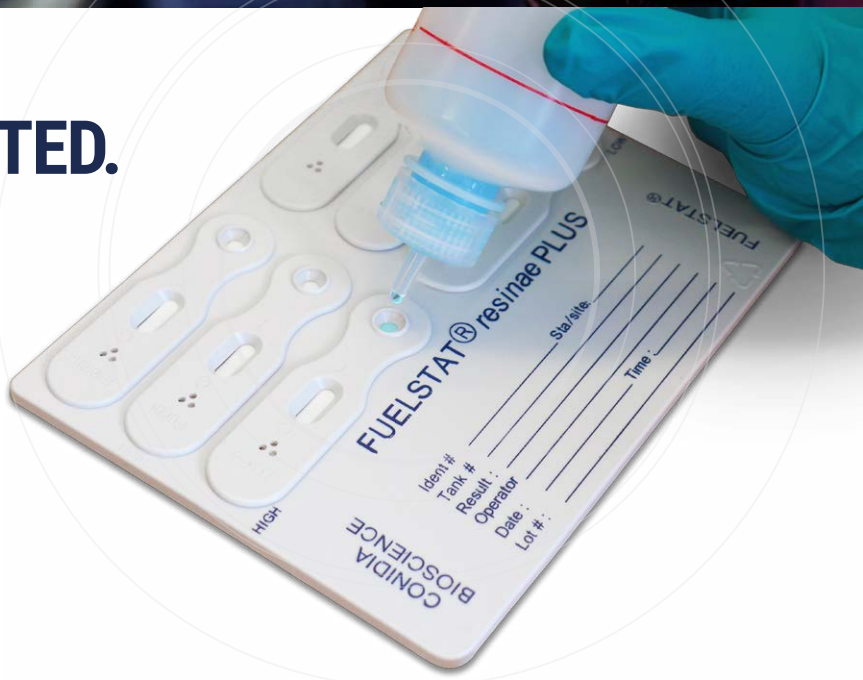
ConidiaBioscience

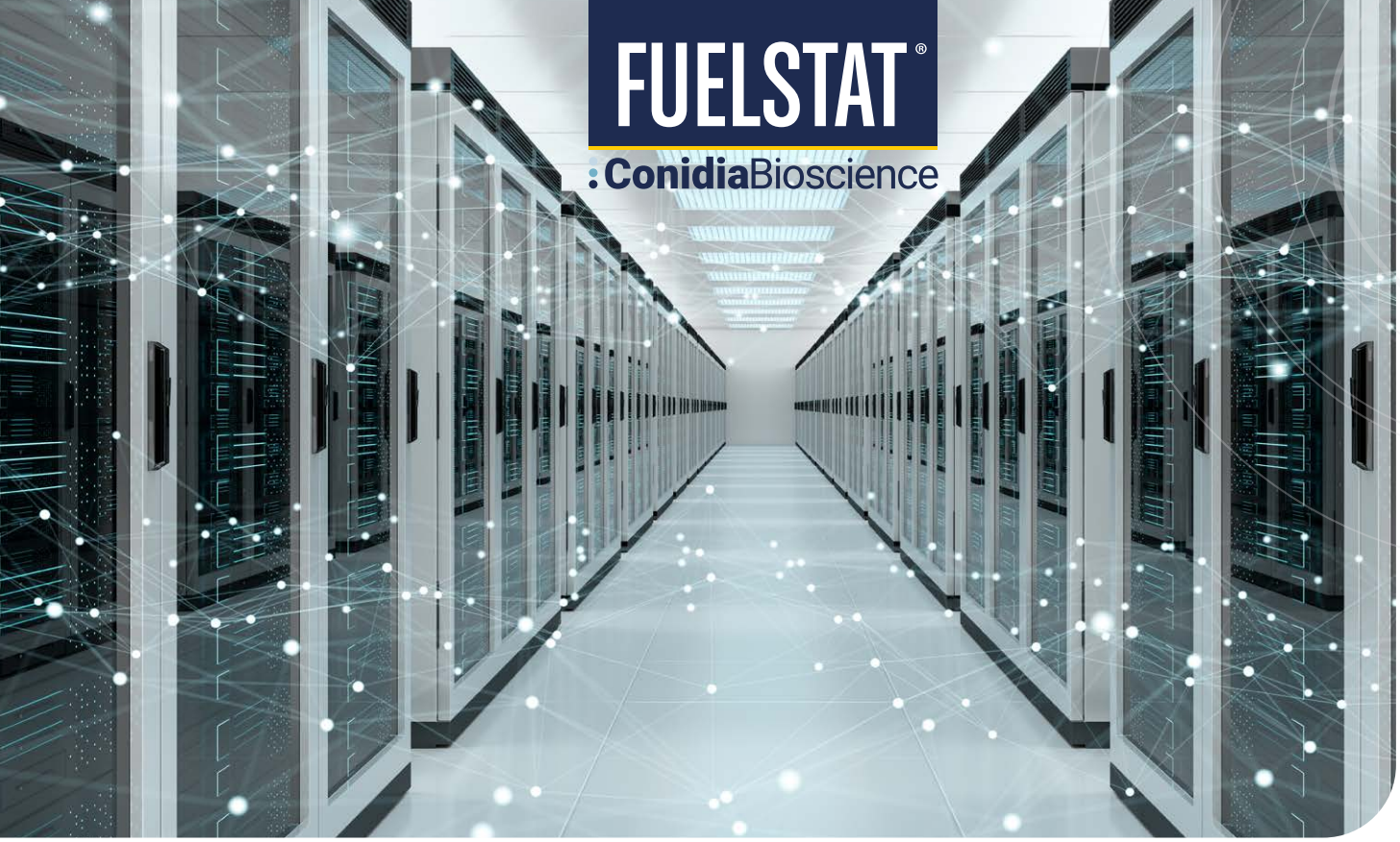
BACKUP POWER GENERATION

Is your backup generator 100% ready for a power emergency?

TRIED.TESTED.TRUSTED.

FUELSTAT® provides rapid detection of microbial contamination in fuel





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

Traditionally, diesel 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 your 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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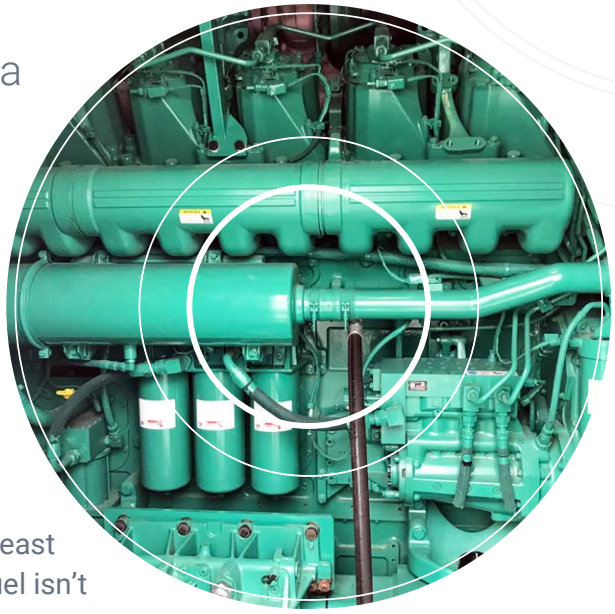

Is your backup generator 100% ready for a power emergency?

In a power emergency, your generator fuel is just as important as the generator itself. And at times when power emergencies seem more likely - or have greater consequences - you need to be 100% sure your fuel is usable. That means carefully monitoring and managing microbial contamination (a.k.a diesel bug) because:

- ***Backup generators are at high risk of microbial contamination.*** Modern diesel fuels always have at least some level of microbial contamination. And when fuel isn't changed often, this contamination has more time to grow to dangerous levels.
- ***Severe microbial contamination could mean disaster.*** If microbial contamination grows quickly between tests, it could potentially stop your generators working.
- ***Traditional fuel tests are inconvenient.*** Testing for microbial contamination usually involves hiring an external team, sending samples off-site, and waiting days for results.
- ***Microbial contamination risks are often underestimated.*** Many maintenance contractors do not realise how fast diesel bug grows, or the danger it presents.

The only way to have total confidence in your generators is with a fuel maintenance program that incorporates regular, accurate testing - so there's 0% room for error.

WHY IS EMERGENCY GENERATOR FUEL AT RISK?

Middle distillate fuels can be affected by contaminants like water, particulates (e.g. rust and dust), other fuels, and microbial contamination. Microbial contamination can enter through water droplets, which get into fuel systems largely through condensation and grow in the space between water and fuel.

Diesel fuel is particularly at risk of microbial contamination due to its properties. In the last 10+ years Fatty Acid Methyl Ester (FAME), also called biofuel, has been added to diesel. FAME is susceptible to microbial contamination because it attracts and holds water.

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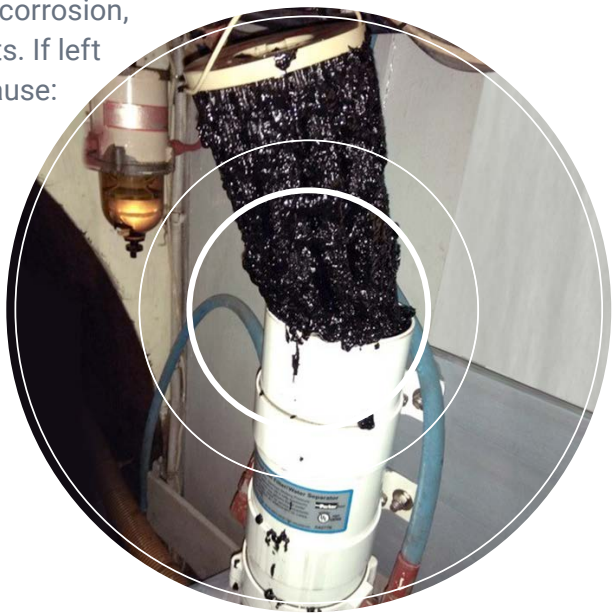
MICROBIAL CONTAMINATION IN FUEL

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

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:



- Blocked filters
- Increased injector wear
- Increased fuel consumption
- Engine failures
- Fuel starvation
- Corrosion and tank leakage

HOW CAN YOU DEFEND YOUR DIESEL GENERATOR AGAINST 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

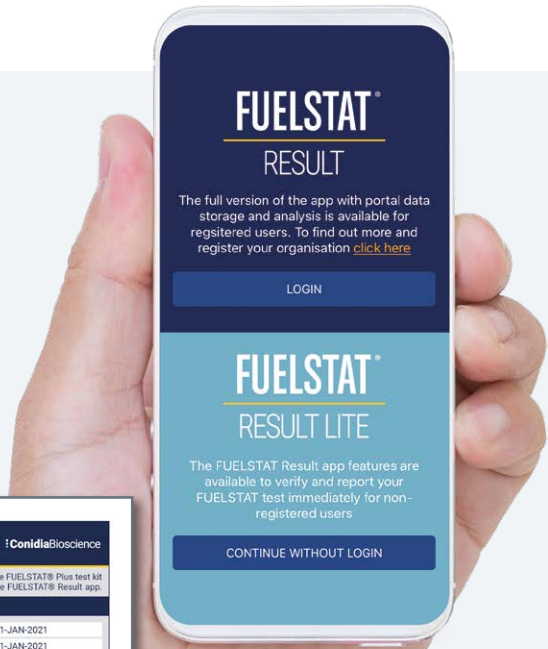
FUELSTAT® PLUS

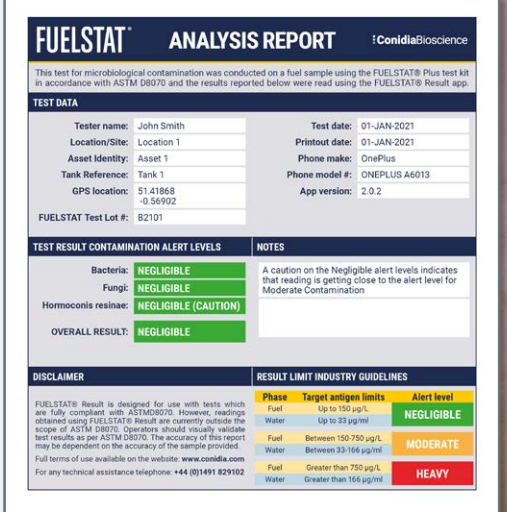
- The ultra-simple test that just requires ***4 drops*** of sample
- ***15 minutes*** to result as opposed to 4-7 days!
- ***'Test at the tank'*** technology - no laboratory required
- No requirement for additional ***equipment*** or ***sterility measures***

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 ConidiaBioscience

This test for microbiological contamination was conducted on a fuel sample using the FUELSTAT® Plus test kit in accordance with ASTM D8070 and the results reported below were read using the FUELSTAT® Result app.

TEST DATA

Tester name:	John Smith	Test date:	01-JAN-2021
Location/Site:	Location 1	Printout date:	01-JAN-2021
Asset Identity:	Asset 1	Phone make:	OnePlus
Tank Reference:	Tank 1	Phone model #:	ONEPLUS A6013
GPS location:	51.41868 -0.56902	App version:	2.0.2
FUELSTAT Test Lot #:	B2101		

TEST RESULT CONTAMINATION ALERT LEVELS	
Bacteria:	NEGLIGIBLE
Fungi:	NEGLIGIBLE
Hormoconis resinae:	NEGLIGIBLE (CAUTION)
OVERALL RESULT:	NEGLIGIBLE

NOTES: A caution on the Negligible alert levels indicates that reading is getting close to the alert level for Moderate Contamination

DISCLAIMER

FUELSTAT® Result is designed for use with tests which are fully compliant with ASTMD8070. However, readings obtained using FUELSTAT® Result are currently outside the scope of ASTM D8070. Operators should visually validate test results as per ASTM D8070. The accuracy of this report may be dependent on the accuracy of the sample provided.

Full terms of use available on the website: www.conidia.com

For any technical assistance telephone: +44 (0)1491 829102

RESULT LIMIT INDUSTRY GUIDELINES

Phase	Target antigen limits	Alert level
Fuel	Up to 150 µg/L	NEGLIGIBLE
Water	Up to 33 µg/ml	
Fuel	Between 150-750 µg/L	MODERATE
Water	Between 33-166 µg/ml	
Fuel	Greater than 750 µg/L	HEAVY
Water	Greater than 166 µg/ml	

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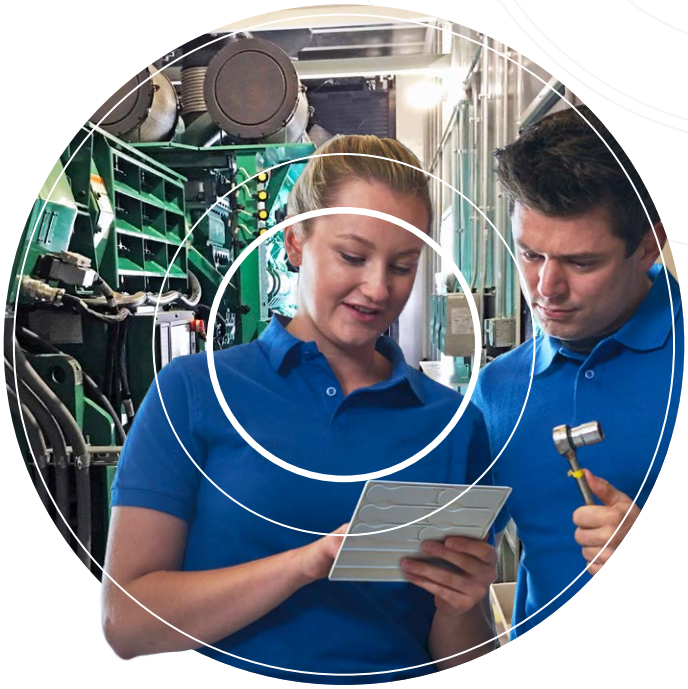
Who we are:

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.

ASTM INTERNATIONAL

FUELSTAT® complies with ATSM D8070 and ASTM D6469 Standard Guide for Microbial Contamination in Fuels

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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