

MARINE & OFFSHORE

IMO 2020: Is your marine fuel at greater risk of microbial contamination?

TRIED. TESTED. TRUSTED.

FUELSTAT® provides rapid detection of microbial contamination in fuel





Is sending samples onshore for microbial fuel tests worthwhile or economical?

Traditionally, marine fuel testing methods have depended on fuel samples being sent onshore 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 onshore 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



MARINE & OFFSHORE

Every year, many sea vessels experience technical and mechanical problems caused by fuel microbial contamination.

Microbial contamination can grow quickly in short time periods—so testing marine fuel yourself is very important. Similarly in offshore applications there are many users of stored fuel; day tanks, backup power generators, cranes and the transportation that relies on stored fuel (diesel-powered life craft and helicopters).

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



IMO 2020: WHY MARINE FUEL MANAGEMENT IS EVER MORE IMPORTANT

The IMO 2020 regulations are important for fuel users, as they require fuel manufacturers to reduce sulphur concentration.

Whilst the direct effects of sulphur reduction on long term fuel stability are, yet unknown, several published studies indicate that introduction of biodiesel, primarily Fatty Acid Methyl Esters (FAME), can increase microbial contamination overall due to the hygroscopic (water absorption/retention) nature of FAME.

- How are you addressing the risk of increased microbial contamination?
- Regular ***fuel tank testing*** is advised at sea or in port
- Manual cleaning of fuel oil tanks during dry-docking and while the ship is in service

MICROBIAL CONTAMINATION IN FUEL

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

Microbial contamination, in particular, is almost always present in fuels to some degree. Left unchecked for too long, it can do serious harm to engines and tanks, and even cause leaks and environmental damage. Diesel "bug" microbial contamination creates a slime called a biofilm or biomass that can induce several issues. If left for a prolonged period of time without treatment, it can cause:

- Blocked filters
- Increased injector wear
- Increased fuel consumption
- Engine failures
- Corrosion and tank leakage
- Excessive exhaust smoke



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

A single case of diesel fuel microbial contamination, if left unchecked, can easily cost hundreds of thousands of pounds/dollars in damages and remedial activities. Basic fuel maintenance, in comparison, costs relatively little—so it makes good business sense to do these activities. 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...**

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**

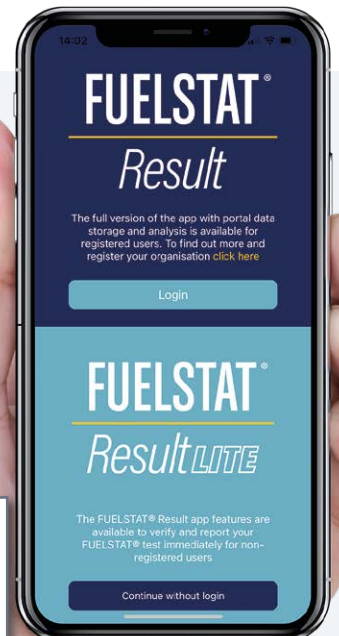


In critical times, you need a fast, convenient testing method - one that doesn't require multiple people to complete the process. Using FUELSTAT®, a single person can conduct tests at the tank after minimal training from our instructional videos. FUELSTAT® Plus is based on immunoassay antibody tests. Just as a pregnancy test searches only for markers of human chorionic gonadotropin, FUELSTAT® Plus 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		NOTES
Bacteria: NEGLECTIBLE		A caution on the Negligible alert levels indicates that reading is getting close to the alert level for Moderate Contamination
Fungi: NEGLECTIBLE		
Hormoconis resiniae: NEGLECTIBLE (CAUTION)		
OVERALL RESULT: NEGLECTIBLE		
DISCLAIMER		
FUELSTAT® Result is designed for use with tests which are fully compliant with ASTM D8070. 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	NEGLECTIBLE
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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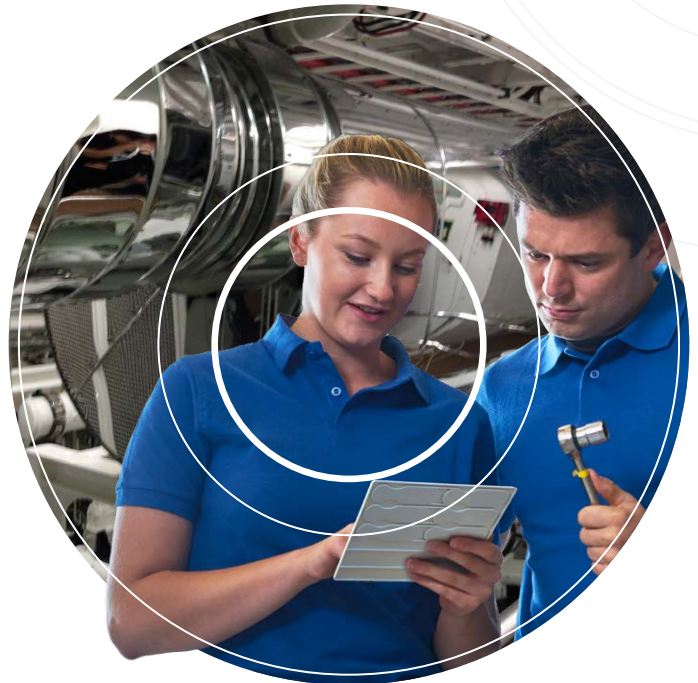
FUELSTAT®

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.



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