



FUEL CONTAMINATION & TESTING IN AIRCRAFT FUEL TANKS
Introducing the FUELSTAT[®] *resinae* PLUS TEST KIT
(Previously called Kerosene Advanced)

There is a small number of microbes that can degrade fuel. They tend to work together as a consortium. One of these, and the most dominant, is *Hormoconis resinae* (*H.res*). This was previously known as *Cladosporium resinae* or more commonly referred to as the “Jet Fuel Fungus”. Circumstances for *H.res* to be present in aviation fuel tanks vary but include temperature, humidity, quality of fuel and water content (water can migrate into the fuel from a variety of sources including condensation etc).

Monitoring fuel systems for contamination on a regular basis is important; particularly for *H.res* because it is the indicator species for contamination and the one organism that can stick to the surface of the tank. It is also highly corrosive and can cause more physical damage than the others to the tank and aircraft structure. Other problems include filter blockage, component failure and gauging errors.

Over the years we (and other scientific organisations) have noticed that *H.res* is present in approximately 95% of all cases of significant contamination in fuel. The other small % of cases is made up solely of bacteria or fungi (including some yeasts). The consortium works together in the vast majority of cases of contamination in the fuel tank

In response to calls from operators and maintenance and repair organisations for a real-time test for total microbial contamination in aircraft fuel tanks, **Conidia Bioscience Ltd** has developed the **FUELSTAT[®] *resinae* PLUS test kit**.

The **FUELSTAT[®] *resinae* PLUS test kit** (Part number **FHR8-2**, CAGE Code KE385) test measures the amount of different types of contamination: *H.res* bacteria and fungi including yeasts actively growing in the sample and reports that as the weight of material in the sample. This is a newer, more accurate measurement system than the old Colony Forming Unit (CFU) count.

The objective of the test is to provide rapid screening of fuel samples (water in fuel or fuel), giving a quick and accurate assessment of *H.res*, bacteria, and other fungi including yeasts in the fuel tank. This test is unlike current growth-based tests, which require a minimum of 72 hours to provide any results. The test measures the amount of active growth in the sample and provides action and alert levels.

Using the **FUELSTAT[®] *resinae* PLUS test kit** is quick and simple and requires little training to operate and to interpret the results. It comes complete with instructions and does not require sterile/lab conditions. It can be used “on the shop floor” and results are obtained in 10 minutes.

IATA and Conidia Bioscience Ltd recommends testing the fuel at least once a year, but because conditions vary globally, testing may have to be carried out more regularly in some parts of the world. Engineers should do a risk assessment to identify if their aircraft is at a higher than normal risk of contamination.

Conidia Bioscience Ltd offers a full backup service and can carry out a comprehensive lab test in extreme cases at our base in Egham.

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