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HY-LiTE® Jet A1 Fuel Test Kit

Ready-to-use Pens for detection of total biological contamination of Jet A1 / Jet A fuel as used in civil aviation.
The HY-LiTE® Jet A1 Fuel Test reagent kit is used in conjunction with the HY-LiTE® 2 luminometer.

Typical Composition

Patented capture solution for sampling from Jet A1 fuel samples. Adenosine triphosphate (ATP) is detected specifically by reaction with a luciferin/luciferase reagent in buffered solution.

Features and Benefits

- Results in minutes compared to days
- De-skilled method
- Field test - no need for laboratory facilities
- Quantitative, Objective results
- Numerical read-out. Easy interpretation
- Same protocol for all jet fuel samples (with / without water)
- Same action limits for all samples (with / without water)
- Detects biological activity directly in the sample. Is not dependant on growth of microorganisms in laboratory media
- Flexible sample volume. 1 litre recommended but lower volumes can be tested. For comparison with guidelines results can be volume adjusted: RLU/litre = RLU x (1000 ml/ ml sample volume)
- Recommended by IATA guideline, 2nd Edition

Experimental Procedure

Fuel contains small amounts of water and bears risk of microbial contamination. The biomass (e.g. bacteria, fungi) may grow and cause blocking of filters or corrosion of tanks. Such damage is a very expensive issue especially in civil aviation, when leading to unplanned maintenance in airport hangars and when waiting three days for microbiology results.

Protocol: Transfer the capture solution into 1 liter fuel sample. Close the bottle tightly, shake and let stand at least 5 minutes. Transfer the blue capture solution back to the pen sample tube. Dip the white stick of the pen into the liquid sample and press the stick into the Pen cuvette. Press and twist (screw) the upper part of the Pen until it contacts the lower part. Shake the Pen, then put into luminometer for measurement. Close lid and read the result on the HY-LiTE® luminometer display.

Specification

Application	Examination of biomass contamination of jet fuel samples
Format	Ready prepared cuvette test format for use with HY-LiTE® 2 luminometer
Pipettes	Each one small and large pipette for sample transfer
Reagent	Contains freeze-dried and stabilized luciferin/luciferase reagent (U.S. patents 5583024, 5674713, 5700673)
Capture solution	Patented solution for capturing of biomass from 1 liter fuel sample
Detection limit	1.4×10^{-14} mol ATP
Interference	Chemical additives and contaminants such as FSII and anticorrosive agents may interfere with the efficiency of the Capture Solution and the HY-LiTE® reaction and cause lower than expected readings. Biocides used for treatment of contaminated fuel may interfere with the reaction chemistry, depending on the concentration and type of biocide in the fuel. The effect of Kathon FP1.5 at 100 ppm w/ w and Biobor JF at 270 ppm w/w have been tested in fuel and cause no significant interference on the HY-LiTE® test.
Ambient conditions	Measurements at +5 to +35 °C
Storage conditions	The test pens are stable up to the date stated on the pack, when stored closed at +2 to +8°C. The shelf-life includes a period of transport or storage of up to 3 weeks at room temperature.
Disposal	HY-LiTE pens can be disposed off with the normal waste.

Literature

IATA "Guidance Material on Microbiological Contamination in Aircraft Fuel Tanks" 2nd ed. 2004

Ordering Information

Product	Merck Cat. No.	Pack contents
HY-LiTE® Jet A1 fuel Test Kit	1.30196.0021	20 fuel test pens and 2 x 20 pipettes
HY-LiTE® 2 luminometer	1.30100.0221	Luminometer with accessories in shoulder bag