



HY-LiTE® Jet A1 Fuel Test Kit

Ready-to-use pens for the detection of total biological contamination of fuel.

The HY-LiTE® Jet A1 Fuel Test kit is used in conjunction with a HY-LiTE® 2/2A luminometer.

Fuel contains small amounts of water and bears risk of microbial contamination. Biomass created from microbial contamination (e.g. bacteria, fungi) in the fuel may grow and cause blocking of filters, corrosion of fuel tanks, or failure of the fuel quantity indication system (FQIS). Such damage is a very costly issue, especially in civil aviation, where issues can lead to delayed flights, unplanned maintenance, and delays waiting for microbiology results.

Typical Composition

Patented capture solution for sampling from fuel samples facilitates detection of adenosine triphosphate (ATP) by reaction with a luciferin/luciferase reagent in buffered solution.

User Benefits

- Results in <10 minutes compared to 3–4 days
- No special skill or advanced training required
- Testing flexibility—test in the field or in a lab
- Quantitative, objective results
- Numerical read-out with 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. It is not dependent on growth of microorganisms in laboratory media
- Flexible sample volume. 1 liter recommended but lower volumes can be tested. For comparison with guidelines, results can be volume adjusted:
 $RLU/liter = RLU \times (1000 \text{ mL/mL sample volume})$

Test Procedure

Using the small pipette, transfer the blue capture solution from the test pen reservoir into the 1 liter fuel sample bottle. Close the bottle tightly, shake and let stand at least 5 minutes. Using the large pipette, transfer the blue capture solution back into the test pen's capture solution reservoir. Dip the white stick of the test pen into the capture solution in the reservoir then press the stick into the Pen cuvette. Press and twist (clockwise) the upper part of the Pen until it contacts the lower part. Shake the Pen, then insert into HY-LiTE® 2/2A luminometer for measurement. Close lid and read the result on the instrument's display.



Specification

Application	Detection of biomass contamination of Jet A1/Jet A fuel fuel samples. (The kit can also be used for diesel, biodiesel, biodiesel-blended fuel, and non-EtOH blended gasoline).
Format	Ready prepared cuvette test format for use with HY-LiTE® 2/2A luminometer
Reagent	Contains freeze-dried and stabilized luciferin/luciferase reagent (U.S. patents 5583024, 5674713, 5700673)
Capture solution	Patented blue solution for capture of biomass from a 1 liter fuel sample
Detection limit	1.4 x 10 ⁻¹⁴ mol ATP
Interference	Chemical additives and contaminants such as FSII and anti-corrosive agents may interfere with the efficiency of the Capture Solution and the ATP bioluminescent reaction, which could cause lower than expected readings. Biocides used to treat 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® Jet A1 Fuel Test.
Industry Recommendations	<ul style="list-style-type: none">• IATA (International Air Transport Association), "Microbiological Contamination in Aircraft Fuel Tanks", 5th edition and newer• ASTM International D7463, "Standard Test Method for Adenosine Triphosphate (ATP) Content of Microorganisms in Fuel, Fuel/Water Mixtures, and Fuel Associated Water", 2008 and newer
Ambient conditions	Measurements at 5–35 °C
Storage conditions	The test pens are stable up to the date stated on the package when stored closed at 2–8 °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 of with the normal waste.
Kit Contents	<ul style="list-style-type: none">• 20 Jet A1 Fuel Pen tests• 20 large pipettes• 20 small pipettes

Ordering Information

Cat. No.	Item	Contents	Application
HY-LiTE® Items			
1.30196	HY-LiTE® Jet A1 Fuel Test Kit	<ul style="list-style-type: none">• 20 fuel test pens• 20 large pipettes	Detection of total biological contamination in fuel samples
1.30100	HY-LiTE® 2A Instrument Kit	<ul style="list-style-type: none">• Instrument luminometer• AC charger and adapters• USB cable for PC sync• TREND2 PC software	HY-LiTE® 2A Luminometer complete with accessories in a robust, compact carrying bag

Recommended Nalgene® Plastic Bottles—available on SigmaAldrich.com

For the collection, preparation (including shaking), and extraction of fuel samples.

Note: Other plastic sample bottles may work, but performance of the HY-LiTE® Jet A1 Fuel Test cannot be guaranteed if bottles other than these are used.

Item Description	Cat. No.	Pack Size
Style 2104 Plastic HDPE Bottles		
1 L fill volume	B9407	6/Case
500 mL fill volume	B9282	12/Case
Economy Wide Mouth HDPE Bottles		
1 L fill volume	TMO332189-0032	50/Case
500 mL fill volume	TMO332189-0016	125/Case

Merck KGaA
Frankfurter Strasse 250
64293 Darmstadt, Germany

To place an order or receive technical assistance

In Europe, please call Customer Service:

France: 0825 045 645

Germany: 069 86798021

Italy: 848 845 645

Spain: 901 516 645 Option 1

Switzerland: 0848 645 645

United Kingdom: 0870 900 4645

For other countries across Europe, please call: +44 (0) 115 943 0840

Or visit: [MerckMillipore.com/offices](https://www.merckmillipore.com/offices)

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