

 Nobil Petroleum Testing, Inc.

www.nobilpetroleumtesting.com

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GTP Aviation Fuel Conference

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INDUSTRY STANDARDS AND GUIDELINES



ICAO



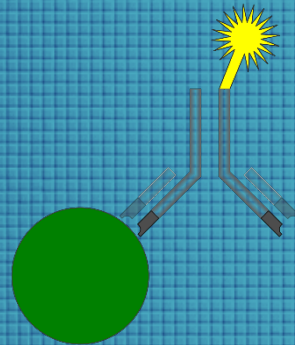
- International Civil Aviation Organization (ICAO) *Manual on Civil Aviation Jet Fuel Supply (DOC 9977 An/489)*
 - The document acts as a reference point to key industry guidance and standards
- **Aircraft fuel tank:** *IATA Guidance Material on Microbiological Contamination in Aircraft Fuel Tanks*
- **Aviation Supply Chain**
 - JIG Bulletin 83 and Technical Information Document; *Microbial Monitoring Strategies/ Microbial Growth Risk Management & Testing*
 - *EI Guidelines for the Investigation, Monitoring and Avoidance of Microbial Growth and Contamination in Liquid Fuel Tanks and Systems- fuel systems monitoring*
 - *EI/JIG 1530 Quality Assurance Requirements for the Manufacture, Storage and Distribution of Aviation Fuels to Airports.*
 - *ATA103- Standard for Jet Fuel Quality Control at Airports*
- *ASTM 7464- Standard Practice for Manual Sampling of Liquid Fuels, Associated Materials and Fuel System Components for Microbial Testing.*

MICROBIOLOGICAL TEST KITS

- Microbiological test kits enable easy on-site detection
- Different methods employ different technology- 4 Basic Categories



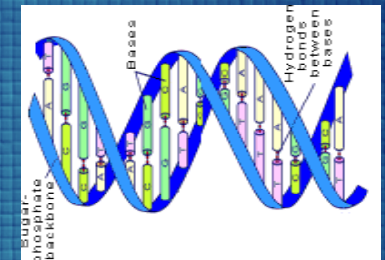
Nutrient Growth Media



Immunoassay



Bioluminescence



Genomics

- Different methods different advantages/disadvantages- **IMPORTANT TO CHOOSE THE RIGHT METHOD FOR THE SPECIFIC NEEDS**

TESTING METHODS and TEST KITS

Detected by Culture

- IP 613/ASTM 7978 (MicrobMonitor[®]2)
 - ECHA Microbiology Ltd, UK
- IP 385/ASTM 6974 (Laboratory procedure)
- Dip Slides (Easicult[®] TTC & M, San- AI Biochecker FC)
 - N.B. For testing water phase ONLY



Detected by Immunoassay

- ASTM 8070 (FUELSTAT[®] Resinae PLUS)
 - Conidia Bioscience, UK



Detected by ATP

- ASTM 7463 (HY LiTE[®] Jet A1)
 - Merck GmbH, Germany/FQS Inc., USA
- ASTM D7687 (LUMINULTRA ATP[®])
 - LuminUltra Microbial Monitoring, CA



- D8412-21 Standard Guide for Quantification of Microbial Contamination in Liquid Fuels and Fuel-Associated Water by Quantitative Polymerase Chain Reaction (qPCR).