



Fuel Filter Investigation

Decode your fuel filter debris!

Lufthansa Technik fuel filter forensics

High-resolution filter debris particle analyses – a milestone in maintenance that consistently provides effortless and instant insight into the condition of your tank by analyzing debris rather than wasting this diagnostic data carrier.

Instead of discarding the filters, **we value each one of them as a free 100% sample and information collector**, delivering a message from inside the tank that would otherwise be very difficult and costly to obtain.

Our team of materials experts, chemists, and biochemists at Lufthansa Technik uses an effective set of scientific detection methods to identify filter debris agglomerates: **“We determine the structure and profile of the contamination and classify the results by deciphering the complex agglomerate of filter residues.”**

Our principal advantage is an extensive knowledge base gained from many thousands of filter tests. For over fifty years, Lufthansa Technik's Central Laboratories have acquired expertise in interpreting the nano and micron profile of debris. The report documentation provides you with fact-based conclusions to support your decision-making concerning operational safety.

Benefits

Avoid unnecessary tank entries and gain effortless insights into your tank system

Profit from rapid responses with short, cost-effective turnaround times

Leverage Lufthansa Technik's extensive, unique library and experience in fuel filter forensics

Ensure result relevance based on the expert perspective of Lufthansa Technik EASA 145 & EASA 21/J

Profit from personal consultations and specific recommendations based on analytical results

Lufthansa Technik fuel filter forensics

Morphological characteristics of debris types

Weight gain per flight hour

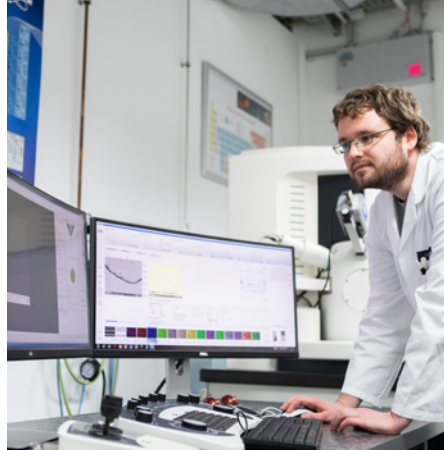
Composition profile using Cu-SO₄, FTIR, SEM/EDX etc.

Root cause attribution of identified contamination

Risk and safety assessment with fact-based recommendations



Lufthansa Technik



Lufthansa Technik fuel filter forensic programs in safety engineering

Lufthansa Technik's Central Laboratories have developed a range of effective fuel filter investigation programs for the CAMOs and engineering teams of aircraft operators. These programs are designed for safety-critical monitoring tasks and effective investigation measures to ensure surprise-free aircraft operations.

Should you decide to utilize the information from your fuel filter, we can support you with lab tests that:

- help identify and explain critical debris-finding patterns,
- assist in the early detection of anomalies and contaminants in the fuel tank before critical failures and in-flight shutdown scenarios become imminent,
- serve as a safety tool and provide documentation as part of your safety initiatives.

You may select from several test options that range from verifying individual Delta-p-rise events up to customized monitoring programs for large fleets.



Contact

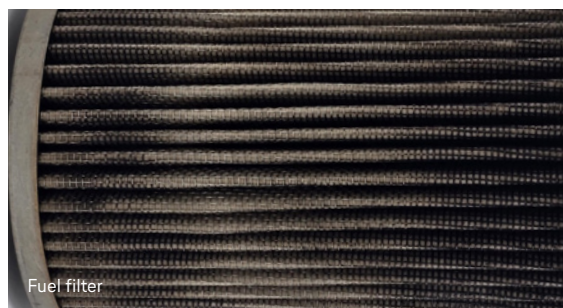
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Our clients frequently opt for:

- ☑ Analysis of **metal wear, tank corrosion, and polymer failure** after Delta-p-rise or in-flight shutdowns
- ☑ Dedicated programs for **SAP polymer contamination**, as SAP remains a risk area to be monitored despite its planned elimination by 2023 (also see IATA special interest groups)
- ☑ Large **fleet inspections**
- ☑ Investigations into fuel auto-oxidation, gumming, and the **aging effects of fluids**
- ☑ **Profiling of microbial tank contamination**

Our close collaboration with aviation authorities, e.g., as part of the Lufthansa Technik **EASA 21/J Design Organization**, provides us with in-depth knowledge of certification requirements for aircraft systems. Participation, for example, in the **IATA expert groups for energy and fuel quality** and collaboration with various **IFQP** airline partners ensures we stay informed about the latest fuel quality issues.

We invite you to discuss your operational safety goals with us and explore how you can best profit from our support services to enhance your fuel system monitoring for effective aircraft fleet safety initiatives.



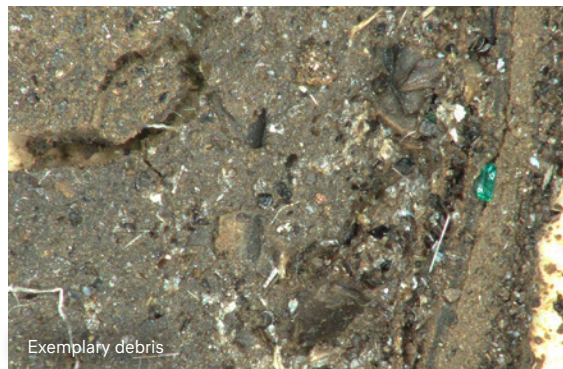
Fuel filter



SAP from supply chain following Cu-SO₄ test



Unexpected Cu-Zn finding



Exemplary debris

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