OAS-43A
(4/18)

Interagency Aviation Accident Prevention Bulletin

No. IA APB 19-01 **Date: October 29, 2018** **Page 1 of 2**

Subject: Filter Monitor Media Migration

Area of Concern: Flight Safety

Distribution: All Aviation Activities

Discussion: Over the past 8 years, eight aircraft events have been attributed to the presence of Super-absorbent Polymer (SAP) on/in turbine engine fuel controls. The events are summarized in the International Air Transport Association (IATA) Super-absorbent Polymer (SAP) Special Interest Group-Data Summary and Proposed Roadmap Paper.

SAP media, the material used in aviation fuel filter monitors, is designed to absorb water from the fuel before it enters the aircraft. The media is considered a contaminant if released downstream of the filter. The reports of SAP migration from filter monitors led to the Special Interest Group not supporting the continued use of aviation fuel filtration meeting Energy Institute (EI) Specification 1583 Laboratory Tests and Minimum Performance Levels for Aviation Fuel Filter Monitors. Effective 12/31/2020, the EI, in support of the Special Interest Group, will not maintain the specification.

The majority of the aviation fuel filtration used in DOI/FS aviation operations is AQUA-Con or Fuel Gard media. Both contain SAP which is qualified to EI 1583 contamination removal specifications. With the demise of the specification, the manufacture and distribution of these filters will most likely disappear. **The flow rate reduction safety net, an indicator of the presence of water, currently enjoyed by users of this media will also disappear.**

In the absence of a new media containing the flow reduction characteristic, a renewed emphasis must be made in the areas of filter vessel sump draining and differential pressure readings. No longer will operators be able to solely rely on flow reduction as an indicator of the presence of water. Sump draining sample results and differential pressures should be recorded and retained for trend analysis.

Fueling facilities currently using Fuel Gard/AQUA-Con media should inspect and clean nozzle screens in accordance with Shell Global Solutions procedure SR.17.01641. The Shell procedure is intended to remove SAP from nozzle strainers.

After completing the cleaning procedures, visually inspect the nozzle screen to ensure there is no sign of damage or

residual debris from the flushing process or cleaning procedure. Re-install the nozzle screen into the aircraft refueling nozzle following manufacturer's instructions.

A change in aviation fuel filtration is forthcoming and the full impact is still unknown. A renewed emphasis on procedures involved with vessel sumping and differential pressure readings should be accomplished. More information, as it becomes available, will be provided in updates to this bulletin. For additional information, contact Charles Mathwig, OAS Fuels Specialist at 907-271-5061.

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