

MSA Chemgard® Monitor for JP-8 monitoring inside pump/filter houses



Application

Monitoring JP-8 Vapors inside fuel pump/filter houses with a 4-pt Chemgard Monitor calibrated with hexane.

Jet fuel pump houses provide fuel filtering and delivery from storage tanks to military and commercial airplanes. Previously, JP-4 was the most popular jet fuel used in military aviation. Due to volatility concerns regarding JP-4 that could lead to explosive mixtures even through a mild leak, catalytic bead sensors were specified from the early 1990s to continuously monitor percent LEL.

In the early 1990's, the US military began to switch from JP-4 to JP-8 (the commercially used Jet A with performance enhancing additives) since JP-8 is far less likely to explode if an aircraft is damaged in combat. With the transition to the less-volatile JP-8, gas detection using catalytic bead sensors has become less preferable, as a JP-8 fuel leak will produce lower levels of fuel vapors than a JP-4 leak. Hence, early warning of a JP-8 fuel leak is better suited to a ppm monitor than an LEL monitor. JP-8 monitoring is also performed to meet occupational safety standards, including enclosed space entry limits as defined by the USAF's Fuels Maintenance Standard T.O. 1-1-3, for 1/10 of the LEL of JP-8. This standard translates into fuel vapor detection lower than 600 ppm.

Solution

This application now uses a 0-1% (10,000 ppm) Chemgard Photoacoustic Infrared Gas Monitor with the sensitivity and stability required to provide reliable protection at the desired ppm levels. The unit is sensitized to detect the major hydrocarbon vapors found in the jet fuel, providing early indication of pipe and valve leaks in the pump house. This system can be tied to alarms/relays that turn on exhaust fans at 250-300 ppm. Such controlled ventilation can help assure safe entry into the pump house as well as preclude the accumulation of vapors to an explosive level. An additional alarm can be used to remotely indicate a major leak approaching or exceeding the lower explosive limit.

JP-8

Composition: Kerosene-based jet fuel

TWA: 52 ppm

STEL: 267 ppm

LEL: 0.6% to 0.9%

Chemgard Detection Limit: 3 ppm

Note: This Bulletin contains only a general description of the products shown. While uses and performance capabilities are described, under no circumstances shall the products be used by untrained or unqualified individuals and not until the product instructions including any warnings or cautions provided have been thoroughly read and understood. Only they contain the complete and detailed information concerning proper use and care of these products.



ID 07-2072-MC / March 2011
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