



MSA Chemgard® Monitor

[for JP-8 monitoring inside fuel pump/filter houses]

APPLICATION: Monitoring JP-8 Vapors inside fuel pump/filter houses a with 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 buildings.

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. Approximately 60 billion gallons of JP-8 and Jet A are used each year to fuel military and commercial aircraft worldwide. With the transition to the less-volatile JP-8, gas detection using catalytic bead sensors has become less preferable. A JP-8 fuel leak will produce lower levels of fuel vapors than a JP-4 leak, so early warning of a JP-8 fuel leak is better suited to a ppm monitor than a LEL level 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 detection lower than 600 ppm fuel vapors.

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 Data Sheet contains only a general description of the product shown. While uses and performance capabilities are described, under no circumstances should the product be used except by qualified, trained personnel, and not until the instructions, labels or other literature accompanying the product have been carefully read and understood and the precautions therein set forth followed. Only they contain the complete and detailed information concerning this product.

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