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*Innovations in phase
analysis solutions*

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ASTM INTERNATIONAL UPDATES JET FUEL SPECIFICATION TO INCLUDE NEW AUTOMATIC VISCOSITY TEST METHOD

*Phase Technology JFA-70Xi Analyzer is World's First Instrument to Test Jet Fuel
Viscosity, Density and Freeze Point in a Single Unit*

RICHMOND, BC (Canada): ASTM International has updated D1655 standard specification for aviation turbine fuels to include ASTM D7945, standard test method for determination of dynamic viscosity and derived kinematic viscosity.

ASTM D7945, as developed by Phase Technology and used in the company's JFA-70Xi analyzer, is an automatic method that quickly tests viscosity without a bulky, external chiller as is commonly used in the petroleum industry. The analyzer's self-contained thermoelectric cooler eliminates the need for a hazardous liquid bath to chill the sample to required test temperatures.

"Although viscosity has long been a required test in the ASTM jet fuel specification, labs have been mostly limited to the very tedious, time consuming ASTM D445 manual method. This new, fully automatic alternative yields results in less than ten minutes, which is a real breakthrough," said Gordon Chiu, Chief Operating Officer, Phase Technology.

Chiu noted that the JFA-70Xi makes use of a patented internal capillary system, eliminating the need for fragile, easily-breakable glass viscosity tubes. The analyzer's small, compact size saves on bench space, a valuable commodity in crowded laboratories.

The JFA-70Xi's low temperature range enables it to test jet fuel viscosity at both -20°C and -40°C. The analyzer also tests freeze point to -88°C, as well as density.

"Customers already trust Phase Technology, and have made our analyzers the most widely used automatic freeze point method in the industry," said Charles Clutter, Vice President of Marketing, Phase Technology. "Adding the capability to also perform viscosity and density tests within the same single analyzer not only saves time, but also saves our customers a lot of money."

Phase Technology's JFA-70Xi analyzer tests jet fuel viscosity at -20°C, the current industry measurement standard. It can also test jet fuel at -40°C and is the first analyzer with an approved ASTM test method and precision statements at this temperature. The JFA-70Xi is also capable of calculating the 12 cSt temperature of jet fuel, a significant parameter that is gaining importance in the aviation industry.

ASTM D1655 defines the minimum requirements for Jet A and Jet A-1 aviation turbine fuel. The specification can be used as a standard in describing the quality of aviation turbine fuel for refineries, airlines and military. Testing viscosity, density and freeze point are required prior to release and sale of jet fuel.

Viscosity influences the pumpability of jet fuel over the operating temperature range and is important relative to droplet size in sprays produced by engine burner nozzles. Viscosity measurement is also an essential requirement to ensure proper operation of the airplane's auxiliary power unit (APU), which has an operational limitation of 12 cSt maximum to ensure proper fuel atomization and reliable altitude starting.

Density measurement assists in weight loading calculations for aircraft, as flight operators generally load enough fuel (with adequate margin) to safely reach their destination.

Freeze point is a required test for airplanes, particularly those on polar flight paths. Fuel temperatures fall depending upon aircraft speed, altitude, and flight duration. If solid crystals form, the flow of fuel can be restricted.

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Phase Technology designs, manufactures, sells and services test instruments that measure cold flow properties such as freeze, cloud and pour point. With over thirty patents for innovative test methods and scientific inventions, Phase Technology products are backed by a global commitment to deliver prompt, friendly and attentive customer service and technical support.

Over the years, Phase Technology has celebrated many “firsts” in the industry. The company introduced the world’s first fully automatic pour, cloud and freeze point analyzer in 1989. In 1995, Phase Technology’s test method for automatic cloud point determination was approved by ASTM, marking the first time that the revered standards organization accepted an automatic procedure for measurement of cloud point.

Similarly, Phase Technology’s pour point and freeze point methods became the first automatic methods of their type ever approved by ASTM. The company’s ASTM D7945 for viscosity measurement joins Phase Technology’s other five approved cold flow test methods, all of which are included in ASTM and other important global specifications for testing and release of petroleum products.

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ASTM International is a registered trademark of American Society of Testing and Materials. ASTM International standards are available for purchase from Customer Service (phone: 610-832-9585; service@astm.org) or at www.astm.org.

Further information is available from Phase Technology (phone: 604-241-9568; cclutter@phase-technology.com) or at www.phase-technology.com.

