Innovations in Phase Analysis Solutions

Superior precision & speed

ASTM quality results

Self-contained

Compact

Series 70X

Online Analyzers for Freeze, Cloud and Pour Point Tests

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Phase Technology is proud to present a new generation of petroleum analyzers that incorporates all of your bottom-line, analytical and operating requirements in the basic design. In a demanding fuel and lubricant marketplace, our analyzers will sharpen your competitive edge by minimizing production costs and enhancing quality, productivity and yields.

**Innovative Integration**

Taking advanced science and engineering to the next level, Phase Technology continues to lead in the field of low-temperature hydrocarbon phase behavior analysis. Surpassing all other online analyzers, the new 70X series integrates the power of advanced multi-processor systems, speed and size of an internal miniature cooler, sensitivity of micro-detectors and user-friendliness of a full-color touchscreen interface into one compact instrument. The result is a powerful and efficient instrument that accurately reports ASTM test values and describes the low-temperature flow behavior of petroleum-based products. In addition, the new generation system is uniquely self-contained in that the only utility needed is electricity, thus no longer requiring an external chiller. With an impeccable track record of quality, precision and reliability, Phase Technology’s new 70X series analyzers will significantly increase your profitability.

**Outstanding Features**

**ANALYZER CHARACTERISTICS**
- Compact design
- Fast and precise analysis
- Virtually maintenance-free
- Fully automated operation
- Self-contained system: no external coolant or PC connection required

**DISPLAY MONITOR & SOFTWARE**
- Touch input panel
- Memory storage for over 10,000 tests
- Full-colour 10.4 high-resolution display panel
- Digital and graphical representation of test results

**SAMPLE CONDITIONING UNIT**
- Extremely low maintenance
- Effective removal of particles
- Efficient elimination of free water
- Intelligent self-cleaning mechanism
Freeze point is a crucial specification for aviation turbine fuels. ASTM D-5972 is the test method developed based on the Phase Technology freeze point analyzer. This procedure is included in the Standard Specification for Aviation Turbine Fuels (ASTM D-1655) and is the approved method not only for the aviation industry, but also military and petroleum refineries worldwide. Designed with superior technology, the analyzers are proven suitable for a wide range of jet fuels, particularly hydrocracked fuels that are often difficult to test using other methods. In addition, Phase Technology analyzers exhibit high levels of sensitivity for diesel contamination detection in jet fuel, as well as unprecedented precision.

ASTM Applications

FREEZE POINT
Freeze point is a crucial specification for aviation turbine fuels. ASTM D-5972 is the test method developed based on the Phase Technology freeze point analyzer. This procedure is included in the Standard Specification for Aviation Turbine Fuels (ASTM D-1655) and is the approved method not only for the aviation industry, but also military and petroleum refineries worldwide. Designed with superior technology, the analyzers are proven suitable for a wide range of jet fuels, particularly hydrocracked fuels that are often difficult to test using other methods. In addition, Phase Technology analyzers exhibit high levels of sensitivity for diesel contamination detection in jet fuel, as well as unprecedented precision.

Cloud point is an important product specification for diesel and other distillate fuels. ASTM D-5773 is the test method developed based on the Phase Technology cloud point analyzer. The method is included in the Standard Specification, ASTM D-975, for Diesel Fuel Oils and numerous other petroleum distillates. Equipped with this technique, Phase Technology analyzers are the most widely used instrument for cloud point analysis. A small aliquot size and advanced cooling system allow the analyzer to scan for approximate wax appearance temperature followed by a slow and constant cooling rate to verify the ASTM cloud point. With a total analysis time of 3 to 5 minutes, Phase Technology cloud point method is stated in ASTM research reports to bear the best precision over all other available methods.

POUR POINT
Pour point is the lowest temperature at which a sample still shows movement under conditions of the test. It is a critical lube oil specification, and is often specified in diesel transactions as well. ASTM D-5949 is the test method developed based on the Phase Technology pour point analyzer. The procedure involves applying a calculated gas pulse onto the sample surface at 3°C intervals (or any other user programmable interval) until no movement is detected. With its advanced optical system, Phase Technology pour point analyzers are ideal for detection of a wide range of materials. ASTM research reports show that Phase Technology’s pour point method is superior over the ASTM D-97 alternative in terms of both repeatability and reproducibility.
Each of Phase Technology's analyzer systems comes complete with all of the equipment necessary to measure freeze, cloud and pour point. The online analyzers are complete turnkey systems, requiring neither an external chiller nor water supply. All you need to provide are electricity, purge air and signal cables. Each online system consists of a process analyzer, and the Aquanot — an ingenious self-cleaning Sample Conditioning Unit. By integrating this compact and virtually maintenance-free conditioning unit into the online analyzers, Phase Technology removes the task of finding a reliable way to deliver a clean, dry sample. A Sample Recovery Unit and Multiple Stream Selection Unit are also available, if required.

Specifications

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<tr>
<td>- all information on analyzer display</td>
<td>- MODBUS option</td>
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</table>

- 4-20 mA current loops for test results
- contact switches for alarms
- MODBUS option

Fuels inlet stream requirements
Flow: Min. 15 gph (57 liters/hour)
Pressure: 20 - 150 psig
Temperature: Minimum of 3°C (5°F) above cloud point
Maximum of 50°C (120°F)
Vol./analysis: 0.5 gallon (2 liters)

Lubes inlet stream requirements
Flow: Min. 0.8 gph (50 cc/minute)
Pressure: 60 - 150 psig
Temperature: Minimum 30°C(86°F)
Maximum 70°C(158°F)
Vol./analysis: 0.5 gallon (2 liters)

Other functions and models are available upon request.