

YIELD STRESS APPARENT VISCOSITY OF ENGINE OILS APPARATUS



Yield Stress Apparent Viscosity of Engine Oils Apparatus TT-4684

Yield Stress Apparent Viscosity of Engine Oils Apparatus TT-4684 conforms to the standards of ASTM D3829 and ASTM D4684.

It predicts the borderline pumping temperature and determines the yield stress apparent viscosity of engine oils at low temperatures. Temperature is controlled within the range of -10 to -40°C. All testing processes are automated and computer-controlled.

APPLICATIONS

The primary application of the Yield Stress Apparent Viscosity of Engine Oils Apparatus TT-4684 is to determine two critical low-temperature properties of engine oils: **yield stress and apparent viscosity**, in compliance with standards like **ASTM D4684**. The test is used to predict the **Borderline Pumping Temperature (BPT)**, which is the lowest temperature at which an engine oil can be reliably pumped by the oil pump to the critical parts of the engine after a cold soak. This is a crucial test for ensuring engine protection during cold starts.

Key Industries

- **Lubricant Manufacturing:** This is a mandatory test for lubricant blenders who formulate and certify multi-grade engine oils (e.g., SAE 5W-30, 0W-20). The results are essential for ensuring their products meet the low-temperature performance requirements specified by organizations like SAE International and the American Petroleum Institute (API).
- **Automotive and Engine Manufacturing:** Automakers and engine manufacturers rely on the results of this test to define the correct type of oil for their engines, especially for vehicles sold in cold climates. It is a critical part of ensuring engine durability and reliable startup performance.

- **Additive Manufacturing:** Chemical companies that develop and produce viscosity index (VI) improvers and pour point depressant additives use this instrument extensively in their research and development. It allows them to prove the effectiveness of their additives in improving the low-temperature pumpability of engine oils.

FEATURES

- The apparatus features touch screen operation, with a built-in CPU capable of accurately controlling the temperature curve.
- It utilizes various method programs, enabling one-button operation and recording the test progress.
- Incorporating a built-in cleaning mode, it is easy to clean.
- Equipped with a dedicated cryostat and a new special defrost system.

TECHNICAL SPECIFICATIONS

1. Rated voltage: AC220V $\pm$ 10%, 50Hz (110V also available)
2. Power: 1800W
3. Test temperature: -10°C to -40°C
4. Cleaning temperature: 20°C to 80°C
5. Accuracy: $\pm$ 0.1°C
6. Test holes: 4
7. Ambient requirement Temperature: 5°C to 40°C, Humidity $\leq$ 85%



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