TORONTECH

MANUAL DEMULSIBILITY APPARATUS

Manual Demulsibility Apparatus TT-1401

Manual Demulsibility Apparatus TT-1401 Apparatus complies with the ASTM D1401 Standard Test Method for Water Separability of Petroleum Oils and Synthetic Fluids.

Manual Demulsibility Apparatus TT-1401 serves as a guide for determining the water separation characteristics of oils subjected to water contamination and turbulence. It is utilized for specifying new oils and monitoring in-service oils. Additionally, it assesses the ability of petroleum oils or synthetic fluids to separate from water. While initially developed for steam-turbine oils with viscosities of 28.8–90 mm2/s at 40°C, this test method can also be applied to oils of different types with varying viscosities and synthetic fluids at different test temperatures. It is recommended, however, to raise the test temperature to 82 ± 1°C when testing products more viscous than 90 mm2/s at 40°C.

APPLICATIONS

The primary application of the Manual Demulsibility Apparatus TT-1401 is to determine the **water separability (demulsibility) characteristics of petroleum oils and synthetic fluids**, in compliance with the **ASTM D1401** standard. The test measures the ability of a lubricant to separate from water after being mixed, which is a critical performance property for oils that may be exposed to water contamination. It is used both for quality control of new oils and for monitoring the condition of in-service oils.

Key Industries

- **Lubricant Manufacturing:** This is a fundamental quality control and product development test for lubricant blenders, especially for steam-turbine oils, hydraulic oils, and circulating oils. It allows them to verify that their products meet the required water separation specifications.
- **Power Generation:** This is a key end-user industry. The demulsibility of steam-turbine oil is a critical performance parameter that is regularly monitored to ensure the protection of bearings and other components from rust and wear

caused by water contamination from steam leaks.

- **Industrial Manufacturing:** A wide range of heavy industries (e.g., steel, paper, mining) utilize large hydraulic and circulating oil systems where water ingress is common. They rely on lubricants with excellent demulsibility to protect their machinery, and this test is used to qualify new oils and monitor the condition of oils in use.

FEATURES

- Equipped with a digital display temperature controller for high-accuracy temperature control.
- Features a digital timer alarm for easy operation.
- Constructed with a glass bath for easy observation.
- Designed with three holes to enhance experimental efficiency.
- Features a sleek and attractive design.

TECHNICAL SPECIFICATIONS

1. Rated voltage: AC 220V (110V also available), ± 10%; 50Hz
2. Power: 2000W
3. Temperature control: Digital display temperature controller
4. Temperature range: Room temperature to 100°C
5. Temperature sensor: Pt100 (Platinum resistor)
6. Bath temperature mixing method: Motor agitation at 1200r/min
7. Oil sample mixing method: Motor agitation at 1500r/min
8. Control temperature accuracy: ±0.5°C
9. Ambient requirements: Temperature: 10 to 40°C; Humidity ≤ 85%

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