TORONTECH

AUTOMATIC FREEZING POINT TESTER FOR ENGINE COOLANT

Automatic Freezing Point Tester for Engine Coolant TT-1177Z

Automatic Freezing Point Tester for Engine Coolant TT-1177Z conforms to ASTM D1177 Standard Test Method for Freezing Point of Aqueous Engine Coolants.

Automatic Freezing Point Tester for Engine Coolant TT-1177Z measures the time-temperature curve before freezing and identifies the horizontal or flattened portion of the freezing curve. The freezing point is determined by the intersection of the projections of the cooling curve and the freezing curve. In cases where the solution supercools, the freezing point is the highest temperature reached after supercooling.

APPLICATIONS

The Torontech TT-1177Z is used to automatically determine the freezing point of aqueous engine coolants in accordance with ASTM D1177. This test is the definitive measure of a coolant's ability to provide freeze protection, a fundamental performance requirement for ensuring engine reliability and preventing catastrophic damage in cold-weather conditions.

This critical quality and performance analysis is essential for:

- **Coolant & Antifreeze Manufacturing:** As a primary quality control test for batch release, ensuring that every production lot meets its specified freeze protection claims and industry standards.
- **Automotive & Engine OEMS:** For validating factory-fill coolants and establishing service recommendations to guarantee engine protection across all climates where vehicles are sold.
- **Fleet Maintenance & Heavy Equipment:** Used for routine testing of coolant in trucks, buses, and construction machinery to verify ongoing freeze protection and guide service intervals, preventing costly downtime.
- **Aerospace & Aviation Ground Support:** To certify the performance of coolants and de-icing fluids used in ground support equipment (GSE), ensuring the operational readiness of airport fleets in winter conditions.

FEATURES

- The 7-inch color LCD touch screen adds a stylish and beautiful touch. The English-language interface ensures clear and intuitive communication between man and machine.
- Our system utilizes an Danfoss compressor renowned for its rapid refrigeration speed and stable performance.
- Featuring unique motor-driven mixing technology, the mixing mechanism is both simple and aesthetically pleasing, with adjustable mixing frequency.
- We incorporate high-precision temperature control modules paired with advanced temperature sensors to ensure accurate temperature measurement with minimal error.
- Real-time sampling of sample temperature during testing allows for automatic display of temperature curves and facilitates the identification of inflection points based on temperature curve changes.
- With two groups of test stations, our system can conduct simultaneous testing for two groups while also offering the option to stir separately for one group.
- The system's main unit is controlled by a microprocessor program, enabling automatic cooling throughout the testing process, along with automatic temperature collection, display of temperature curves, inflection point identification, data storage, printing, and shutdown at the conclusion of the test.

TECHNICAL SPECIFICATIONS

1. Standard Compliance: ASTM D1177

2. Temperature Control Range: Room temperature to -70°C

3. Temperature Control Accuracy: ±0.1°C

4. Refrigeration Method: Cascade compressor

5. Detection Method: Temperature sensor

6. Stirring Method: Motor-driven

7. Test Stations: 2 groups

8. Power: 2000W

9. Storage Capacity: 200

10. Printing Method: Micro printer

11. Power Supply: AC 220V±10%, 50Hz (110V also available)

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