ASTM CE50S Lubricity Test

(ASTM D4863)

Specifications

- ASTM TC Sequence II

Objective

- Evaluate the lubricity of a two-stroke cycle air-cooled engine lubricant.

Field Service Simulated

- Typical two-stroke cycle air-cooled engines in off-road use over hilly terrain.

Test Fixture

- A Yamaha CE50S single-cylinder, air-cooled, two-stroke cycle, spark-ignition engine is coupled to a high-speed 10-hp dynamometer.
- External cooling air is supplied to the engine by a variable delivery fan.

Test Parameters

- A test consists of three sets of five to seven piston "tightenings." In a tightening, the torque decrease is measured as the spark plug gasket temperature increases from 200°C to 300°C.
- Each tightening begins with a stabilization period at the following conditions:

Parameter	Value
Engine speed, rpm	4000
Load	WOT
Spark plug gasket temp, °C	170
Fuel/lubricant ratio	150:1

- After stabilization, the cooling air is stopped and torque decrease is monitored as spark plug gasket temperature rises.
- Cooling air is restored when spark plug gasket temperature reaches 350°C.
- This procedure is repeated five times in each of two sets on both the reference and candidate lubricants.

Test Parts Evaluation

- General engine condition is evaluated.

Used Lubricant Analysis

- None.

Pass/Fail Criteria

- The candidate lubricant must demonstrate performance equal to or better than ASTM 600 reference lubricant at the 95% confidence level.
- The torque decrease of the candidate lubricant must be less than or equal to the ASTM 600 reference lubricant at the 95% confidence level.

We welcome your inquiries.

For additional information, please contact:

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