

# SOUTHWEST RESEARCH INSTITUTE®

## Fuels and Lubricants Research Division

### ASTM CE50S Pre-ignition Test

(ASTM D4858)

#### Specifications

- NMMA TC-W3.

#### Objective

- Evaluate the effect of a lubricant on pre-ignition caused by combustion chamber deposits.

#### Field Service Simulated

- Typical two-stroke cycle air-cooled engines operated at full power.

#### 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

- The test duration is 50 hours.
- The following steady-state conditions are maintained throughout the test:

Parameter	Value
Engine speed, rpm	4000
Load	WOT
Spark plug gasket temp, °C	200
Fuel/lubricant ratio	20:1

#### Test Parts Evaluation

- General engine condition is evaluated.

#### Used Lubricant Analysis

- None.

#### Pass/Fail Criteria

- No more than one major pre-ignition, defined as a sudden increase in combustion chamber temperature of 10°C or greater, is allowed.





◆ We welcome your inquiries. For additional information, please contact:

**Patrick Lang**

Manager

210.522.2820

*patrick.lang@swri.org*

Fuels and Lubricants Research Division

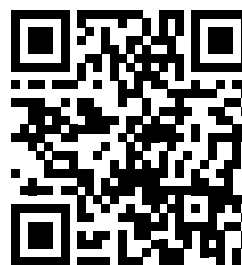
Southwest Research Institute

6220 Culebra Road

San Antonio, Texas 78238-5166

**swri.org**

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210.522.2122

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