

SOUTHWEST RESEARCH INSTITUTE®

Fuels and Lubricants Research Division

JASO M342-18 Smoke Test

Specifications

- JASO
- ISO 13738

Objective

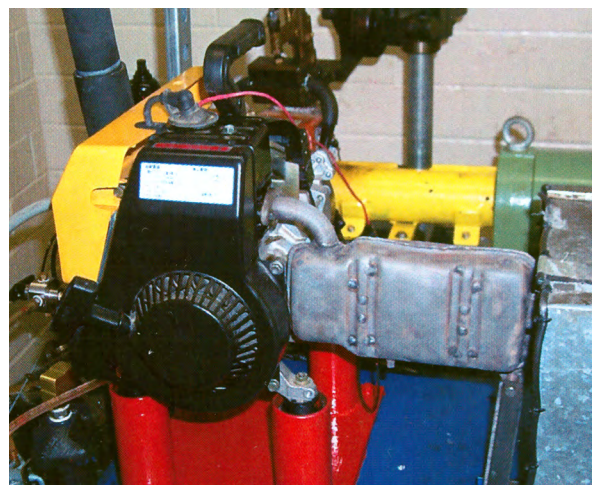
- Evaluate the exhaust smoke formation performance of a lubricant used in two-stroke cycle engines.

Field Service Simulated

- Two-stroke cycle gasoline engine operation such as motorcycle, utility, and outboard engines.

Test Fixture

- A Suzuki generator SX800R, single-cylinder, forced air-cooled, two-stroke cycle, spark-ignition engine is connected to an electrical load absorber.
- A light-absorbing smoke meter is used to measure the smoke density level.



Test Parameters

- The normal running order for a test is reference, candidate, and reference lubricants. A test consists of a fuel flush and three test runs for each lubricant.
- The test fuel/lubricant ratio for the reference and candidate lubricants is 10:1.
- A test run consists of:
 - 15-minute burn-off (750 W, 60 Hz, 320°C exhaust gas temperature)
 - Cool-down to plug gasket temperature of 60°C
 - 20-minute idle at 50 Hz
 - Power phase at 50 Hz, 670 W

Test Parts Evaluation

- None.

Used Lubricant Analysis

- None.

Pass/Fail Criteria

- Lubricants in each grade correspond to the following two-stroke cycle lubricants:
 - The FB and EGB grades correspond to lubricants that have high performance in lubricity, but are non-low-smoke type.
 - The FC and EGC grades correspond to lubricants typical of low-smoke type lubricants in the Japanese market.
 - The FD and EGD grades correspond to lubricants that have greater detergency performance as identified in International Standard 13738.

Grade	Minimum Exhaust Smoke Index
FB, EGB	45
FC, EGC	85
FD, EGD	85

We welcome your inquiries.

**For additional information,
please contact:**

Patrick Lang

Manager

210.522.2820

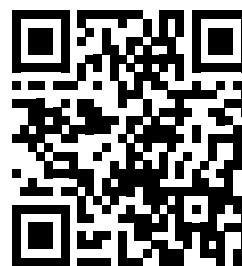
patrick.lang@swri.org

Fuels and Lubricants Research Division

Southwest Research Institute

6220 Culebra Road

San Antonio, Texas 78238-5166



lubricanttesting.swri.org

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210.522.2122

ask@swri.org

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