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**OXIDATION AND STORAGE STABILITY OF BIODIESEL AND BIODIESEL BLENDS**

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This paper presents the results of work conducted to develop a database that supports specific proposals for a stability test and a specification for biodiesel and biodiesel blends. The overall study included the following steps:

1. Collection of 19 B100 samples and six diesel samples.
2. Preliminary B100 characterization and measurement of B100 stability using accelerated tests.
3. Down selection from 19 B100 samples to eight that cover the range of stability observed in accelerated tests and the range of feedstocks.
4. Preparation of B5 and B20 blends from eight biodiesel fuels and six diesel fuels.
5. Measurement of the stability of the B5 and B20 blends using accelerated tests.
6. Down selection from 48 B5 and 48 B20 blends to eight of each blend.
7. Testing of the eight B100 samples for stability in a simulated storage environment for 12 weeks.
8. Testing of the eight B5 and eight B20 blends for stability in a simulated storage environment for 12 weeks, and in a simulated vehicle fuel tank for 1 week followed by high-temperature stability testing.
9. Selection of two B100 and two diesel fuels for tests of antioxidant additives in all testing scenarios.

The results of the testing of the down selected fuels, the B5 blends, and the B20 blends are presented and discussed.