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Leaders in Tribology Test Equipment

Wet Clutch Screening on the MTM

PCS Instruments are pleased to offer a new type of test specimen for the popular Mini Traction Machine (MTM). This new class of specimen consists of a friction material coated steel disk, which is designed for the accurate screening of lubricants in a wet clutch type contact.

This new test configuration, which has been successfully used at Imperial College London, UK (1) and Powertrib, Oxford UK (2), utilises the pin-on-disk mode in the MTM, to provide a pure sliding contact at pressures similar to that of a wet clutch. This can be used for the accurate screening of additives and in-depth investigation of the wet clutch friction behaviour.

The figure below exhibits a set of results obtained with this test configuration. The friction against sliding speed characteristics of a friction modifier (FM), a dispersant (Disp) and a detergent (Det) are shown.

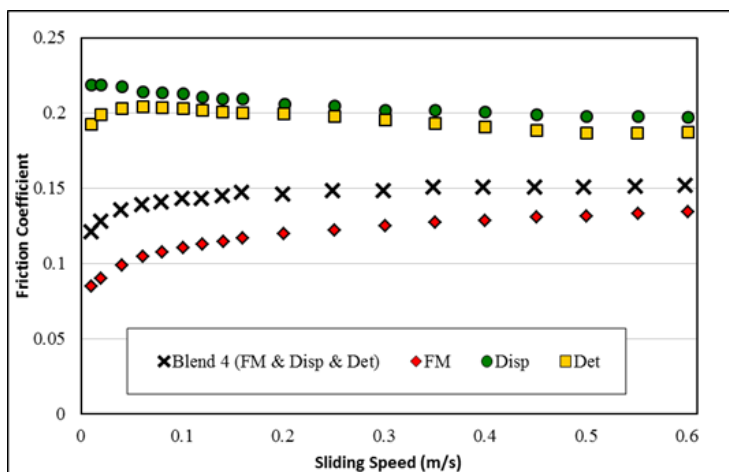
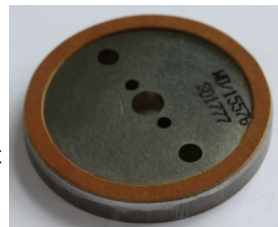


Figure 1: Example results from the MTM wet clutch screener. Showing the friction behaviour of different additives.

Table 1: Possible MTM Wet Clutch Test Specifications

Configuration	Steel ball on friction material coated disk Pure sliding (sliding/rolling also possible)
Applied Load	Standard Load Beam: 3 - 75 N (4.4 - 13 MPa) Low Load Beam: 1 - 8 N (1.4 - 6.1 MPa)
Sliding Speed	0.01 - 4 m/s
Temperature	Ambient - 150 °C Below ambient with optional oil cooler
Lubricant Sample Volume	35 ml (10 ml with optional pot filler)
Friction Material	SD1777, others available on request

References:

- (1) Tribology Transactions, 54: 145-153, 2011
- (2) www.powertrib.com

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