ETM

For measuring traction / friction under extreme contact pressure conditions – Up to 7.1 GPa !

Applications could include:

Studying antiwear tribofilms at high contact pressures

Scuffing testing of lubricants, materials and coatings

Characterising lubricant properties for traction drives

Mechanochemistry research

Studying friction modifier behaviour at high contact pressures

PCS Instruments

Evaluating Lubricant Scuffing Performance

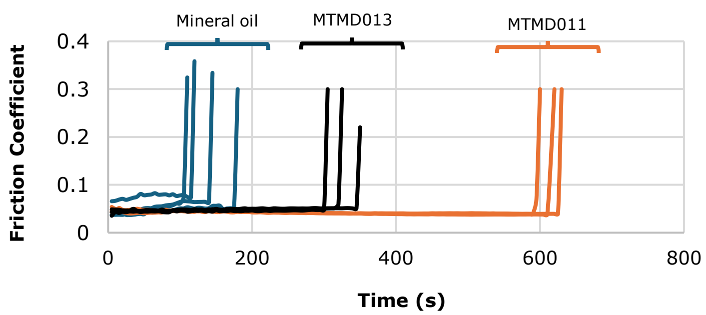
Izzy Roots, Tom Welham, Clive Hamer.

A test profile was created:

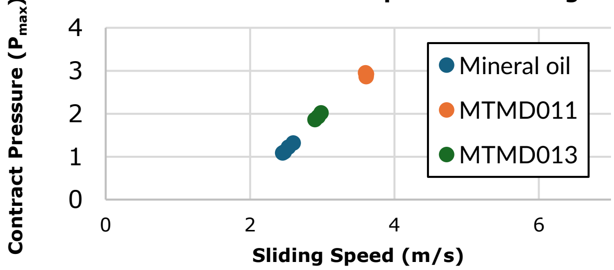
↑ Load
Sliding Speed
(higher energy)

↓ Entrainment Speed
(lower film thickness)

This increased the severity of the contact conditions during testing, resulting in scuffing as shown below.



Test conditions at the point of scuffing



	MTM	ETM
Normal load	0 – 75N	100 – 1650N
Contact pressure		
With standard specimens (52100 AISI Steel)	Up to 1.25 GPa	Up to 3.5 GPa
With Tungsten Carbide specimens	Up to 3.1 GPa	Up to 7.1 GPa

ETM vs MTM Performance Map

(with standard 52100 steel specimens)