



**Oronite**

# **Interchangeability of T-10, T-11, and T-12 to generate Used Oil Sample for MRV TP-1 for API CI-4, CI-4 Plus and CJ-4**

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# Background

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## ■ Used Oil MRV TP-1 measurement introduced in API CI-4 to address Low Temperature Pumpability with Sooted Engine Oils

- 75 h Mack T-10 sample was specified for the CI-4 Used Oil MRV TP-1
- Mack T-10A test - generate used oil sample without running full length Mack T-10
- Labs could reference a test stand as a Mack T-10A

*Wording from Table 3, D 4485 under CI-4 Bench Tests* – The following limits are applied to SAE viscosity grades 0W, 5W, 10W and 15W: Viscosity of 75 h used oil sample from T-10 test (or T-10A test) tested at -20°C, mPa-s max 25 000

## ■ Used Oil MRV TP-1 measurement carried over into API CJ-4

- 180 h Mack T-11 sample was specified for the CJ-4 Used Oil MRV TP-1

*Wording from Table 3, D 4485 under CJ-4 Bench Tests* – Viscosity of the 180 h used oil drain sample from T-11 test, tested at -20°C, mPa-s max 25 000

# Mack T-10A Test Unavailability

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- **Last T-10A stand went out of reference in October 2009**
  - Labs have no parts to reference T-10A
  - Limited activity for T-10A
  - Wording in D 4485 currently does not allow substitution for T-10A
- **Original intention - interchangeability between 75 h T-10 and 180 h T-11 samples for used oil MRV - both around 4% soot**
- **Lubrizol has also mentioned using 100 h T-12 sample – also around 4% soot**
- **Proposal – Allow interchangeability between 75 h T-10 and 180 h T-11, and include 100 h T-12 oil samples in the interchangeability for used oil MRV measurement for API CI-4 and CJ-4**
- **Need input from industry to evaluate technical equivalence of three methods**