

FT-IR Spectroscopy

Key Features

- Allows validation of system performance
- Specially formulated for FT-IR lubricants analysis
- Supplied with certified property values



OilExpress™ 4 DUO XL

In-Service Lubricants FT-IR Control Oil

FT-IR analysis has become an increasingly important tool for in-service lubricants analysis, and is now widely deployed in a range of environments from high-throughput labs using the OilExpress autosampling system through to smaller field labs and on-site installations using the Spectrum Two™ In-Service Lubricants FT-IR Analysis System based on the revolutionary Spectrum Two instrument.

Confidence in analytical results requires validation that the method is being performed correctly and instrumentation is operating within its specifications. Analyzing samples with known properties is a key component of this process. In-service lubricants, however, are very complex samples, containing both dissolved and suspended additives and contaminants and, until now, a realistic yet well-characterized control oil has not been available.

Ensuring reliability for lubricant analysis

The In-Service Lubricants FT-IR Control Oil from PerkinElmer has been specially formulated to mimic the spectral signature of an in-service diesel motor oil, and contains known amounts of water, soot, oxidation (carbonyl-bearing compounds) and ethylene glycol (Figure 1).

Each bottle of the oil comes with a Certificate of Analysis stating nominal values and uncertainties for several oil condition parameters, measured following ASTM® standards. System performance can thus be validated without needing to conduct time-consuming round-robin studies.



Figure 1. Certificate of Analysis



Figure 2. In-Service Lubricants FT-IR oil

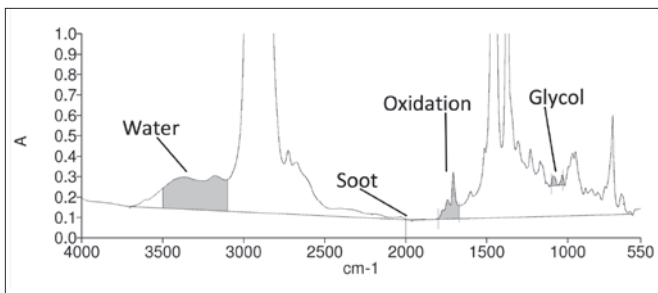


Figure 3. Example of FT-IR spectrum of the control oil.



Figure 4. Spectrum Touch In-Service Lubricants FT-IR Analysis System with Spectrum Touch software

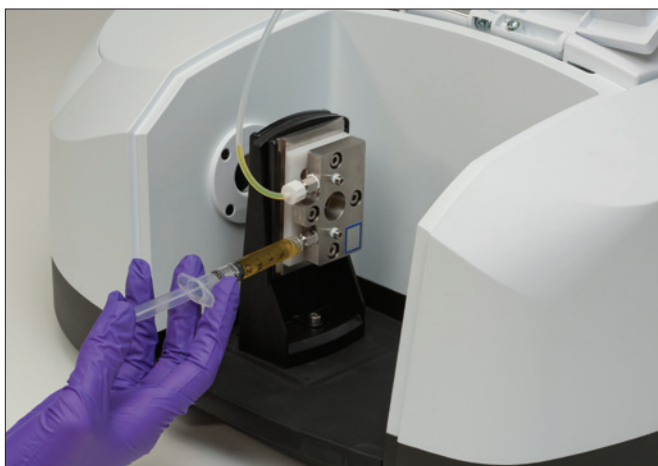


Figure 5. Spectrum Two

As a method-level validation, the Control Oil should be analyzed as any other sample on the In-Service Lubricants Analysis System or OilExpress system, using the ASTM® E2412 direct-trending protocol. The results are then compared to the Certificate of Analysis. If all the values are within the stated uncertainties, the system is performing correctly. Values outside the stated ranges may indicate that the cell requires cleaning, sampling SOPs are not being followed, or there is a configuration issue requiring corrective action.

Ordering information

The control oil can be used with OilExpress 4, OilExpress (software version 4.0 or later), and the Spectrum Touch In-Service Lubricants Analysis System (version 1.1 or later).

The oil is packaged in 100-mL bottles, sufficient for up to 50 analyses with OilExpress 4

Part Number	Description
N9308350	In-Service Lubricants FT-IR Control Standard