ASSET PERFORMANCE MANAGEMENT

VIM / VPR VARNISH & DEPOSIT IDENTIFICATION AND MEASUREMENT / VARNISH & DEPOSIT PREVENTION AND REMOVAL

ICML course on varnish and deposits, focusing on their impact on equipment reliability and performance. Covers causes of oil degradation, deposit formation mechanisms, and influencing factors. Includes oil analysis techniques to assess varnish risk and fluid condition. Provides practical methods for prevention, removal, and proactive maintenance practices, and supports ICML VIM and VPR exam preparation.

Format

Duration: 14 hours **Schedule:** 2 Day(s) **Delivery:** Classroom

Who should attend

- Maintenance engineers
- Reliability engineers
- Condition monitoring professionals
- Lubricant Analysts and engineers

Objectives

- Develop expertise in varnish detection and mitigation.
- Understand how breakdown products become deposits.
- Use oil analysis tools to assess varnish risk and fluid health.
- Apply proactive practices to minimize oil degradation.
- Compare technologies for varnish removal and prevention.
- Prepare for the ICML VIM and VPR certification exams.

*ICML Partner

The exams and associated certifications are provided by ICML. Baker Hughes can provide a proctored environment for either the paper-based or online exam.

Recommended Prerequisites

Candidates must hold either MLA I or MLT I certifications OR have a minimum of 1 year of experience in lubrication.

Program Outline

Day 1:

- Introduction to varnish and deposits and their impact on equipment reliability
- Problems caused by varnish: flow restriction, stiction, filter plugging, efficiency loss, and bearing issues
- Lubricant breakdown mechanisms and varnish precursors
- Influence of base oil groups, additive chemistry, and contamination
- Effects of temperature, oxidation, microdieseling, and electrostatic discharge

Day 2:

- Proactive methods to minimize oil breakdown and maintain fluid health
- Deposit formation chemistry: solubility, polarity, saturation, and agglomeration
- Technologies for varnish removal and prevention, with pros and cons
- Oil analysis techniques to assess varnish risk and lubricant condition
- Linking analysis results to corrective and preventive actions

Day 3: Exam

ICML Exam: Each certification exam consists of 25 multiple‑choice questions administered over 45 minutes. A score of 70% is required to pass.

CERTIFICATION
ICML
Global Partner: International Council for Machinery Lubrication (ICML)