



MACHINERY LUBRICATION ANALYSIS

Failing to apply the precise lubricant in the correct volume, location, and timeframe can actively damage your assets. Current lubrication standards have evolved significantly, moving away from traditional, anecdotal practices toward data-driven precision.

This program delivers essential knowledge regarding industrial lubricants, mechanical lubrication, and oil collection protocols. It serves as a comprehensive primer for launching a structured oil analysis initiative and is specifically tailored to help candidates achieve the **ICML Level I Machine Lubricant Technician (MLT I)** certification.

Details:

Acquire Immediate, Practical Expertise on:

- **Strategic Lubricant Selection:** Gain a deep understanding of lubricant properties to ensure you choose the perfect match for every machine application.
- **Storage & Management Standards:** Discover how top-tier maintenance teams optimize their lube rooms, dispensing systems, and fluid transfer equipment.
- **Mastering the "Four Rights":** Ensure the right lubricant reaches the right place, in the right amount, at the precise time. Failure to align these four elements can compromise your equipment's health.
- **Precision Greasing Techniques:** A standard grease gun can produce \$15,000\$ psi—enough to destroy bearing seals instantly. We teach you how to use this tool safely and effectively to prevent premature failure.
- **Advanced Sampling Protocols:** Learn to extract high-quality, "data-rich" samples by identifying the best port locations and utilizing the correct sampling hardware.

Course Outline

- Financial benefits from achieving lubrication excellence
- Four equipment maintenance strategies, and when each applies
- Important implementation steps to lubrication excellence
- important functions of lubricating oils
- How oils and greases are formulated and why it is important
- How friction is generated in lubricated machinery
- The importance of oil film thickness and critical clearances
- How lubricant properties irreparably change
- Seven important physical properties of a base oil
- The importance of API's five base oil categories
- What causes grease to dry out and 18 ways to prevent it
- How to detect the root causes of lubricant oxidation
- When to select one of the six most commonly used synthetic base oils
- How to use temperature to determine the right base oil for your machine
- How to select grease thickeners for your application
- Key additives that enhance lubricant performance
- Viscosity grades, measurement, and reporting
- Why Viscosity Index is important
- What causes oil viscosity to change and how to set monitoring limits
- Lubricant performance tests and reporting – what you need to know
- How water contamination generates other contaminants
- How to control and eliminate aeration problems
- Important USDA requirements and government regulations for food-grade lubricants
- What you need to know about food-grade additives, base oils and grease thickeners
- Guidelines for food-grade lubricants
- How to protect against incompatible grease mixtures
- Advantages and disadvantages of centralized lubrication systems
- Best practices for greasing motor bearings
- How to control pressure when greasing bearings
- The unique problems caused by over-greasing – specific steps to eliminate
- 3 critical instructions to give your electric motor rebuild shop
- Comparing single- and multi-point lubrication options
- How to calculate greasing intervals and quantity
- Best practices for ultrasonic/sonic-based greasing
- Overview of oil lubrication methods and devices
- How to use oil mist and other automatic lubrication methods
- Using pressure spray methods for gearboxes
- Best practices for the maintenance of grease guns and fittings
- How to protect against problems caused by constant-level oilers
- Overview of single-point direct lubrication systems
- most common journal bearing lubrication problems
- How to select journal bearing viscosity based on speed
- critical factors affecting rolling-element bearing lubricant selection
- How to convert required operating temperature viscosity to ISO viscosity grades
- 5 key requirements for gear oil
- How to select the best viscosity for a gear lubricant
- Best practice guidelines for storing spare gearboxes – lubrication matters!
- 10 conditions that may require synthetic gear lubricants

- Lubrication best practices for enclosed gears – a 12 point checklist
- Mastering the challenges of open gear lubrication
- How to read a motor oil label: what really matters
- The 6 critical objectives a motor oil must accomplish
- Understanding API service classifications for engine and gear oils
- The number 1 reason automatic transmission fluids fail and how to protect against it
- Service classifications for automotive greases – how to select
- Extending engine life – surprising engine oil filter study results
- Steps you can take right now to combat compressor lubricant failure
- The most common compressor lubricant stressors
- When to use synthetic compressor lubricants and why.

APPLY WHAT YOU LEARN AND REAP THE BENEFITS

Compare and Select the Best Lubricants for the Job With hundreds of lubricant types, base stocks, additive packages and viscosity grades to choose from, how can a person decide which lubricant is right for a machine? The options are endless... Synthetic or hydrocracked? EP or AW? Naphthenic or paraffinic? ISO VG 32 or 68?

Stop Pesky Oil and Hydraulic Fluid Leaks Leakage is a festering sore to a machine maintenance program. It is often the symptom of a host of other problems. If left unchecked, reduced machine performance is imminent. Eliminating leakage involves the lubrication and oil analysis programs and should be a principal goal

Squeeze Maximum Life from Lubricants and hydraulic fluids can have infinite life when specific operating conditions are stabilized. The rising costs of new lubricants and the disposal costs of used fluids are directives for change learn a proven action plan for extending fluid life.

A More **Effective Oil Analysis** Program When the goals of a lubrication program are in sync with the oil analysis program objectives, oil analysis becomes far more effective. Learn how to align the programs for maximum results.

Contact us on reliability@assetmatrixenergy.com to discuss your needs and arrange your session.

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