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COURSE BROCHURE

# Base Oils, Additives and Grease Selection Training Course

27 September – 1 October 2027
Dar es Salaam

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Registered in the United Kingdom and Saudi Arabia

# Base Oils, Additives and Grease Selection Training Course

**Ref:** 1586_58203 **Date:** 27 September – 1 October 2027 **Location:** Dar es Salaam **Fees:** 7900 GBP

Base Oils, Additives and Grease Selection is a 1-week training course for lubrication technicians and reliability engineers, built around a machine lubricant selection and schedule sheet that each participant completes for a group of their own machines. Wrong oil, mixed greases and poor storage remain common causes of bearing and gearbox failures, and lubricant ranges keep growing more complex. Jupiter Prime Training delivers this course on Base Oils, Additives and Grease Selection.

## Why Base Oils, Additives and Grease Selection Matter Now

Three forces shape lubricant choices today. Synthetic base stocks and longer drain intervals offer savings, but only when matched to the right temperature and load. Equipment makers specify tighter oil and grease requirements in their warranties, while stores hold dozens of overlapping products. Sustainability goals push sites to cut waste oil and consider biodegradable fluids. A plant that selects and stores lubricants well extends bearing and gear life and simplifies its stock; one that does not mixes incompatible greases and replaces components early. The course rests on asset criticality and lifecycle cost principles from asset management practice.

## Who Gains Most from Base Oils, Additives and Grease Selection

- Technicians who top up, change oil and regrease machines on route
- Reliability engineers who specify lubricants for new and existing equipment
- Stores staff who receive, label and issue oils and greases
- Planners who set lubrication frequencies and quantities in the maintenance system
- Supervisors who approve lubricant changes and product consolidation

A site gains most when its lubrication technician, reliability engineer and stores controller attend together.

## Base Oils, Additives and Grease Selection Capabilities

Participants move from reading a product data sheet to choosing, storing and scheduling the right lubricant for each machine.

- Compare mineral and synthetic base oil groups by temperature range and oxidation life — reliability engineer
- Specify viscosity from speed, load and operating temperature — equipment specification
- Assess additive packages for anti-wear, extreme pressure and rust protection needs — gearbox and hydraulic duty
- Select grease thickener, base oil viscosity and consistency for bearings — regreasing route
- Test grease and oil compatibility before product changes — supervisor approval

- Build relubrication frequencies and quantities for a machine group — maintenance planner

## Key Base Oils, Additives and Grease Selection Terms

- Base oil group — a class of base stock, from solvent-refined mineral oils to synthetic polyalphaolefins and esters, with differing purity and stability.
- Viscosity index — a number showing how little an oil's viscosity changes with temperature; higher means more stable.
- Extreme pressure additive — a chemical that forms a protective film on gear teeth under high sliding loads.
- Grease thickener — the soap or non-soap structure, such as lithium complex or polyurea, that holds base oil in a grease.
- Grease consistency grade — a number describing grease stiffness, from fluid to very firm, set by penetration testing.
- Lubricant compatibility — whether two oils or greases can mix without losing consistency, additive performance or stability.

## Base Oils, Additives and Grease Selection Day by Day

### Day 1: Lubricant Roles and Product Landscape

- Hydrodynamic, Elastohydrodynamic and Boundary Regimes — Choosing Film Strategy
- Mineral, Synthetic and Biodegradable Base Stocks — Matching Environment
- Product Data Sheets and Typical Properties — Reading Supplier Claims
- Equipment Maker Lubricant Requirements — Warranty Protection
- Lubricant Inventory Survey — Finding Duplicate Products

### Day 2: Base Oils and Viscosity Selection

- Base Oil Groups and Refining Routes — Oxidation Life Expectations
- Viscosity, Viscosity Index and Temperature Charts — Grade Selection
- Speed, Load and Film Thickness Calculation — Bearing Oil Choice
- Synthetic Polyalphaolefin and Ester Fluids — High-Temperature Duty
- Food-Grade and Fire-Resistant Fluids — Special Service Decisions

### Day 3: Additive Chemistry and Oil Types

- Anti-Wear and Extreme Pressure Additives — Gearbox Protection
- Antioxidants, Rust Inhibitors and Demulsifiers — Turbine Oil Life
- Detergents and Dispersants — Engine Oil Cleanliness
- Hydraulic, Compressor and Gear Oil Formulations — Application Match
- Used Oil Analysis Basics — Confirming Additive Health

## Day 4: Grease Selection and Lubricant Handling

- Thickener Types and Dropping Point — High-Temperature Bearings
- Consistency Grade and Base Oil Viscosity in Grease — Speed Factor
- Grease Compatibility Testing — Product Change Decisions
- Lube Room Layout, Labelling and Filtration — Storage Discipline
- Transfer Containers and Colour Coding — Preventing Cross-Mixing

## Day 5: Practising the Lubricant Selection and Schedule Sheet

- Gearbox and Hydraulic Oil Choice for a Packaging Line — Applying Day 3
- Electric Motor Bearing Grease for a Water Pumping Station — Applying Day 4
- Viscosity Check for a Conveyor Drive — Applying Day 2
- Product Consolidation Proposal — Reducing Stock Items
- Machine Lubricant Selection and Schedule Sheet — Completed for One Machine Group

## Applying Base Oils, Additives and Grease Selection After the Course

- Survey the lube room, list every product in use and propose which overlapping oils and greases to consolidate.
- Recalculate regreasing quantities and intervals for ten critical motor bearings and update the maintenance system.

## Base Oils, Additives and Grease Selection Questions FAQ

### What is base oils, additives and grease selection, and why does it matter now?

It is choosing the right base stock, additive package, viscosity and grease for each machine, then storing and applying it correctly. It matters now because synthetic options, warranty demands and crowded stores make wrong choices more likely.

### Which roles gain most from base oils, additives and grease selection?

Lubrication technicians, reliability engineers, stores staff and maintenance planners gain most, since each handles a step from specification to application.

### How does base oils, additives and grease selection differ from a tribology and wear course?

It concentrates on lubricant products, chemistry, selection and handling, while a tribology course studies friction, wear mechanisms and oil condition testing in depth.

### What do you bring back from base oils, additives and grease selection?

You bring back a lubricant selection and schedule sheet for a group of machines, listing products, viscosities, greases, quantities and intervals.

## Base Oils, Additives and Grease Selection: The Way Forward

The machine lubricant selection and schedule sheet first informs which products stay in the lube room and which are retired. Technicians follow it on route, reliability engineers use it to approve changes, and stores staff use it to set stock levels. After its first use, revisit whether synthetic oils would justify longer drain intervals on critical gearboxes.