

### ▲ Who should attend?

Engineers and technical staff beginners working in development, technical assistance, manufacturing and sales of lubricants, in mechanical engineering offices desiring to acquire basic knowledge on functional properties, application of automotive and industrial lubricants. Having followed the course «Lubrication and Lubricants» is a mandatory prerequisite to follow this course.

### ▲ Duration

**5 days**

### ▲ Dates & Location

**Non-scheduled**

**May only be organized for a single company**

### ▲ Tuition fees

**To be agreed upon**

### ▲ Course Coordinator

**Jean-Pierre Pouille**

Ref. **LUB / INILAI**

# AUTOMOTIVE AND INDUSTRIAL LUBRICANTS

(introductory course)

## OBJECTIVES

Bring the necessary knowledge for the recommendation of lubricants for automotive engine and transmission, for the equipment's currently used in the industry and for solving problems in service.

After completion of the course, the participants know:

- the lubricant's properties needed for the lubrication of automotive engine and transmissions, industrial equipments
- the methodology for the recommendation of the lubricants according to their use
- the possible problems in service and the remedies.

## COURSE CONTENT

### ENGINE LUBRICANTS

**1 day**

Elements on engine technology in relation with lubricants properties.

Passenger cars engine oils: role, function, classifications and specifications (API, ACEA, OEM's).

Heavy duty Diesel oils: role, function, classifications and specifications (API, ACEA, OEM's)

### AUTOMOTIVE GEAR AND TRANSMISSION LUBRICANTS

**0.75 day**

Elements on automotive transmission technology.

Automotive transmission oils (manual and automatic): role, function, classification and specifications.

### HYDRAULIC LUBRICANTS

**0.75 day**

Basic hydraulic circuit. Elements on hydraulic equipment technology. Lubrication requirements of hydraulic circuits. Properties, classification and specifications of hydraulic oils. Recommendation of an hydraulic oil. Hydraulic fluids in service: maintenance, filtration, pumps failures.

### INDUSTRIAL GEAR LUBRICANTS

**0.5 day**

Elements on industrial gears technology. Various types of gears and lubrication requirements.

Properties, classification and specifications of industrial gear oils. Recommendation of an industrial gear oil. Industrial gear oils in service: maintenance, filtration, gear failures.

### COMPRESSOR LUBRICANTS

**0.5 day**

Principle of gas compression. Various types of compressors. Lubrication requirements according to compressor type and compressed gas. Functional properties of lubricants for gas and refrigerating compressors. Compressor lubricants classification and specifications. Lubricants recommendation. Possible problems in service.

### TURBINE LUBRICANTS

**0.5 day**

Elements on the different types of turbines (hydraulic, steam, gas). Lubrication requirements.

Functional properties, classification and specification of turbine lubricants. Lubricants recommendation and possible problems in service.

### PLAIN AND ANTIFRICTION BEARING LUBRICANTS

**0.5 day**

Elements on technology of plain and anti-friction bearing. Lubrication requirements according to the type. Functional properties, classification and specifications of oil and greases for bearings.

Recommendation of a bearing oil or a grease. Bearing failures: identification, origin and remedies.

### MACHINE TOOLS LUBRICANTS

**0.5 day**

Machine tools principles - elements on the different organs. Lubrication requirements of the various organs. Functional properties of machine tool lubricants. Lubrication schedule. Possible problems in service.