

# Training courses in small groups

## Applied rheology—theory and practical application



You are a **newcomer** and would like to acquire a basic understanding of rheology?

You are a **re-entrant** and would like to refresh and expand existing knowledge?

You are a **perfectionist** and want to exploit the maximum measuring possibilities and optimize your measuring methods?

This application-oriented basic training will benefit users in research and development, in the production process and in quality control.

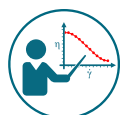
### Your benefits

- In-person training courses in our new Materials Characterization training center in Karlsruhe, Germany
- Illustrative and practical presentations by application specialists
- Hands-on sessions with step-by-step instructions in front of the instruments
- Three one-day modules to choose from (presentations and practical training each)
- Time to answer your questions
- Comprehensive training materials
- Certification of participation
- Price includes: Course, lunch, snacks, and drinks (costs not included: travel and hotel, other meals).



## Applied rheology training courses

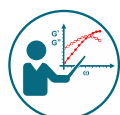
Detailed theoretical and practical knowledge will be imparted by our rheology experts, enabling you to conduct reliable measurements and evaluate and interpret the measuring data. The relevance of rheology for research and development, production, and quality control will be discussed and demonstrated by presenting various application examples. In small groups, practical training, step-by-step sample handling, and filling are demonstrated on selected samples, and measurement and evaluation routines are created. Different rheometers are available in the rheology labs. Questions will be answered directly in the presentations and the practical training. The training consists of three one-day modules that can be booked individually or in combination. Each module is limited to 20 participants.



### Module 1: Basics of rheology, rotational testing, introduction to measurement, and evaluation software

In this module, rheological terms and principles are explained, and different measuring systems are presented.

- **Introduction to rheology and rotational testing**—Basic principles, definitions, and explanations
- **Rheological behavior**—Flow behavior, yield stress, thixotropy, flow, and viscosity curves
- **Rheological measuring instruments**—Overview of various (conforming to standards) measuring principles, geometries, and accessories



### Module 2: Viscoelasticity, creep and creep recovery testing, and measurements in oscillation

In this module, the focus is on how viscoelastic properties can be recorded, evaluated, and interpreted.

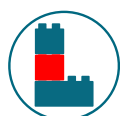
- **Viscoelasticity**—Basic principles, definitions, and explanations
- **Creep and creep recovery testing**—Zero shear viscosity, retardation time, elastic, and viscous properties
- **Measurements in oscillation**—Amplitude, frequency, temperature, and time sweeps



### Module 3: Thermo Scientific™ HAAKE™ RheoWin™ Software

A detailed introduction will be given on how to use the HAAKE RheoWin measuring and evaluation software in the most efficient way and which tools are available.

- **User manager**—User administration and access rights
- **Job manager**—Creating and editing software routines (SOPs), self-controlled data evaluation, and documentation
- **Data manager**—Data evaluation, graphical presentation, creation, and use of templates for graphs / tables
- **Design and export graphics and data**—Export of results to HAAKE RheoWin-independent formats, and use of report templates



### Location, dates, and prices

Pfannkuchstr. 10–12, 76185 Karlsruhe, Germany  
9 am–5 pm CET/CEST  
Language: English

	Spring 2024	Fall 2024
Module 1	5 March	24 September
Module 2	6 March	25 September
Module 3	7 March	26 September

List price 2024 per participant	Order number	Price plus VAT
One-day module of your choice	777-0035	920 €
Two modules of your choice	777-0036	1320 €
Special price for all modules	777-0037	1740 €

We reserve the right to cancel the training up to 14 days before the respective date.



Further information and registration:  
[thermofisher.com/LearnWithUs](https://thermofisher.com/LearnWithUs)

E-mail address for enquiries:  
[seminar.mc.de@thermofisher.com](mailto:seminar.mc.de@thermofisher.com)