

# SPECIAL

Advanced Liquid Handling Training



# Special Advanced Liquid Handling TRAINING

FOR MORE THAN 50 YEARS,  
THE NAME HAMILTON HAS BEEN...

...associated worldwide with uncompromising quality in precision fluid-measuring products. Because of the dedicated nature of the products we supply, it is important to us that our customers have the opportunity to become fully trained on the operation of our products. Our software training covers the needs of both laboratory operators and assay programmers.

## **Take the maximum advantage of your instrument by:**

- Ensuring the safety of your staff and equipment
- Enabling your staff to adapt the instrument to new protocols or workflows
- Increasing efficiency through optimization of processes
- Reducing downtime due to erroneous operation

## **What we offer:**

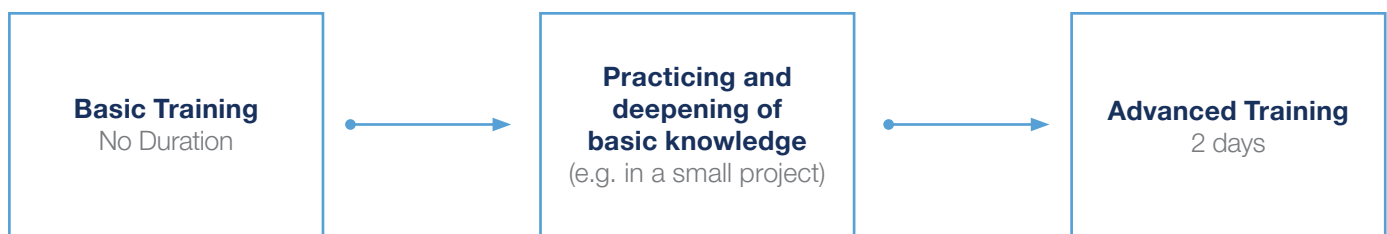
- Small group size (limited to 6 participants for maximum efficiency)
- Mix of theory & practical exercises, including hands-on sessions with our systems (ML STAR/VANTAGE)
- Availability of trainers for responding to questions after the training
- All training material and files generated during the training are provided for later reference
- Training confirmation (Letter of Attendance) upon successful completion of a training course
- Trainings in English

**We are looking forward to welcoming you to one of our trainings and to sharing our knowledge with you!**



# Special Advanced Liquid Handling TRAINING

## BEGINNER TO ADVANCED



### Advanced Training

(On-Site at Hamilton, 2 days)

This training deals with advanced liquid handling issues. The problems and solutions are addressed both theoretically and practically. The following topics are covered: Short repetition of Basic Liquid Handling topics; for example, properties of liquids, pipetting technology and liquid handling parameters

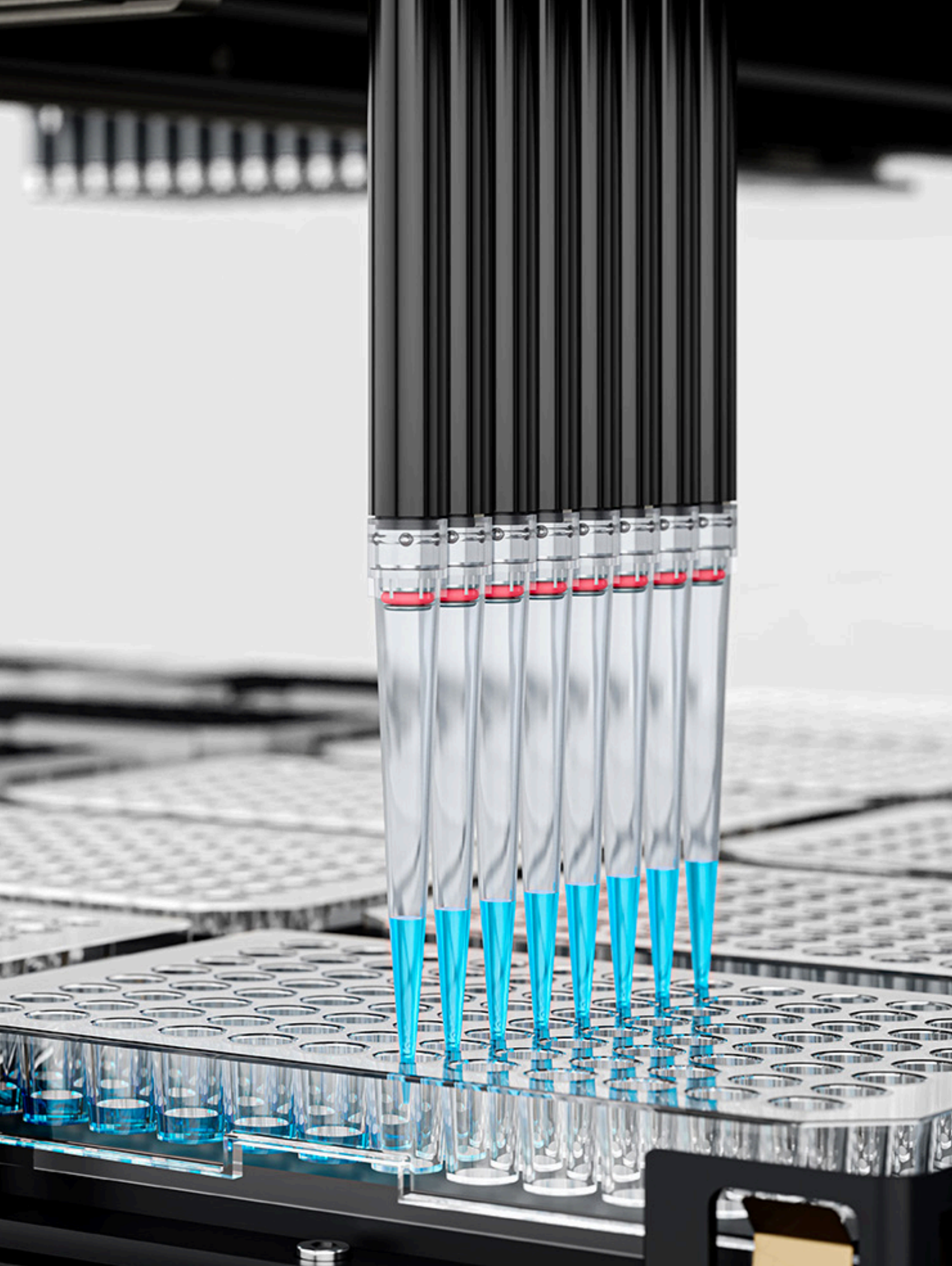
- Basic Labware Definition: Creating and adjusting Labware
- How to handle volatile liquids (including ADC (Anti-Droplet Control))
- Creation of Liquid classes and how to verify Liquid Classes (using the HAMILTON Liquid Verification Kit)
- Monitoring Feature:
  - Interpretation of Pressure Curves
  - TADM (Total Aspiration and Dispense Monitoring)
  - MAD (Monitored Air Displacement)
- How to handle low volumes
- How to improve multi-dispensing (aliquoting)
- How to handle mixing, shaking, and Side Touch with liquid handling systems
- Various hands-on sessions with our Liquid Handling systems

\* Requirement for the Training: Participation in a VENUS or INSTINCT V Basic Training and basic experience by applying the basic knowledge (practice and first deepening your basic knowledge).

# Automated Liquid HANDLING

UNDERSTAND THE PROPERTIES OF THE LIQUID ADJUST LIQUID  
HANDLING PARAMETERS CREATE AND OPTIMIZE LIQUID CLASSES VERIFY  
VOLUMES AND INCREASE ACCURACY





# Advanced Liquid Handling Training REGISTRATION

The fee for training sessions in Bonaduz, Gräfelfing (Munich), and Eindhoven (Netherlands) include lunch, drinks and snacks but exclude taxes, traveling and accommodation expenses. We also offer VENUS training in a virtual\* format. For dates, availability, and registration for our regular on-site and online training, please scan the QR code or [view here](#).

*Note: You can cancel a course four weeks before the trainings without cancellation fees.*

## **CONFIRMATION**

After booking, a detailed confirmation for the training session will be sent via email. If desired, Hamilton can support you with accommodation arrangements. Please bear in mind that a sufficient number of participants must be confirmed for the training; otherwise, Hamilton is permitted to cancel or postpone the training course. The registered participants will be informed as soon as possible.

## **CONTACT**

HAMILTON Bonaduz AG /  
HAMILTON Germany GmbH /  
HAMILTON Benelux B.V.

E-Mail: [softwaretraining.rob.ch@hamilton.ch](mailto:softwaretraining.rob.ch@hamilton.ch)



# Special Advanced Liquid Handling Training

# APPENDIX

## COURSE CONTENTS IN DETAIL

### **Advanced Training**

(On-Site at Hamilton, 2 days)

Today's laboratories require flexible and fast compact robotic workstations to efficiently automate assays and sample preparation. HAMILTON's pipetting platforms deliver this performance by combining highly scalable platforms, a wide range of applications, easy to use software, modular accessories, and leading pipetting technology. The automated liquid handling development over the past 50 years results in a system that is highly adaptable for pipetting different liquids, from highly viscous substances such as honey to volatile substances such as methanol and achieves high pipetting precision, combined with speed. With the appropriate software settings and HAMILTON technology, high accuracy and precision from sub-microliter volumes to 5mL can be reached. This entire process is called "liquid handling", the main function of the HAMILTON pipetting platforms.

HAMILTON's Special Advanced Liquid Handling Training provides you with the ability to optimize and troubleshoot liquid transfers. Determine why something does not work as expected and solve the problem. Furthermore, the participant will gain insight into delicate and challenging work with low volumes, multi-dispensing, and will enter the intriguing world of pressure curves and applications to monitor liquid handling transfers. The transmitted content is based on ISO/FDIS 23783 for Automated Liquid Handling Systems.

This training deals with advanced liquid handling issues. The problems and solutions are addressed both theoretically and practically.

## IMPORTANT NOTICE

The content of these training programs is subject to change without notice. Every effort has been made to ensure the accuracy of this brochure's contents. Should any errors be detected, HAMILTON Bonaduz AG would greatly appreciate being informed of them. The above notwithstanding, HAMILTON Bonaduz AG can assume no responsibility for any errors in this brochure, or for changes to training dates or the consequences thereof.

The following topics are covered: Short repetition of basic Liquid Handling topics; for example, properties of liquids, pipetting technology, and liquid handling parameters

- Basic Labware Definition: Creating and adjusting Labware
- How to handle volatile liquids (including ADC (Anti-Droplet Control))
- Creation of Liquid classes and how to verify Liquid Classes (using the HAMILTON Liquid Verification Kit)
- Monitoring Feature:
  - Interpretation of Pressure Curves
  - TADM (Total Aspiration and Dispense Monitoring)
  - MAD (Monitored Air Displacement)
- How to handle low volumes
- How to improve multi-dispensing (aliquoting)
- How to handle mixing, shaking, and Side Touch with liquid handling systems
- Various hands-on sessions with our Liquid Handling systems

Note: The course is intended for people who actively use a HAMILTON Liquid Handling System. Basic knowledge of Liquid Handling is a prerequisite for this course. It is recommended that participants already have experience with automated Liquid Handling.

## REQUIREMENTS

- **Windows-based computer skills**
- **Completion of Basic Training in VENUS or INSTINCT V and sufficient practical experience**
- **English language skills**
- **English literacy (presentation slides are presented in English)**

# Activities in-and-around BONADUZ

## SIGHTSEEING IN CHUR AND LEISURE ACTIVITIES IN THE DOMLESCHG AREA

If you arrive over the weekend, you'll have enough time to discover our surroundings in the beautiful canton of Graubünden. You might even be interested in spending your evenings in Chur, the city closest to HAMILTON Bonaduz AG.

An impressive walk through the Viamala gorge will show you the power of water on solid stone over centuries.

### Excursions

- Rhäzüns-Feldis-Scheid-Rothenbrunnen-Bonaduz/Chur (by cable car, on foot or by train) 3 hrs
- Chur-Lenzerheide-Chur (by bus or car or on foot around Lenzerheide Lake) 4 hrs
- Chur-Arosa-Chur (by train or car - 368 turns in the road!) ½ day
- Bonaduz-Viamala-Zillis-Bonaduz ½ day
- Bonaduz-Thusis-Davos-Thusis-Bonaduz 1 day
- The Bernina Express (train) Chur-Tirano-Chur 1 day
- The Glacier Express (train) Chur-Zermatt-Chur 2 days

### Additional Information

Tourist Office, Chur:  
Grabenstrasse 5  
Postfach 7002 Chur  
Switzerland

Tel: +41 81 252 18 18  
Fax: +41 81 252 90 76

Email: [info@churtourismus.ch](mailto:info@churtourismus.ch)

The Tourism Office can provide you with information about alpine and cross-country skiing, ice skating, hockey games, sledding, rafting, canyoning, fishing, swimming, golf, tennis, squash, ballooning, cycling, paragliding, mountain-biking, horse riding, hiking and much more.

<https://www.chur.graubuenden.ch/de>



# MUNICH

## SIGHTSEEING IN MUNICH AND LEISURE ACTIVITIES IN THE AREA

### Sightseeing

- Frauenkirche
- Nymphenburg Palace
- Marienplatz
- St. Peter's Church "Alter Peter"
- Allianz Arena or BMW Welt
- Olympiapark
- Tierpark Hellabrunn

### Excursions

- Starnberger See
- Tegernsee
- Ammersee
- Walchensee
- Heimgarten
- Therme Erding

If you want to combine your stay with sightseeing and some leisure activities, we recommend some interesting spots in and around Munich.

[www.muenchen.de/int/en](http://www.muenchen.de/int/en)



# EIDHOVEN

## SIGHTSEEING IN EIDHOVEN AND LEISURE ACTIVITIES IN THE AREA

### Sightseeing

- The Blob
- Philips Museum
- Van Abbemuseum

If you want to combine your stay with sightseeing and some leisure activities, we recommend some interesting spots in Eindhoven.

[www.holland.com/global/tourism/destinations/more-destinations/eindhoven.htm](http://www.holland.com/global/tourism/destinations/more-destinations/eindhoven.htm)





To find a subsidiary or distributor in your area, please visit, [www.hamiltoncompany.com/support](http://www.hamiltoncompany.com/support).

Web: [www.hamiltoncompany.com/robotics](http://www.hamiltoncompany.com/robotics)  
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