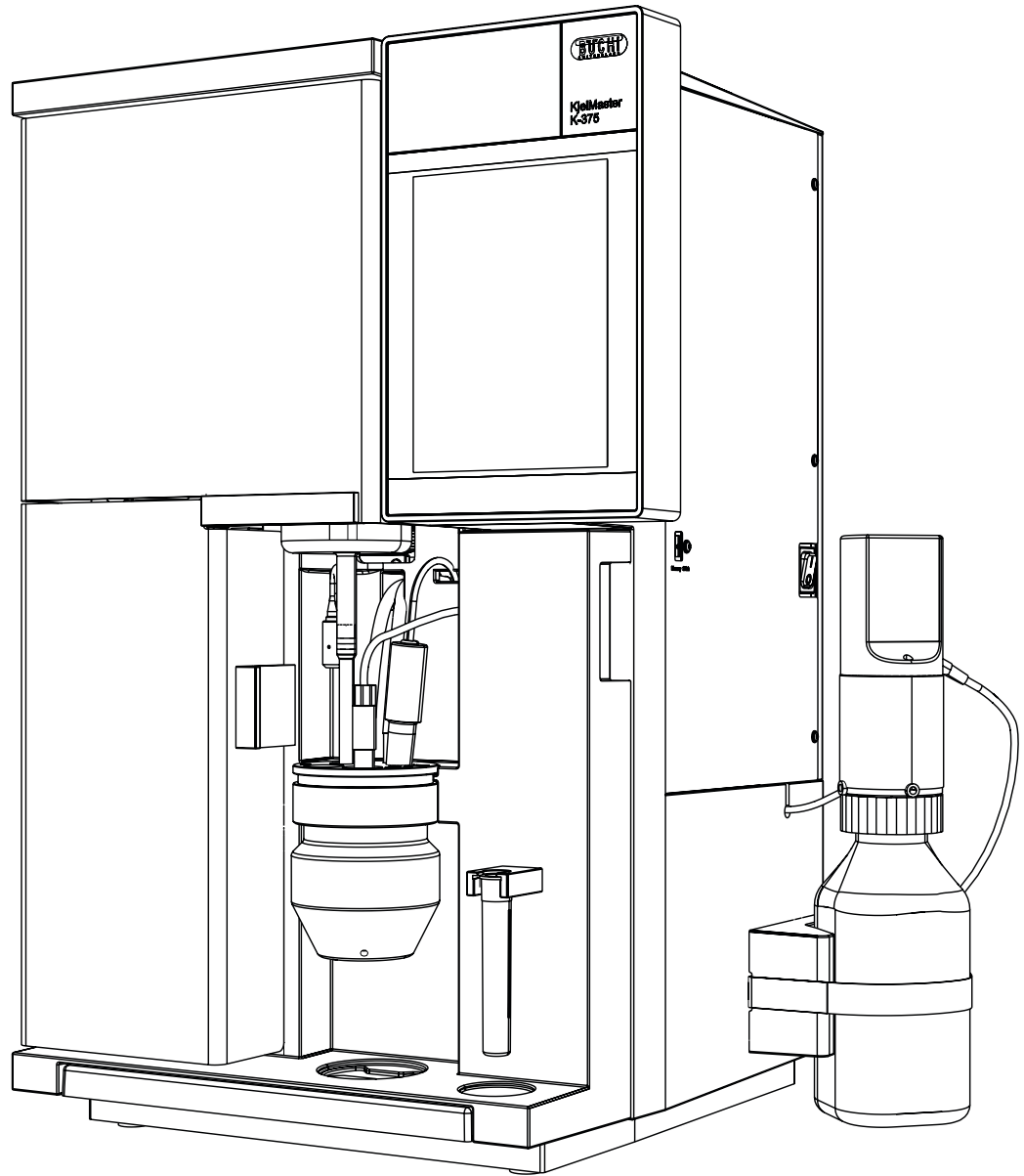




KjelLink 1.3

Software Manual



11593533E en

Imprint

Product Identification:
Software Manual (Original), KjellLink 1.3

11593533E en

Publication date: 02.2017

BÜCHI Labortechnik AG
Meierseggestrasse 40
Postfach
CH-9230 Flawil 1

E-Mail: quality@buchicom

BUCHI reserves the right to make changes to the manual as deemed necessary in the light of experience; especially in respect to structure, illustrations and technical detail.

This manual is copyright. Information from it may not be reproduced, distributed, or used for competitive purposes, nor made available to third parties. The manufacture of any component with the aid of this manual without prior written agreement is also prohibited.

Table of contents

1	About this manual and general information	5
1.1	About this manual	5
1.2	Reference documents	5
1.3	Trademarks	5
1.4	Abbreviations	5
2	Technical data	6
2.1	Minimum system requirements	6
3	Description of function	7
3.1	Software functions	7
4	Putting into operation	8
4.1	Step 1: Installing the software	8
4.2	Step 2: Starting the software	8
4.3	Step 3: Connecting the KjellMaster K-375	8
4.4	Software Installation Guide	9
4.5	Language Pack Installation Guide	11
4.6	Software in evaluation mode	12
4.7	Upgrade to full version	12
5	Operation	13
5.1	General information on buttons	13
5.2	The main screen.	14
5.3	The online view	16
5.4	Determination	17
5.4.1	Sample lists	17
5.4.2	Sequences	20
5.5	Results	24
5.5.1	Results	24
5.5.2	Blank Correction	27
5.6	Determination Parameters.	28
5.6.1	Groups	28
5.6.2	Methods	28
5.6.3	Volumetric Solutions.	30
5.6.4	Reference Substances	31

Read this manual carefully before installing and operating this software.

This manual is copyright. Information from it may not be reproduced, distributed, or used for competitive purposes, nor made available to third parties. The manufacture of any component with the aid of this manual without prior written agreement is also prohibited.

The English manual is the original language version and serves as basis for all translations into other languages. Other language versions can be downloaded at www.buchi.com.

5.6.5	Result Units	31
5.7	KjelLink	32
5.7.1	Import Export Logs	32
5.7.2	Settings	33
5.7.3	License and Info.	34
5.8	KjelLink databases	35
5.8.1	Database types	35
5.8.2	Storing location	35
5.8.3	Database naming	36
5.8.4	Automatic data backup and restore	36
5.8.5	Manual backup and restore	36
6	Balance connection	37
6.1	General	37
6.2	Balance requirements	37
6.3	PC requirements	38
6.4	RS-232 configuration	38
6.5	Filling in weight values	39

1 About this manual and general information

1.1 About this manual

This manual is part of the product. It describes the Kjellink software and provides all information required for its use.

It is addressed to laboratory personnel and operators in particular.

- Read this operation manual before use.
- Observe all safety instructions.

1.2 Reference documents

For information about the KjellMaster K-375 and KjellSampler K-376 or K-377, please refer to the corresponding manual. For registered users, all manuals are accessible via Internet.

Table of available language versions of this software manual.

Language	Ordering number
English	11593533
German	11593534

The following supplementary documents are available on the Kjellink installation CD under "Operation Manual" and from any authorized BUCHI representative:

- "Kjellink - Sample list import", which describes the requirements for XML files imported into a sample list or sequence in Kjellink.
- "KjellMaster K-375 - Data export", which describes how the files exported by the KjellMaster K-375 are constructed and how they can be evaluated for further use.
- "KjellMaster K-375 - Network connection", which describes how a KjellMaster system can be integrated into a company network.

1.3 Trademarks

The following product names and any registered and unregistered trademarks mentioned in this manual are used for identification purposes only and remain the exclusive property of their respective owners:

- Windows® 7
- Windows® 8.1
- Windows® 10

1.4 Abbreviations

PC: Personal Computer
 CD: Compact Disk
 USB: Universal Serial Bus

2 Technical data

2.1 Minimum system requirements

Operating System	Requirements
Windows 7 Professional/Enterprise/Ultimate, (32-bit/64-bit, SP1)	Intel Core i3 or higher and 1.4 GHz or faster
Windows 8.1 Pro/Enterprise, (64-bit)	>5 GB of free hard disk space
Windows 10, Pro/Enterprise, (64-bit)	2 GB RAM
	CD- or DVD-ROM drive
	USB 1.1 or higher
	Ethernet connection
	Recommended display resolution: 1280×1024
	Minimum display resolution: 1024×768
	Optional RS-232 connection for external balance

3 Description of function

This section will introduce all basic functions provided by the software and its structure.

3.1 Software functions

The Kjellink PC software is a monitoring, preparation and evaluation software, which is supposed to be used when working with the distillation unit KjellMaster K-375. Thus, performing remote actions at the Kjeldahl system itself is not possible.

It provides the following handling and storage functionality for Kjeldahl processes:

- Distillation and titration processes in progress can be observed online
- Preparation of analyses and export to the K-375 for further processing
- Recorded Kjeldahl results can be imported and saved for further use
- Recalculation of results

4 Putting into operation

This section contains three steps to a working setup in chronological order. If any error occurs, please check every step carefully again from the beginning.

4.1 Step 1: Installing the software

The following prerequisites must be fulfilled:

- For installation, the user must hold administrative rights on the computer used
- The PC must match the minimum system requirements for this software, see section 2.1

Installation of the software:

Put the CD into the optical drive of the PC and follow the installation dialog.

Installation of the language pack:

Request the language pack from your BUCHI representative. You will get a single installation file.

4.2 Step 2: Starting the software

- Go to: Start > Programs > Buchi > Kjellink > Kjellink
- Or double-click on the program shortcut icon on the desktop

4.3 Step 3: Connecting the KjellMaster K-375

To view the status of a KjellMaster K-375 or to exchange data with it via a network folder, connect it to the network following the description in the manual "KjellMaster K-375 - Network connection".

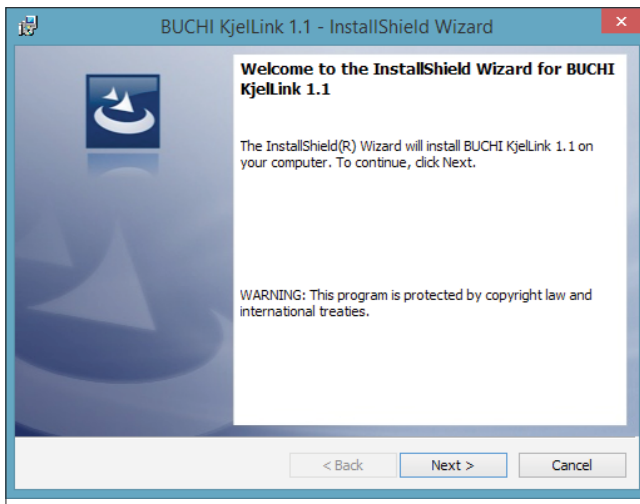
4.4 Software Installation Guide

Installation

Start the PC and log in as a user with administrator rights. Put the KjelLink CD into the optical drive—the installation dialog window should start automatically (this may take some seconds).

If the window does not appear, go to 'My Computer'. Click on the optical drive to start the CD manually.

At the installation dialog window click 'Install KjelLink'.

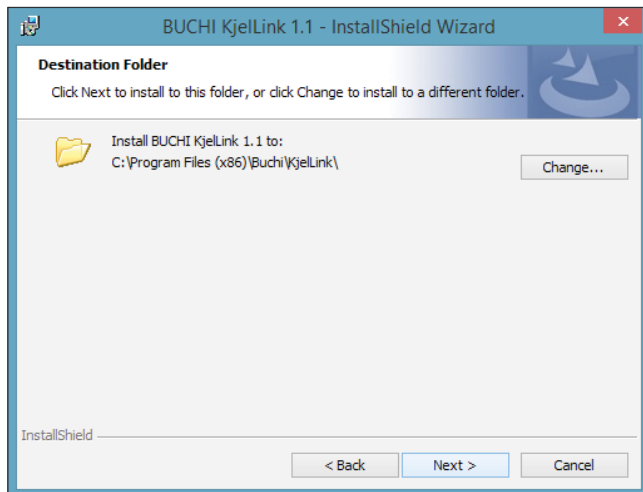


Wait until the InstallShield Wizard is ready for installation.

Click "Next >" to start the installation process...



...read and accept the license agreement. Click "Next >" to proceed...

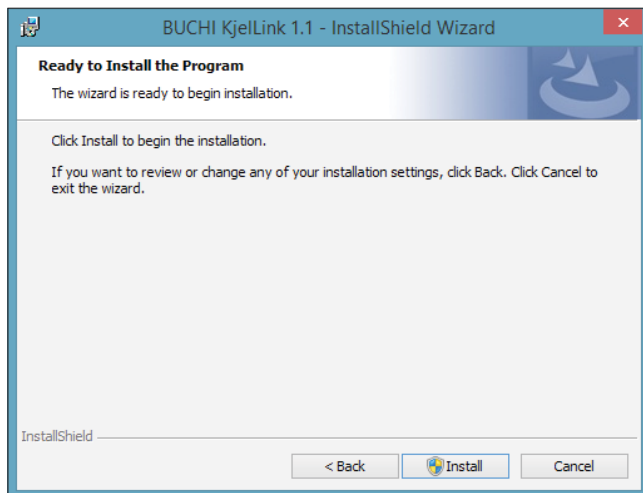


...the default destination folder for the installation is displayed.

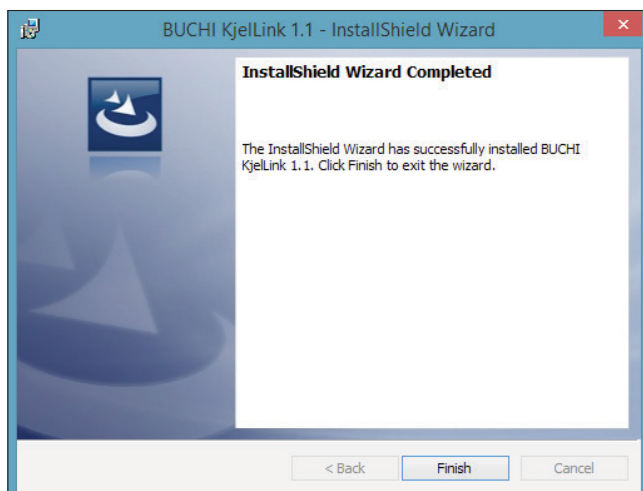
It is recommended to install KjelLink in the suggested path.

Click Change to change it according to the needs (if required).

Subsequently click "Next >" to continue.



...click "Install" to install the software components.



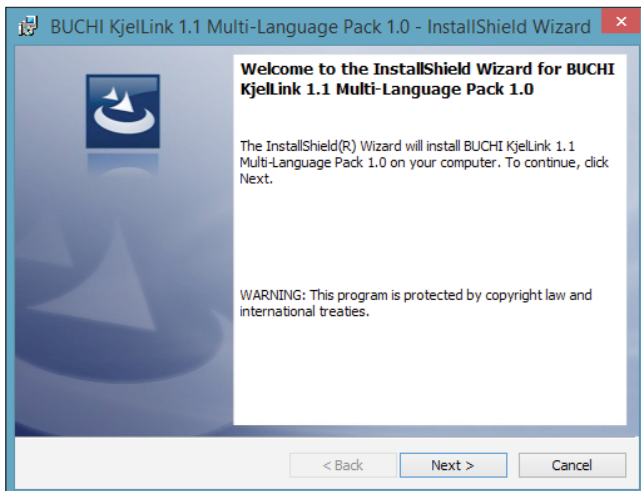
The installation is now completed. Click Finish to close the InstallShield Wizard.

NOTE

It is recommended to restart the computer after the installation process.

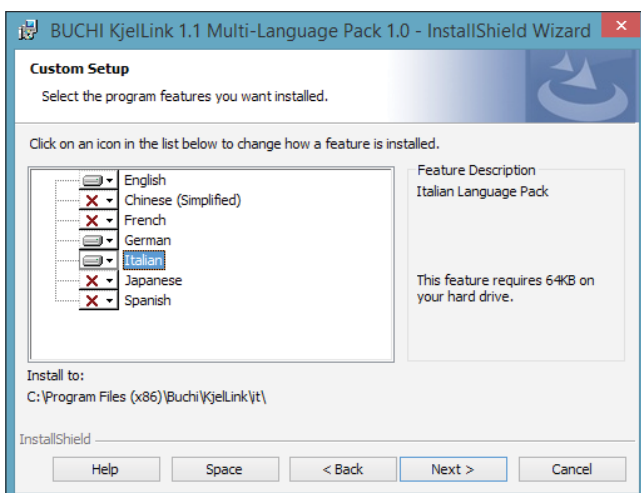
4.5 Language Pack Installation Guide

Start the PC and log in as a user with administrator rights. Start the language pack installation program that you received from BUCHI.



Wait until the InstallShield Wizard is ready for installation.

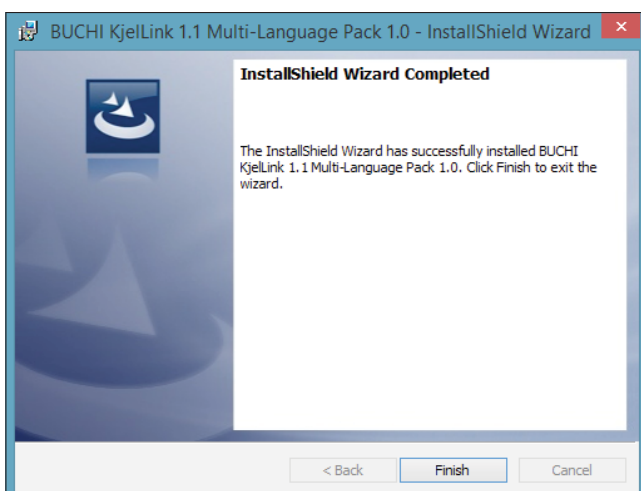
Click "Next >" to start the installation process...



...the default destination folder for the installation is displayed.

Select all languages you want to install.

Subsequently click "Next >" to continue.



The installation is now completed. Click Finish to close the InstallShield Wizard.

4.6 Software in evaluation mode

Software in evaluation mode

The evaluation mode has full functionality but shows a 'Evaluation Mode' watermark in the background of every report.

NOTE

To remove this 'Evaluation Mode' watermark, please purchase a license for the software!

4.7 Upgrade to full version

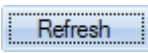
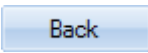

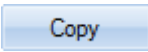
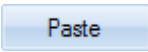
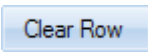


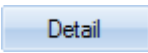


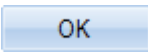
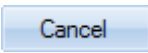




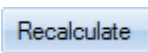
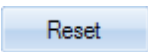
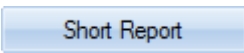
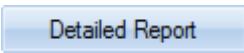
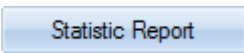
The Kjellink software license can be ordered through a BUCHI partner (see description under section "5.7.3 License and About").

5 Operation

This section describes the different program views and handling steps.

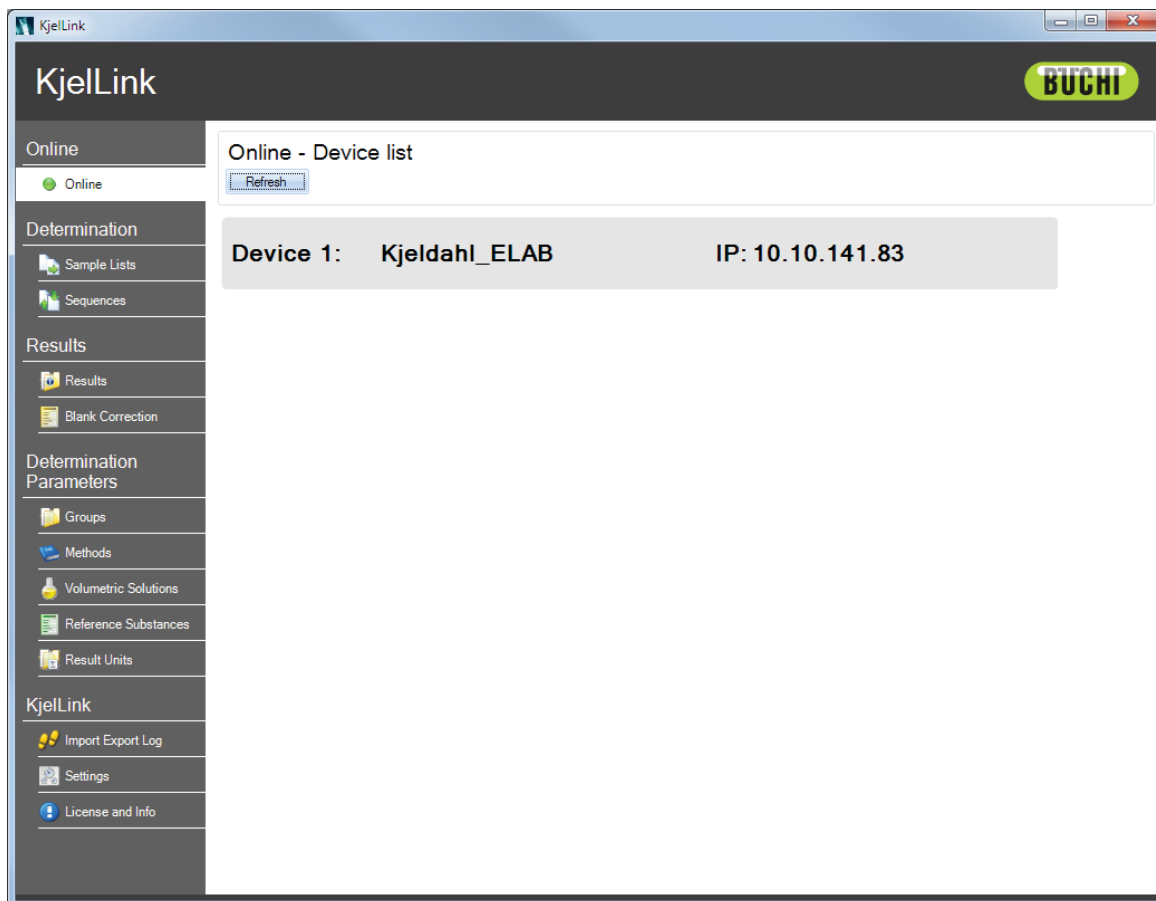
5.1 General information on buttons

The following control buttons are available in the software for navigation and input confirmation:

	Update the list of the available KjelMasters on the Ethernet network
	Go back to the previous screen
	Create a new entry in a list
	Copy a selected row
	Paste the content of a copied row into a selected row in the list
	Clear the content of a selected row
	Define the rack settings
	Delete a selected row in a list
	Open the detailed view of a selected row in a list
	Import a method or result
	Export a method, sample list or sequence list
	Confirm an entry
	Cancel an entry
	Add a step during sequence definition
	Remove a step during sequence definition
	Change the order of entries in a list
	Change the order of entries in a list
	Recalculate a result
	Reset the report header image
	Generate a short report
	Generate a detailed report
	Generate a statistic report













5.2 The main screen

When the software is started, the main screen appears.



The main screen consists of the permanent navigation area on the left, containing the menu buttons, and the specific data area with the control buttons on the right.

The menus are:

Grouping	Icon	Menu	Description
Online		Online	View the connected Kjeldahl devices, which are currently online.
Determination All tasks related to sample definition		Sample Lists	Create a sample list with samples to be determined one by one without a KjelSampler K-376/377.
		Sequences	Create a sample sequence with predefined samples per rack to be processed using a KjelSampler. (Only visible if sampler has been configured under "Settings".)
Results All tasks related to the results of the system (storage, viewing, printing and selection)		Results	View, print or recalculate the results.
		Blank Correction	View blanks used for result calculation and their impact on the calculated results.
Determination Parameters All tasks related to the methods, volumetric solutions, reference substances, and results		Groups	Create and delete groups for the storage of results.
		Methods	Create, import, edit, and manage determination methods.
		Volumetric Solutions	Manage all used volumetric solutions.
		Reference Substances	Manage all used reference substances.
		Result Units	Create, define and delete result units.
KjelLink All general KjelLink tasks		Import Export Logs	See a log of all import/export activities of the current day.
		Settings	Define language, import/export path, report header image and sampler type and RS-232 parameters.
		License and Info	Register the software, import a software license and read the Info information.

5.3 The online view

To see the status of an individual K-375, click on the corresponding row in the online view.

Online - Prt16

Refresh Back

Priming Distillation

1 Remaining time

2 **02:53**

Titrated volume

0.000 mL

pH

Last Samples

1/20 1	0.499 g	2.566 %N
17.02.12 16:03	9.558 mL	16.368 %Pr
20/20 20	0.548g	2.560 %N
17.02.12 12:10	10.417 mL	16.332 %Pr
19/20 19	0.545g	2.291 %N
17.02.12 12:04	9.317 mL	14.616 %Pr

Active Blank

3 Auto calculated		
11.11 07:41	0.402 mL	automatic

1. Status field - indicates the system status and shows the active step of the running task.
2. Progress indication for the running task (remaining time, titrated volume, and measured pH).
3. Information area - shows last results and the active blank used for result calculations.


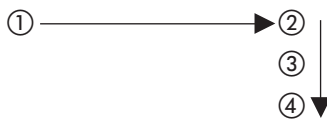
Colors of the status field

Color of status field	Meaning
Ready	Green - the system is ready for sample determinations.
Standby	Orange - the system is in standby mode. (The steam generator is powered off.)
Determination Dosing	Blue - the system is busy (preparative task, periodic task, or sample determination running).
Not Ready Titrator not ready	Red - the system has an error, or a system component is not ready.

5.4 Determination

Samples can be determined as follows:

- Determination of a predefined sample list (one by one without a sampler)
- Determination of a complete rack in a predefined sample sequence (with a KjelSamper K-376 or K-377)

Sample determination possibilities		
	Sample list determination	Sequences (automatic rack determination with sampler)
Recommended for:	<ul style="list-style-type: none"> • Many samples (> 10 per day) • Routine analysis • Number of samples in a list is variable 	<ul style="list-style-type: none"> • High number of samples (> 20 per day) • Routine analysis • Unattended processing (express rack with 4×300 mL sample tubes, rack with 12×500 mL or 20×300 mL sample tubes)
Operation procedure:	<ol style="list-style-type: none"> 1. Enter data for all samples 2. Determine the first sample 3. Determine the second sample 4. ... 	<ol style="list-style-type: none"> 1. Enter data for all samples 2. Start the sequence 3. Samples are determined automatically 
Description:	Without KjelSampler K-376 / K-377.	With KjelSampler K-376 / K-377.

5.4.1 Sample lists



With the sample list functionality it is possible to predefine a complete list of samples to be determined one by one without a sampler.

The names can be entered here. The type (Blank, Sample, Reference substance or Control blank), Method, Reference substance and Group can be selected from a drop-down list.

For samples, the weight and the protein factor must be specified as well.

NOTE

When creating a new sample the data of the last sample are copied. A standard name will be set automatically.

Click on **Sample Lists** in the navigation area. The **Sample Lists** screen appears:

Sample Lists		
<input type="button" value="New"/> <input type="button" value="Copy"/> <input type="button" value="Delete"/> <input type="button" value="Detail"/> <input type="button" value="Export"/>		
	Name	Configured samples
1	Animal Feed	dfsdf; Sample2; Sample7; Sample10; Sample12; Sample1; Sample13; Sample0; Sample1; Sample 1
2	Whole Milk	Sample7; dfsdf; Sample1; Sample10; Sample12; Sample2; Sample13; Sample0; Sample1; Sample0; Sa

It shows a list of all present sample lists.

New sample lists can be created with **New** and existing ones can be deleted, renamed or copied.

It is also possible to export sample lists in order to import them on a KjellMaster K-375.

To open a sample list, click on the row number to select it and click on **Detail** or doubleclick on the row number. The following screen opens:

Sample List - Animal Feed									
<input type="button" value="Back"/> <input type="button" value="New"/> <input type="button" value="Copy"/> <input type="button" value="Delete"/> <input type="button" value="▲"/> <input type="button" value="▼"/> <input type="button" value="Detail"/> <input type="button" value="Import"/>									
	Name	Type	Weight	Weight Unit	Protein Factor	Method	Reference Substance	Group	Create
1	Blank 1	Blank ▾				Animal feed ▾		Feed March 2012 ▾	26.03.2012 08
2	Blank 2	Blank ▾				Animal feed ▾		Feed March 2012 ▾	26.03.2012 08
3	Blank 3	Blank ▾				Animal feed ▾		Feed March 2012 ▾	26.03.2012 08
4	Blank 4	Blank ▾				Animal feed ▾		Feed March 2012 ▾	26.03.2012 08
5	Dog Feed 1	Sample ▾	2.1225	g ▾	6.25	Animal feed ▾		Feed March 2012 ▾	26.03.2012 08
6	Dog Feed 2	Sample ▾	1.9953	g ▾	6.25	Animal feed ▾		Feed March 2012 ▾	26.03.2012 08
7	Cat Feed 1	Sample ▾	2.8725	g ▾	6.25	Animal feed ▾		Feed March 2012 ▾	26.03.2012 08
8	Cat Feed 2	Sample ▾	2.9741	g ▾	6.25	Animal feed ▾		Feed March 2012 ▾	26.03.2012 08

Within each list all samples are listed with name, type, weight and weight unit (except for blanks, where no weight is needed), protein factor (except for blanks, where no protein factor is needed), method, reference substance, group, creation date and date of last modification.

NOTE

The order of the samples can be changed. For this purpose, click on the row number to select a row and click on the ▲ or ▼ button.

Samples are added to the list either by clicking **Import** and importing an XML-file or by clicking the **New** button.

NOTE

The imported samples are appended at the bottom of the list.

Existing samples can be deleted after being selected. When importing a sample with the same name but different data as an already existing sample a consecutive number will be added to the name of the imported sample. When copying a sample a consecutive number will be added to the name. The copy will be appended at the bottom of the sample list.

All parameters can be adapted (except for the automatically generated creation date), either directly within the table row or by double-clicking the row number and working within the detailed **Sample Lists** screen.

Sample Lists - Dog Feed 1

Name	Dog Feed 1
Type	Sample
Weight	2.1225
Weight unit	g
Protein factor	6.25
Method	Animal Feed
Group	Feed March 2012
Last modified	14. Dec 2012 10:14

OK

The editable parameters are highlighted in gray, the non-editable ones have a white background.

The first parameter for each sample is the name.

The second parameter for each sample is the type:

- **Blank**
- **Sample**
- **Reference substance**
- **Control blank**

According to the selected type, a different set of parameters is available.

For samples of type **Blank**, enter a name and select the **Method** to be used for the determination of the blank.

Select a result **Group** for the storage of the result.

For samples of type **Sample**, enter a name, the **Weight** and the **Weight Unit** in (g) or (mL). Enter the **Protein Factor** for the calculation of the results and select the **Method** to be used for the sample determination.

Select a result **Group** for the storage of the result.

For samples of type **Reference Substance**, enter a name and select the reference substance from the list.

Enter the **Weight** and the **Weight Unit** in (g) or (mL) and select the **Method** to be used for the determination of the reference substance.

Select a result **Group** for the storage of the result.

For samples of type **Control Blank**, enter a **Name** and select the **Method** to be used for the determination of the control blank.

Select a result **Group** for the storage of the result.

With **OK** the changes are saved and the screen is closed.

5.4.2

Sequences



The Sequences menu is only available if a KjelSampler is present and configured in the Settings menu. A sample sequence contains a number of steps defining the samples itself and the necessary system tasks like preheating, priming, aspiration etc.

Click on **Sequences** in the navigation area. The **Sequences** screen appears:

Sequences		
<input type="button" value="New"/> <input type="button" value="Copy"/> <input type="button" value="Delete"/> <input type="button" value="Detail"/> <input type="button" value="Export"/>		
	Name	Configured steps
1	Animal feed	Preheating; Priming; Rack 20 (A); Cleaning; DoseH3BO3; Standby; Rack 4 (A);
2	Milk	Preheating; Rack 12 (A); Pause; Cleaning; DoseH3BO3; Rack 20 (A); Rack 20 (A); Rack 20 (A);

The following types of steps may be used within a sequence:

Step	Explanation
Preheating	The preheating procedure is performed according to the settings under System Preparation ► Preheating in the KjelMaster K-375 embedded software
Priming	The priming procedure is performed according to the settings under System Preparation ► Priming in the KjelMaster K-375 embedded software
Rack 4	Enter the sample details for a four-place express rack with 300 mL sample tubes. For the KjelSampler K-377, which has two rack trays, the tray position (A or B) can be selected using the Settings button within the step. This step can be edited within the sequence.
Rack 12	Enter the samples for a 12-place rack with 500 mL sample tubes. For the KjelSampler K-377, which has two rack trays, the tray position (A or B) can be selected using the Settings button within the step. This step can be edited within the sequence.
Rack 20	Enter the samples for a 20-place rack with 300 mL tubes. For the KjelSampler K-377, which has two rack trays, the tray position (A or B) can be selected using the Settings button within the step. This step can be edited within the sequence.
Pause	The sequence is stopped until it is continued by pressing Start .
Cleaning	The cleaning procedure is performed according to the settings under System Preparation ► Cleaning in the KjelMaster K-375 embedded software
Aspiration	The aspiration procedure for the sample tube and the receiving vessel is always performed, unless the aspiration parameters of the referenced method are set to No . (In this case the sample determination will stop after the determination of the sample with the corresponding method.)
Dose H ₃ BO ₃	This step helps to protect the electrode. 50 mL of boric acid are dosed in to the receiving vessel to keep the electrode tip immersed during non-usage of the device.
Standby	The device is set to Standby mode.

Sequences are added to the list by clicking the **New** button.

Existing sequences can be deleted. When adding a new sequence, an empty row is added automatically and the sequence name is given a consecutive number.

When copying a sequence, an entry, identical to the previous one, is added to the list.

It is also possible to export sequences in order to import them on a KjellMaster.

An empty sequence can be defined or an existing one can be edited by double-clicking the corresponding row number and clicking **Detail**.

The detailed view of the rack is displayed in the **Sequences**:

Sequences - Sequence Animal feed

Available steps		Configured steps
Preheating		1 Preheating
Priming		2 Priming
Rack 4	<input type="button" value="▶"/>	3 Rack 20 Ⓐ
Rack 12	<input type="button" value="◀"/>	4 Cleaning
Rack 20	<input type="button" value="▲"/>	5 Dose H ₂ BO ₃
Pause	<input type="button" value="▼"/>	6 Standby
Cleaning		
Aspiration		
Dose H ₂ BO ₃		
Standby		

To set up a sequence, select a step from the list of Available Steps on the left and click the ▶ button. The step is now attached to the list of Configured Steps on the right.

To delete one or several configured steps, select the corresponding step(s) and click the ◀ button.

The order of the steps in the list can be changed by selecting the step to be moved and clicking the ▲ or ▼ button.

Click on the Rack 4, 12 or Rack 20 step in the Configured Steps list to adapt the settings of the rack and to add samples to the rack.

The detailed view of the rack in the sequence is displayed:

Sequences - Rack 20								
Back Copy Paste Clear Row Settings Detail Import								
	Name	Type	Weight	Weight Unit	Protein Factor	Method	Reference Substance	Group
1	Blank 1	Blank				Animal feed		Feed March
2	Blank 2	Blank				Animal feed		Feed March
3	Dog feed 1	Sample	2.0563	g	6.25	Animal feed		Feed March
4	Dog feed 2	Sample	2.1482	g	6.25	Animal feed		Feed March
5	Cat feed 1	Sample	2.9835	g	6.25	Animal feed		Feed March
6	Cat feed 2	Sample	2.8457	g	6.25	Animal feed		Feed March
7	Reference	Reference Substance	0.1045	g		Animal feed	Glycine	Feed March
8	Reference	Reference Substance	0.1152	g		Animal feed	Glycine	Feed March
9	Blank	Control Blank				Animal feed		Feed March

Within each rack all samples are listed with name, type, weight and weight unit (except for blanks, where no weight is needed), protein factor (except for blanks, where no protein factor is needed), method, reference substance, group and creation date.

To copy a row, click on the row number to select it and click **Copy**. With the **Paste** button the copied row content can be pasted into one or several selected rows afterwards.

Click **Settings** to change the settings of the rack. The **Rack Settings** screen opens:

Sequences - Rack Settings	
Back	
Rack Name	Rack 20
Determine blank(s) first	<input type="checkbox"/>
Pause after blank calculation	<input type="checkbox"/>
Use Tray in Sampler	A

“Determine blank(s) first”: Blanks are determined first, followed by sample measurements.

“Pause after blank calculation”: A pause after the blank calculation allows a user with operator rights in the K-375 software to eliminate an unwanted blank from a calculated mean blank value before this mean value is used for calculations of sample results.

The third setting is only available for 2 tray samplers:

“Use tray in sampler”: Specify which tray of the KjelSampler K-377 is supposed to be used to process a rack (A or B).

Click **Back** to get back to the detailed rack view.

Samples are added to the list by clicking **Import** and importing an XML-file.

NOTE

During an import, all previous samples in a rack are deleted. For additional information regarding the XML-file requirements, refer to the document „KjelLink - Sample list import“, which is available on the KjelLink installation CD under "Operation Manual" and from any authorized BUCHI representative.

Existing samples can be deleted after being selected by clicking **Clear Row**.

All parameters of a sequence rack can be changed (except for the automatically generated date of last modification), either directly within the table row or by double-clicking the corresponding row or clicking **Detail** and working within the detailed screen:

The screenshot shows a dialog box titled "Sample Lists" with the following fields and values:

Name	Dog Feed 1
Type	Sample
Weight	2.1225
Weight unit	g
Protein factor	6.25
Method	Animal Feed
Group	Feed March 2012
Position	3
Last modified	14. Dec 2012 10:21

An "OK" button is located at the bottom right of the dialog box.

The first parameter for each sample is the name.

The second parameter for each sample is the type:

- **Blank**
- **Sample**
- **Reference substance**
- **Control blank**

According to the selected type of sample, a different set of parameters is available.

For samples of type **Blank**, enter a name and select the **Method** to be used for the determination of the blank.

Select a result **Group** for the storage of the result.

For samples of type **Sample**, enter a name, the **Weight** and the **Weight Unit** in (g) or (mL). Enter the **Protein Factor** for the calculation of the results and select the **Method** to be used for the sample determination.

Select a result **Group** for the storage of the result.

For samples of type **Reference Substance**, enter a name and select the reference substance from the list.

Enter the **Weight** and the **Weight Unit** in (g) or (mL) and select the **Method** to be used for the determination of the reference substance.

Select a result **Group** for the storage of the result.

For samples of type **Control Blank**, enter a **Name** and select the **Method** to be used for the determination of the control blank.

Select a result **Group** for the storage of the result.

With **OK** the changes are saved and the screen is closed.

5.5 Results

In the result area all tasks related to the results (importing, viewing and printing) can be performed.

5.5.1 Results



Click on **Results** in the navigation area. The **Results** screen appears:

Results															
<input type="button" value="Recalculate"/> <input type="button" value="Delete"/> <input type="button" value="Detail"/> <input type="button" value="Import"/> <input type="button" value="Short Report"/> <input type="button" value="Detailed Report"/> <input type="button" value="Statistic Report"/>															
	Sample	Result 1 value	Result 1 unit	Result 2 value	Result 2 unit	Weight	Weight unit	Titrated volume [mL]	Blank volume [mL]	Protein Factor	Type	Method	Group	Created	Last modified
	<i>Filter</i>										<i>Filter</i>	<i>Filter</i>	<i>Filter</i>	<i>Filter [days]</i>	<i>Filter [days]</i>
120	BW							0.676			Blank	TKN	muea	16.04.2012 16:12	20.03.2012 09:32
121	TI3	0.180	g N/L	0.180	g Pr/L	10	mL	13.584	0.738	1.00	Sample	TKN	muea	16.04.2012 16:07	16.02.2012 12:53
122	TI2	0.179	g N/L	0.179	g Pr/L	10	mL	13.504	0.738	1.00	Sample	TKN	muea	16.04.2012 16:01	16.02.2012 12:48
123	BW							0.000			Blank	TKN	muea	16.04.2012 15:51	16.02.2012 12:36
124	BW							0.606			Blank	TKN	muea	16.04.2012 15:51	16.02.2012 12:31
125	BW							0.869			Blank	TKN	muea	16.04.2012 15:46	16.02.2012 10:52
126	20	0.525	%N	3.351	%Pr	2.8995	g	5.646	0.209	6.38	Sample	CUBE	muea	13.04.2012 14:23	16.02.2012 10:47
127	19	0.526	%N	3.357	%Pr	2.9001	g	5.656	0.209	6.38	Sample	CUBE	muea	13.04.2012 14:18	16.02.2012 10:42
128	17	0.526	%N	3.354	%Pr	2.7929	g	5.450	0.209	6.38	Sample	CUBE	muea	13.04.2012 14:13	16.02.2012 10:37
129	16	0.524	%N	3.342	%Pr	2.7968	g	5.439	0.209	6.38	Sample	CUBE	muea	13.04.2012 14:09	16.02.2012 10:33
130	15	0.526	%N	3.354	%Pr	2.7825	g	5.431	0.209	6.38	Sample	CUBE	muea	13.04.2012 14:04	16.02.2012 10:20
131	14	0.527	%N	3.359	%Pr	2.7994	g	5.471	0.209	6.38	Sample	CUBE	muea	13.04.2012 14:00	16.02.2012 10:10
132	12	0.525	%N	3.350	%Pr	2.8321	g	5.518	0.209	6.38	Sample	CUBE	muea	13.04.2012 13:55	16.02.2012 10:05
133	11	0.526	%N	3.355	%Pr	2.8270	g	5.515	0.209	6.38	Sample	CUBE	muea	13.04.2012 13:50	15.02.2012 14:40
134	10	0.526	%N	3.356	%Pr	2.8350	g	5.533	0.209	6.38	Sample	CUBE	muea	13.04.2012 13:46	15.02.2012 14:36
135	9	0.526	%N	3.357	%Pr	2.8407	g	5.545	0.209	6.38	Sample	CUBE	muea	13.04.2012 13:41	15.02.2012 14:26
136	7	0.526	%N	3.355	%Pr	2.8587	g	5.575	0.209	6.38	Sample	CUBE	muea	13.04.2012 13:36	16.02.2012 10:47
137	6	0.525	%N	3.352	%Pr	2.8080	g	5.475	0.209	6.38	Sample	CUBE	muea	13.04.2012 13:32	16.02.2012 10:42
138	5	0.525	%N	3.347	%Pr	2.8149	g	5.480	0.209	6.38	Sample	CUBE	muea	13.04.2012 13:27	16.02.2012 10:37
139	4	0.525	%N	3.347	%Pr	2.8444	g	5.535	0.209	6.38	Sample	CUBE	muea	13.04.2012 13:23	16.02.2012 10:33
140	2	0.525	%N	3.352	%Pr	2.7085	g	5.289	0.209	6.38	Sample	CUBE	muea	13.04.2012 13:18	16.02.2012 10:20
141	1	0.552	%N	3.523	%Pr	2.4796	g	5.097	0.209	6.38	Sample	CUBE	muea	13.04.2012 13:13	16.02.2012 10:10
142	BW							0.186			Blank	CUBE	muea	13.04.2012 13:09	16.02.2012 10:05
143	BW							0.192			Blank	CUBE	muea	13.04.2012 13:04	15.02.2012 14:40

To delete one or several results, click on the row number to select the corresponding row(s) in the list and click **Delete**.

To import results that have been exported on the KjellMaster K-375 press the **Import** button and select one or several result files. From the KjellMaster the exported files can be transferred to the Kjell-Link PC via a USB stick or shared network (for further information refer to the document „KjellMaster K-375 Data export“, which is on the KjellLink installation CD under "Operation Manual" and from any authorized BUCHI representative).

To recalculate a result, click on the row number to select the corresponding result in the list and click **Recalculate**.

The following screen opens:

Recalculation	
Sample	a2
Weight	0.01
Weight unit	g
Protein factor	6.25
Titer	1
Solution type	Based on molarity
Molarity	0.1
Valence factor	2
Type	Sample
Method	A 1
Group	Report Tests
Titrated volume [mL]	7.539
Titration solution	H ₂ SO ₄ 0.1 mol/L
Created	21. Jun 2012 14:35
Last modified	21. Jun 2012 14:35
<input type="button" value="Recalculate"/> <input type="button" value="Cancel"/>	

The editable parameters are highlighted in gray, the non-editable parameters have a white background.

To carry out a recalculation, modify the corresponding parameter(s) by typing directly in the field or using the drop-down menu and click **Recalculate**.

The result is recalculated, the screen is closed and the recalculated result is displayed in blue color (instead of black) in the **Results** screen.

In the detail view of the recalculated sample, the recalculation is shown in the History table at the bottom of the screen.

To view the details of a result, double-click the corresponding row number in the table or click the row number once and then the **Detail** button.

The following screen appears:

Sample	
Name	Salami 4
Result 1	4.234 %N
Result 2	28.464 %Pr
Titrated Volume [mL]	19.064
Blank Corrected Volume [mL]	18.862
Weight	1.2479
Weight Unit	g
Protein Factor	6.25
State	Completed
State Info	-
Type	Sample
Group	AN Fleisch
Rack	
Rack Position	19 / 20 @
Method	
Method	0.2 N
H ₂ O Volume [mL]	50
NaOH Volume [mL]	50
Reaction Time [s]	5
Distillation Mode	Fixed Time
Distillation Time [s]	180
Stirrer Speed Distillation	5
Steam Output [%]	100
Titration Type	Boric Acid Titration
Receiving Solution Volume [mL]	50
Titration Solution	H ₂ SO ₄ 0.1 mol/L
Sensor Type	Potentiometric
Titration Mode	Standard
Measuring Mode	Endpoint pH
Endpoint pH	4.65
Stirrer Speed Titration	7
Titration Start Volume [mL]	0
Titration Algorithm	Optimal
Determination Mode	Standard
Unit Result 1 (Mass)	%N
Unit Result 1 (Volume)	g N/L
Unit Result 2 (Mass)	%Pr
Unit Result 2 (Volume)	g Pr/L
Aspiration Sample Tube	Yes
Aspiration Receiving Vessel	Yes
Titration Solution	
Name	H ₂ SO ₄ 0.1 mol/L
Solution Type	Based on Molarity
Molarity	0.100
Valence Factor	2
Titer	1.0000
Blank	
Name	Auto. calculated
Type	Automatic Blank
Titrated Volume [mL]	0.2016375
Created	12.12.2011 17:18
Physical Blank(s)	
Name	Blank
Titrated Volume [mL]	0.19555
Created	12.12.2011 17:18
Name	Blank
Titrated Volume [mL]	0.202
Created	12.12.2011 17:08
Name	Blank
Titrated Volume [mL]	0.203
Created	12.12.2011 17:13
Name	Blank
Titrated Volume [mL]	0.206
Created	12.12.2011 17:02

NOTE

In the detail result screen a recalculated result has an additional history area, where the original value(s), the modified value(s) and the date of modification are listed.

Click **OK** to close the screen.

Three different reports are available via the corresponding button:

- Short Report
- Detailed Report
- Statistic Report

The **Short Report** displays the following parameters of the selected results: sample name, result 1 and 2, sample weight, titrated volume, blank, protein factor, recovery rate and creation date (one line per result).

The **Detailed Report** displays the corresponding detailed view of the selected or all results and contains more sample information than the short report (one page per result).

NOTE

In a Detailed Report a recalculated result has an additional history area, where the original value(s), the modified value(s) and the date of modification are listed.

Within the Statistic Report the mean value, the standard deviation and the relative standard deviation of two or more results can be calculated.

Select the results, for which a statistic report needs to be generated, and click the corresponding button.

Before the report is generated, the number of determinations has to be entered.

If duplicate measurements have been performed enter "2" and the software will always take two consecutive results to perform the statistical calculation.

Each report format can be saved as PDF or printed.

5.5.2

Blank Correction



Click on **Blank Correction** in the navigation area. The **Blank Correction** screen appears:

Blank Correction				
	Name	Type	Volume [mL]	Created
1	trst reports mean	Mean	0.382	21. Jun 2012 13:02
2	test reports	Manual	0.500	21. Jun 2012 10:50
3	Auto-berechnet	Automatic blank	15.076	21. Jun 2012 09:41
4	Auto-berechnet	Automatic blank	0.373	21. Jun 2012 08:36
5	Auto-berechnet	Automatic blank	0.388	21. Jun 2012 08:10
6	Auto-berechnet	Automatic blank	0.631	21. Jun 2012 07:44

Use	Name	Volume [mL]	Created
<input checked="" type="checkbox"/>	h1	0.347	21. Jun 2012 11:47
<input checked="" type="checkbox"/>	g1	0.356	21. Jun 2012 11:22
<input checked="" type="checkbox"/>	f1	0.453	21. Jun 2012 10:30
<input checked="" type="checkbox"/>	c1	0.373	21. Jun 2012 08:36

When a row is selected, the corresponding measured blank(s) is/are displayed in the lower table. If a blank is identified as outlier or should not be included in the result calculation, it can be removed by selecting the checkbox. An auto-calculated blank, that has been modified, is marked with an asterisk (*).

For manual blanks, where only one blank value is used to calculate the result, the titrated volume can

be edited.

For mean blanks the titrated volume cannot be edited (the values are highlighted in gray).

NOTE

Changing a blank or modifying a mean value by deactivating a measured blank will have an impact on all results calculated with the corresponding blank.

5.6 Determination Parameters

Within this area, the determination method for the K-375 can be edited and the parameters like reference substances or volumetric solutions for the titration can be defined.

5.6.1 Groups



Groups are used to organize the results. Click on **Groups** in the navigation area. The **Groups** screen appears:

Groups		
	<input type="button" value="New"/>	<input type="button" value="Delete"/>
	Groups	Last modified
1	Group 1	15. Oct 2012 16:03
2	Group 2	15. Oct 2012 16:03
3	Group 3	15. Oct 2012 16:03
4	Default	01. Jan 2011 00:00
5	Priming	01. Jan 2011 00:00

Click **New** to create a new group. A row is added below the last group in the table and a consecutive number is added to the name. To delete a group from the list, click on the row number to select it and click **Delete**.

NOTE

Groups highlighted in green are predefined and cannot be deleted or changed!

5.6.2 Methods



Each method consists of 4 different parameter sets:

- Parameters for the sample **distillation**
- Parameters for the sample **titration**
- Parameters for the sample **determination** (calculating the result)
- Parameters for the **aspiration**

Click on **Methods** in the navigation area. The **Methods** screen appears:

Methods								
<input type="button" value="New"/> <input type="button" value="Copy"/> <input type="button" value="Delete"/> <input type="button" value="Detail"/> <input type="button" value="Import"/> <input type="button" value="Export"/>								
	Name	H ₂ O volume [mL]	NaOH volume [mL]	Reaction time [s]	Distillation mode	Distillation time [s]	Stirrer speed distillation	Steam output [%]
1	Animal feed	50	60	5	Fixed time	180	5	100
2	Milk products	50	50	5	Fixed time	180	5	100
3	Milk products new	50	55	5	Fixed time	180	5	100
4	Col. Standard	50	60	5	Fixed time	150	5	100
5	Col. Standard Autosampler	50	60	5	Fixed time	180	5	100
6	Pot. Standard	50	60	5	Fixed time	150	5	100
7	Pot. Standard Autosampler	50	60	5	Fixed time	180	5	100

Within the Methods screen, methods can be created, deleted, renamed, copied, imported or exported.

A new method is created using the **New** button. The name for a new method has to be unique. Methods are added to the list either by clicking **Import** and importing a *.kmet file or by clicking the **New** button.

Existing methods can be deleted after being selected. When adding a new method the standard parameters will be used and the method name gets a consecutive number.

When copying a method, a method with a new name and identical data is added to the list.

All parameters of the newly added method can be changed (except for the automatically generated modification date), either directly within the table row or by double-clicking the corresponding row and working within the detailed **Methods** screen.

The screenshot shows a dialog box titled 'Methods' with the following fields and values:

- Method:** Animal feed
- H₂O volume [mL]:** 50
- NaOH volume [mL]:** 60
- Reaction time [s]:** 5
- Distillation mode:** Fixed time
- Distillation time [s]:** 180
- Stirrer speed distillation:** 5
- Steam output [%]:** 100
- Titration type:** Boric acid titration
- Receiving solution volume [mL]:** (empty field)

An **OK** button is located at the bottom right of the dialog.

With **OK** the changes are saved and the screen is closed.

With the buttons **Import** and **Export**, methods can be imported from, or exported to a memory stick or a network folder.

NOTE

Methods highlighted in green are predefined BUCHI standard methods and cannot be deleted or changed.

However, they can be copied and stored as a new method which can be changed.

5.6.3

Volumetric Solutions



All volumetric solutions that might be used for setting up a method can be defined in this screen. Click on **Volumetric Solutions** in the navigation area. The **Volumetric Solutions** screen appears:

Volumetric Solutions						
<input type="button" value="New"/> <input type="button" value="Delete"/>						
	Name	Solution type	Normality or molarity	Valence factor	Titer	Last modified
1	Solution 1	Based on molarity ▾	0.250	2 ▾	1.0000	26. Nov 2012 14:32
2	H ₂ SO ₄ 0.05 mol/L	Based on molarity ▾	0.050	2 ▾	1.0000	01. Jan 2011 00:00
3	H ₂ SO ₄ 0.1 mol/L	Based on molarity ▾	0.100	2 ▾	1.0000	01. Jan 2011 00:00
4	H ₂ SO ₄ 0.25 mol/L	Based on molarity ▾	0.250	2 ▾	1.0000	01. Jan 2011 00:00
5	HCl 0.1 mol/L	Based on molarity ▾	0.100	1 ▾	1.0000	28. Feb 2012 10:53
6	HCl 0.5 mol/L	Based on molarity ▾	0.500	1 ▾	1.0000	01. Jan 2011 00:00

Create a new volumetric solution using a unique name, or delete or rename an existing one.

NOTE

Volumetric solutions highlighted in green are predefined and cannot be deleted. Only the Titer can be adapted for these solutions!

For each solution the solution type, molarity or normality and titer can be specified. For the "Solution type Based on molarity" the valence factor can be set, too.

5.6.4 Reference Substances



If a reference substance and its theoretical value is defined, it is possible to automatically calculate the recovery rate. Limits for the recovery (lower and upper limit) can also be defined so that the system rejects results if they are outside of these limits when a reference sample is measured.

The following steps are necessary for defining reference substances.

Click on **Reference Substances** in the navigation area. The **Reference Substances** screen appears:

Reference Substances						
<input type="button" value="New"/> <input type="button" value="Delete"/>						
	Name	Theoretical value	Result unit	Lower recovery limit [%]	Upper recovery limit [%]	Last modified
1	Substance0	13.72	%N ▾	98	102	28.02.2012 10:53:49
2	Acetanilide	10.36	%N ▾	98	102	01.01.2011 00:00:00
3	Glycine	18.66	%N ▾	99.5	102	01.01.2011 00:00:00
4	NH ₄ H ₂ PO ₄	12.18	%N ▾	98	102	01.01.2011 00:00:00
5	Tryptophan	13.72	%N ▾	98	102	01.01.2011 00:00:00

Create a new reference substance with a unique name, or delete or rename an existing one.

NOTE

Reference substances highlighted in green are predefined and cannot be deleted or changed!

For each reference substance, a theoretical value, related to the nitrogen content, can be specified.

5.6.5 Result Units



Click on **Result Units**. The **Result Units** screen appears:

Result Units						
<input type="button" value="New"/> <input type="button" value="Delete"/>						
	Name	Base unit	Correction factor	Correction offset	Decimal places	Last modified
1	Result Unit 1	%N ▾	1	0	1 ▾	16.10.2012 11:25:30
2	Resultunit1	%N ▾	10000	0	1 ▾	05.03.2012 10:58:17
3	Resultunit1	%N ▾	10000	0	1 ▾	05.03.2012 10:58:18
4	%N	%N ▾	1	0	3 ▾	01.01.2011 00:00:00
5	%NH ₄	%N ▾	1.28785	0	3 ▾	01.01.2011 00:00:00
6	%Pr	%Pr ▾	1	0	3 ▾	01.01.2011 00:00:00
7	g N/100g	%N ▾	1	0	3 ▾	01.01.2011 00:00:00
8	g N/100mL	g N/L ▾	0.1	0	3 ▾	01.01.2011 00:00:00

Select one of the predefined units or create a new unit with **New** and store it under a new, unique name.

Select a base unit for the new unit calculation.

Selectable are: **g N/L**, **% N**, **g Pr/L** or **% Pr**

(N = nitrogen, Pr = protein)

Enter a correction factor and/or correction offset if necessary and select the preferred number of decimal places.

(The results are calculated following the linear equation $y = a \cdot x + b$ where a is given by the correction factor and b by the correction offset.)

NOTE

Result units highlighted in green are predefined and cannot be deleted or changed!

5.7 Kjellink

The following options are available:

- viewing the import/export logfile
- adapting the software settings
- registering the software
- viewing the Software manual

5.7.1 Import Export Logs



Click on **Import Export Logs** in the navigation area. The following screen appears:

```

Import and export logs

>>> 16:05:38 Result import: Result successfully imported from file 'C:\Kjellink\Results 1\2012-06-06.xml'
>>> 16:05:38 Result import: Result successfully imported from file 'C:\Kjellink\Results 1\2012-06-06.xml'
>>> 16:05:38 Result import: Result successfully imported from file 'C:\Kjellink\Results 1\2012-06-06.xml'
>>> 16:05:38 Result import: Result successfully imported from file 'C:\Kjellink\Results 1\2012-06-06.xml'
>>> 16:05:38 Result import: Result successfully imported from file 'C:\Kjellink\Results 1\2012-06-06.xml'
>>> 16:05:38 Result import: Result successfully imported from file 'C:\Kjellink\Results 1\2012-06-06.xml'
>>> 16:05:38 Result import: Result successfully imported from file 'C:\Kjellink\Results 1\2012-06-06.xml'
>>> 16:05:38 Result import: Result successfully imported from file 'C:\Kjellink\Results 1\2012-06-06.xml'
>>> 16:05:38 Result import: Result successfully imported from file 'C:\Kjellink\Results 1\2012-06-06.xml'
>>> 16:05:38 Result import: Result successfully imported from file 'C:\Kjellink\Results 1\2012-06-06.xml'
>>> 16:05:39 Result import: Result successfully imported from file 'C:\Kjellink\Results 1\2012-06-06.xml'
>>> 16:05:39 Result import: Result successfully imported from file 'C:\Kjellink\Results 1\2012-06-06.xml'
>>> 16:05:39 Result import: Result successfully imported from file 'C:\Kjellink\Results 1\2012-06-06.xml'
>>> 16:05:39 Result import: Result successfully imported from file 'C:\Kjellink\Results 1\2012-06-06.xml'
>>> 16:05:39 Result import: Result successfully imported from file 'C:\Kjellink\Results 1\2012-06-06.xml'
>>> 16:05:39 Result import: Result successfully imported from file 'C:\Kjellink\Results 1\2012-06-06.xml'
>>> 16:05:39 Result import: Result successfully imported from file 'C:\Kjellink\Results 1\2012-06-06.xml'
>>> 16:05:39 Result import: Result successfully imported from file 'C:\Kjellink\Results 1\2012-06-06.xml'
>>> 16:05:39 Result import: Result successfully imported from file 'C:\Kjellink\Results 1\2012-06-06.xml'
>>> 16:05:39 Result import: Result successfully imported from file 'C:\Kjellink\Results 1\2012-06-06.xml'
>>> 16:05:39 Result import: Result successfully imported from file 'C:\Kjellink\Results 1\2012-06-06.xml'
>>> 16:05:39 Result import: Result successfully imported from file 'C:\Kjellink\Results 1\2012-06-06.xml'
=== 16:06:11 Result import: Import started
>>> 16:06:11 Result import: Result already existed from file 'C:\Kjellink\Results 1\2012-06-06.xml'
>>> 16:06:11 Result import: Result already existed from file 'C:\Kjellink\Results 1\2012-06-06.xml'
>>> 16:06:11 Result import: Result already existed from file 'C:\Kjellink\Results 1\2012-06-06.xml'
>>> 16:06:11 Result import: Result already existed from file 'C:\Kjellink\Results 1\2012-06-06.xml'
=== 16:06:43 Result import: Import started
### 16:06:43 Result import: Could not import the result file 'C:\Kjellink\Results 2\2012-06-06.xml'
### 16:06:43 Result import: There is an error in XML document (107, 7).

```

Here the course of import/export activities of the day can be seen.

The prefixes at the beginning of each row have the following meaning:

=== Import/export started

>>> Regular import information

Import or export failed because of a wrong file format, a corrupt file, etc.

5.7.2

Settings



Click on **Settings** in the navigation area. The **Settings** screen appears:

Settings	
Reset image	
Language	English
Date format	DD. MMM YYYY
Import / Export path	C:\
Report header image	BUCHI
Sampler type	None
RS-232 Read-in from the balance active	<input type="checkbox"/>
RS-232 Received data	
RS-232 Number of weight digits	6
RS-232 Port name	COM1
RS-232 Baud rate	9600
RS-232 Number of data bits	8
RS-232 Parity	None
RS-232 Number of stop bits	1

Select a language. The following languages can be installed from the language pack: English, German, French, Spanish, Italian, Chinese and Japanese.

The date format can be changed.

The Import/Export Path and the Report header image can be changed.

The Sampler Type can be selected.

RS-232:

- Select if the weight values from an external balance should be processed.
- “Received data” shows the text received from the balance to test the RS-232 settings of the balance and the PC.
- Set the number of digits to round the balance value.
- Select the port where the balance is connected to.
- Select the parameters corresponding to the balance.

Click **Reset image** to set the BUCHI standard image for the reports.

5.7.3

License and Info




To register the software, click on **Software Registration** (also available via the Welcome screen). The following screen opens:

Software Registration

Buchi software is license protected. The software will only be available on the computer where you fill out this registration form, because the license will be bound to the HostID of this computer. The HostID is a unique machine identifier that will be used by the software to ensure the license agreement. Please fill out the registration form below and send the registration to your buchi sales representative. Thank you for using buchi software!

Software:

AN: AN and SN numbers are mandatory if the sticker is in the DVD-Box! 

SN:

HostID of this computer:

Hostname of this computer:

Company:

Name and surname:

Title:

eMail:

Phone:

Address:

Postal code:

City:

Country:

Remark:

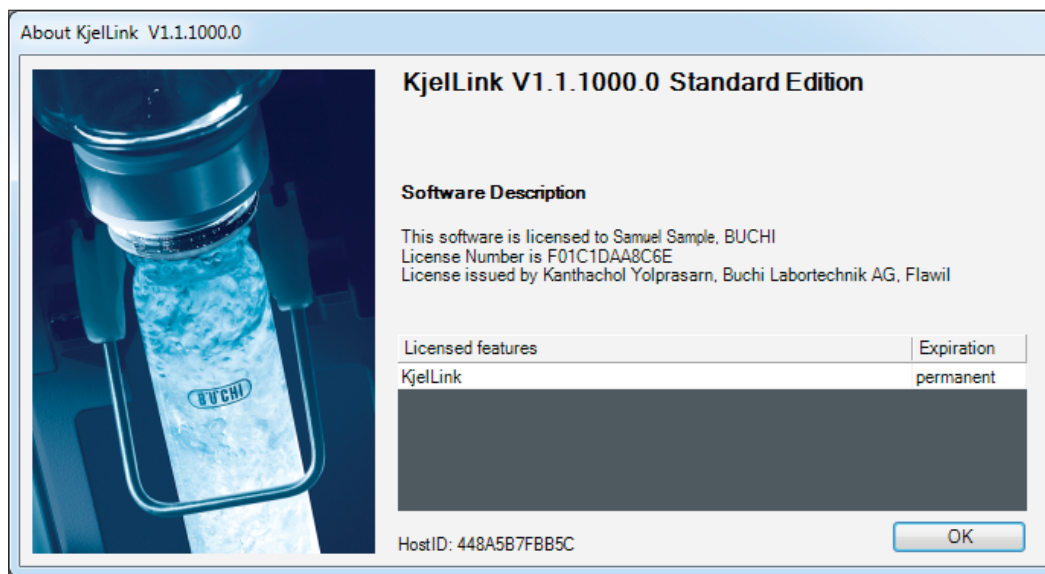
OK Cancel

Fill in the mandatory fields, save the generated registration file and send it to the software support team at BUCHI (registration@buchi.com) to get a software license.

To import a license, click **Import License**, search the corresponding *.lic file and click Open. For additional information related to the software licensing, click on the help button (question mark on the screen).

To open the **About** screen that informs about the current software version, click **About**.

The following screen opens:



To open the Manual of KjelLink, click **Operation Manual**.

5.8 KjelLink databases

KjelLink saves all data in two types of databases. The software automatically creates a limited number of backups and deletes older versions of them.

5.8.1 Database types

The Application database contains:

- All data entered for “Determination” and “Determination Parameters”
- All KjelLink “Settings”

The Result database contains:

- All data imported in “Results”
- All results, including the recalculation history

5.8.2 Storing location

The databases are stored in a subfolder on the PC. The default path is C:\ProgramData\BUCHI\KjelLink\DB.

Normally, Windows does not display this default data path in the explorer.

To make it visible, change the settings of the Explorer:

Windows 7: Organize ► Folder and Search Options ► View ► Hidden files and folders and select “Show hidden files, folders, drives”.

Windows 8.1: View ► Check “Hidden items”.

Windows 10: View ► Show/Hide ► Check “Hidden items”.

5.8.3 Database naming

The active databases are named as follows:

- The Application database: ApplicationDataBase.sdf
- The Result database: ResultDataBase.sdf

For the backup files the date and time and the extension “.bak” is added to the above mentioned name, YYYYMMDD-HHMMSS.bak.

- YYYYMMDD = Year, month, day
- HHMMSS = Hour, minute, second

Example:

- “ResultDataBase.sdf.20121125-153955.bak” is a backup stored on November 25, 2012, 15:39:55 (or 3:39:55 pm).

5.8.4 Automatic data backup and restore

Every time the software is started, it automatically creates a database backup file for both database types. Kjellink keeps up to ten backups of older working days. Older files are deleted automatically. The software will always try to use the active database files. In case they are missing or corrupt the latest backup files are used and an information is displayed to notify the operator.

5.8.5 Manual backup and restore

It is recommended to manually copy the “.sdf” files into a separate backup folder at regular intervals, so that older data are available if needed.

To restore an older database file:

- Close Kjellink.
- In the Kjellink database folder store the active database files “.sdf” under a meaningful name to be restored later.
- Copy the old database files to the Kjellink database folder and make sure they are named “ApplicationDataBase.sdf” and “ResultDataBase.sdf”, respectively.

6 Balance connection

6.1 General

An external balance may be connected to the PC with the Kjellink software in the same way as it is already possible with the KjellMaster. The operator can weigh the sample and directly transfer the value to the weight field in the sample in a sample list or the rack in a sequence.

6.2 Balance requirements

The balance must have an RS-232 connection.

The balance must be able to send a single weight value on a operator command, pressing a "send" button or similar. Continuous value transfer from the balance will be ignored by the Kjellink software or may have unwanted effects.

The RS-232 settings of the balance must correspond with the ones supported by the PC and Kjellink:

- Baud rate: 75 .. 115200
- Data bits: 7 or 8
- Parity: None, Odd or Even
- Stop bits: 1, 1.5 or 2
- Handshake: No hardware or software handshake (RTS, CTS)

The balance must send an ASCII string as follows: **xxxVxxxUxxxF**

xxx	May be any character except value or unit parts. Value parts are: +-.0123456789 is the weight value:
V	<ul style="list-style-type: none"> • May start with + or - • May contain a decimal point • May start with a decimal point • May end with a decimal point
U	is the weight unit: <ul style="list-style-type: none"> • Must follow after the weight value • Must be one of the following: "g", "mg", "L" or "mL" • May be capital or small letters
F	Are the final control characters as CR and LF. They may or may not appear.
	The value is considered valid and will be written into the weight fields: <ul style="list-style-type: none"> • if the weight value is > 0.0 • if the unit has been detected correctly

6.3 PC requirements

To be able to connect the balance, the PC must have a built-in RS-232 interface. If not available any standard commercial RS-232 / USB converter can be used. The converters usually require a driver installation, see the data sheet of the converter you provide.

6.4 RS-232 configuration

Balance (see your balance manual):

- Set the balance RS-232 communication parameters. Typical parameters are 9600 baud, 8 data bits, no parity, 1 stop bit.
- Set the balance to sending one single weight value on a send request.
- Select a supported unit in the balance, either "g", "mg", "L" or "mL".

KjelLink:

- Check "Read-in from the balance active" to process the weight values from the balance.
- Set the number of digits to round the balance value.
- Select the port where the balance is connected to.
- Set the identical communication parameters as on the balance.

<ul style="list-style-type: none"> Blank Correction Determination Parameters Groups Methods Volumetric Solutions Reference Substances Result Units KjelLink Import Export Log Settings License and Info 	RS-232 Read-in from the balance active <input checked="" type="checkbox"/>	
	RS-232 Received data	
	RS-232 Number of weight digits	<input type="text" value="4"/>
	RS-232 Port name	<input type="text" value="COM1"/>
	RS-232 Baud rate	<input type="text" value="9600"/>
	RS-232 Number of data bits	<input type="text" value="8"/>
	RS-232 Parity	<input type="text" value="None"/>
	RS-232 Number of stop bits	<input type="text" value="1"/>

Test the communication:

- Connect the balance to the PC.
- Send a weight value from the balance.
- In KjelLink in the "Received data" field the text will appear. The detected weight value and unit will show after the "=>".

Example:

RS-232 Received data	S S 12480 mg => 12.48 g
-----------------------------	-------------------------

6.5 Filling in weight values

The weight values can be transferred from the balance to several Kjellink views.

Online		Sample Lists - Sample list 1									
<ul style="list-style-type: none"> Online 		<ul style="list-style-type: none"> Back New Copy Delete ▲ ▼ Detail Import 									
Determination		Name	Type	Weight	Weight unit	Protein factor	Method	Reference substance	Group	Last modified	
<ul style="list-style-type: none"> Sample Lists Sequences 		1	Sample 1	Sample	0.0	g	6.25	Pot. Standard	-	Default	16. Apr 2015 13:47
Results		2	Sample 2	Sample	0.0	g	6.25	Pot. Standard	-	Default	16. Apr 2015 13:47
		3	Sample 3	Sample	0.0	g	6.25	Pot. Standard	-	Default	16. Apr 2015 13:47

Sample Lists, Racks in Sequences and detail views:

- Click in the Weight field. Only if the focus is on the weight field, the value from the balance will be accepted.
- Send the weight value from the balance.

Sample Lists or Racks in Sequences:

- After receiving the value, the focus will jump to the Weight field in the next available row.

Sample Lists - Sample 1

Name

Type

Weight

Weight unit

Protein factor

Method

Group

Last modified 16. Apr 2015 13:47

Online		Sequences - Rack 12								
<ul style="list-style-type: none"> Online 		<ul style="list-style-type: none"> Back Copy Paste Clear Row Settings Detail Import 								
Determination		Name	Type	Weight	Weight unit	Protein factor	Method	Reference substance	Gr	
<ul style="list-style-type: none"> Sample Lists Sequences 		1	Sample 1	Sample	0.0	g	6.25	Pot. Standard Autosampler	-	Defa
Results		2	Sample 2	Sample	0.0	g	6.25	Pot. Standard Autosampler	-	Defa
<ul style="list-style-type: none"> Results Blank Correction 		3	Sample 3	Sample	0.0	g	6.25	Pot. Standard Autosampler	-	Defa
Determination Parameters		4	Blank 1	Blank	-	-	-	Pot. Standard Autosampler	-	Defa
		5	Blank 2	Blank	-	-	-	Pot. Standard Autosampler	-	Defa
		6	Ref	Reference substance	0.0	g	-	Pot. Standard Autosampler	Glycine	Defa
		7								

BUCHI Affiliates:

Europe

Switzerland/Austria

BÜCHI Labortechnik AG
CH – 9230 Flawil
T +41 71 304 63 63
F +41 71 304 65 65
buchi@buchi.com
www.buchloom

Italy

BUCHI Italia s.r.l.
IT – 20010 Comaredo (MI)
T +39 02 824 53 11
F +39 02 575 12 855
italia@buchi.com
www.buchi.it

Benelux

BÜCHI Labortechnik GmbH
Branch Office Benelux
NL – 3342 GT Hardrik-bos-Ambacht
T +31 78 694 94 29
F +31 78 694 94 30
benelux@buchi.com
www.buchi.be

Russia

BUCHI Russia/CIS
Russia 127287 Moscow
T +7 495 35 35 495
F +7 495 96 10 520
russia@buchi.com
www.buchi.ru

France

BUCHI Sarl
FR – 94556 Rungis Cedex
T +33 1 56 70 52 50
F +33 1 46 86 00 31
france@buchi.com
www.buchi.fr

United Kingdom

BUCHI UK Ltd.
GB – Oldham OL9 9QL
T +44 161 533 1000
F +44 161 533 1007
uk@buchi.com
www.buchi.co.uk

Germany

BÜCHI Labortechnik GmbH
DE – 45127 Essen
T +800 414 0 414 0 (Toll Free)
T +49 201 747 49 0
F +49 201 747 49 20
deutschland@buchi.com
www.buechigmbh.de

Germany

BÜCHINIR-Online
DE – 69190 Walldorf
T +49 6227 73 25 60
F +49 6227 73 25 70
nir-online@buchi.com
www.nir-online.de

America

Brazil

BUCHI Brasil Ltda.
BR – Valinhos SP 13271-200
T +55 19 3649 1201
F +55 19 3649 2007
brasil@buchi.com
www.buchi.com

USA/Canada

BUCHI Corporation
US – New Castle, DE 19720
T +1 877 662 8244 (Toll Free)
T +1 302 652 3000
F +1 302 652 8777
us-sales@buchi.com
www.nybuchi.com

Asia

China

BUCHI China
CN – 200052 Shanghai
T +86 21 6260 3366
F +86 21 5230 8821
china@buchi.com
www.buchi.com.cn

India

BUCHI India Private Ltd.
IN – Mumbai 400 055
T +91 22 657 75400
F +91 22 657 19956
india@buchi.com
www.buchi.in

Indonesia

PT. BUCHI Indonesia
ID – Tangerang 15321
T +62 21 537 62 16
F +62 21 537 62 17
indonesia@buchi.com
www.buchi.co.id

Japan

Nihon BUCHI K.K.
JP – Tokyo 110-0008
T +61 3 3621 4777
F +61 3 3621 4555
nihon@buchi.com
www.nihon-buchi.jp

Korea

BUCHI Korea Inc.
KR – Seoul 153-792
T +82 2 6719 7500
F +82 2 6719 7509
korea@buchi.com
www.buchi.kr

Malaysia

BUCHI Malaysia Sdn. Bhd.
MY – 47301 Petaling Jaya,
Selangor
T +60 3 7832 0310
F +60 3 7832 0309
malaysia@buchi.com
www.buchi.com

Singapore

BUCHI Singapore Pte. Ltd.
SG – Singapore 609919
T +65 6555 1175
F +65 6555 7047
singapore@buchi.com
www.buchi.com

Thailand

BUCHI (Thailand) Ltd.
TH – Bangkok 10600
T +66 2 962 08 51
F +66 2 962 08 54
thailand@buchi.com
www.buchi.co.th

BUCHI Support Centers:

South East Asia

BUCHI (Thailand) Ltd.
TH-Bangkok 10600
T +66 2 962 08 51
F +66 2 962 08 54
bacc@buchi.com
www.buchi.com

Middle East

BÜCHI Labortechnik AG
UAE – Dubai
T +971 4 313 2860
F +971 4 313 2861
middleeast@buchi.com
www.buchi.com

Latin America

BUCHI Latinoamérica Ltda.
BR – Valinhos SP 13271-200
T +55 19 3849 1201
F +55 19 3849 2007
latinoamerica@buchi.com
www.buchi.com

We are represented by more than 100 distribution partners worldwide.
Find your local representative at: www.buchi.com