

KemConnect™ V1.0 User Guide

December 2015

1 Introduction

- [1.1 About this document](#)
- [1.2 KemConnectTM System in brief](#)
- [1.3 Q-Reader Specifications^{1\)}](#)
- [1.4 FCC certification and CE marking](#)

2 KemConnectTM System

- [2.1 Contents](#)
- [2.2 System description](#)
- [2.3 Storing and transporting the system](#)
- [2.4 Safe use of the System](#)

3 Installation and Set up

- [3.1 Installation](#)
- [3.2 Setting up products](#)
- [3.3 Updating Products](#)
- [3.4 User Interface icons](#)

4 Using KemConnectTM System

- [4.1 Starting KemConnect application](#)
- [4.2 Analyzing a sample](#)
- [4.3 Browsing measurements](#)
- [4.4 Deleting measurements](#)
- [4.5 Uploading configuration](#)
- [4.6 Changing passwords](#)
- [4.7 Clearing saved passwords and usernames from the browser](#)
- [4.8 Stop saving passwords and usernames](#)

5 Troubleshooting

- [5.1 System becomes unresponsive](#)
- [5.2 Error when selecting the test](#)
- [5.3 Measure button remains inactive](#)
- [5.4 Could not start protocol](#)
- [5.5 Connect Reader's cables](#)
- [5.6 Value out of range](#)
- [5.7 Interval boundary is exceeded](#)
- [5.8 Stuck on the start mixing -screen](#)

6 Maintenance of the system

6.1 General instructions

6.2 Cleaning instructions

6.3 Disposal of the System

Terms used in the document

Cassette	Part of the Test Kit that contains the dried reagents.
Emission	Light radiated by the sample and Test Kit chemistry after excitation.
End user license	The software developed by Aqsens Oy and used to run the KemConnect™ UI and Q-Reader
Excitation	Process of illuminating the sample and Test Kit chemistry for a short duration with light of certain wavelength.
Q-Reader (Referred to as the Reader)	Part of the KemConnect™ System that has the electronics and optics for performing TRF measurements and mixer to mix sample with reagent in the cassette
KemConnect™ System	The complete system consisting of: Workstation, Reader, laptop, UI software and Test Kits. Developed and manufactured by Aqsens Oy and based on the Aqsens Q System.
Q-Workstation	Part of the KemConnect™ System: Used for the sample treatment step.
LED	Light Emitting Diode
Pipette	A calibrated device into which small amounts of liquid are suctioned for transfer or measurement.
Pipette tip	Disposable tip for the pipette
PMT	Photomultiplier Tube
Polymer	A chemical compound that is made of small molecules that are arranged in a simple repeating structure to form a larger molecule.

ppm	Unit of measurement for concentration level: parts per million (mg/kg).
RFID	Radio Frequency Identification
Scale Inhibitor	Chemical added to water to prevent forming of scale.
SI	Scale Inhibitor
Stencil	Provided with each box of Test Kits it is placed in its unique orientation on the workstation to guide the user through the test protocol.
Test Kit	Disposables for single test (except the pipette tips).
TRF	Time Resolved Fluorescence
UI	Software preloaded onto the laptop and used to enable the user to carry out a measurement and review past measurements; User interface.
USB	Universal Serial Bus

1 Introduction

1.1 About this document

This user guide is intended to be used with the KemConnect™ System (model number: AQ-QS01) by customers who have purchased the system. It describes how to setup and use the system in conjunction with a Test Kit. Use of the software described in this document is subject to approval of the software license terms.

1.2 KemConnect™ System in brief

The KemConnect™ System provides the user with an integrated approach for measuring a variety of chemistries used for water treatment. The system has been designed and developed by Aqsens Oy to be easy to use, requiring just pipetting skills, and to be as reliable as standard laboratory methods. Additionally it can be used equally well in a central laboratory or in a satellite laboratory at a sample collection site.

The Reader uses TRF (time resolved fluorescence) detection technology to measure the residual concentration of key chemistries used to treat water used in industrial applications. In the user guide the KemConnect™ Test Kit is used as the example. This application has been developed to measure residual polymeric scale inhibitor in produced water of use in the oil industry. The application has three test ranges **A** 100 000 -10 000 ppm, **B** 10 000 – 100 ppm, **C** 100 – 1 ppm of the active SI polymer.

After the sample preparation a controlled amount of liquid sample is added to the test cassette. The cassette is transferred to the mixer integrated with the Reader for mixing. Using an automated mixing step improves the overall reliability and reproducible results.

After mixing the cassette is inserted inside the Reader. A flash of LED excites the sample and the Reader counts the photons emitted. Based on the photon count detected and the factory calibration of the Test Kit, the concentration of the scale inhibitor is determined and displayed to the operator.

The lid of the Reader should always be kept closed when not in use, to minimize the light received by the photomultiplier tube and to limit the opportunity for dust to settle on the Reader optics.

1.3 Reader Specifications¹⁾

Trade name	Q-Reader
Model number	AQ-QS01
Operating temperature range	+20 to +30 °C (+68 to + 86 °F)
Storage temperature range	0 to +50 °C (32 to 122 °F)
Power supply adapter (Reader)	output: 12V 2A, input: 100-240V 50/60 Hz
Power supply adapter (Laptop)	output: 19V 2.1A, input: 100-240V 50/60 Hz
Operation Relative Humidity	30-80% at +30 °C (86 °F), non-condensing
Reader Dimensions	length:196mm, width:196mm, height:168mm
Workstation Dimensions	length:196mm, width:196mm, height:150mm
Transport case Dimensions	length:550mm, width: 330mm, height: 230mm
Reader weight	2.2 to 2.5 kg
Laptop weight	1.2 to 1.5 kg

¹⁾ For Test Kit specifications see Test Kit instructions for use.

The Reader is a precision instrument that should be handled with care.

1.4 FCC certification and CE marking

FCC declaration of conformance:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

The Reader has been CE marked.

2 KemConnect™ System

2.1 Contents



Figure 1: Laptop and the Reader



Figure 2: From left to right: Power supply for the laptop, USB-cable and power supply for the Reader.



Figure 3: The power supply of the Reader is shipped with three regional adapters.



Figure 4. Also the power supply for the laptop is shipped with three regional adapters.



Figure 5: Workstation, pipettes and pipette tips



Figure 6: Test Kits (single test packet)

The Workstation (figure 5) contains no electronical parts. It guides the operator by graphical instructions through the sample preparation. The Q- Reader (figure 1) is used to carry out the mixing step and the measurement. Finally the result is calculated and through the UI the operator is given options for storing and reporting the result. The UI software is preinstalled on the supplied laptop.

List of system components:

Q-Reader

Q-Workstation

USB Cable

12V power supply, power cord and plugs for EU, US and UK (not shown in the picture)

Laptop with Aqsens software preinstalled

User Guide

Transport case

10-100 µl Pipette (and Pipette user manual, Pipette tip manual, accessories bag for the pipette, no picture shown)

100-1000 µl Pipette (and Pipette user manual, Pipette tip manual, accessories bag for the pipette, no picture shown)

Pipette tip box for 10-100 µl Pipette

Pipette tip box for 100-1000 µl Pipette

2.2 System description

The Q-Reader incorporates a mixer for mixing the test reagents with the sample (e.g. a produced water sample containing scale inhibitor) and a TRF optical unit for the measurements. The measurements are transferred to the laptop, results are displayed on the UI and also saved in the database.

Each time a measurement is made the Reader checks the validity of the test cassette by reading its factory set RFID tag.

The Q-Reader is connected with an USB cable to the supplied laptop and to main power via a 12V power adaptor (see figure 7). This enables the Reader to be controlled by the laptop and receive power needed to operate the Reader functions. In the bottom of the Reader there is a data port that is used for updating the firmware by the manufacturer.



Figure 7: Connections ports (USB on the left and power connection on the right)

The Q-Reader contains dedicated electronics to enable the measurement and an Aqsens designed optical module to direct and filter the light emitted by the LED. This gives the KemConnect System an optimal performance when coupled with the cassettes provided in the Test Kit to ensure high sensitivity and reliability.

The Workstation with the test specific stencil (part of the Test Kit) will guide the user through the process of pretreating the sample and mixing the dried reagents in the cassette with the liquid sample to be analyzed. As the Test Kits for different concentration levels require each their own pretreatment procedure, the boxes of 10 tests include specific stencil to guide the user with the sample preparation process for the selected Test Kit.

2.3 Storing and transporting the system

Storage temperature range for the Reader is 0 to 50 °C. For transportation the system must be packaged in the provided transport case that came with the KemConnect™ System. It should be transported as fragile baggage in all transport methods, or, when transported by airplane, as hand luggage depending on individual airline requirements.

2.4 Safe use of the System

Always use the mouse supplied with the system. The trackpad is deactivated as it may cause problems when using it due to a bug in the Linux operating system on this model of Acer laptop.

The Reader is a precision instrument that should be handled with care and used only by trained personnel. While using the system follow the instructions given by the Aqsens application on the laptop and this guide. Working temperature range for the KemConnect™ System is 20-30 °C. During transport from cold to warmer places water will condensate inside the Reader. It is important that there is enough time for drying before the Reader can be started again.

Do not expose the system to drips or spills. Clean the external surfaces of the instrument after a spill, or when they become dirty with a dry and clean cloth.

The lid of the Reader should always be kept closed when not in use, to minimize the light received by the photomultiplier tube and to limit the opportunity for dust to settle on the Reader optics.

The Reader has a low-power (10-20 mW) UV -light source, which will be switched on and off during the analysis. Opening the lid during measurement will shut the LED off. Keep the lid of the Reader closed during analysis.

Use only Test Kits certified by Aqsens. Always use the mixer for mixing the reagents with the sample. Never use the mixer for anything else than mixing sample in the Cassette. Attempt to mix other cassettes than the ones provided in the KemConnect™ Test Kits may damage the mixer motor. Do not touch the mixer while it is operating. During mixing the sound from the mixer will vary as mixer uses changing mixing speed and cycles to optimize the mixing process.

Never use any other power source that the one that came with the system. Plug the power source only to sources that give the right voltage and frequency as indicated on the label of the power source. Use only the cables that were provided with the system. Never use any other adapters than the ones that came with the system. **In case the power cord is damaged, do not use the system before damaged cord is replaced with a new one.**

Reader has no user serviceable parts. Do not change any of the electrical, mechanical or optical components of the system. Do not disassemble the Reader mechanical or electrical parts.

DANGER! Explosion Hazard: Do not operate the system in an environment containing explosive gases. The instrument is not designed for operation in an explosive environment.

Do not dispose any components of the system, including electrical parts, as unsorted municipal waste. Follow local municipal waste regulations for proper disposal provisions to reduce the environmental impact of WEEE (waste, electrical, and electronic equipment). For Test Kits follow the individual Test Kits disposal instructions.

3 Installation and Set up

3.1 Installation



Figure 8: KemConnect™ System

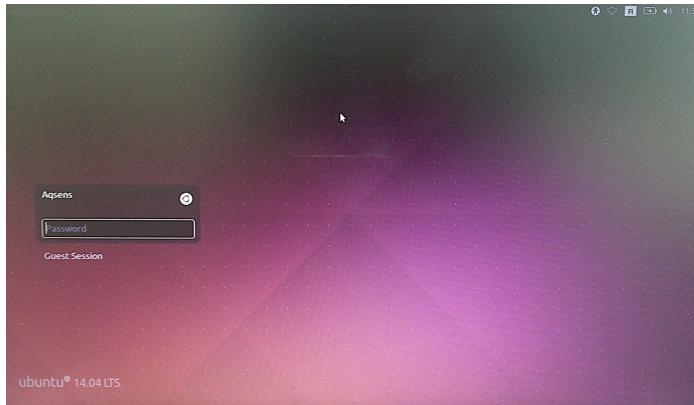
Follow the steps outlined below

- 1) Open the KemConnect™ System packaging and check that all the items described in chapter 2.1 are in place.
- 2) Put the Workstation (1), Reader (2) and the laptop on a clean, level surface with enough space for the operation. Avoid dusty areas.
- 3) Connect the Reader to the laptop with the provided USB cable as illustrated in Figure 9.
Always use the USB cable supplied for connecting the Reader to the laptop as other types of cables may result in unreliable performance.

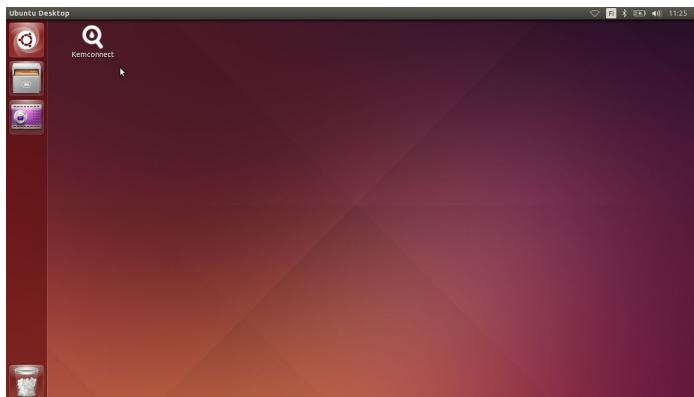


Figure 9: Q-Reader with USB and power cable plugged in

- 4) Connect the power supply to mains and to Reader. Power up the laptop and wait until the login screen comes up.



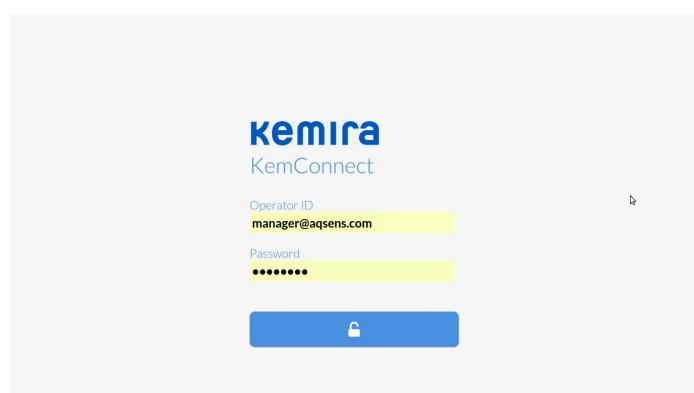
- 5) Login to the laptop by entering kemConnect into the password field.



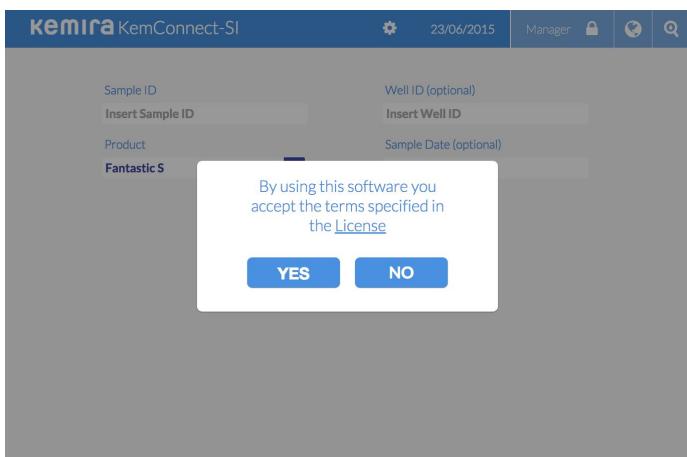
- 6) Start the application by clicking the KemConnect icon.

Press F11 to enter the fullscreen mode (otherwise you might need to scroll the view to access all fields and buttons on the display)

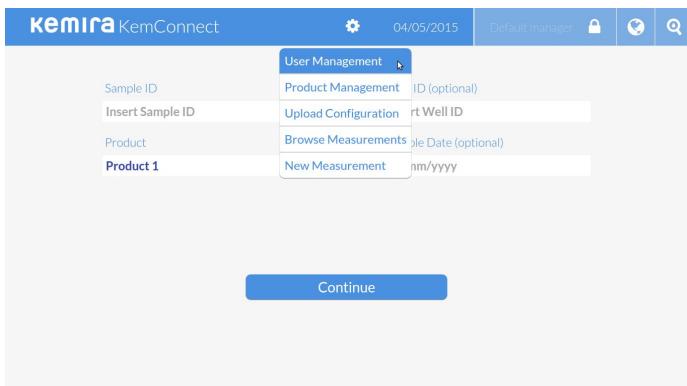
To complete the installation the nominated administrator should set up a new manager account and delete the Aqsens provided account as outlined below:



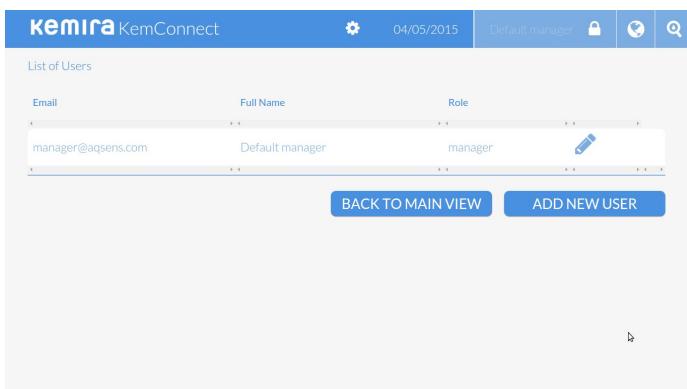
- 1) Login with the Operator ID and password provided by Aqsens: Enter your Operator ID and Password and click on the -button.



Accept license terms pop-up will be shown. In order to continue using the system, you must accept the license terms by clicking yes. To review the License terms you may click the "License"-link. License text will be displayed. Once ready with reading the text, press F11 (if you were in fullscreen -mode), close the license text tab and press F11 on the KemConnect tab to re-enter fullscreen mode.



2) Select “User Management” from the menu.



3) Click on the “ADD NEW USER” -button to create a new user.

Kemira KemConnect

Edit User

Email: john@gmail.com

Full name: John Jameson

Role: manager

Cancel Save Changes

4) Enter the email address, which will be used as the Operator ID when logging in to the system. NOTE: LENGTH OF THE FULL NAME MUST NOT EXCEED 26 CHARACTERS. Pick the role “manager” to allow user and product management operations.

Choose a secure password and store it in a secure place. **Lost manager password cannot be easily recovered.**

Click “Save Changes” -button.

Kemira KemConnect

List of Users

Email	Full Name	Role
john@gmail.com	John Jameson	manager
sam@gmail.com	Sam Smith	user

BACK TO MAIN VIEW ADD NEW USER

5) Logout by pressing the icon (located in the top right hand side of the screen) and log in with the user account you just created.

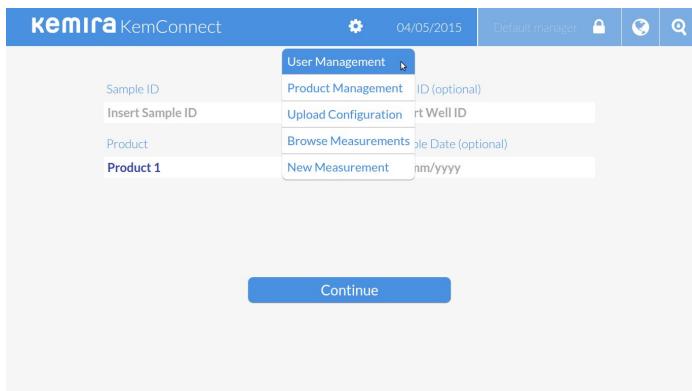
Remove the manager account that was provided by Aqsens by clicking the delete icon .

This completes the installation. You should now set user accounts for each operator as explained in chapter 3.2 (Setting up users).

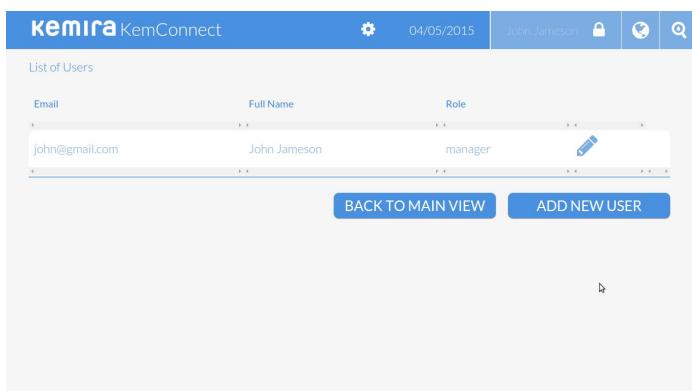
3.2 Setting up users

This section describes how to set up users and additional manager accounts. User accounts are needed for each **operator** who will be using the KemConnect™ System. Additional manager accounts can be set up to enable local user account management.

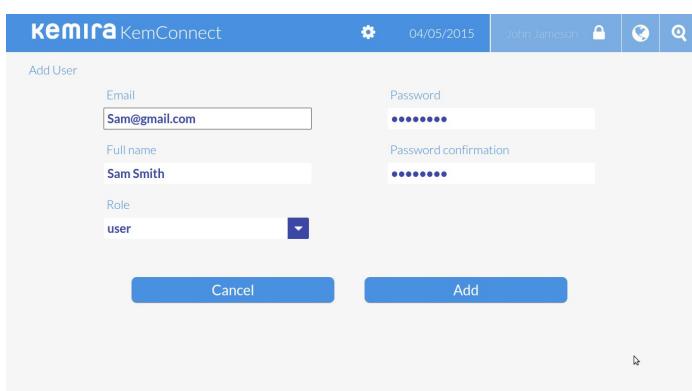
To set up users, you need to be logged in as a manager.



- 1) Select “User Management” menu from the Tools.



- 2) Click “ADD NEW USER” -button to open the “Edit user”- screen.



- 3) Enter user's email, which is used as the Operator ID when logging in. Enter Full name (NOTE: LENGTH OF THE “Full name” MUST NOT EXCEED 26 CHARACTERS.) and select a role from the drop down menu.

Roles are:

user - can perform and view their own measurements

manager - can on top of performing measurements add new users, new

products and update the active component concentration in the product.

Enter a password for the user. Note that the password must be at least eight characters long. When done, press “Add”. To cancel operation press “Cancel”.

Email	Full Name	Role
john@gmail.com	John Jameson	manager
sam@gmail.com	Sam Smith	user

4) After pressing “Add”, the screen listing all users will appear.

In case the “Edit User”-screen stays on, check that all information is entered and that the password is at least eight characters long and press “Add” -button again. Password can include both numbers and alphabetical characters. In case user loses the password, a user with Manager role is able to reset it.

3.2 Setting up products

To create and modify products you need to be logged in as a manager to the system.

User Management

- Product Management
- Upload Configuration
- Browse Measurements
- New Measurement

1) To add a product, pick “Product Management” from the menu.

Product Name Active Component Percentage

BACK TO MAIN VIEW ADD NEW PRODUCT

2) "List of Products" -view is displayed.
Click "ADD NEW PRODUCT" -button.

Add Product

Id (cannot be changed afterwards)
Product 1

Name
Product 1

Version
1

Active component
Active Component 1

% of Active Component (0-100)
40

Status
production

Cancel Add

3) "Add Product" -view is shown. Key in the ID (product code), Name, Version (optional), concentration of the Active component (KemGuard products). Pick from list the Active component and the Status (production-disabled) of the product. (In case the active component pull down list is not including the active component of the product you are defining, contact Aqsens to get an updated batch calibration data file.) Once complete, press "Add".

List of Products

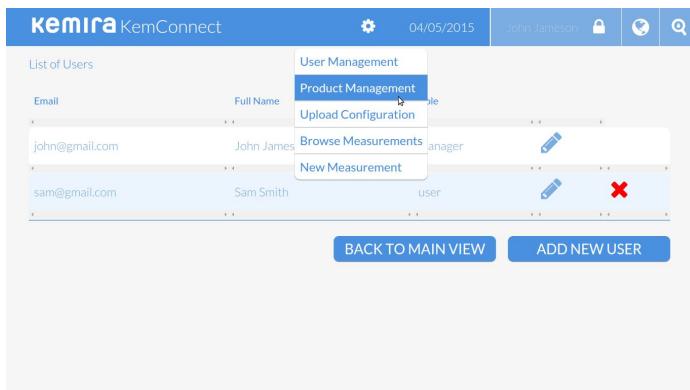
Product Name	Active Component	Percentage
Product 1	Active Component 1	40.0 %

BACK TO MAIN VIEW ADD NEW PRODUCT

4) If adding product succeeds, the system will display a screen listing all products registered including the one you just added to the system.

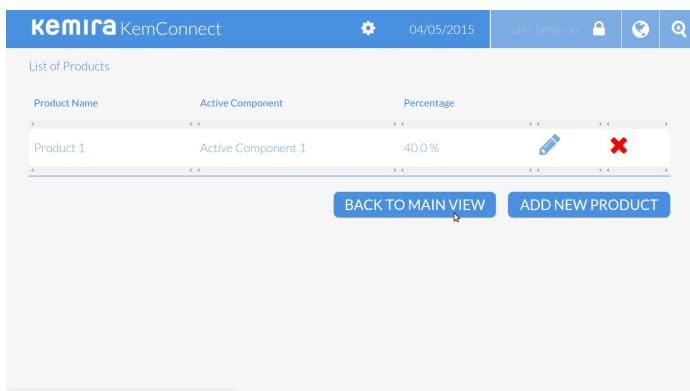
3.3 Updating Products

To update product information, log in as a manager to the system and follow the steps below.



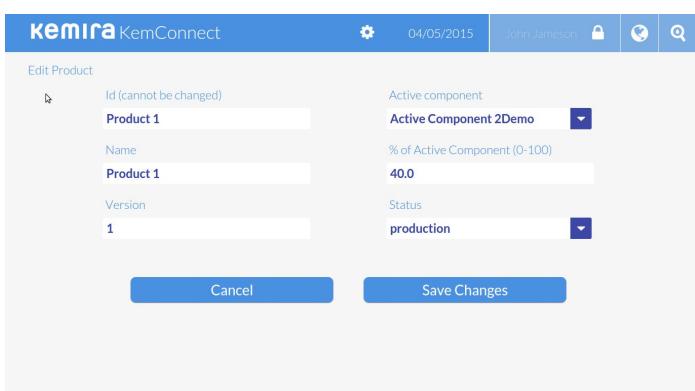
The screenshot shows the KemConnect User Management interface. At the top, there's a header with the Kemira logo, the application name 'KemConnect', a date '04/05/2015', and a user 'John Jameson'. Below the header is a table titled 'List of Users' with columns for Email, Full Name, and Role. Two rows are visible: one for 'john@gmail.com' (John Jameson, Manager) and another for 'sam@gmail.com' (Sam Smith, user). A context menu is open over the first row, with 'Product Management' highlighted. Other options in the menu include 'Upload Configuration', 'Browse Measurements', and 'New Measurement'. At the bottom of the screen are two buttons: 'BACK TO MAIN VIEW' and 'ADD NEW USER'.

1) Pick "Product Management" from the menu.



The screenshot shows the KemConnect List of Products interface. At the top, there's a header with the Kemira logo, the application name 'KemConnect', a date '04/05/2015', and a user 'John Jameson'. Below the header is a table titled 'List of Products' with columns for Product Name, Active Component, and Percentage. One row is visible: 'Product 1' with 'Active Component 1' and '40.0 %'. An edit icon (pencil) is located next to this row. At the bottom of the screen are two buttons: 'BACK TO MAIN VIEW' and 'ADD NEW PRODUCT'.

2) Click the edit icon  to open the "edit product"-screen.



The screenshot shows the KemConnect Edit Product interface. At the top, there's a header with the Kemira logo, the application name 'KemConnect', a date '04/05/2015', and a user 'John Jameson'. Below the header is a form titled 'Edit Product' with fields for Id (cannot be changed), Name, Version, Active component, % of Active Component (0-100), and Status. The 'Name' field contains 'Product 1', the 'Version' field contains '1', the 'Active component' dropdown is set to 'Active Component 2 Demo', the '% of Active Component' input is '40.0', and the 'Status' dropdown is set to 'production'. At the bottom of the screen are two buttons: 'Cancel' and 'Save Changes'.

3) Make the changes to the product. Press "Save Changes" to confirm the changes and "Cancel", if you don't want to save the changes

The screenshot shows a software application window titled "Kemira KemConnect". At the top, there are navigation links for "List of Products", "04/05/2015", "John Jameson", and icons for lock, globe, and search. Below the header is a table with three columns: "Product Name", "Active Component", and "Percentage". A single row is visible with the data: "Product 1", "Active Component 1", and "40.0 %". To the right of this row are edit and delete icons. At the bottom of the table are buttons for "BACK TO MAIN VIEW" and "ADD NEW PRODUCT".

4) After pressing “Cancel” or “Save Changes”, you are back on the “List of Products”-screen.

You can delete a product by clicking on the delete icon .

3.4 User Interface icons



Edit



Delete



Download test results in pdf -format



Download test results in excel format



Information message



Process step



Successful step



Step failed



Log in (login screen)

Icons in the top bar:



Menu



User is logged in. Logout by clicking this icon.



Icon indicates Internet connection (If dimmed, no Internet connection).

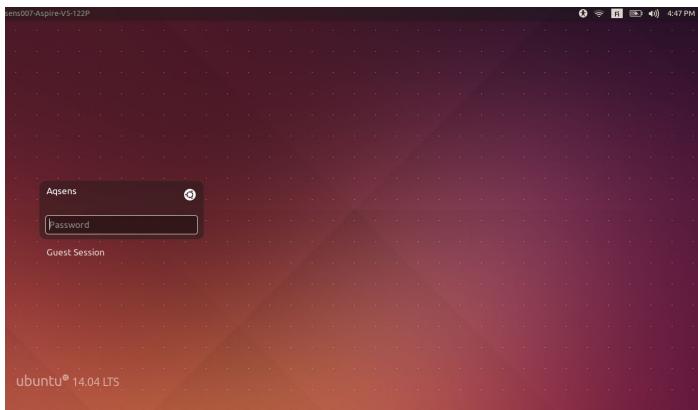


Icon indicates connection to Reader. (If dimmed, the Reader is not connected or it is not powered up).

4 Using KemConnect™ System

4.1 Starting KemConnect application

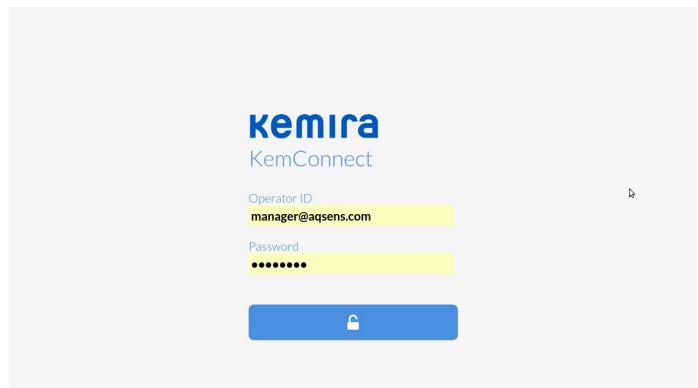
- 1) Check that the Reader is connected to the laptop with the USB cable provided. **Always use the USB cable supplied for connecting the Reader to the laptop**, as other types of cables may result in unreliable performance.
- 2) Check that the mains power supply is connected to the Reader. Power up the laptop and wait until the login screen comes up.



- 3) Login to the laptop by entering kemConnect into the password field.



- 4) Start the application by clicking the KemConnect icon.



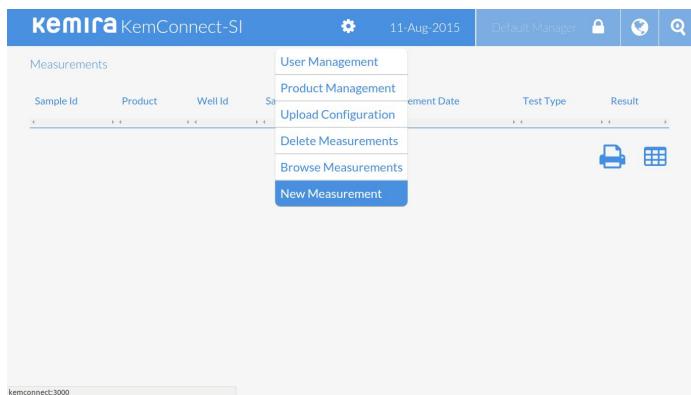
- 5) Login with your Operator ID and password. When logging in for the first time, you are presented with the “accept license terms” dialog.

4.2 Analyzing a sample

Once at least one user account has been created, the system is ready to be used. To analyze a sample, log into the system with your operator ID. Sample analysis is allowed both for the Manager and User role. While using the system, **do not use browser's back, forward and refresh buttons**. Refreshing the page may cause the system to freeze.

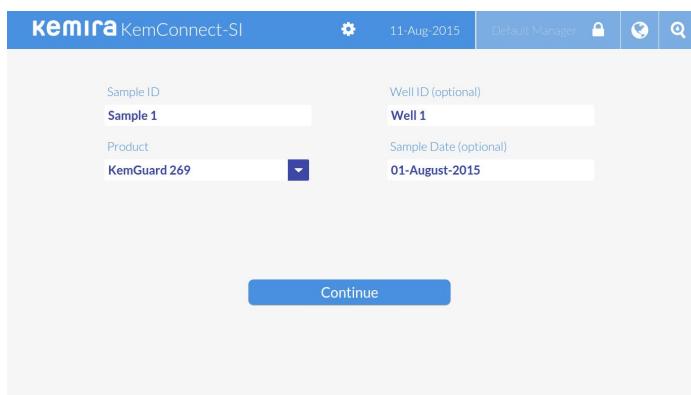
Make sure that your browser is in fullscreen mode by pressing F11. Otherwise you may need to scroll the screen in order to access the buttons in the lower part of the screen.

Steps in analyzing the sample are as follows:



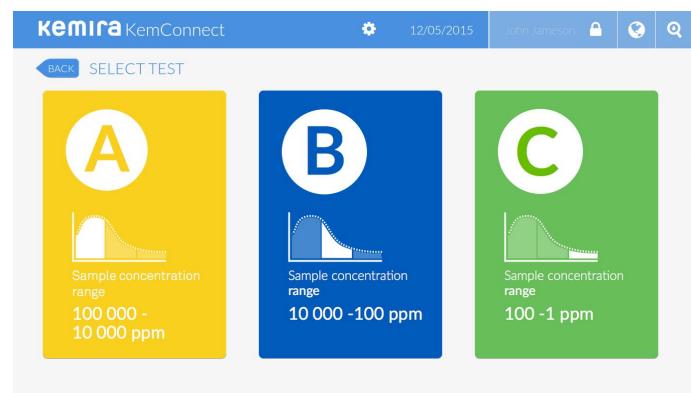
The screenshot shows the KemConnect-SI main interface. At the top, there is a header with the Kemira logo, the system name 'KemConnect-SI', the date '11 Aug-2015', and a 'Default Manager' dropdown. Below the header is a navigation menu with options like 'Measurements', 'User Management', 'Product Management', 'Upload Configuration', 'Delete Measurements', 'Browse Measurements', and 'New Measurement'. The 'New Measurement' button is highlighted with a blue background and white text. The main content area is currently empty.

- 1) In case you are not on the main screen, Pick "New Measurement" from the menu or click on the Kemira KemConnect -logo



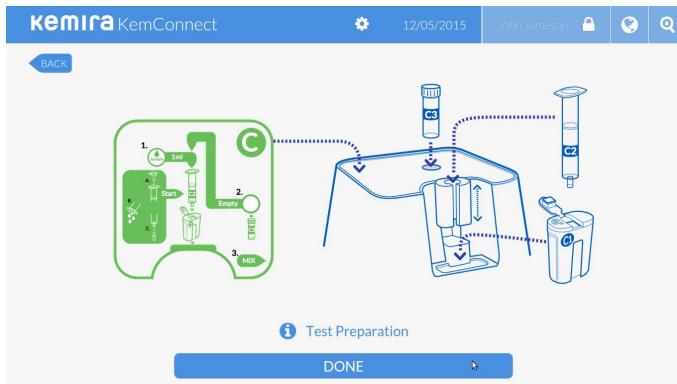
The screenshot shows the 'New Measurement' input form. It has fields for 'Sample ID' (Sample 1), 'Well ID (optional)' (Well 1), 'Product' (KemGuard 269), and 'Sample Date (optional)' (01-August-2015). A 'Continue' button is located at the bottom of the form.

- 2) Enter the Sample ID, pick scale inhibitor product used, enter Well ID and Sample Date. Once done, click "Continue" -button



- 3) Select the test corresponding to the sample's concentration range by pressing the respective Test Kit icon.

In case you pick the wrong one, your measurement may fail with error message "Value out of range" and you will need to perform a retest of the sample.



4) Prepare the sample following the instructions on the Workstation stencil and on the screen. Once finished, click the “DONE”-button.

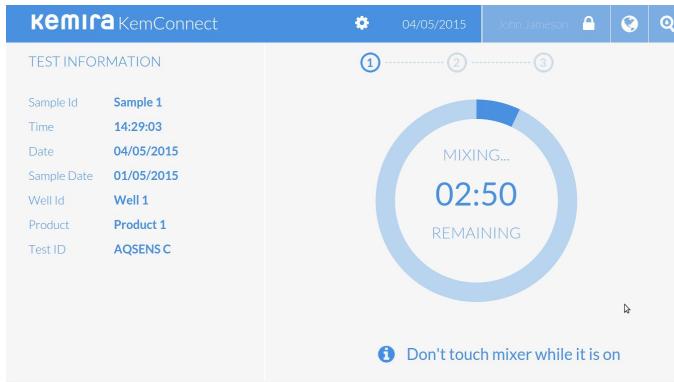
Make sure that you are using the correct stencil. Each box of Test Kits contains their individual stencil. The preparation procedure, and stencil, differs depending on the Test Kit you are using.

TEST INFORMATION	
Sample Id	Sample 1
Test Time	14:27:06
Test Date	04/05/2015
Sample Date	01/05/2015
Well Id	Well 1
Product	Product 1
Test ID	AQSENS C

5) Insert the Cassette to the mixer the transparent side of the cassette facing towards you. Once done, click the “START MIXER” -button on the screen. The mixer will start and a screen detailing the progress of mixing is shown.



Figure 10: Reader mixing the cassette



6) Wait until the mixing is completed.

Mixing will take approximately three minutes. **Do not touch the mixer while it is operating.** Touching the mixer may cause the mixing process to stop. If mixing stops before finishing, unplug Reader power cable, plug it back in and after that you can start the mixing process again.

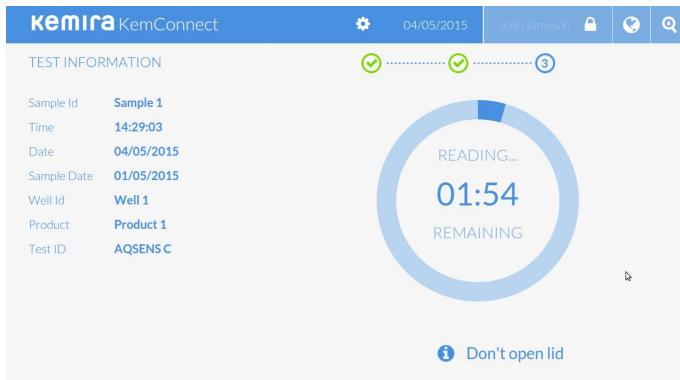
While mixing, the mixer will use different speed ramps to ensure a proper end result. During this time a mixing sound will also vary, this is normal.



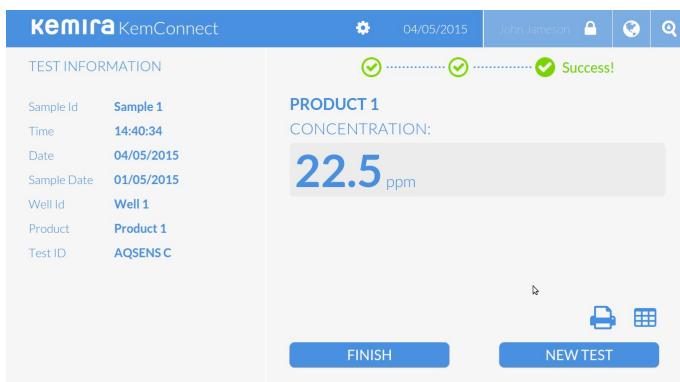
7) Once mixing is complete, the system instructs you to insert the cassette to the Reader.



8) After you have inserted the cassette into the Reader and closed the lid by pressing it down carefully, the "MEASURE" -button is enabled and you can click it to start the measurement.



9) A screen showing the progress of measurement is shown. **The lid must remain closed until the measurement is completed and the result is displayed on the screen as shown in step 10.**



10) Write down the result in your lab notes or download a pdf or an excel spreadsheet format(csv) report of the result by clicking the printer icon or spreadsheet icon . Reports will be saved in directory:
/home/aqsens/downloads

If you press FINISH on this screen, the system will log you out. Prior to logout you will get a confirmation pop-up.

To run a new test click the "NEW TEST" -button.

4.3 Browsing measurements

Currently the system comes with one standard report including Sample ID, product, Well ID, sample date, measurement date, Test Kit used and the actual result. The report is available both in .pdf and in excel spreadsheet format (csv).

The screenshot shows the KemConnect software interface. At the top, there is a navigation bar with the Kemira logo, the text 'KemConnect', a gear icon, the date '04/05/2015', a user name 'John Jameson', a lock icon, and search icons. Below the navigation bar, there are several input fields and buttons:

- 'User Management' button
- 'Sample ID' field
- 'Insert Sample ID' button
- 'Product Management' button (with '(optional)' note)
- 'Upload Configuration' button
- 'Well ID' field
- 'Browse Measurements' button (highlighted in blue)
- 'Date (optional)' field
- 'New Measurement' button
- 'i/yyy' field

At the bottom center is a large blue 'Continue' button.

1) Pick “Browse Measurements” from the menu

The screenshot shows a table titled 'Measurements'. The columns are: Sample Id, Product, Well Id, Sample Date, Measurement Date, Test Type, and Result. The data in the table is as follows:

Sample Id	Product	Well Id	Sample Date	Measurement Date	Test Type	Result
Sample 1	Product 1	Well 1	01/05/2015	12/05/2015 12:09:41	AQSENS C	3.7
Sample 1	Product 1	Well 1	01/05/2015	12/05/2015 12:09:04	AQSENS C	5.4
Sample 1	Product 1	Well 1	01/05/2015	12/05/2015 12:08:57	AQSENS C	Invalid
Sample 1	Product 1	Well 1	01/05/2015	12/05/2015 12:08:14	AQSENS C	8.9
Sample 1	Product 1	Well 1	01/05/2015	12/05/2015 12:07:35	AQSENS C	42.0
Sample 1	Product 1	Well 1	01/05/2015	12/05/2015 12:07:01	AQSENS C	21.8

2) In case you are logged in as a manager you can browse all measurements done with the system starting with the latest measurements. If you are logged in as a user, you can browse the measurements done by yourself.

The screenshot shows a table titled 'Measurements'. The columns are: Sample Id, Product, Well Id, Sample Date, Measurement Date, Test Type, and Result. The data in the table is as follows:

Sample 1	KemGuard 269	Well 1	01-Aug-2015	11-Aug-2015 15:13:33	AQSENS C	Invalid
Sample 1	KemGuard 269	Well 1	01-Aug-2015	11-Aug-2015 15:13:12	AQSENS C	Invalid
Sample 1	KemGuard 269	Well 1	01-Aug-2015	11-Aug-2015 15:12:50	AQSENS C	Invalid
Sample 1	Product Missing	Well 1	01-Aug-2015	11-Aug-2015 15:09:47	AQSENS C	Invalid

At the bottom left, there are navigation buttons: a left arrow, the number '2', a right arrow, and a double-right arrow. At the bottom right, there are icons for printing and exporting.

3) The measurements are split to pages. At the bottom left hand side of the page you can find the navigation buttons (page numbers, next page, last page).

kemira KemConnect

Date: 12/05/2015
Operator: John Jameson

Results

Sample ID	Sample Date	Analysis Time	Result	Test	Scale Product
Sample 1	01/05/2015	12/05/2015 / 12:09:41	3.7	C	Product 1
Sample 1	01/05/2015	12/05/2015 / 12:09:04	5.4	C	Product 1
Sample 1	01/05/2015	12/05/2015 / 12:08:57	Invalid	C	Product 1
Sample 1	01/05/2015	12/05/2015 / 12:08:14	8.9	C	Product 1
Sample 1	01/05/2015	12/05/2015 / 12:07:35	42.0	C	Product 1
Sample 1	01/05/2015	12/05/2015 / 12:07:01	21.8	C	Product 1

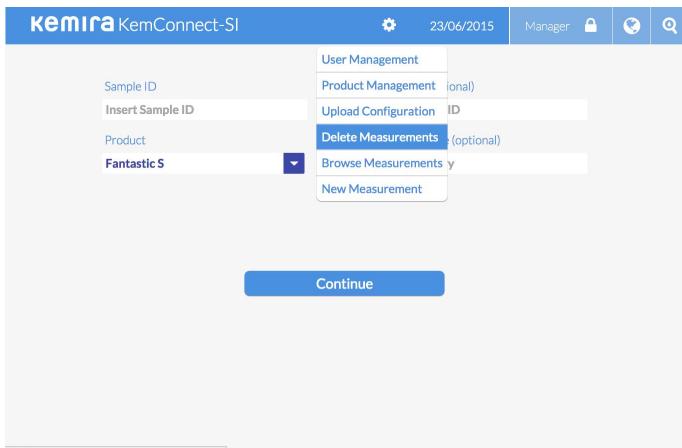
4) Pressing the -icon will create a pdf-format file including all the measurements on the current page.

The screenshot shows a LibreOffice Calc spreadsheet titled "aqtop_export (2).xls - LibreOffice Calc". The data is pasted into a new sheet named "Results". The data consists of 26 rows of measurements, each containing fields for Date, Operator, Result, and Test, along with other columns for Sample ID, Sample Date, Analysis Time, and Scale Product.

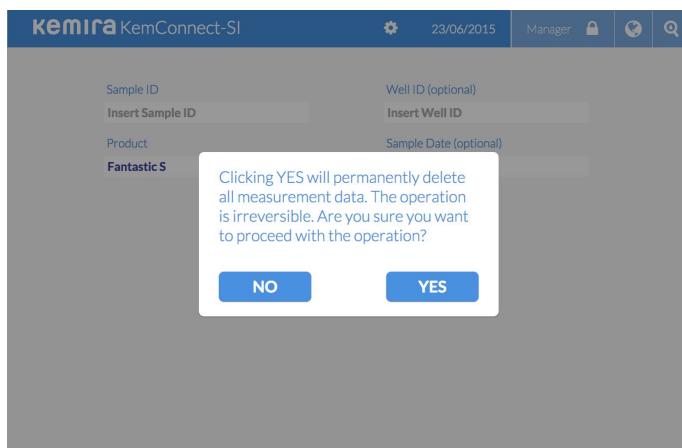
Sample ID	Sample Date	Analysis Date	Operator	Result	Test	Scale Product	
1	01/05/2015	12/05/2015	John Jameson	3.1	C	Product 1	
2	01/05/2015	12/05/2015	John Jameson	4.4	C	Product 1	
3	01/05/2015	12/05/2015	John Jameson*	Invalid	C	Product 1	
4	01/05/2015	12/05/2015	John Jameson	8.9	C	Product 1	
5	01/05/2015	12/05/2015	John Jameson	21.8	C	Product 1	
6	01/05/2015	12/05/2015	John Jameson	42.0	C	Product 1	
7	01/05/2015	12/05/2015	John Jameson*	21.8	C	Product 1	
8	01/05/2015	12/05/2015	John Jameson	9.7	C	Product 1	
9	01/05/2015	12/05/2015	John Jameson	14.2	C	Product 1	
10	01/05/2015	12/05/2015	John Jameson	10.7	C	Product 1	
11	01/05/2015	12/05/2015	John Jameson	97.1	C	Product 1	
12	01/05/2015	12/05/2015	John Jameson	10.3	C	Product 1	
13	01/05/2015	12/05/2015	John Jameson	10.7	C	Product 1	
14	01/05/2015	12/05/2015	John Jameson	14.2	C	Product 1	
15	01/05/2015	12/05/2015	John Jameson	21.4	C	Product 1	
16	01/05/2015	12/05/2015	John Jameson	33.8	C	Product 1	
17	01/05/2015	12/05/2015	John Jameson	23.7	C	Product 1	
18	01/05/2015	12/05/2015	John Jameson	3.5	C	Product 1	
19	01/05/2015	12/05/2015	John Jameson	38.0	C	Product 1	
20	01/05/2015	12/05/2015	John Jameson	17.8	C	Product 1	
21	01/05/2015	12/05/2015	John Jameson	18.1	C	Product 1	
22	n/a	12/05/2015	John Jameson	18.1	C	Product 1	
23	Sample 1	12/05/2015	John Jameson	18.1	C	Product 1	
24	n/a	12/05/2015	John Jameson	18.1	C	Product 1	
25	Sample 1	12/05/2015	John Jameson*	Invalid	C	Product 1	
26	Sample 1	n/a	12/05/2015	John Jameson*	Invalid	C	Product 1

5) Pressing the -icon will create an excel-format (csv) file that includes all measurements on the current page.

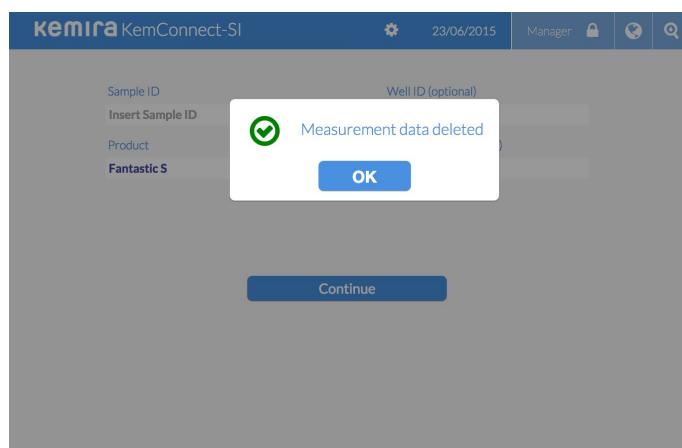
4.4 Deleting measurements



Select “Delete Measurements” from the menu. NOTE: “Delete measurements” will delete the measurements from the database. If you have created reports of measurements in excel or pdf-format, you will need to delete the report files separately from Downloads-folder through Files -application (file cabinet symbol on the upper left side of the desktop). If the symbol is not visible, you may need to exit the fullscreen mode by pressing F11.



Confirmation dialog pops up. If you click on “YES” all measurements that you have done will be deleted. The operation is final and irreversible: before pressing yes make sure that you have downloaded the measurements you want to save for future in a pdf report or excel file. If you are logged in as a Manager, deleting measurements will delete all measurements of all users.

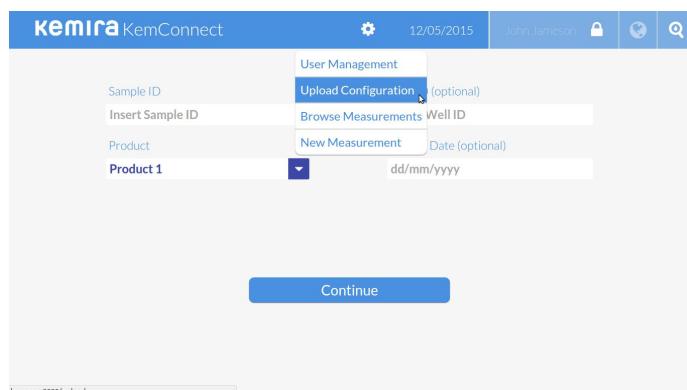


If you clicked on “YES” and measurements were deleted a confirmation message will be shown. To continue using the application click “OK”.

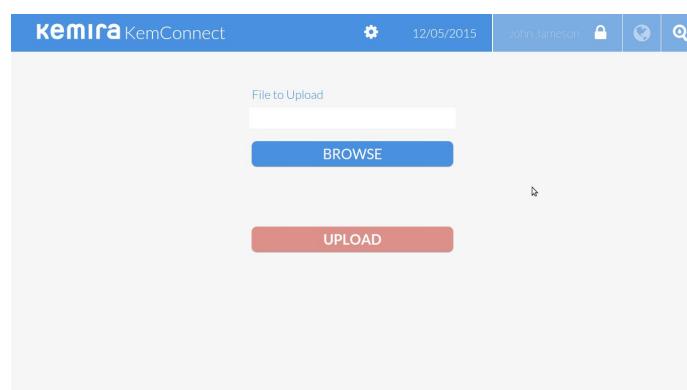
4.5 Uploading configuration

In order for the system to perform the analysis, the configuration must include the calibration information for the batch of Test Kit that is used. In case the configuration for the Test Kit batch is missing, the “MEASURE” -button on the measure-screen remains dim. Alternatively you may also get the error message “Couldn’t start protocol [2001]”.

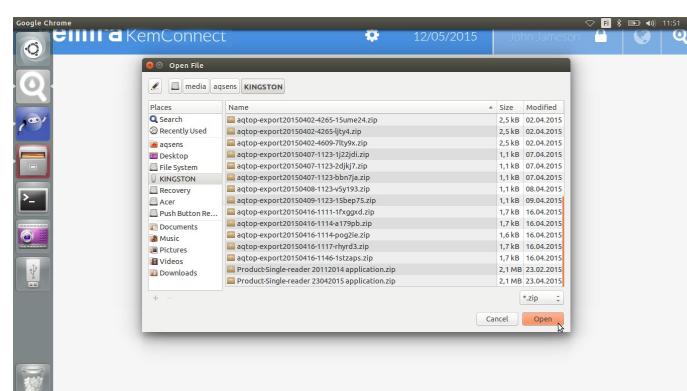
You can request an up to date configuration file by sending an e-mail to support@aqSENS.com. Copy the file to the laptop that you are using for Aqsens software.



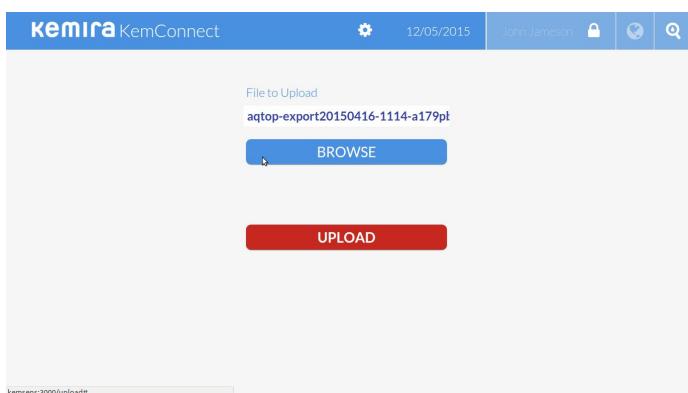
1) Pick from the menu “Upload configuration”.



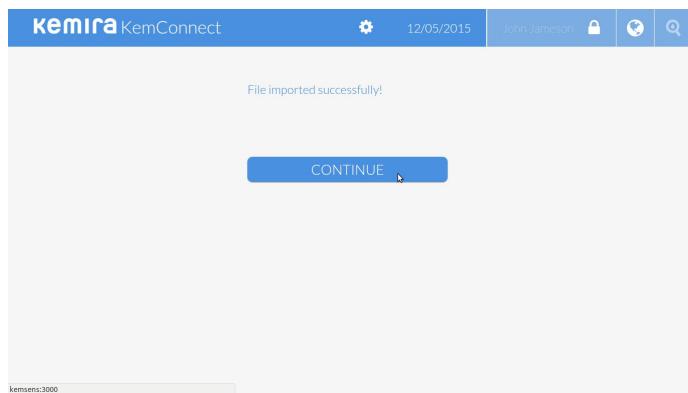
2) Press “BROWSE”.



3) Navigate to the directory where you stored the calibration information file. Select the file by clicking it and then click “Open”.



4) Click “UPLOAD”.

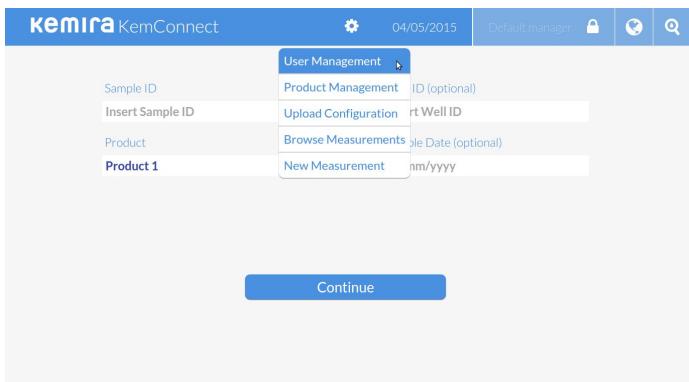


5) Click “CONTINUE”.

4.6 Changing passwords

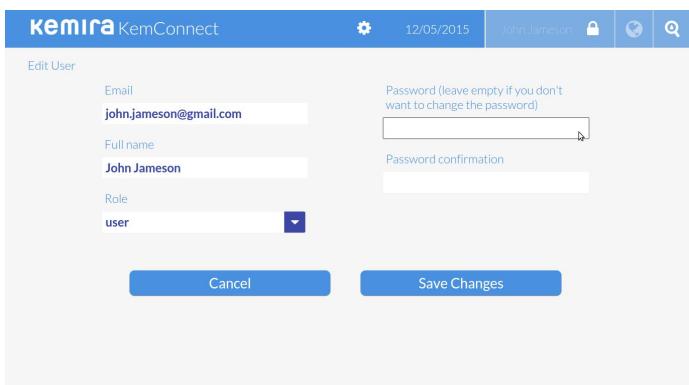
Users with the manager role can change any user's password, which is useful if a user happens to lose their password. User that has the user role can only change their own password.

4.6.1 Changing your password with user role



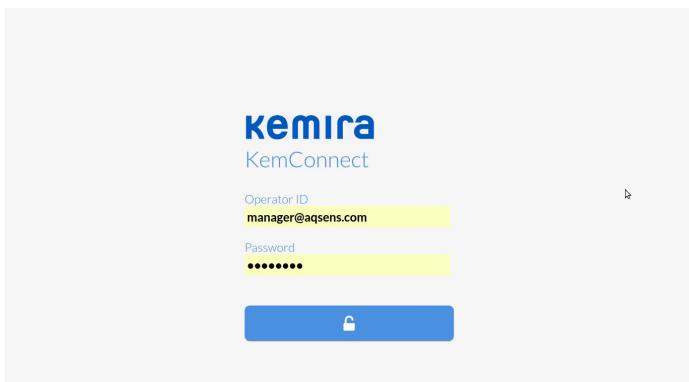
The screenshot shows the KemConnect interface with a blue header bar. On the left, there are several buttons: 'Sample ID', 'Insert Sample ID', 'Product', and 'Product 1'. On the right, there are buttons for 'User Management' (which is highlighted with a blue border), 'Product Management', 'Upload Configuration', 'Browse Measurements', and 'New Measurement'. Below these buttons is a date field '04/05/2015' and a status 'Default manager'. At the bottom center is a blue 'Continue' button.

1) Pick “User management” from the menu.



The screenshot shows the 'Edit User' form. It has fields for 'Email' (john.jameson@gmail.com), 'Full name' (John Jameson), and 'Role' (user). To the right of the email field is a note: 'Password (leave empty if you don't want to change the password)'. Below these fields are two input fields: 'Password confirmation' and 'Save Changes'. At the bottom left is a 'Cancel' button.

2) Your own user details are displayed.
Key in your new password to the password field and to the confirmation field and press “Save Changes”.



The screenshot shows the KemConnect login page. It has fields for 'Operator ID' (manager@aqsens.com) and 'Password' (represented by a series of dots). At the bottom is a blue 'Lock' button.

3) Your new password is set and you are automatically logged out of the system.
You can now log in with your Operator ID and the new password.

4.6.2 Changing a password with manager role

In case a user has lost the password a user with the manager role can set a new one. Log in as a manager to the system.

The screenshot shows the Kemira KemConnect software interface. At the top, there is a navigation bar with the Kemira logo, the text 'KemConnect', a gear icon, the date '04/05/2015', and a user status 'Default manager'. Below the navigation bar is a horizontal menu bar with several options: 'Sample ID', 'Insert Sample ID', 'Product', 'Product 1', 'User Management' (which is highlighted in blue), 'Product Management', 'Upload Configuration', 'Browse Measurements', and 'New Measurement'. A search icon is also present in the menu bar. At the bottom of the screen is a large blue button labeled 'Continue'.

1) Pick “User management” from the menu to get to list of users.

The screenshot shows the 'List of Users' page. At the top, it displays the Kemira logo, 'KemConnect', the date '04/05/2015', and the user name 'John Jameson'. Below this is a table with three columns: 'Email', 'Full Name', and 'Role'. The table contains two rows: one for 'john@gmail.com' (Full Name: John Jameson, Role: manager) with edit and delete icons, and one for 'sam@gmail.com' (Full Name: Sam Smith, Role: user) with edit and delete icons. At the bottom of the table are two buttons: 'BACK TO MAIN VIEW' and 'ADD NEW USER'.

2) Click the -icon for the user, whose password you want to set.

To remove a user from the system click on the .

The screenshot shows the 'Edit User' dialog box. It has fields for 'Email' (john@gmail.com), 'Full name' (John Jameson), 'Role' (manager), and 'Password' and 'Password confirmation' fields. There are 'Cancel' and 'Save Changes' buttons at the bottom.

3) Key in the new password to the password field and to the confirmation field and click on “Save Changes”.

Email	Full Name	Role
john@gmail.com	John Jameson	manager
sam@gmail.com	Sam Smith	user

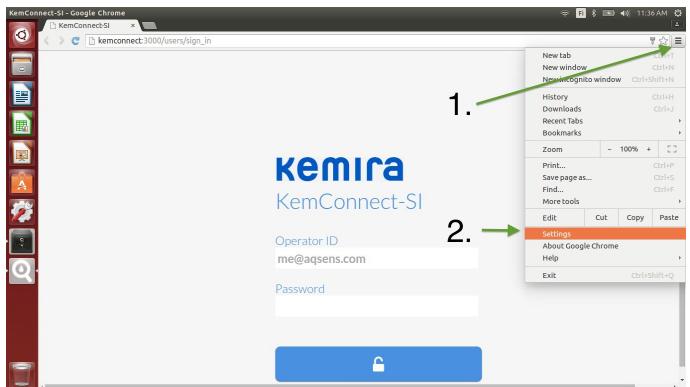
BACK TO MAIN VIEW **ADD NEW USER**

4) The list of users is displayed. The user, whose password was changed, should change the new password after logging in with the password set by the user with manager role.

4.7 Clearing saved passwords and usernames from the browser

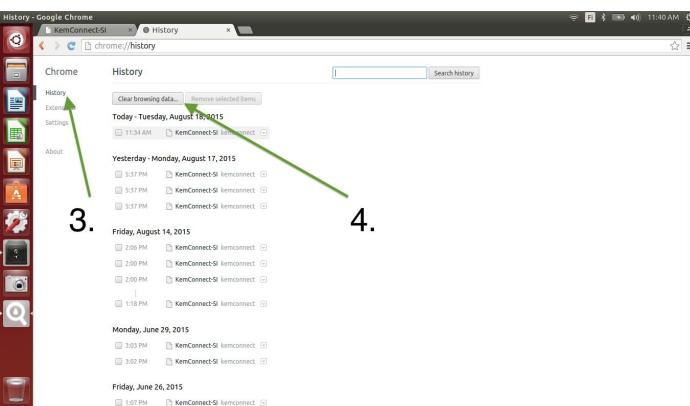
KemConnect application uses Chrome-browser. The browser will by default save the usernames and passwords used on the system, so that user doesn't have to re-enter them on every use of the application.

Passwords saved by the browser can be cleared when using the KemConnect™ application as follows:



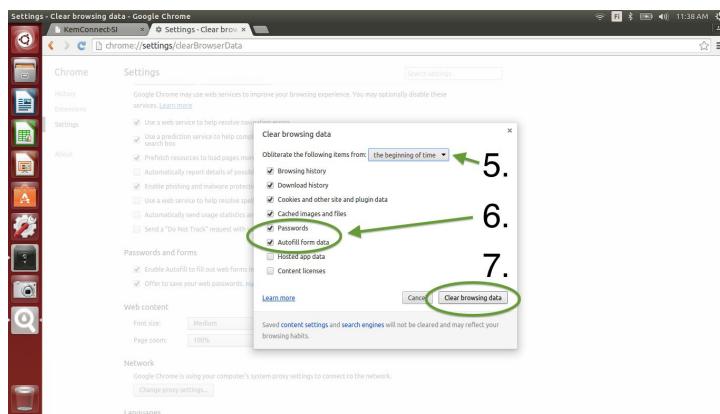
1) Click the menu icon (right top corner of the browser window).

2) Click on “Settings”



3) Click “History”

4) Click “Clear browsing data”



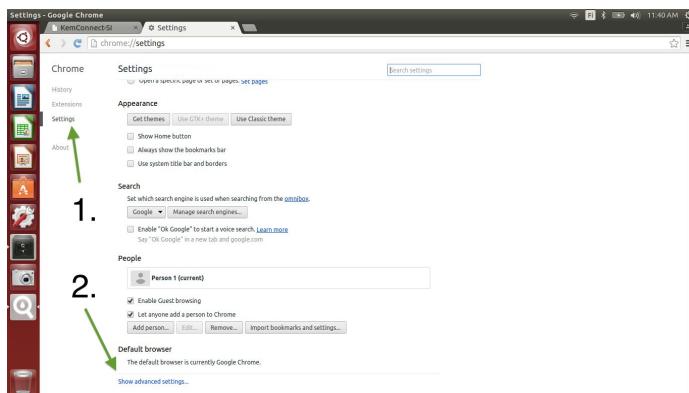
5) Pick “from the beginning of time”

6) Tick “Passwords” and “Autofill form data”

7) Click “Clear browsing data”

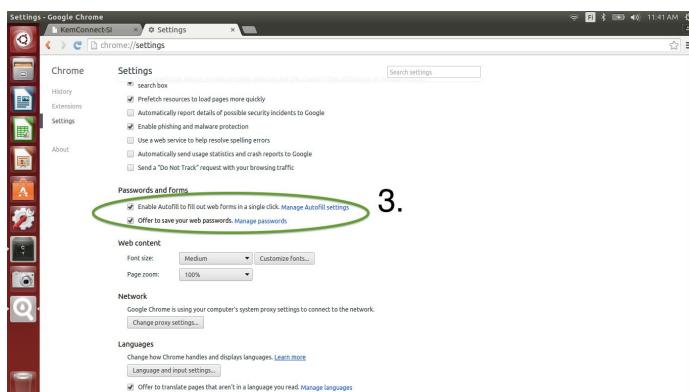
4.8 Stop saving passwords and usernames

If you want the browser not to store passwords and usernames, follow the steps below.



1) When on browser settings-screen (see 4.7. steps 1 and 2)

2) Click “Show advanced settings”



3) remove ticks from “Enable Autofill to fill out web forms in a single click” and “Offer to save your passwords”

5 Troubleshooting

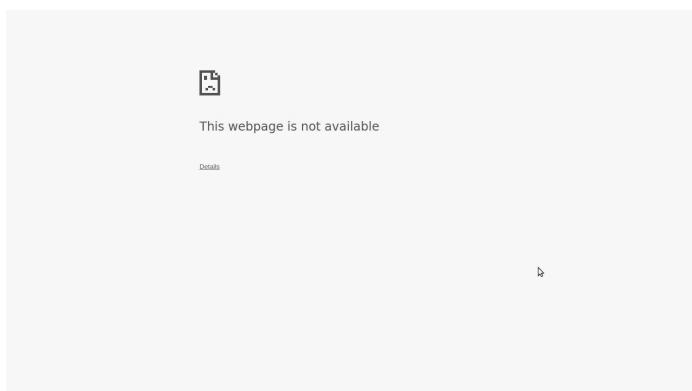
In case your browser is not in fullscreen mode, you may need to scroll down to get access to the buttons in the lower part of the view (start mixing, measure). You can set the fullscreen mode by pressing F11.

You can make a screenshot by pressing the printscreen -button on the keyboard.

By pressing the Kemira KemConnect™ -logo on the top left hand corner, you can always get back to the “enter measurement information” -screen. **Do not click the logo while mixing is ongoing.**

5.1 System becomes unresponsive

If the system becomes for one reason or another unresponsive, close the browser (press F11 to exit the fullscreen mode and click on the red cross on the top left corner of the browser window) and restart the laptop by switching the power off and on again. Once the laptop is restarted, open the Aqsens application by clicking the icon on the desktop.

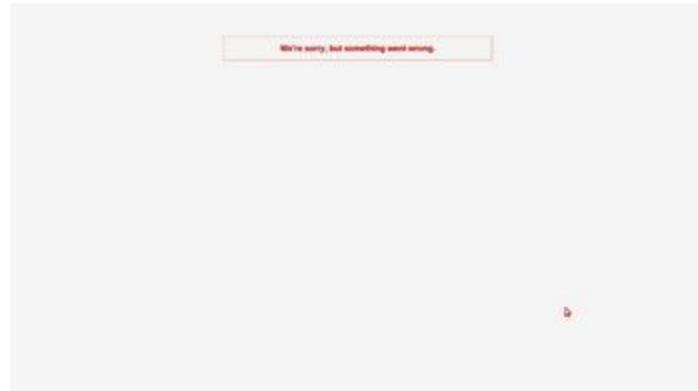


If “This webpage not available”

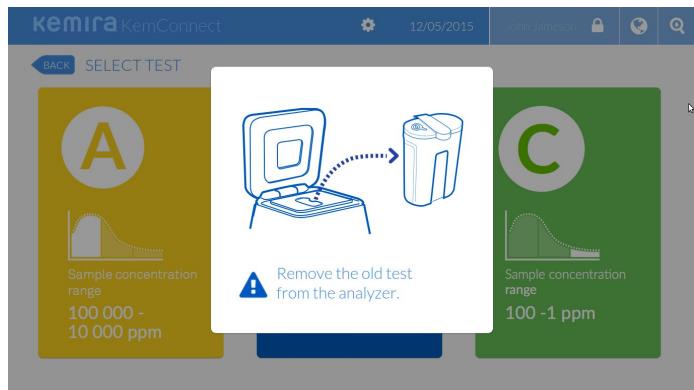
or

“We’re sorry, but something went wrong”

-message appears, switch off the laptop and switch it on again to restart the software.



5.2 Error when selecting the test



If you have a used test cassette in the Reader when selecting the test, a pop-up window instructing you to remove the old test from the Reader is shown.

Open Reader's lid and remove the old cassette.

5.3 Measure button remains inactive



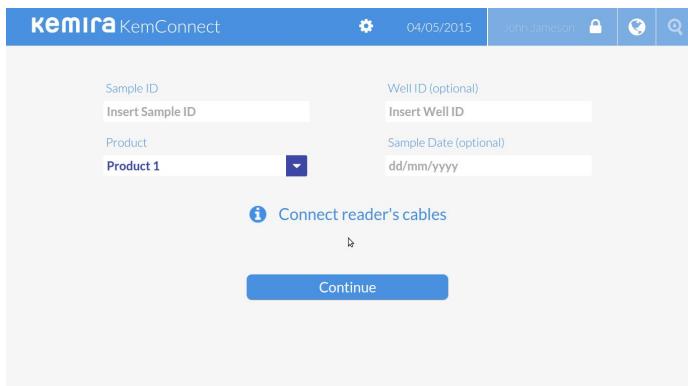
In case the “MEASURE” -button remains inactive even if a cassette has been inserted and the lid is closed, it is likely that your system is missing the configuration for the batch of the Test Kits. Request a new configuration file by sending mail to support@aqSENS.com and upload it to the AqSENS application as explained in the section 4.5. (Uploading configuration). Try measuring again. If it still fails there is probably a problem with the RFID reader of the AqSENS Reader. Switch off Reader and the laptop, switch them on again and try running the test again. If the button still remains inactive (dimmed), try running through the preparation and measurement procedure with another test. If it still fails, contact product support.

5.4 Could not start protocol



“Could not start protocol [2001]”- message comes up if there is something wrong with reading the RFID tag embedded into the cassette or batch calibration data for the cassette was not found. Request a new configuration file by sending mail to support@aqSENS.com.

5.5 Connect Reader's cables



If Reader is not connected to the laptop, “Connect Reader’s cables” -message will appear in the “measurement info”- screen. Make sure that the power cable of the Reader is connected and the power supply is connected to the mains. Check also that the Reader is connected with the USB cable to the laptop.

5.6 Value out of range

The screenshot shows the KemConnect software interface. In the top left, it says "kemira KemConnect". The top right has a gear icon, the date "04/05/2015", a user name "John Jameson", and icons for lock, email, and search. Below the header is a "TEST INFORMATION" section with fields: Sample Id (Sample 1), Time (15:01:09), Date (04/05/2015), Sample Date (01/05/2015), Well Id (Well 1), Product (Product 1), and Test ID (AQSENS C). To the right is a "PRODUCT 1" section with a "CONCENTRATION:" field containing "Value out of range (too low)". Above this field is a red circular icon with a white "X" and the text "Out of range!". Below the concentration field is a red button labeled "RETEST SAMPLE". At the bottom are "FINISH" and "NEW TEST" buttons, along with print and grid icons.

In case sample's concentration is not matching with the Test Kit selection, the measurement will be out of range. In such case you will get “Value out of range (too low)” or “Value out of range (too high)” -message. Make sure you are using the correct Test Kit and picking the right Test Kit in the “test selection” -screen when starting the analysis process.

100 000 -10 000 ppm, **B** 10 000 – 100 ppm, **C** 100 – 1 ppm of the active SI polymer.

This screenshot is identical to the one above, showing the same software interface and "Value out of range (too low)" message. The only difference is the time listed in the test information: Time (15:10:32).

5.7 Interval boundary is exceeded

The screenshot shows the KemConnect software interface. The "TEST INFORMATION" section includes fields: Sample Id (Sample 1), Time (15:06:20), Date (04/05/2015), Sample Date (01/05/2015), Well Id (Well 1), Product (Product 1), and Test ID (AQSENS C). The "PRODUCT 1" section shows a "CONCENTRATION:" field with the message "An error occurred while processing data: Value 417683 is higher than the maximum interval boundary 400000". Above this field is a red circular icon with a white "X" and the text "Error!". Below the concentration field is a red button labeled "RETEST SAMPLE". At the bottom are "FINISH" and "NEW TEST" buttons, along with print and grid icons.

Likely cause for Measurement Error is too high concentration for the Test Kit selected. Make sure that you are using the correct Test Kit and picking the right Test Kit when starting the analysis process.

5.8 Stuck on the start mixing -screen

In case the USB cable is removed while mixing is ongoing the mixing will stop, but the mixing indicator continues to run even if the mixing time is already expired. The back button will remain dimmed. To continue pick new measurement from the menu to start the measurement process from the beginning.

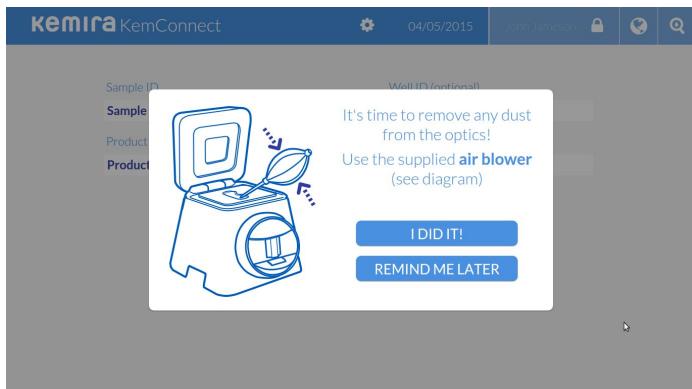
6 Maintenance of the system

6.1 General instructions

KemConnect™ System is a precision instrument and must be handled with care. **While transporting the system unnecessary shocks should be avoided.**

The lid of the Reader should always be kept close to minimize the light received by the photomultiplier tube. Keeping the lid closed also helps to keep dust out of the Reader and more specifically the lens of the LED. Dust will degrade system performance.

6.2 Cleaning instructions



Cleaning the filter regularly helps to keep the optical pathway in optimal condition. When a set number of tests have been analyzed, the software will ask you to clean the filter.

Open the lid of the Reader and remove the test cassette (if it is in place). Blow away any dust from the filter using the air blower.

Do not use anything else than the air blower that came with the system to clean the inside of the Reader.

Once you have cleaned the optics click on I DID IT!

Clean the external surfaces of the instrument after a spill, or when they become dirty. Use dry soft cloth to clean the surfaces of the Reader, Workstation and laptop.

6.3 Disposal of the System

Do not dispose any system components, including electrical parts, as unsorted municipal waste. Follow local municipal waste ordinances for proper disposal provisions to reduce the environmental impact of WEEE (waste, electrical, and electronic equipment). For Test Kits follow the individual Test Kits disposal instructions.