



# MilkSafe™ Desktop Reader

User Manual

**CHR HANSEN**

*Improving food & health*

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# Contents

Introduction	4
Intended use	4
Materials included	4
Warranty	4
Main features	4
Run test	4
Records	5
Settings	5
Safety precautions	5
Operating locations	5
Ambient conditions	5
Power supply	5
Getting started	6
Reader	6
Software	7
PC and system requirements	7
Installing the software	7
Updating the Reader software	8
Reader operation	9
Reading test strips	9
Test records	10
Verification procedure	10
Export data	11
Maintenance notes	11
Cleaning of the Reader	11
Service and repairs	11

# Introduction

## Intended use

The MilkSafe™ Desktop Reader (referred to as “the Reader”) is used for digital interpretation of MilkSafe™ Rapid Tests for antibiotic residues and aflatoxins in milk.

## Materials included

- › Reader
- › Power cable
- › Test cartridge
- › Touch screen pen
- › Thermal printer paper. Specifications: 58g/m<sup>2</sup>, width: 57mm, diameter: 30 mm (not supplied by Chr. Hansen additionally)
- › Serial to USB cable
- › Converter

## Warranty

The MilkSafe™ Desktop Reader is covered by a warranty for 12 months against defects in materials and workmanship. This period begins from the date of first delivery, and within this period readers will be repaired or replaced as decided by Chr. Hansen A/S.

The warranty does not cover defects caused by excessive wear and tear or damage due to shipping, accident, abuse, misuse, problems with electrical power, or usage not in accordance with product instructions, if other than original spare parts supplied by the manufacturer have been used or if repairs or alterations have been performed by anyone else than the manufacturer or agents approved by the manufacturer. The warranty does not cover removable parts (such as cartridges for the test strips) or consumables.

## Main features

### Run test

When selecting the **Run test** button, the user will be presented with two main groups of tests, **Qualitative** or **Quantitative** tests. After selecting a test group, a specific test must be selected, and the Reader will guide the user through the test process.

## Records

**Records** allow the user to view previous test results. Each test is represented on a single line which displays the date, sample ID, type of test, and overall result among others. By selecting a test, it is possible to view further details of the selected test and print or export the results.

## Settings

The **Settings** button on the right-hand side will enable the user to configure language, date and time, change password, turn on automatic printing and load a curve for the quantitative tests.

## Safety precautions

### Operating location

The location of the MilkSafe™ Desktop Reader should be on a desk or on a stable and level surface with enough surrounding space to easily insert the test strip cartridge or to unplug the Reader.

The results may be influenced by vibrations, e.g. if the Reader is used close to vibrating machines.

### Ambient conditions

- > Temperature range: 5 to 40°C / 41 to 104°F
- > Humidity: Max 80%
- > Protect from water (incl. splashes)
- > The Reader can be operated up to 2,000 m altitude

### Power supply

The instrument is powered by 100V-240V AC 50Hz/60Hz. Do not connect the Reader to any power supply outside this range.

# Getting started

## Reader

1. Unpack the Reader carefully and check that the following parts are present:
  - > Reader
  - > Power cable
  - > Test cartridge
  - > Touch screen pen
  - > Thermal printer paper
  - > Serial to USB cable
  - > Converter
2. Place the Reader on a level and stable surface.
3. Open the printer cover, insert thermal printing paper, and close the printer cover.
4. Connect the power supply.
5. Turn on the Reader (switch on the left side of the Reader).
6. After the system self-test the **Home** screen will appear.
7. Choose **Settings** and enter the initial password CH123456 to edit the instrument elements. Press **OK**.
8. Select **Language** to change the language of the Reader. Press **Confirm** to approve the change and **Back** to return to all setting options.
9. Select **Date & Time** and use the ▼/▲ buttons on the screen to adjust the date and time fields to the current date and time. Press **Confirm** to accept the changes or **Cancel** to return to the menu screen without setting the date and time.
10. When reading quantitative tests, the standard curve from the specific batch must be loaded. To load a curve go to **Settings**, select **Load a curve**, click **View** to see if any previous curves have been loaded. If yes, click **Empty** to remove it. Insert the included USB from the test kit in use in the **Data In** slot located in the front of the Reader and select **Load**. The curve is loaded. For every new batch of a quantitative test, a standard curve must be loaded.

The MilkSafe® Desktop Reader is now ready for use.

## Software

### PC and system requirements

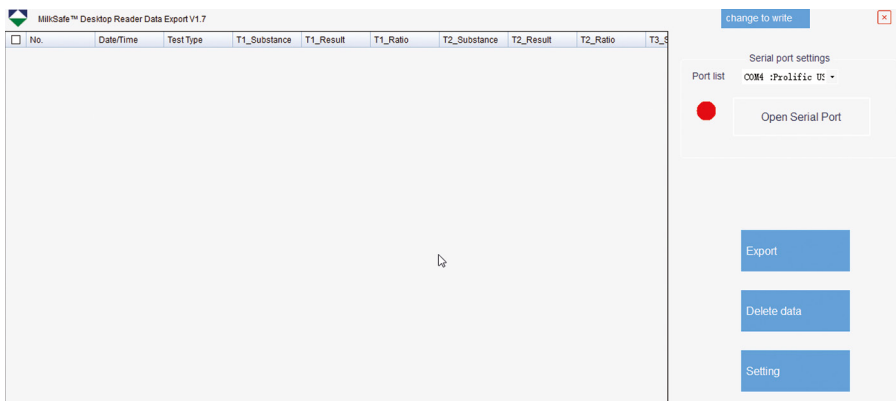
- › Windows 7 or higher (not applicable for Mac)
- › 32- and 64-bit
- › Administrative rights to install the software (may require support from your local IT department)

### Installing the software

Download the MilkSafe™ Desktop Reader zip file from MilkSafe™ Downloads on <http://milksafe.chr-hansen.com>. In the zipped file you will find the following files:

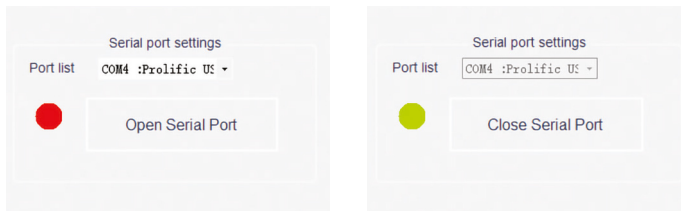
- › Driver file
- › Data Manager file
- › ROM.bin file

- 1 Install the Driver.
- 2 Connect the Reader to PC with the serial to USB cable included.
- 3 Open the Data Manager file, right click the MS-DR19 data export software and create a shortcut.
- 4 Double click the MilkSafe™ icon on your desktop and the following screen will open:



- 5 On your PC, search for and open the Control Panel, go to System and Security → System → Device Manager.
- 6 In the Device Manager scroll to “Ports (COM & LPT)” and find the port device name in the brackets (Prolific USB-to-Serial Comm Port(COM4)) (any number).
- 7 In the port list in the MilkSafe™ Data Manager, choose the serial port which you found in the Device Manager.
- 8 Click **Open Serial Port** and the red dot will turn green.

If the used connection port on the computer is not changed from time to time, the COM Port will remember its COM; if the connection port is changed, the COM port may change and step 5 through 7 must be repeated.



- 9 To customize the data fields and export standards click **Settings**. Change field names, file types etc. and click **Save**.

The MilkSafe™ Data Manager is now ready for use.

## Updating the Reader software

It is recommended to keep your device updated with the newest software. The software can be found on MilkSafe™ Downloads.

- 1 Export the data stored on the Reader to the Data Manager if the data should be saved. For instructions see section **Export Data**.
- 2 From the MilkSafe™ Desktop Reader zip file transfer the **Reader Update** file to an empty USB of the format FAT32. Rename the file to ROM.bin so the filename is without version number. The file must be located in the root directory of the USB - do not put it in a folder.
- 3 Connect the Reader to power.
- 4 Insert the USB in the USB port on the back of the Reader.
- 5 Turn on the Reader. The Reader automatically prints a piece of paper and the update is initiated. The update takes approximately 1 minute.



- 6 Once the update is complete, the screen will light up and the Reader will print out a notification on the successful update.
- 7 Connect the Reader to the computer with the Serial to USB cable and open the Data Manager.
- 8 In the upper right corner click Change to write.
- 9 Click Clear Project to remove previously inscribed Test Items.
- 10 Click Open file and select the file Test Items.
- 11 Tick all the required Test items and click Write.
- 12 When the test items have successfully been written, unplug the Reader from the computer, connect to power and restart the Reader. The Reader is now ready to use.

## Reader operation

### Reading test strips

- 1 Turn on the Reader on the left-hand side of the Reader.
- 2 Select **Test** on the main screen.
- 3 Select **Qualitative** for antibiotic tests or **Quantitative** for aflatoxin tests.
- 4 OBS!! Quantitative tests require the standard curve corresponding to the batch in use to be loaded before testing. See the Reader section step 10 under Getting Started for guidance.
- 5 Select the relevant test from the list of tests.
- 6 Fill out Sample ID, Lot No., and Operator ID (optional).
- 7 Press **Test** and the test port located to the right in the front of the Reader will open and a “platform” will emerge.
- 8 As soon as the test incubation has finished as according to the test protocol, place the test strip in the Reader cartridge.
- 9 Insert the test cartridge fully into the port on the Reader.
- 10 Press **Test** again, the cartridge will enter the Reader and the test is initiated. The reading will start automatically and show the **Result** screen after a few seconds.
- 11 Interpret the result: Positive results are shown with a + after the line antibiotics type. Negative results are shown with a - after the line antibiotics type. The numbers given represent the line ratio: the intensity of the test

line divided by the intensity of the control line. For qualitative tests, the ratio numbers cannot be used for quantitative purposes.

Ratio < 0.9: Positive

Ratio 0.9 – 1.1: Weak positive

Ratio >1.1: Negative

- 12 Upon test completion, the cartridge will exit the Reader and can be removed. The platform should be pushed back in, once the Reader is turned off.
- 13 The test result is automatically saved on the Reader.
- 14 The result can be printed with the built-in printer by selecting **Print**.
- 15 To perform a new test press **Home** and repeat step 2 through 12.

## Test records

- 1 To view previous test results, select **Records**.
- 2 Select **Qualitative** for antibiotic tests or **Quantitative** for toxin tests.
- 3 To scroll up and down, either use the **PgUp** and **PgDn** buttons or the scrolling bar. To scroll to the side use the scrolling bar in the bottom.
- 4 To resize the columns drag on column header edges.
- 5 View the details of a specific test result by first selecting the test by clicking anywhere on the line and then select **Details**.
- 6 Print the results by selecting **Print**.

## Verification procedure

Verify the accuracy of the measurements performed with the MilkSafe™ Desktop Reader by reading standard strips. The standard strips with 4 lines can be used to verify the results of MilkSafe™ 2BC while standard strips with 5 lines can be used to verify the results of MilkSafe™ 3BTC, 3BTS and 4BTSC.

- 1 Select the standard strip corresponding to the test you are using.
- 2 Complete step 3 through 10 in section Reading test strips with the standard strip. The strip is ready for use.
- 3 The obtained ratios for each substance line should be  $1.0 \pm 0.1$ . If the ratios exceed  $1.0 \pm 0.2$ , perform the reading again. If the ratios again exceed  $1.0 \pm 0.2$ , please contact your local Chr. Hansen representative.

## Export data

- ① Open the MilkSafe™ Data Manager software and ensure that the serial port dot is green. If not, complete step 5 through 8 in the section Installing the Software on page 7.
- ② Connect the Reader to the computer using the serial to USB cable included.
- ③ Go to **Records**, select a test group **Qualitative** or **Quantitative** and select **Export**. An export window will appear displaying the export status. When the export is completed go to the computer software.
- ④ Select the data lines to be exported. You can use the checkboxes on the left to choose data lines to export. The checkbox in the top left corner selects or deselects all data lines.
- ⑤ Click **Export** in the MilkSafe™ Data Manager. To change the Export format go to **Settings**.

## Maintenance notes

### Cleaning of the Reader

It is recommended to clean the Reader on a regular basis.

If you use the Reader in a working area that is subject to dust or contamination, you should clean the Reader more often. Use a damp cloth to clean the Reader. If the contamination is persistent, you can also rub the surface of the Reader with a cloth that has been moisturized with pure alcohol (isopropanol or ethanol). Do not use aggressive cleaning agents such as acetone. If the inside of the Reader is contaminated, please contact your supplier for technical assistance.

### Service and repairs

For all service or repairs needed, please contact your supplier for assistance. Attempts to open or repair the Reader by any non-authorized personnel will void the warranty.


## Experts for the dairy industry

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Our experienced application and industry specialists provide you with the knowledge, inspiration, support, and customized solutions you need to be successful.

Contact your local Chr. Hansen representative to learn more about how we can work together to find the perfect solution for you.

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