FC1 Cycler
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Contacting Fluidigm

For Technical Support

Email

United States and other countries not in Europe or Asia techsupport@fluidigm.com
Europe techsupporteurope@fluidigm.com
Asia techsupportasia@fluidigm.com

Phone

United States (toll-free) +1 866 358 4354
Europe +33 1 60 92 42 40
Japan +81 3 3662 2150
China (excluding Hong Kong) +86 21 3255 8368
All other countries +1 650 266 6100

On the Internet: www.fluidigm.com/support

Fluidigm Corporation
7000 Shoreline Court, Suite 100
South San Francisco, CA 94080
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About this User Guide

CAUTION! ABBREVIATED SAFETY ALERTS. Hazard symbols and hazard types specified in procedures may be abbreviated in this document. For the complete safety information, see Appendix D, Safety, on page 49.

How To Use This Guide

The following chapters provide information about setup, installation, operation and maintenance of the FC1™ Cycler. The term “cycler” in general refers to the FC1™ Cycler and the term “software” refers to the FC1™ Cycler software.

Safety Alert Conventions

This guide uses specific conventions for presenting information that may require your attention. Refer to the following safety alert conventions.

Safety Alerts for Chemicals

Fluidigm follows the United Nations Globally Harmonized System (GHS) for communicating chemical hazard information. GHS provides a common means of classifying chemical hazards and a standardized approach to chemical label elements and safety data sheets (SDSs). Key elements include:

- Pictograms that consist of a symbol on a white background within a red diamond-shaped frame. Refer to the individual SDS for the applicable pictograms and warnings pertaining to the chemicals being used.

- Signal words that alert the user to a potential hazard and indicate the severity level. The signal words used for chemical hazards under GHS:
  - DANGER Indicates more severe hazards.
  - WARNING Indicates less severe hazards.
Safety Alerts for Instruments

For hazards associated with instruments, this guide uses the following indicators:

**CAUTION!** This convention highlights potential bodily injury or potential equipment damage upon mishandling of the FC1™ Cycler. Read and follow instructions and/or information in a caution note very carefully to avoid any potential hazards.

**WARNING!** This convention highlights situations that may require your attention. May also indicate correct usage of instrument or software.

**IMPORTANT:** This convention highlights situations or procedures that are important to the successful outcome of your experiments.

**NOTE:** This convention highlights useful information.

Safety Data Sheets

Read and understand the SDSs before handling chemicals. To obtain SDSs for chemicals ordered from Fluidigm Corporation, either alone or as part of this system, go to fluidigm.com/sds and search for the SDS using either the product name or the part number.

Some chemicals referred to in this user guide may not have been provided with your system. Obtain the SDSs for chemicals provided by other manufacturers from those manufacturers.
Introducing the FC1™ Cycler
The FC1™ Cycler

The Fluidigm FC1™ Cycler is a compact single-bay instrument that is used to thermal cycle integrated fluidic circuits (IFCs).

**NOTE:** The FC1™ Cycler is for research use only and is not for use in diagnostic procedures.

Fluidigm Technical Support

Fluidigm Technical Support welcomes your questions or comments about the use and configuration of the FC1™ Cycler. Contact Fluidigm Technical Support by telephone or email. See “Troubleshooting” on page 35 for contact information.

Components of the FC1™ Cycler
## Components Included in Shipping Box

<table>
<thead>
<tr>
<th>Component</th>
<th>Purpose</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FC1™ Cycler</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Rapidly and precisely cycles the temperature of the IFCs.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Power cable</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Country specific power cable to connect the FC1™ Cycler to the wall socket.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>USB stick</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Contains the FC1™ Cycler User Guide and quick reference cards. It is also used for copying protocols and updating software.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>FC1™ Cycler Setup Quick Reference Card</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Describes how to unpack and install the FC1™ Cycler.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>FC1™ Cycler Usage Quick Reference Card</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Provides an overview of turning on, logging into and running a protocol on the FC1™ Cycler.</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** To order additional items, contact Fluidigm Corporation at 1-866-FLUIDLINE (1.866.358.4354), Outside the US, call 650.266.6100.
FC1™ Cycler Basics

The FC1™ Cycler rapidly and precisely cycles the temperature of the IFCs. The cycler is an electrically and pneumatically operated desktop instrument. It has a built-in vacuum pump to hold the IFC in position. The embedded PC inside the cycler regulates all the functions and monitors the performance of instrument. The cycler has a touch panel LCD display. All required user specific instructions and functions can be controlled through the touch enabled graphic user interface. The instrument uses thermoelectric cooling (TEC) to provide rapid, accurate, uniform heating and cooling.

Operating Environment

The FC1™ Cycler should be used in an environment that meets the requirements shown below.

**IMPORTANT:** The FC1™ Cycler is for indoor use only.

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Ambient between 15°C and 30°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humidity</td>
<td>30-70%, non-condensing</td>
</tr>
<tr>
<td>Pollution</td>
<td>Degree 2</td>
</tr>
<tr>
<td>Electrical Installation</td>
<td>Category II</td>
</tr>
<tr>
<td>Altitude</td>
<td>Up to 2,000 M</td>
</tr>
</tbody>
</table>

Regulatory Compliance

The FC1™ Cycler conforms with the provisions of the following EC Directives, including all amendments and national legislation implementing these directives:

- Low Voltage Directive 2006/95/EC
- EMC Directive 2004/108/EC

The FC1™ Cycler complies with the following harmonized standards:

- EN 61326-1:2006 Class A
Power Options

The FC1™ Cycler operates through 100-240 V AC power at 50/60 Hz.

**IMPORTANT:** Supply voltage fluctuation not to exceed 10% of normal.

Care of the Cycler

The FC1™ Cycler requires very little maintenance other than regular cleaning of the chuck.

**System Cleaning**

1. Turn system off.
   - Let the system cool down.
2. Use a lint-free cloth and 70% isopropyl alcohol to gently wipe the chuck.

**CAUTION!** Make sure the chuck has had time to cool. It can get very hot and cause burn injury.
Cycler Basics
Setting Up the FC1™ Cycler

This chapter describes:
• Site requirements for operating the FC1™ Cycler.
• How to install and start using the FC1™ Cycler.

WARNING! LIFTING HAZARD! The FC1™ Cycler is shipped in one cardboard box containing the Cycler and power cable. It weighs 25 lb (11 kg). Use caution when moving the shipping box.

Site Requirements

To operate the FC1™ Cycler, your site should meet the following requirements:
• One electrical power outlet
• A workspace that accommodates the FC1™ Cycler

Electrical Requirements

<table>
<thead>
<tr>
<th>Customer Location</th>
<th>Voltage (VAC)</th>
<th>Frequency (Hz)</th>
<th>Maximum Current (A)</th>
<th>Typical Average Power Consumption (W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>100 +/-10%</td>
<td>50-60 +/-1%</td>
<td>2.5</td>
<td>Idle: 40 Operating: 175</td>
</tr>
<tr>
<td>USA, Canada</td>
<td>115 +/-10%</td>
<td>50-60 +/-1%</td>
<td>2.0</td>
<td>Idle: 40 Operating: 175</td>
</tr>
<tr>
<td>Europe, Australia</td>
<td>240 +/-10%</td>
<td>50-60 +/-1%</td>
<td>1.1</td>
<td>Idle: 40 Operating: 175</td>
</tr>
</tbody>
</table>

Power Cord Requirements

Fluidigm will provide a country-specific power cord.

<table>
<thead>
<tr>
<th>Customer Location</th>
<th>Minimum Wire Gauge (AWG)</th>
<th>Maximum Length (m)</th>
<th>Instrument End Plug</th>
<th>Receptacle End Plug</th>
</tr>
</thead>
<tbody>
<tr>
<td>All countries</td>
<td>16</td>
<td>2</td>
<td>IEC C13</td>
<td>Country specific</td>
</tr>
</tbody>
</table>

Receptacle Requirements

When connecting this instrument to a receptacle, check with your facilities manager to make sure the circuit will not be overloaded. If you are connecting multiple instruments to the same electrical receptacle or circuit, be sure the sum of all the instruments’ maximum current draw is within the circuit’s current limit.
Uninterruptible Power Supplies

If your local power supply is subject to frequent power interruptions, you can protect your experiment on the FC1™ Cycler by using an uninterruptible power supply (UPS) with the minimum requirements shown in table below.

<table>
<thead>
<tr>
<th>Component</th>
<th>Output Power Capacity</th>
<th>Backup Time (Run-Time)</th>
<th>Power Draw (Load)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC1™ Cycler</td>
<td>300W (400VA)</td>
<td>2 hours</td>
<td>175 W</td>
</tr>
</tbody>
</table>

A UPS meeting the specifications above is sufficient to maintain power to one FC1™ Cycler.

Work Space

Provide a work surface that can accommodate the FC1™ Cycler. The table below shows the dimensions and weight of FC1™ Cycler.

<table>
<thead>
<tr>
<th>Component</th>
<th>Length inches (cm)</th>
<th>Width inches (cm)</th>
<th>Height inches (cm)</th>
<th>Weight in lbs (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC1™ Cycler</td>
<td>19 (48)</td>
<td>9 (23)</td>
<td>8 (20)</td>
<td>25 (11)</td>
</tr>
</tbody>
</table>

The FC1™ Cycler is designed as desktop equipment. It can be placed on a laboratory bench top. To accommodate one FC1™ Cycler, we recommend you supply a bench top with minimum depth of 25 in. (64 cm) and width of 16 in. (40 cm). To allow adequate air circulation, keep at least 2 in. (5 cm) clearance behind and in front of the FC1™ Cycler. Multiple cyclers can be stacked together side by side.

**IMPORTANT:** Do not place FC1™ Cycler on a heated surface or directly above a source of heat.

**CAUTION!** Do not position the FC1™ Cycler in such a way that it is difficult for the operator to disconnect the power cord.
Installing the Cycler

The FC1™ Cycler is a standalone desktop instrument that requires only one electrical connection as described below.

Electrical Connections

The FC1™ Cycler has an AC power input socket and a power ON/OFF switch on the top left corner of the back panel. Correctly orientate the female end of the power cable and insert it to the power socket.

Starting the Cycler

Initialization Screen

To start the FC1™ Cycler:

1. Turn on the switch on the back of the FC1™ Cycler.
2. Once the power is on, the LCD display lights up and after few seconds (10-15 seconds) the display appears as shown below.
The application program starts with the startup screen and initializes all the system components including communication protocol, vacuum and temperature sensors, software parameters, uploading of the instrument configuration information, calibration data, etc.
Using the Software

This chapter describes the functions of the cycler software, including:

- Loading a chip
- Logging in
- Running a protocol
- Changing settings (Admin level and User level)

Starting the Cycler

- Turn system power on.
  The initialization screen appears.

Once the system is initialized, the Start screen appears. The FC1™ Cycler features a touch-screen interface.

Logging In

1. Press Login.
2. Log in as Admin or User.
If you are logging in as Administrator, the initial default password is: 123456
If you are logging on as User, the initial default password setting is no password. In either case, we recommend that you change your password after initial log in.
For more information on adding users, see “Managing Users” on page 26.

Loading a Chip

1  Press Start.
2 Place the chip with the notched corner of the chip aligned to the “A1” mark on the chuck.

![Notched corner of IFC chip]

**WARNING!** Never press down on the chip when it is on the FC1™ Cycler chuck. If you encounter a vacuum problem, turn off the system, allow it to cool down and remove the chip. Clean the chip and/or chuck surface with a lint-free cloth and 70% isopropyl alcohol.

3 Press **Continue** to display the available thermal protocols.

**Selecting a Protocol**

- The system displays the protocols installed. Select a protocol to run.
Running a Protocol

1  Press Run.

For this example, **96x96 Standard** is selected.

A status bar at the bottom of the screen provides an estimated time of completion. You can also abort a session from this screen. If you abort, the system will return to the select a protocol to run screen.

2  Press OK to move the chip out of the cycler.

---

**WARNING!** Never press down on the chip when on the FC1™ Cycler. If you encounter a vacuum problem, turn off the system, allow it to cool down and remove the chip. Clean the chip and/or chuck surface with a lint-free cloth and 70% isopropyl alcohol.
Auto Resume

In the event of a power outage, the FC1™ Cycler will resume thermal cycling when power is restored.

Organizing Protocols

You can organize protocols by categories and subcategories (tags). Categories could include application types or chip types. Tags could be used for user names, for example.

1. Click on the protocol you want to add to a category.
2. Select **Edit**...
3. Select an existing Category (Testing in this example) or press **Create new category**.
4. Select **Add Category** (or **Add new Tag**).
5. Enter a new category name (or new tag name) on the onscreen keyboard.
6. Click **Save**.

Setting Holding Temperature

Holding temperature is the temperature the FC1™ Cycler will maintain after the thermal cycling protocol has run.

1. To set the holding temperature, select the protocol you want to edit.
2. Press **Set**.
3 Enter a value for the holding temperature.

4 Press Save.

**Administrator Tools**

When logged in as Administrator, you can manage users, passwords, settings, and protocols.

1 Click **Tools** to see the options.
Edit User

On the **Edit User** screen, you can edit the User Name, Password and Email Notification settings by clicking **Edit**.

**NOTE:** The system must be connected to a network for Email Notifications and Group Mode to work.

If you edit email notifications, a new screen appears. You can receive notifications by email or cell phone.
If you chose **By Phone Number and Carrier**, select your carrier service.

**Network Settings**

On the **Network** tab, you can have your company’s IT professional network the cycler to the company network. He/she can choose to:

- Get an IP address dynamically through DHCP
- Use a static IP address

He/she can also edit:

- DNS addresses
- Network Unit Name

**NOTE:** If you have multiple FC1™ Cyclers that you are networking together, you will need to change the Network Unit Name. The cyclers are delivered from the factory with the same default name.

On the **Server** tab, your company’s IT professional can edit:

- Mail server
- Port number
- User name
- Password
Managing Users

You can use the Manage Users screen to add, delete or edit users.

1. Press Manage Users.
2. Press Add New User.
3. Use the keyboard to enter a user name.
4. Press Next.
5. If you want to assign a password for this user, press Change and enter a password, using the onscreen keyboard.
6 Assign an access level by pressing the radio button next to Normal or Administrator.

**NOTE:** Normal access level allows basic protocol running. Administrator access level allows basic protocol running, and the ability to change user access and passwords, manage protocols and system settings.

7 Press Save.

The new user name appears on the login screen.

### Changing Time/Date

1 Press **Change Time/Date**.
   Use the blue arrows to adjust time and date.
2 Press **Save** when finished.

### Managing Protocols

For more detailed information on loading and updating protocols, see “Updating Software and Protocols” on page 32.

1 Press **Manage Protocols**.
   You can modify existing protocols or create new protocols from this screen.
2 Select the protocol you want to edit.
3  OPTIONAL: If you want to rename the protocol, press **Change name**. Type in the new name and press **Change**.

4  Press **EDIT** at the bottom of the screen (not **Edit** on the right side).

The above screen can also be used to change the protocol name, category, tag and holding temperature.

5  Press the value (segment name, temperature, time, number of cycles, speed) you wish to change and a editing window for that value will appear.

6  Press **OK** to make the change or **Cancel** leave the value the same.

7  Also, use **Insert Remove** to either insert or remove segments and slices of the protocol. Then, click on the values to edit them as you did in step 5 above. Click **Insert Remove** again to exit the mode.

8  To create a new protocol, press **New Protocol**.

9  Enter a name for the new protocol using the onscreen keyboard.
10 Press OK.
11 You can build your new protocol by adding segments and/or slices. Press *Insert Remove* to enable this feature.

12 After adding or deleting segments and/or slices, press *Insert Remove* again to save the changes.
13 You can also touch the value (segment name, temperature, time, number of cycles, speed) you wish to change and a editing window for that value will appear.
14 Press OK to make the change or Cancel to leave the value the same.
15 Press Save.
16 Press *Insert Remove* again to exit the mode.

Logging Out

1 When you are finished using the cycler, press Log Off.

2 Then press Log Off.

Operating in Group Mode

You can also operate the cycler in conjunction with other FC1™ Cyclers. On the cycler you wish to use as the master cycler:
1  Select **This instrument is the group master.**

On the cycler(s) you wish to link to the master cycler:

2  Select **This instrument is the group worker.**

Now, go back to the master cycler.

3  Select **Add More Workers.**

4  Select the cyclers you wish to link to.
5 Click **Add Workers**.

You’ll notice that the master cycler now has a **Master Mode** icon on its screen and the worker cycler(s) now have a **Worker Mode** icon on their screen.

You can now control the worker cyclers remotely via the master cycler.

6 Select the number of chips you wish to run.

The default number is equal to the number of cyclers that are connected via Group operating mode. For example, if you have four cyclers linked, four will be the default number of chips to run. If you only want to run two, you would select -2 to adjust the number.

To leave the worker or master modes, click **Exit**. You can also operate the system independently.
7 Select **This instrument is independent**.

The screen will indicate it is in worker mode, independent of any other systems:

**User Tools**

When logged in as a user, these tools are available:

- **Edit User** allows you to change your password.

**Updating Software and Protocols**

Occasionally, Fluidigm sends out updates of the system software and new protocols.
To install the updated software and protocols:

1. Turn off the cycler by pressing the power switch at the back.
2. Insert the Fluidigm USB key into the USB port on the cycler.
3. Turn on the FC1 Cycler by pressing the power switch at the back of the cycler.
4. Press Update Software (or Update All or Update Firmware) to update the software.

A status screen appears to let you know the software/firmware was updated successfully.

5. Turn off the cycler, take out the USB key, and turn it back on again to reboot the system.

To load new protocols:

1. Log in as Administrator.
2. Press Tools.

4. Go to the Protocols directory on the USB key.
5 To add all of the new protocols, press **Copy all from USB drive**.

You can now view, rename or delete the individual protocols.

6 To select a protocol, select the protocol’s name.

7 You can also copy modified protocols back to the USB drive by selecting the **Copy all to USB Drive**.

The protocols will be copied to the Protocols directory in the USB key.
Troubleshooting
Observation and Possible Course of Action

<table>
<thead>
<tr>
<th>Observation</th>
<th>Possible Cause</th>
<th>Recommended Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Cycler failed to power on.</td>
<td>No AC Power.</td>
<td>Check that the power cable is properly connected to both wall socket and cycler. Make sure the power switch on wall socket is ON, and then turn ON the instrument power switch on the back panel. If using a power strip, make sure it is turned ON.</td>
</tr>
<tr>
<td>2 There is no display after power is turned on.</td>
<td>Cycler power supply is not fully reset.</td>
<td>Turn OFF the cycler power switch located on the back panel. Wait for 10 seconds and re-boot it by turning ON the power switch.</td>
</tr>
<tr>
<td>3 Vacuum problems</td>
<td>Chip or chuck surface is dirty</td>
<td>Turn off the power switch and let the system cool down. Remove the chip from the chuck. Use a lint-free cloth and 70% isopropyl alcohol to gently wipe the chuck and/or chip.</td>
</tr>
<tr>
<td>4 Error messages</td>
<td></td>
<td>Reboot the system. If the system fails to recover, call Technical Support.</td>
</tr>
</tbody>
</table>

Technical Support

Fluidigm Technical Support can be contacted by telephone or email.

Email
- United States and other countries not in Europe or Asia
techsupport@fluidigm.com
- Europe techsupporteurope@fluidigm.com
- Asia techsupportasia@fluidigm.com

Phone
- United States (toll-free) +1 866 358 4354
- Europe +33 1 60 92 42 40
- Japan +81 3 3662 2150
- China (excluding Hong Kong)+86 21 3255 8368
- All other countries +1 650 266 6100

On the Internet: www.fluidigm.com/support

Fluidigm Corporation
7000 Shoreline Court, Suite 100
South San Francisco, CA 94080
Unpacking the Cycler

**WARNING! Safe Lifting:** The FC1™ Cycler is shipped in one cardboard box with a country-specific power cable and weighs 25 lb (11 kg). Use proper lifting techniques.

1. Open the box near its permanent place in the lab.
2. Remove components from plastic wrapping.
3. Confirm that cycler and power cable are included in the box. (If anything is missing or damaged, call Technical Support at 1-866-358-4354 within the US or 1-650-266-6100 outside the US.)
Installing the Cycler

**CAUTION!** Do not place the FC1™ Cycler on a heated surface or near a heat source.

1. Place the cycler on a laboratory bench top, which must be at least 21 inches (54 cm) deep and 9 inches (22 cm) wide.
2. Provide at least 2 inches (5 cm) of clearance behind the cycler to allow adequate air circulation.
Connecting the Power Cable

1. Connect the power cable to the cycler.

2. Connect the power cable to the power outlet that provides single-phase AC voltage, between 100 and 240 volts (50 or 60 Hz).

   **IMPORTANT:** The current draw is 2.5 amps at 100 volts; 2.0 amps at 115 volts or 1.1 amps at 240 volts.

   **IMPORTANT:** If your local power supply is subject to frequent power interruptions, you may protect your chip runs on the cycler by using an uninterruptible power supply (UPS).

Powering On the Cycler

1. If you are using a power strip, turn it ON.
2. Press the switch at the back of the cycler to the ON position.
3. Wait while the cycler initializes.

   **NOTE:** Initialization may take up to 1 minute to complete. After the cycler initializes, the Start screen displays.
NOTE: The cycler uses a touch-screen interface. Once you power it on, all interactions with the application occur by touching the screen.
Instrument Startup

NOTE: The FC1™ Cycler uses a touch-screen interface, therefore all interactions with the application occur by touching the screen.

1. If you are using a power strip, turn it on.
2. Press the switch at the back of the cycler to the on position.
3. At completion of power up and instrument initialization, the **Start** screen appears.

![Start Screen](image)

NOTE: Initialization will take approximately one minute to complete.

Login

1. Press **Login**.
2. Default passwords for the following users are:
   a. Admin: use **123456**
   b. User: [leave blank]

![Password Input](image)
Running a Protocol

1. Press **Start**.
2. Open the lid.
3. Remove and discard the blue protective film from the bottom of the chip (if not done earlier).
4. Place the chip onto the thermal cycling block (chuck) on top of the instrument by aligning the notched corner of the chip to the **A1** mark.

5. Close the lid.
6. Press **Continue** to display available thermal protocols.
7. Choose a protocol to run.

8. Press **Run**.

**NOTE:** A status screen appears with a time estimate for completion.

9. Once the protocol is complete, a confirmation screen appears. (During an active protocol, **Abort** will cancel the chip run.)

**WARNING!** Never press down on the chip when it is on the FC1™ Cycler. If you encounter a vacuum problem, turn off the system, allow it to cool down and remove the chip. Clean the chip and/or chuck surface with a lint-free cloth and 70% isopropyl alcohol.
Cleaning Protocol

It is important to keep the thermal chuck surface clean. Any grease or debris will impact the thermal contact between the chuck and the chip. Turn off the system prior to cleaning the chuck.

System Cleaning

1. Turn system off and allow to cool down to room temperature.
2. Use a lint-free cloth and 70% isopropyl alcohol to gently wipe the chuck.

CAUTION! Make sure the chuck has had time to cool. It can get very hot and cause burn injury.
## Troubleshooting

<table>
<thead>
<tr>
<th>Error Message</th>
<th>Possible Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>The screen is blank</td>
<td>Check power connection at the wall outlet, at the power strip and instrument inlet.</td>
</tr>
<tr>
<td>Error while loading the chip, no vacuum</td>
<td>Verify the blue tape is removed from the bottom of the chip.</td>
</tr>
<tr>
<td></td>
<td>Verify the chip is fully seated.</td>
</tr>
<tr>
<td></td>
<td>Make sure chuck surface and bottom of the chip are clean.</td>
</tr>
<tr>
<td></td>
<td>Follow &quot;Cleaning Protocol&quot; on page 46.</td>
</tr>
</tbody>
</table>
General Safety

In addition to your site-specific safety requirements, Fluidigm recommends the following general safety guidelines in all laboratory and manufacturing areas:

- Use personal protective equipment (PPE): safety glasses, fully enclosed shoes, lab coats, and gloves.
- Know the locations of all safety equipment (fire extinguishers, spill kits, eyewashes/showers, first-aid kits, safety data sheets, etc.), emergency exit locations, and emergency/injury reporting procedures.
- Do not eat, drink, or smoke in lab areas.
- Maintain clean work areas.
- Wash hands before leaving the lab.

Instrument Safety

**CAUTION!** Do not modify this device. Unauthorized modifications may create a safety hazard.

**CAUTION!** BIOHAZARD. If you are putting biohazardous material on the instrument, use appropriate personal protective equipment and adhere to Biosafety in Microbiological and Biomedical Laboratories (BMBL) from the Centers for Disease Control and Prevention and to your lab’s safety protocol to limit biohazard risks. If biohazardous materials are used, properly label the equipment as a biohazard. For more information, see the BMBL guidelines online at: cdc.gov/biosafety/publications/index.htm

**HOT SURFACE!** The FC1™ Cycler chuck gets hot and can burn your skin. Please use caution when working near the chuck.
### Instrument Symbols

<table>
<thead>
<tr>
<th>Symbol</th>
<th>English</th>
<th>Français</th>
</tr>
</thead>
<tbody>
<tr>
<td>⚠️</td>
<td>Caution, risk of danger&lt;br&gt;Consult the manual for further safety information.</td>
<td>Attention, risque de danger&lt;br&gt;Consulter le manuel pour d’autres renseignements de sécurité.</td>
</tr>
<tr>
<td>🔥</td>
<td>Caution, hot surface</td>
<td>Attention, surface chaude</td>
</tr>
<tr>
<td>⚠️</td>
<td>Pinch hazard</td>
<td>Risque de pincement</td>
</tr>
<tr>
<td>🦠</td>
<td>Biohazard</td>
<td>Risque biologique</td>
</tr>
<tr>
<td>⚠️</td>
<td>On/off</td>
<td>On/off (marche/arrêt)</td>
</tr>
<tr>
<td>🔋</td>
<td>Protective conductor terminal (main ground). It must be connected to earth ground before any other electrical connections are made to the instrument.</td>
<td>Borne de conducteur de protection (mise à la terre principale)</td>
</tr>
<tr>
<td>🌴</td>
<td>To minimize negative environmental impact from disposal of electronic waste, do not dispose of electronic waste in unsorted municipal waste. Follow local municipal waste ordinances for proper disposal provisions and contact customer service for information about responsible disposal options.</td>
<td>Pour minimiser les conséquences négatives sur l’environnement à la suite de l’élimination de déchets électroniques, ne pas éliminer ce déchet électronique avec les déchets usuels non soumis au tri sélectif. Se conformer aux ordonnances locales sur les déchets municipaux pour les dispositions d’élimination et communiquer avec le service à la clientèle pour des renseignements sur les options d’élimination responsable.</td>
</tr>
</tbody>
</table>

### Conformity mark

<table>
<thead>
<tr>
<th>Conformity mark</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>🇨🇦🇺🇸</td>
<td>Indicates conformity with safety requirements for Canada and the United States.</td>
</tr>
<tr>
<td>🚀</td>
<td>Indicates conformity with European Union requirements for safety and electromagnetic compatibility.</td>
</tr>
</tbody>
</table>
Chemical Safety

Read and comprehend all safety data sheets (SDSs) by chemical manufacturers before you use, store, or handle any chemicals or hazardous materials. Wear personal protective equipment (gloves, safety glasses, fully enclosed shoes, lab coats) when handling chemicals. Do not inhale fumes from chemicals. Use adequate ventilation, and return caps to bottles immediately after use. Check regularly for chemical spills or leaks. Follow SDS recommendations for cleaning up spills or leaks.

Disposal of Products

Used IFCs should be handled and disposed of in accordance with federal, state, regional, and local laws for hazardous waste management and disposal. Do not dispose of this product in unsorted municipal waste. This equipment may contain hazardous substances that could affect health and the environment. Use appropriate take-back systems when disposing of materials and equipment. Learn more at fluidigm.com/compliance
World Headquarters
7000 Shoreline Court, Suite 100
South San Francisco, CA 94080 USA
Fluidigm Europe B.V.
Luna Arena
Herikerbergweg 238
1101 CM Amsterdam Zuidoost
The Netherlands
T: +31 (0)20 578 8853
F: +31 (0)20 203 1111
Fluidigm France Sarl
Les Conquérants - Bât Le Kilimandjaro
1 avenue de l'Atlantique
91940 Les Ulis
France
T: +33 (0)1 60 92 42 40
F: +33 (0)1 60 92 11 31
Fluidigm Singapore Pte. Ltd.
Techplace II
Block 5008, #08-08
Ang Mo Kio Ave 5
Singapore 569874
Singapore
T: +65 6858 7316
Fluidigm Japan K.K.
Luminous 4F
15-19 Nihonbashi-Kodenmacho
Chuo-ku, Tokyo 103-0001
Japan
T: +81 (0)3 3662 2150
F: +81 (0)3 3662 2154
Fluidigm (Shanghai) Instrument Technology Co. Ltd.
Room 1709, A Building
Hongwell International Plaza
No. 1600 West Zhongshan Road
Xuhui District
200235 Shanghai
China
T: +86 (0)21 3255 8368
F: +86 (0)21 3255 8369

For technical support visit
fluidigm.com/support
EMAIL
United States and other countries not in Europe or Asia techsupport@fluidigm.com
Europe techsupporteurope@fluidigm.com
Asia techsupportasia@fluidigm.com
PHONE
United States (toll-free) +1 866 358 4354
Europe +33 1 60 92 42 40
Japan +81 3 3662 2150
China (excluding Hong Kong) +86 21 3255 8368
All other countries +1 650 266 6100