



Using Disinfectants on Agilent Instruments

Agilent Technologies is committed to the health and well-being of our customers. Many of you have asked how to effectively clean and disinfect Agilent systems.

The United States Centers for Disease Control and Prevention (CDC) recommend cleaning and disinfecting surfaces as a preventative measure against the spread of viral respiratory illnesses. This brief outlines safe procedures for cleaning and disinfection of Agilent instruments, consistent with CDC preventative measures. Agilent is providing these supplementary decontamination instructions in addition to any normal instrument cleaning procedures for your instruments.

These instructions apply to Agilent Gas Chromatographs (GC), Liquid Chromatographs (LC), Mass Spectrometers (MS), Headspace Samplers (HS), GC and LC Automatic Liquid Samplers (ALS), Capillary Electrophoresis (CE) systems, Atomic Spectroscopy instruments (ICP-MS, ICP-OES, MP-AES, AA), Molecular Spectroscopy instruments (UV-Vis, Mobile & Hand-held FTIR, Research FTIR, Laser SPSD, and Raman products), and Automated Liquid Handling Products.

Cleaning and Disinfecting

The CDC lists a variety of chemicals and commercial products for disinfection, however, some of these are not suitable for cleaning Agilent instruments. A compatible, CDC-recommended cleaning solution for external instrument surfaces is a solution of 70% isopropanol (isopropyl alcohol) and 30% water. This solution is commonly sold in stores as rubbing alcohol.

Concentrations of isopropanol above 70% may damage the instrument.

WARNING

When working with solvents observe appropriate safety procedures (for example, goggles, safety gloves and protective clothing) as described in the safety data sheet supplied by the solvent vendor, especially when toxic or hazardous solvents and flammable liquids are used. For this cleaning procedure, the appropriate personal protective equipment (PPE) consists of nitrile or similar gloves, safety glasses, and a laboratory coat.

General procedure:

Use the following procedure to clean often-touched external surfaces of Agilent instruments.

Before beginning, refer to the user and safety manuals for each Agilent instrument, including samplers, for safety guidelines when cleaning the instruments.

NOTE

For spectroscopy instruments, see [“Additional information for Spectroscopy instruments”](#) on page 3 before proceeding with the disinfection procedure.

NOTE

Any thermal zone on an instrument is likely to already be decontaminated, provided it was operated above 121 °C for at least one hour. For example, on a gas chromatograph, the inlets, oven, columns, transfer lines, and detectors can be decontaminated by setting the temperature zones to 200 °C for at least one hour. To avoid burns, cool these temperature zones to room temperature before accessing.

- 1 Before beginning, establish the current baseline performance as appropriate. For example, if using an MS perform an autotune and generate a report.
- 2 Put on the appropriate PPE.
- 3 Cool all thermal zones and allow them to reach room temperature.
- 4 Wait until the instrument is cool, then turn off the instrument and disconnect the power cord. Never clean an instrument while it is powered on or plugged in. Never clean an instrument while it is hot.
- 5 Remove any external devices, if necessary, to allow cleaning access to all potentially contaminated surfaces. For example, remove an ALS and clean separately. (If desired you can disconnect a GC or LC from a mass spectrometer or other connected instrument as described in its user documentation to allow cleaning between the instruments. Be sure to use all of the recommended procedures and two persons if it is necessary to move the instruments.)
- 6 If the instrument has been operated with non-volatile buffers or salt additives (commonly used with LC or CE), clean the exposed areas with pure water to remove residuals before applying 70% isopropanol.
- 7 If needed, create an amount of 70% isopropanol/30% water solution that is sufficient to clean the instruments.

WARNING

Never spray any liquids directly onto the product.

- 8 Moisten a clean, lint-free cloth with the mixture of 70% isopropanol/30% water.
 - **Do not use a paper towel or other fibrous material.**
 - The cloth should be moist, not dripping wet.
- 9 Gently wipe external surfaces to be cleaned using the moistened cloth. Do not allow any liquid to drip into the instrument. Many areas inside Agilent instruments contain electrical

wiring, printed circuit boards, and other parts that can be damaged by liquids or potentially create an electrical safety hazard when wet.

- Start with the top and side surfaces, and end with external cabling, external gas supply lines, and transfer lines.
- Wipe the outer surface of cables and their connectors but do not touch the electrical connections (for example, pins and plugs inside the cable or connection port).
- When cleaning a display or touchscreen, carefully wipe in one direction, moving from the top to the bottom.
- Use one cloth per instrument to prevent cross contamination. Dispose of the cloth appropriately.

10 Allow all surfaces to completely air-dry. No moisture should be present on the instrument surfaces.

11 Plug in the instruments. If separated, return instruments to their original locations on the lab bench, and restore to normal operating conditions as described in the instrument user documentation.

12 Verify performance after reassembly, as appropriate.

13 Discard the gloves and other personal protective equipment or clean them in an approved process, then wash your hands.

Refer to the instrument documentation for stabilization times after turning everything back on.

You may notice some visible changes to cosmetic finishes over time as a result of the cleaning techniques mentioned in this document.

Additional information for Spectroscopy instruments

Spectroscopy instruments may require additional disassembly and cleaning. The general procedure described above for cleaning instrument surfaces applies, however there are some instrument-specific considerations, described below:

For MP-AES/AA/ICP-OES/ICP-MS systems:

- 1** Before disinfecting, remove all hazardous materials and samples from in and around the equipment and store appropriately. Special precautions are required for HF applications systems.

WARNING

Perform the appropriate decontamination procedure if hazardous material has been spilled on or inside the instrument.

- 2** Appropriately address any sample spills.
- 3** Remove sample introduction components (Plasma Torch, Spray Chamber and Nebulizer) to access the external surfaces that are routinely handled.

For AA systems: Unless the Burner needs to be removed for cleaning, the sample introduction system can be disinfected in place using a soft, lint free cloth.

For UV-Vis, Mobile & Hand-held FTIR, Research FTIR, Laser SPSD, and Raman products:

CAUTION

DO NOT clean instrument optics, such as sample compartment windows, with this solution.

It is recommended that FTIR instruments remain **POWERED ON**, even when not in use, for thermal stability. This has the added benefit of minimizing contact cleaning requirements.

Safety information for isopropanol (isopropyl alcohol)

WARNING

- Always refer to the instructions and safety data sheet for the solvent.
 - Isopropanol is a highly flammable liquid and vapor.
 - Use with adequate ventilation.
 - Keep away from heat and sources of ignition.
 - Store in a cool, well-ventilated place. Keep container tightly closed.
 - Avoid contact with skin, eyes, and clothing.
 - In the event of contact with isopropanol, wash skin thoroughly with soap and water.
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Other cleaners

While there are many other common household cleaners and disinfectants recommended by the CDC for disinfecting surfaces, many of these can damage painted surfaces and electronic products. Do not use: bleach (including sodium hypochlorite), peroxides (including hydrogen peroxide), acetone, ammonia, quaternary ammonium-based cleaners, ethyl alcohol, methylene chloride, sodium dichloroisocyanurate (sodium dichloro-S-triazinetrione), or any petroleum-based solvents (for example gasoline, paint thinner, benzene, or toluene). This includes wipes, liquids, and sprays. Read the product labels.

FAQ

Q: How do I disinfect GC columns and mounting hardware?

A: In general, these are disinfected in the GC oven if run at sufficient temperature.

Q: Can I use bleach or peroxide to clean my instrument?

A: No. Agilent instruments can be damaged by these chemicals. (If you plan to use any other procedure than described, first carefully check on a hidden part of the instrument or module. Note that some unapproved cleaning chemicals may remove instrument labeling.)

Q: Will the letters disappear from my instrument's touch pad or other surfaces?

A: Use of a cloth dampened with 70% isopropanol reduces this risk. Avoid heavy scrubbing. Wipe gently.

Q: Can I apply the cleaning procedure to high-voltage parts (for example, electrodes) used in Capillary Electrophoresis Instruments?

A: Yes, however it is recommend to clean these parts with 100% isopropanol after applying this procedure.

Q: How do I disinfect my PC?

A: Please refer to the PC supplier's disinfection recommendations.

Q: How do I disinfect non-Agilent branded accessories?

A: Please consult the manufacturer for disinfection recommendations.

Q: Can I use commercial IPA wipes?

A: Yes, as long as the wipes use 70% IPA/30% water solution.

Q: Where do I find more information?

A: Restrictions on chemical availability differ by country. Please check local regulations. For a list of disinfectants registered with the US EPA, go to:

<https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>

For information about Agilent's COVID-19 response, visit:

<https://www.agilent.com/about/COVID-19>

To contact Agilent about COVID-19 concerns, use the online feedback form:

https://explore.agilent.com/COVID-19_Feedback

www.agilent.com

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