Miltenyi Biotec



MACSQuant® Instrument short instructions

Maintenance

Before using the instrument for the first time, read the MACSQuant Instrument user manual and MACSQuantify™ Software user manual.

⚠ WARNING

Risk of scalds and/or chemical burns of skin and eyes due to hot liquids and hypochlorite solution (bleach).

- Wear personal protective equipment (such as gloves, safety glasses, etc.) as indicated in the safety data sheet for the particular substance.

⚠ WARNUNG

Gefahr von Verbrühungen und/oder Verätzungen von Haut und Augen durch heiße Flüssigkeiten und Hypochloritlösung (Bleichmittel).

- Tragen Sie persönliche Schutzausrüstung (wie Handschuhe, Schutzbrille etc.), wie im Sicherheitsdatenblatt zum jeweiligen Material angegeben.

⚠ ADVERTENCIA

Riesgo de escaldaduras y/o quemaduras químicas en la piel y los ojos por líquidos calientes y solución de hipoclorito (lejía).

- Use equipo de protección personal (como guantes, gafas de seguridad, etc.) como se indica en la hoja de datos de seguridad de la sustancia en particular.

⚠ AVERTISSEMENT

Risque d'ébouillantage et/ou de brûlures chimiques de la peau et des yeux par des liquides chauds et de la solution d'hypochlorite (eau de Javel).

- Portez des équipements de protection individuelle (tels que des gants, lunettes de protection, etc.) suivant les indications fournies dans la fiche de données de sécurité de la substance en question.

⚠ AVVERTENZA

Rischio di scottature e/o ustioni chimiche della pelle e degli occhi a causa di liquidi caldi e soluzione di ipoclorito (candeggina).

- Indossare dispositivi di protezione individuale (ad esempio guanti, occhiali di sicurezza ecc.) come indicato nella scheda di dati di sicurezza della specifica sostanza.

These short instructions are valid for the MACSQuantify Software 3.1 and later.

All MACSQuant Instruments are equipped with automated start-up and shutdown protocols to ensure easy and reliable maintenance. When running many or sticky samples, additional cleaning routines are recommended to further enhance performance of the instruments. See **Table 1** and **Table 2** to learn more about available cleaning programs and cleaning recommendations.

Cleaning programs

Cleaning program	Description
Rinse	Rinses the needle with MACSQuant Running Buffer for 2 minutes
Clean	Cleans the needle and flow cell with 0.25 mL 1% hypochlorite solution for 10 minutes
Flush	Performs a system backflush rinse if a blockage of the fluidics system occurs. The duration is 18 minutes for MACSQuant Analyzer 10, VYB, and 16, or 1 minute for MACSQuant X

Table 1: Cleaning programs available for the MACSQuant Instruments

To start a cleaning program, select one of the following options:

- Click the **Rinse** button in the status bar to start a needle **Rinse**.
- Right-click **Rinse** in the status bar. Select **Clean** to start a **Clean** program. Follow the on-screen prompts.
- Right-click **Rinse** in the status bar. Select **Flush** to start a **Flush** program. Follow the on-screen prompts.



Figure 1: **Rinse** button in the status bar with the options **Clean** and **Flush**

Cleaning recommendations

Indication	Washing programs
After each user (optional)	**Clean** program
After running biohazardous samples	**Clean** program
After sticky material, such as bone marrow or tumor samples	**Clean** program followed by a **Flush** program
During laser warm-up in acquisition mode (recommended)	**Flush** program followed by a **Clean** program
Debris or high noise	**Clean** program, hot bleach
Blockage of the fluidics system; can also be used as weekly cleaning routine	Hot bleach, see **Removing a potential blockage (hot bleach)** below

Table 2: Cleaning recommendations for the MACSQuant Instruments

Cleaning the washing station

1 Switch off the instrument.
2 Remove the Single tube rack.
3 Open the cover of the washing station to the left-hand side.
4 Clean the washing station by wiping it with tissues and an appropriate disinfectant, for example, 70% ethanol, isopropyl alcohol, or 1% hypochlorite solution. Finally, rinse with distilled water.

Cleaning the uptake needle

Clean the uptake needle of the robotic needle arm regularly to prevent contamination or clogging.

1 Switch off the instrument.
2 Push the needle carefully out of the holder.
3 Clean the uptake needle by wiping it with tissues and an appropriate disinfectant, for example, 70% ethanol, isopropyl alcohol, or 1% hypochlorite solution. Finally, rinse with distilled water.
4 Put the needle back into the holder.

Long-term storage of the instrument

The instrument must be run every two weeks to prevent clogging. If the instrument is not in use, turn on the instrument every two weeks and switch it to acquisition mode. During the priming procedure, the fluidics are flushed. After priming, shut down the instrument manually as described in the short instruction **Getting started**.

Removing a potential blockage (hot bleach)

Clogs or blockages in the sample tube or flow cell can cause greatly reduced event rates. Optimized sample preparation can prevent clogs. Contact Miltenyi Biotec Technical Support if the problem persists.

The following protocol can also be used as a weekly cleaning routine.

1 Click the **Experiment** tab.
2 Select the Chill 5 Rack.
3 Select column 1 and 2 in the rack scheme. Ensure vertical processing order.
4 Click **Group**.
5 Set the flow rate to high, the uptake volume to 450 µL, and the sample volume to 500 µL. It is not necessary to open an analysis window.
6 Optional: Enter weekly clean in the **Project** field.



7 Save this as an experiment file called **weekly cleaning** in the Public folder, so that the file can be opened by any user.
8 Optional: Open the **weekly cleaning** experiment file.
9 Prepare 2 mL hot bleach solution. Mix 1 mL of 1% hypochlorite solution with 1 mL boiled distilled water.
10 Place four tubes containing 0.5 mL hot bleach solution into wells A1-D1 of the Chill 5 Rack.
11 Place four tubes containing 0.5 mL MACSQuant Running Buffer into wells A2-D2.
12 Place the Chill 5 Rack onto the MACS MiniSampler Plus.
13 Check the MACSQuant Running Buffer and waste level.
14 Click the **Start** button.

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