

Application Information:

Cleaning glassware contaminated with drug compounds or chemicals

The final cleaning process of equipment involved in drug compounding is crucial as the pharmacist must ensure the glassware can be reused without any carry-over of material from the previous run. This includes active ingredients and excipients.

The Miele G 7883 or G 7893 glassware systems using the organica programs offers a more effective solution for cleaning in this application as opposed to hand washing or residential dishwashers. Hand washing not only presents inherent safety risks for employees, but is also not a repeatable process and produces variable results.

Temperature

Hot wash and rinse water is crucial in achieving proper cleaning result. The Miele G 7883/G 7893 can heat wash and DI Water up to 93° C.

Mechanical Action

It is often assumed that high pressure must be used to provide good cleaning results. The problem: higher pressure also means a greater chance of bottles being broken. Miele's research indicated that a high turnover rate (circulation) of water at a low discharge pressure provides the best cleaning results without risk of breakage. How often the water and detergents contact the surface to be cleaned is actually more important than how hard it hits.

The Miele glassware washer circulation pump is rated at 106 gallons per minute (gpm) compared with 25 gpm for typical household dishwashers, and 60 gpm for typical lab washers. Miele's high circulation rate aids in energy efficiency and less detergent usage while helping to ensure analytically clean results.

Time

Increasing the time of a wash cycle will improve the cleaning results. Yet most labs cannot afford to spend time waiting for a washer to complete long cycles. Because Miele systems feature high circulation rates and extremely hot water, shorter cycle times can be accomplished without sacrificing cleaning results.

Detergent

Selecting the proper detergent is an important step in achieving critically clean glassware. Miele offers an extensive line of powder and liquid detergents, and acid neutralizers for removal of virtually any residue.

DI Water Rinse

Complete elimination of residue is best achieved by one or more heated DI water rinse cycles. Miele laboratory glassware washers, specifically the G 7883 and G 7893 feature a DI water connection with the ability to heat the water up to 93° C.

Typically 1-3 DI water rinses are sufficient, but the washer can be programmed to utilize pure water for any or all steps if desired. Miele combines this with flow meters for all incoming water types, which allows extremely precise filling and varying of fill volume by program step.

Organica program

For cleaning of glassware used in organic chemistry, the Organica program would be the ideal solution. This program is typically used for the removal of organic residue, such as oils, fats, wax, agar, preparation applications and for some analytical applications, with moderate to heavy soiling, and moderate rinse requirements. Liquid or powder detergent is required for this program. Cold, warm, and a DI water supply is also utilized in the Organica program to ensure no residue.

Program:

Pre-Wash - 65° C, 3 min.

Wash - 85° C, 3 min. w/ detergent

Interim Rinse - 1 min. w/ neutralizer

Interim rinse - 1 min.

Interim rinse - 1 min. w/DI water

Final rinse - 80° C, 1 min w/DI water

Conclusion

Miele undercounter laboratory glassware options with Organica programs:

G 7883

G 7883 CD

G 7893

Recommended Detergents:

neodisher™ FLA - alkaline based detergent

neodisher™ Z - organic acid neutralizing agent

For more information, contact Miele Professional at 1-800-843-7231

