



aapptec LLC
advanced automation
peptide protein technologies

Maintenance and Troubleshooting

(Apogee)

“Warm Up” Procedure

Upon initial receipt of the Apogee, or if the instrument has not been used for more than five days, it will be necessary to “warm up” the internal valves. Set-up and perform a Clean System operation using Acetone. If all of the AA Vials are not empty at the completion of the operation, or if the operation fails to complete, manually empty the vials and run the procedure again. After a prolonged lack of use, this may require 5 or 6 attempts. Always perform this Clean System procedure with Acetone before periods of storage or discontinued use.

RV

The RV should be manually washed between uses to remove residual resin. Be careful not to leave traces of resin beads behind. To do so would degrade the purity of future reactions. A well silanized reactor usually cleans up sufficiently with several rinses with a good organic solvent such as THF or MeOH. If the RV is exceptionally dirty use soap and water, and consider resilanizing if needed.

Silanization Procedure

The glassware on Advanced ChemTech peptide synthesizers has been custom designed for the particular operation required. Although each vessel can be washed automatically, the user should perform a periodic visual inspection of the Reaction Vessel to look for any foreign materials or residues that may require a manual cleansing.

Silanization of the reaction vessel is necessary to prevent resin beads from sticking to the RV walls. To silanize the RV, refer to the following instructions:

Silanization Treatment for Glassware

1. Wash the vessel thoroughly with soap and water, and then dry it with acetone.
2. Prepare a 5% v/v solution of silanization reagent in hexane (Surfa-Sil, Pierce Chemical Co.; Sigmacote, Sigma Chemical Co.).
3. Fill the vessel 1/4 to 1/3 full with the 5% silanization reagent and shake well (30-60 seconds), wetting all internal surfaces.
4. Discard the silanization solution and rinse several times with hexane to remove excess reagent. Let the vessel air dry.

Fluid Transfer Lines

Some fluid transfer lines are shared. Therefore, the user must clean the lines following reagent deliveries. The Clean command is used for this purpose. At a minimum, the user must place a Clean Lines command after every delivery of amino acid solution and deprotection reagents (such as piperidine). Approximately 10 ml of NMP or DMF is required to adequately clean the lines.

At the completion of each synthesis, a Clean System¹ command must be performed using Acetone. This function will remove all residual solvents and reagents from the valves, fluid transfer lines, amino acid vials, Collection Vessel, and RV. Failure to routinely execute a Clean System command following a synthesis may result in degradation of the instrument's performance.

Special Consideration for TFA

TFA should only be used in reagent bottle 7 for deprotections when doing Boc chemistry, or in the RV and Collection Vessel during onboard Fmoc cleavage operation. During cleavage, TFA may be placed either into the Collection Vessel for Automated cleavage, or directly into the RV for Manual cleavage. TFA can never be used in reagent bottles 1 through 6.

¹ Always use Acetone, never THF, for a Clean System command. Using THF causes damage to the Amino Acid tubing.

Caution: TFA is very corrosive and should only be handled in a fume hood with gloves, goggles, and appropriate protective garments.

Reagent Bottles

Reagent bottles can be treated like most ordinary glassware in the sense that they should be washed periodically with soap and water. The safety coatings of the bottles will oxidize in some corrosive cleaning solutions. Do not use strong oxidizers, such as dichromate solution, or sulfuric or perchloric acids to clean these vessels.

Checking Solvent / Reagent Levels

Periodically check the levels of all reagents to make sure that there is sufficient volume to complete the synthesis.

Computer Maintenance

For proper servicing or maintenance of the computer operating the Advanced ChemTech Apogee, refer to operations or technical manuals provided with your particular computer system. You may call IBM technical support for most problems. Be sure to have your computer model number and serial number ready before you call.

IBM Technical Support: 1800-772-2227, for systems under warranty
1900-555-2582, for systems out of warranty

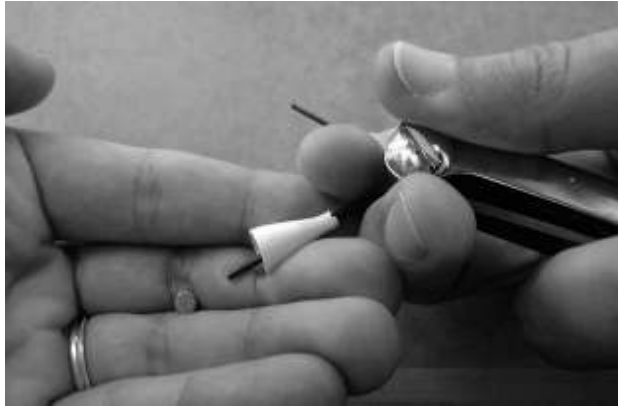
If IBM is unable to help call our toll free line for assistance (800)456-1403.

Filter Replacement

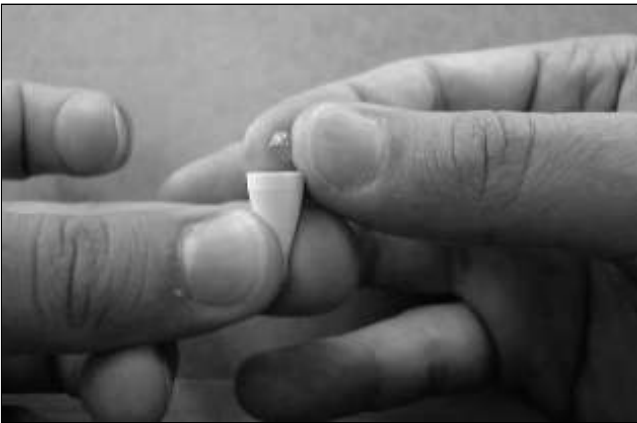
With normal use the filters in your reagent bottles collect residue and must be replaced. Use the following simple, four-step procedure for replacing your filters.

1. Use a small flat head screwdriver to pry off the plastic cone. The filter is inside of the cone.

2. Use a small hex wrench to push out the filter from the narrow end of the cone.



3. The new filter can then be inserted and pressed into place with the same wrench. Only a mild pressure is required to seat the filter. You will feel a soft click when it falls into place.



Drop in the new filter



Seat the new filter

4. Now, simply replace the cone and the filter is ready for use.