

Discover SP-D Cleaning with Tap Water - to be done DAILY

Note: Complete procedure each day after running samples. The sample will vent 4 to 6 times and lose 2 to 3 mL of water

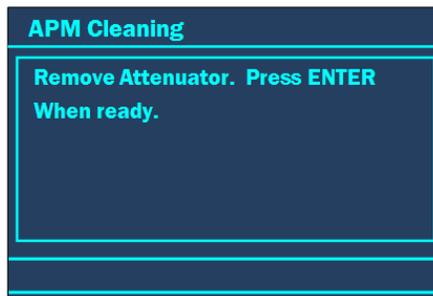
1. Create the following method using the document, CEM Synergy-D Software Operating Procedures in the section “Create New Methods.”
 Microwave Power Application: Ramp to Temperature
 Pressure Stages: Custom,
 Stage 1: PressureSP = 125 PSI, Times at SP = 4,
 Stage 2: PressureSP = 250 PSI, Times at SP = 10,
 Remove Stages 3 - 5.
 Vessel: 80 mL Quartz or 35 mL or 10 mL Pyrex without Liner

Stage	Temp	Ramp Time	Hold Time	Pressure	Power	Stirring
1	200	4:00	2:00	400	300	Med

2. Add tap water to vessel
 10 mL to the 35 mL and 80 mL vessel, OR
 3 mL and 15 - 20 grains of NaCl to the 10 mL vessel
3. Add stir bar and cap
4. Place in Explorer rack or Discover SP-D
5. Add sample to queue using the document, [CEM Synergy-D Software Operating Procedures](#) in the section “Set-up and Start a Sample Queue with the Explorer” OR “Set-up and Start a Sample Queue without the Explorer”
6. Press Play

ActiVent cleaning - to be done WEEKLY

1. Press the HOME key to display the “Discover Home” screen.
2. Press the “+/-“ keys to highlight “System Setup”.
3. Press the ENTER key.
4. Press the right ARROW key 3 times to display the “Setup 4” screen.
5. Press the “+/-” keys to highlight “APM Cleaning”.
6. Press the ENTER key. A new screen will appear:



7. Remove the attenuator (microwave door) from the cavity.
8. Press the ENTER key. A new screen will appear:



“Clean APM” - Moves APM forward and lowers the pressure head.
“APM Home” - Raises pressure head and homes APM.

9. Use the “+/-” keys to highlight “Clean APM”.
10. Press the ENTER key. The pressure device will move forward. Once the device reaches the front of the instrument, it will vibrate for about 3 seconds and then lower the pressure device.
11. Once the pressure device is lowered and no movement of device components can be heard, remove the back cover of the APM.
12. Hold the front cover of the pressure device and lift upward. The underside of the ActiVent will be exposed.
13. Use a damp cloth to clean the pressure device, inside and out, as well as the o-rings.
14. Once the pressure device is cleaned, lower the pressure assembly onto the track. Ensure that the pressure device is properly aligned on the track.
15. Use the “+/-” keys to highlight “APM Home”. The pressure head will raise and return to the Home position

Stirring Verification - to be done WEEKLY

1. Place empty vessel with stir bar into the attenuator (do not install cap).
- NOTE: Depending on the viscosity of the sample, a reaction mixture can be prepared and the above procedure can be used to determine if the sample is adequately stirring.
2. Log-in to the Discover as a user with Administrative privileges.
 3. Press the HOME key to display the “Discover Home” screen.
 4. Press the “+/-” keys to highlight “Administrative Functions”.
 5. Press the ENTER key.
 6. Press the right ARROW key one time to display the “Administration” screen.
 7. Press the ENTER key.
 8. Press the right ARROW key 4 times to display the “Maintenance 5” screen.
 9. Press the “+/-” keys to highlight “Test Stirring”.
 10. Press the ENTER key. The stirring speed will be displayed at the bottom of the screen.
 11. Press the “+/-” keys to change the stirring speed to High, Medium, Low and Off.
- NOTE: If stirring does not occur, try using a larger/stronger stir bar.
NOTE: The prepared sample can be used to determine adequate stirring speed for each sample.
NOTE: If stirring does not work properly, contact CEM Service: service@cem.com.

IR Temperature Verification with Water - to be done MONTHLY

1. Create the following method using the document, [CEM Synergy-D Software Operating Procedures](#) in the section “Create New Methods.”

Microwave Power Application: Ramp to Temperature
Pressure Stages: Inorganic
Vessel: 80 mL Quartz or 35 mL or 10 mL Pyrex without Liner (preferred)

Stage	Temp	Ramp Time	Hold Time	Pressure	Power	Stirring
1	240	3:00	2:00	200	300	Med

2. Add tap water to vessel:
10 mL to the 35 mL and 80 mL vessel, OR
3 mL and 15 - 20 grains of NaCl to the 10 mL vessel
3. Add stir bar and cap.
4. Add to Explorer rack or Discover SP-D.
5. Add sample to queue using the document, [CEM Synergy-D Software Operating Procedures](#) in the section “Set-up and Start a Sample Queue with the Explorer” OR “Set-up and Start a Sample Queue without the Explorer.”
6. Press Play.
7. Run the sample twice in a row, making sure to **change the cap between runs**.
8. Run the sample a third time, making sure to change the cap between runs. Note the temperature at the beginning of the hold time.
The temperature should be within 6°C of 200°C.
If the temperature is not within 6°C of 200°C, contact CEM service: service@cem.com

Additional Tips

- The ActiVent vapor seal should be checked on a weekly basis
- The Explorer rails should be inspected and cleaned/lubricated on a weekly basis
- The instructions for the above procedures and additional cleaning can be found in the [Discover SP-D Maintenance Manual](#) or online at www.cem.com

