

Operation of R & D 80 Volatile Acid Cash Still

1. Fill the reservoir in the boiler portion of still with distilled water, either by filling through the funnel, or by releasing the clamp on hose from distilled water source. To fill through the funnel, turn the blue handle on Stopcock A up. Fill to the middle of the round flask.
2. Connect the hoses, as shown in the drawing, to the condenser and the aspirator unit. Be sure drain line is clear, and turn on the tap water. The water should flow fast enough to create suction with the aspirator. Check this by adding a little distilled water to the sample chamber through the funnel, with the red handle on stopcock A up. Now open the aspirator stopcock B; if there is sufficient tap water flowing, the water in the sample chamber will be sucked out. If not, increase the tap water flow lightly until it does suck it out.
3. Close the aspirator stopcock B, and add the sample to be tested through the funnel with the red handle on stopcock A up.
4. Turn the blue handle on stopcock A up, and turn on the electric power to the heating coil. Place a 300 – 500 ml Erlenmeyer flask under the delivery end of the condenser. Wait 20 seconds after the water starts boiling, then close stopcock A, to allow CO₂ to be vented.
5. Collect the required amount of distillate.
6. Remove the Erlenmeyer flask and the distilled sample for titration.
7. Open the aspirator stopcock B, and suck out the spent sample. To rinse the sample chamber, close the aspirator stopcock, turn the red handle on stopcock A up, and add distilled water through the funnel. Open the aspirator stopcock to flush; repeat until sample chamber is clean.
8. When the sample chamber is clean, check the water level in the boiling flask; add more distilled water as needed. *Always* be sure there is adequate water in flask; if the heating coil is exposed, or if the flask runs dry, there is a very real risk of cracking the flask. If the flask is dry and hot, *do not add water*; turn off the power and let the still cool slowly.

9. To begin cycle again, turn off power, add new sample, put clean flask under condenser, and proceed as above.

