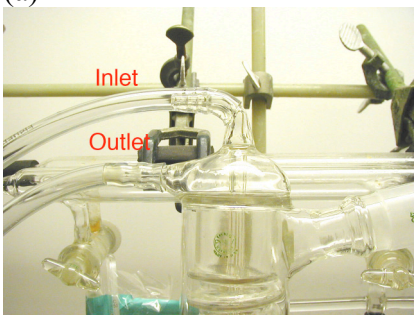
Guidelines for Setting up a Reflux Condenser

Water leaks from a reflux condenser can destroy years of research data and cause thousands of dollars of damage to instruments and equipment in the labs below you. To help prevent this common accident, wire or clamp all hose connections, secure the condenser outlet to the drain, and make sure that debris does not clog the drain.

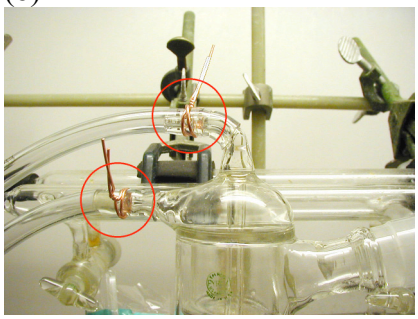
1. The pictures below show how to secure ¼-inch tubes into the inlet and outlet of the condenser. After fitting the tubes into the condenser (a), the joints are further secured with copper wires (16 ga.) by wrapping twice around the joints and tightening with pliers (b). Any leftover wires are cut (c).

* The copper wirings around the joints (encircled in pictures) are important to prevent the tubes from bursting off from the condenser in case of sudden increase in main water pressure.

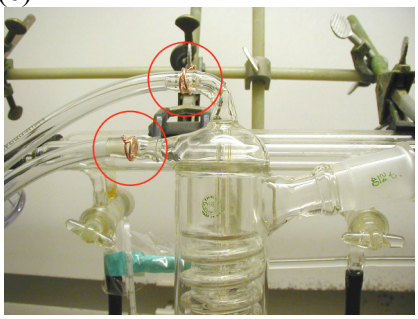
(a)



(b)

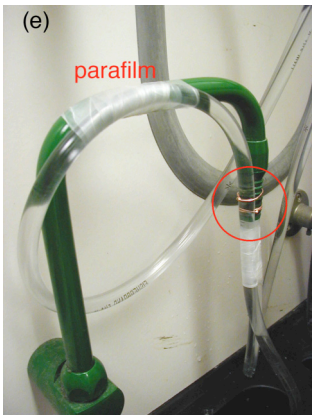


(c)



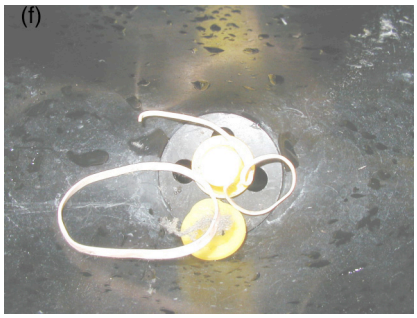
2. The picture (d) shows the secure connection between the condenser inlet tube and the water faucet with a copper wiring.

3. The picture (e) shows the placement of condenser outlet tube in the sink area. The parafilm is used in this instance to secure the loose tube around the cup sink. The outlet tube at the end is further secured with a copper wire and parafilm to firmly direct the tube into the cup sink in case of sudden increase in main water pressure.



* Securing the outlet tube inside the cup sink is important to prevent the tube from popping out in case of sudden increase in water pressure (e).

4. Caution: before you operate the reflux condenser, make sure to check the cup sink to see if there are any items that may block the water flow. The picture, as an example, shows possible items that may clog the cup sink (f). The picture (g) shows stable water flow at maximum rate with a cup sink filter.



* Any debris inside the cup sink may block the flow of water, resulting in a flood and damages to the property and pricy instrument in the lab.

Written by Sang-Woo Kang on 10/25/05