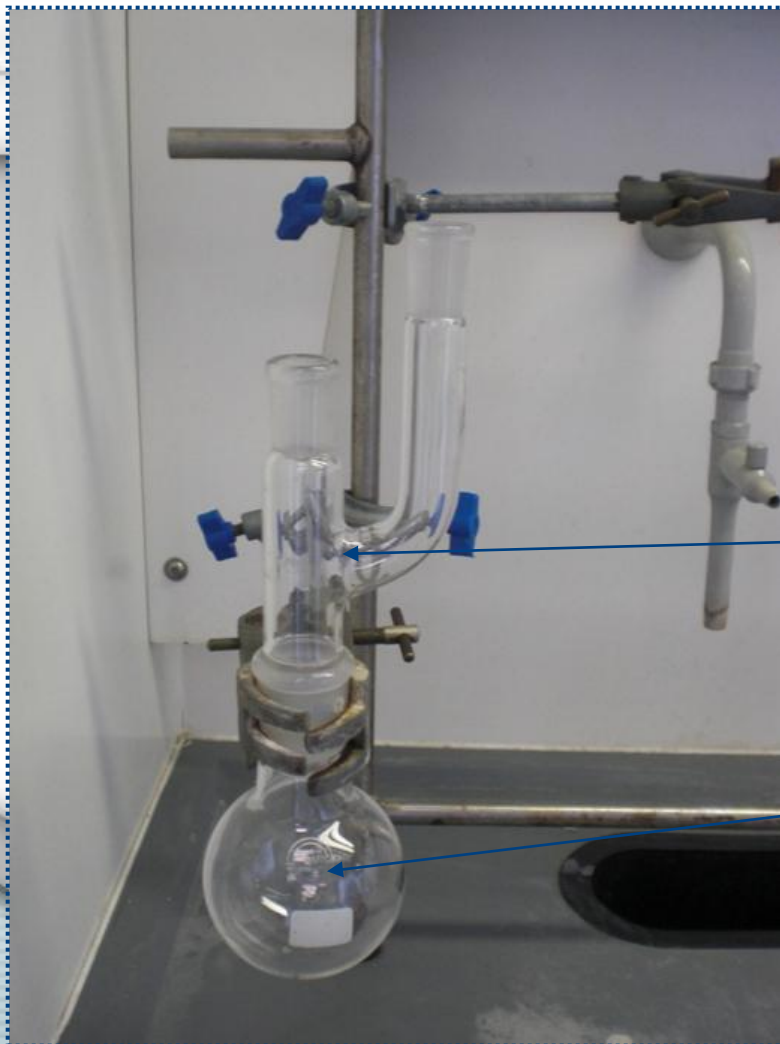


Setting up reflux
with a drying tube
and pressure
equalising
dropping funnel



Two inlets into a round bottomed flask are needed. One for a condenser and one for the dropping funnel. This can be achieved by either using a two necked round-bottomed flask (not shown) or an appropriate adapter (shown).



Two neck adapter. There are a few variations of adapter so don't worry too much if yours looks a little bit different.

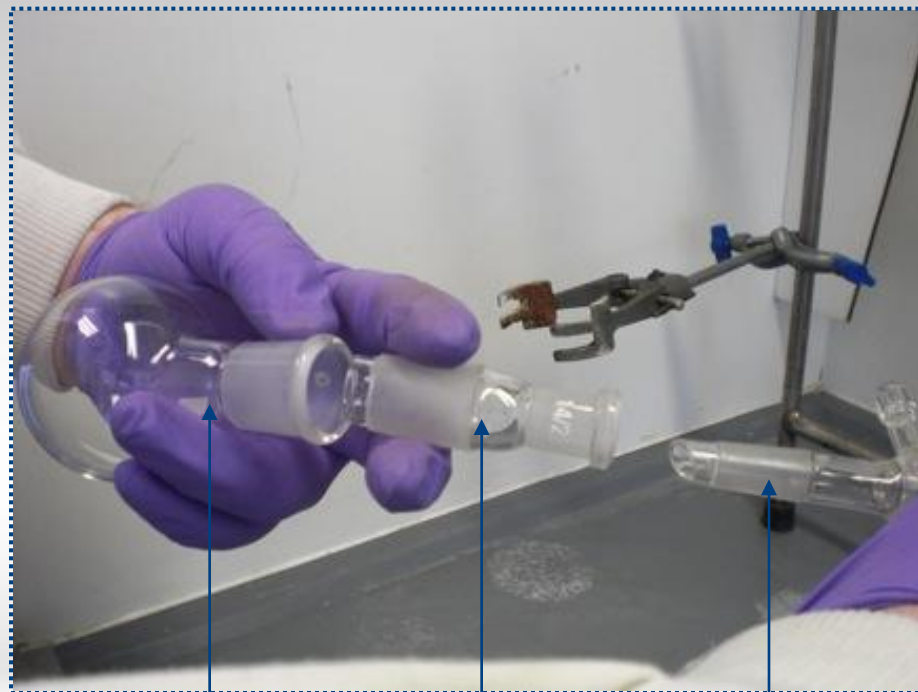
round-bottomed flask

Whilst the pictures below show the use of adapters for connecting round bottomed flasks to condensers, it applies to any pieces of Quickfit glassware including two neck adapters and dropping funnels. When connecting the dropping funnel or condenser to the two neck flask, you may need to use an adapter, as shown.

Always use an appropriate size flask and make sure it is no more than half-full.



The condenser can not be inserted straight into the round-bottomed flask as the joints are different sizes



round-bottomed flask

adapter

condenser

Connect the condenser to one of the two arms of the adapter (if one of the two arms is not vertical, put the condenser on the vertical one, or consult a demonstrator). There are two types of condensers which attach to the rubber tube in different ways.



Condenser with screw thread on the glass inlet and outlet pipes

Attach the plastic adapter to the rubber tubing and then screw the adapter onto the pipe

Condenser with glass inlet and outlet pipes with a 'knuckle'

Slide the rubber tube onto the pipe and past the 'knuckle'

Place the pressure-equalising dropping funnel into the second of the adapter arms



A stopper will need to be added to the top of the dropping funnel

A pressure-equalising dropping funnel is ideally suited to reactions under dry conditions. Since the exclusion of moisture is paramount, the funnel can be sealed with a stopper with the pressure being controlled by the side arm/tube (liquid that leaves the funnel is displaced by the 'air' from the flask below).

There are a few pressure-equalising dropping funnels, so don't worry too much if yours looks a little bit different.

Place the dropping funnel into the second of the adapter arms, and place a calcium chloride drying tube on top of the condenser.

Drying tube. Contains calcium chloride, which has a high affinity for water and draws moisture out of the reaction vessel. It is needed when the exclusion of moisture is required, but reaction under atmospherically inert conditions is not necessary.

All these pieces of glassware will need to be assembled after being in the oven to ensure the exclusion of moisture.

TAKE CARE: Glassware will be hot when first removed from an oven. Use gloves.



Add a stopper



When setting up the condenser it is very important that you have the water flow in the correct direction.



Water in at the bottom

Water out at the top



When adding a heat source to the reflux set up, an oil bath may be used instead of the heating blocks.

heating
blocks

heater
stirrer



Remember to add either anti-bumping granules or a magnetic stirring bar to the reflux flask.