

Using a Bunsen burner

For heating non-flammable liquids and solids, see *CLEAPSS Student Safety Sheet 93*.

For heating flammable liquids and solids, see *CLEAPSS Student Safety Sheet 94*.

For handling hot liquids in beakers, see *CLEAPSS Student Safety Sheet 95*.





Using a Bunsen burner

- Tie any long hair back to avoid it catching fire.
- Make sure your clothing does not get in the way of the flame and don't lean over a flame to reach other apparatus.
- Wear eye protection.
- Place the Bunsen burner on a heat-resistant mat 30 to 40 cm from the edge of the bench.
- Make sure the air hole is closed (*unless* you are lighting the gas with a piezo-electric lighter, in which case air hole should be half open).
- Attach the gas tubing to the gas tap.
- Light a match or a wooden splint from a central flame. (Do not walk around the laboratory with wooden splint alight.)
- Turn on the gas tap.
- Keeping your head well away from the Bunsen burner, use the match or lighted splint to light the gas coming up the Bunsen burner chimney.
- Do not allow solids to drop into the Bunsen burner to clog the gas jet or the collar at the top of the chimney.

When you have finished:

- Make sure the air is closed and the flame is yellow.
- Switch the gas off.
- Remove the tubing by putting your fingers on the tubing around the gas tap nozzle and pulling. Don't pull the tubing off by stretching it.

Types of flame from a Bunsen burner

Type of flame	Gas tap	Air hole	Appearance	Hazards	When used
Yellow flame	Fully (or partly) open	Closed		This flame is still hot if you put your hand into it.	To light the burner and when it is not being used to heat anything because is easy to see and will not readily set fire to clothing etc. This flame is unsuitable for heating as it coats surfaces with soot (carbon).
Gentle flame Yellow just disappears; pale lilac, almost invisible.	Half open	Partly closed		It is difficult to see the flame in bright sunlight. Some risk of blowing out.	For general heating.
Medium flame Yellow just disappears; pale lilac, almost invisible.	Fully open	Partly closed		It is difficult to see the flame in bright sunlight. Some risk of blowing out.	Start with the gentle flame and then open the gas tap fully to give the medium flame.
Roaring flame Inner cone blue, outer cone lilac.	Fully open	Fully open		It is difficult to see the flame in bright sunlight. Some risk of blowing out. Do not partly close the gas tap if the air hole is fully open as this will extinguish the flame.	For very strong heating (which is not very often needed). The hottest section of the flame is just above the blue cone of unburnt gas.