

## Transferring (handling) liquid chemicals

### Why 'transferring' and not 'handling'?

It is better to use the word 'transferring' as opposed to 'handling' because 'handling', if taken literally, means 'using your hands' (or fingers). Many chemicals are toxic, corrosive or irritant to the skin so directly 'handling' such chemicals is never a good idea.

### Should I wear gloves?

The use of chemically resistant gloves should always be considered. However, wearing gloves reduces manual dexterity, gives rise to an environmental issue (because they do not degrade very quickly in the waste) and are expensive for the school.

More importantly, if a chemical is on the gloves, wearers may not realise it is there and so may wipe that chemical on other parts of the body (eg by rubbing their eyes).

However, if there are cuts which cannot be covered, or other skin issues on the hand, then gloves should be worn.

For a small number of chemicals which are corrosive but do not immediately produce a sensation of burning, for example phenol, they should also be worn.

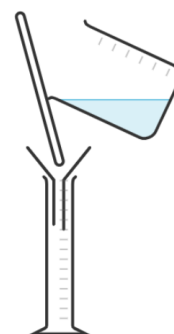
### Transferring liquids

When transferring chemicals which are liquid, the main risk is of spilling or splashing a hazardous liquid or a hazardous aqueous solution.

Spills occur when people attempt to pour liquids from a large container (bottle) into a small container such as a test tube. There is a risk of liquids dribbling down the side of the bottle or measuring cylinders, possibly damaging labels, making the bottle unsafe to pick up for the unwary, or producing fumes in the store as the liquid evaporates. It is better to pour from large bottles into (labelled) beakers first.

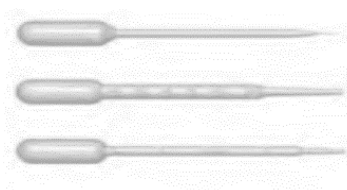
#### Pouring from bottles, measuring cylinders and beakers

One way of avoiding dribbles is to pour down a glass rod into a container via a funnel.



#### Small volumes of liquid (up to 3 cm<sup>3</sup>)

Use plastic teat pipettes or dropping bottles.



#### Using automatic or volumetric pipettes

More sophisticated pipettes are available for other purposes.

### Mixing liquids

Spatulas should not be used for stirring. Stirring rods made of glass or plastic should be used. Over enthusiastic stirring can cause a glass stirrer or container to break or the liquid to splash out. Some laboratories have magnetic stirrers.

### Filling a test tube

If using a test tube, do not fill it more than one-fifth full. To mix the contents, hold the tube close to the open end and agitate (waggle) the test tube from side to side. Do not shake it up and down, especially not with a thumb over the end.