Generic Lab Procedures

ChemLab supports a number of basic chemistry procedures, including:

Decanting/pouring, heating, titration, adding chemicals and water, use of indicators, stirring, weighing, and filtering.

Pouring/decanting:

Pouring or decanting, involves selecting a piece of lab equipment, positioning its left side or center (in the case of watch glasses and evaporation dishes) over the receiving container and selecting the decant button from toolbar or decant/pour menu item from the procedures menu or from the right-mouse-button context menu. Note: liquid is first transferred in this process, to allow separation.

Heating:

Similarly to heat an object with a bunsen burner, position the burner under that object.

Titration:

A titration dialog box is opened when a new buret is added. The titration dialog box is used to control the rate of flow leaving the buret. A slider control in the dialog box labeled stopcock is used for this purpose. If an existing buret is selected when the buret button or menu is pressed no new buret will be added, rather the titration dialog box will then refer to the previously selected buret. To identify which buret the titration dialog box refers to; the burets label value is added to the dialog boxs title bar. Note, only one titration dialog box can be opened at a time. The titration dialog box also updates the current volume of the buret to the nearest tenth of a ml and can be used to record the start and end-points of a titration.

Adding Chemicals:

To add chemicals to a container first select the container and then select the chemicals button from the toolbar or chemicals menu item from either the main menu or the right-mouse-button context menu. This will open up a chemicals dialog box. The chemicals dialog box allows the users to add chemicals to the selected item or add chemicals to a new item. It will also allow the user to change the selected containers size and type. Select the desired chemical from the chemicals drop-down combo box. Enter the desired mass or volume of chemical needed and press OK.

Adding Water:

Water is added to a selected lab item by using either the toolbar water button or the water dialog box. To open the water dialog box, select the water menu item in the chemicals menu or the water menu item with the right-mouse-button context menu. Water may also be added through the Chemicals dialog box. The toolbar button will only add water at room temperature to a selected item to the next graduation on the container. The water dialog box also allows the users to add ice water, which is used to create ice baths. The water dialog box also only adds water in increments.

Stirring with a stirring rod:

ChemLab allows the addition of a stirring rod for mixing to selected lab containers with some contents. The stirring rod may be added to a single selected item by pressing the stirring rod button on the toolbar, selecting stirring rod

from the equipment menu or from the popup context menu. A user can also remove an existing stirring rod from a container by this same process. The stirring rod will remain in a container for only a few seconds; to continue stirring the user must re-select the stirring rod.

Weighing:

The sample weight of a container may be added to a single selected item by pressing the scales button on the toolbar, selecting scales from the equipment menu or from the popup context menu. A user can also remove an existing sample weight from a container by this same process.

Filtering:

In ChemLab a buchner funnel may be added to an Erlenmeyer flask for filtering by first selecting the flask and then picking the buchner funnel from the toolbar, equipment menu or right-mouse-button context menu. To remove the funnel, do the same. If any solid is present in the filter a dialog box will appear asking whether you wish to discard or keep and place it another container.