



Make-up Rate Calculations

The *Control Block* in versions of ProTreat® prior to version 6.5 only had one option, calculating make-up rates for water and solvents based on the inlet and outlet of the *Control Block*. In version 6.5, two more basis options have been added: a full flowsheet material balance and user defined control volume (Figure 1).

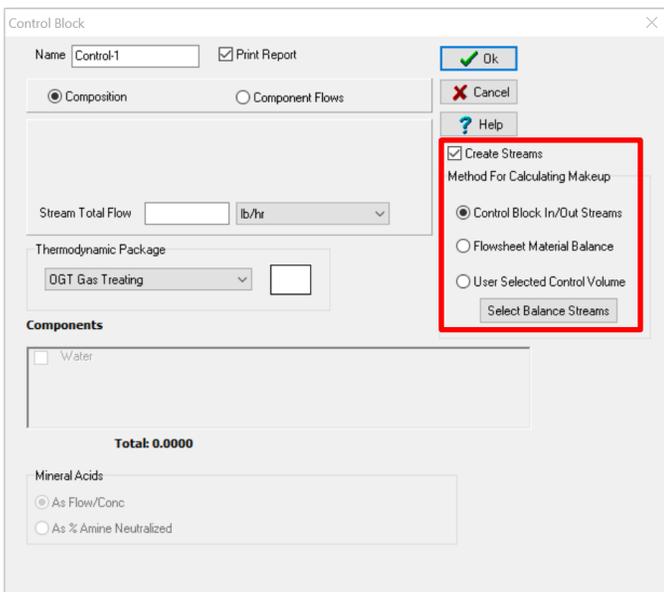


Figure 1. Control Block Dialog Box (version 6.5)

The *Flowsheet Material Balance* option allows you to obtain make-up rates for water and solvents based on the total inlets and total outlets of a full flowsheet. This will allow you to obtain more accurate values for such things as amine losses due to vaporization.

The *User Selected Control Volume* option allows you to obtain make-up rates for water and solvents based on a specific set of inlet streams and outlet streams of your choosing. This option lets you obtain a make-up rate around a specific piece of equipment to more accurately assess solvent losses and water balance issues. When this option is selected, there is a separate dialog box that can be found by clicking *Select Balance Streams* below the associated radio button. Here, you are asked to select which specific streams will be treated as inlets and which streams will be treated as outlets as seen in Figure 2.

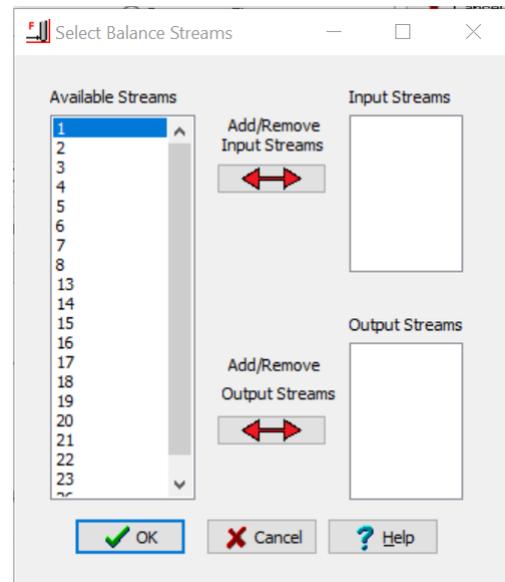


Figure 2. Select Balance Streams Dialog Box

Selecting the checkbox, *Create Streams*, places a short inlet and outlet stream attached to the *Control Block*, as seen in Figure 3. This allows the make-up and purge rates and materials to be part of the stream table as well as providing an easier visualization of whether the *Control Block* requires make-up, purge, or both.

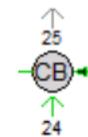


Figure 3. Control Block with Auto Drawn Material Streams

PROTIP: Be aware that if there are stream manipulator blocks present in the flowsheet (such as *Multiplier Blocks* or *Duplicator Blocks*), make-up rates will not reflect the true values for the inlets and outlets if either *Flowsheet Material Balance* or *User Selected Control Volume* are selected as these stream manipulators artificially change stream flows and/or number of outlets.

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