

87 Particle Tracking

Particle Tracking is a mass balancing technique to mass balance liberation data. Particle tracking is an extension of the mass balancing module of the HSC Chemistry (see manual “48 Sim Mass Balancing.doc”).

Particle Tracking is available currently only for AMIRA P90 Sponsors. The full manual will be provided when user registers the HSC as a AMIRA P90 Sponsor.

Before entering into particle tracking, i.e. mass balancing the liberation data you need to:

1. Sample the circuit
2. Do unsized chemical assays
3. Do sizing of samples
4. Do chemical assays for sized samples
5. Do MLA analysis for sized samples
6. Organize your data

Now the steps in HSC are:

1. Mass balance 1D data on mineral basis (see manual “48 Sim Mass Balancing.doc”)
2. Mass balance 2D data on mineral basis (see manual “48 Sim Mass Balancing.doc”)
3. Start Particle Tracking module by pressing 3D>> button in the Data Balancing and Reconciliation window.
4. PTrack.exe checks your license; if AMIRA P90 sponsor you can continue, if not PTrack.exe won't start or it does not respond to any user action.
5. Perform the 3D mass balance. 1D and 2D mass balances won't be changed.

The screenshot shows the 'Data Balancing And Reconciliation' window. On the left, under 'Dimension', the '2D' radio button is selected. The '3D >>' button is highlighted with a mouse cursor. Below the dimension options are 'Steps' buttons: 1. Streams, 2. Components, 3. Nodes, 4. Test, 5. Conditions, 6. Run Balancing (highlighted in yellow), and 7. Report. At the bottom left, there is a 'Data' table with columns 'Av' and 'Used', and a 'Units' row showing '7'. The main table has the following data:

	Ref Feed	Is Used	Analysis	Stream Name	Fraction	Solids Flowrate Balanced
1		X	X	CC1	0	9.939
2		X	x	CC1	1	3.878
3		X	x	CC1	2	2.800
4		X	x	CC1	3	2.593
5		X	x	CC1	4	0.538
6		X	x	CC1	5	0.130
7		X	X	CT1	0	6.522
8		X	x	CT1	1	2.802
9		X	x	CT1	2	1.546
10		X	x	CT1	3	1.831
11		X	x	CT1	4	0.287
12		X	x	CT1	5	0.055

Figure 1. Starting Particle Tracking, press the 3D>> button.