

Z2 Coulter Counter Protocol

1. If the aperture is submerged in a beaker of water, fill a cuvette with 10ml Isoton, open the platform door, lower the sample platform, replace the flask with cuvette and raise the platform so that the probe and aperture are submerged in Isoton.

Note: the cuvette should sit snugly in the cuvette slot.

Operation of the Isoton dispenser: Twist clock wise to take off the red cap at the end of dispenser. Pull the pump all the way up then push down all the way to dispense.

2. On the control pad, push **FUNCTIONS** button, use “<” and “>” scroll to *Flush Aperture* then push **START/STOP** button. This will fill the system with Isoton. Push the **SET-UP** button and set up your parameters. The only things you need to change are upper size, lower size and count mode. Use the up and down arrow to scroll. Use the number keys, “<” and “>” to change settings.

Note:

- Upper Size Tu: Tu has to be $< \text{ or } = 3 \times Tl$.
- Lower Size Tl: has to be $> \text{ or } = 2 \mu\text{m}$ for the aperture we have.
- The size of your particle should not be larger than $60 \mu\text{m}$ for the aperture we have.

3. Dilute your sample with 10ml Isoton in a clean cuvette. Record the dilution factor.

Note:

- At least half of the volume should be Isoton.
- Particle density should be over 25k/10ml

4. Put your sample in the cuvette slot and raise the platform. Push **START/STOP** to start the run. The Z2 counter will start collecting data. You can stop the run at any time by push **START/STOP**.

Note:

- If your particles are of larger size, tend to precipitate or aggregate, dilute your sample in a beaker and use the stirrer. You can control the height and the speed of the stirrer with the two knobs on top of the coulter counter.
- If the aperture is clogged, stop the run and try to unclog by swirling the sample around or wiping off the aperture with Kim wipe. If it is still clogged, see the manager for help.

5. Go to the computer and open Z2 AccuComp program. Go to *Acquire-> Acquire from Z2* or click on the *Acquire* button (the last button). Save your run under *C:\Z2\lab name\your name*.

Note: the control pad can only store data from one run. You need to down load the data right after each run.

6. Replace your sample with clean Isoton and flush the counter using the **FUNCTIONS** button the control pad and measure your second sample.
7. When you are done, flush the counter and submerge the aperture and probe in clean Isoton if you are going to use it again soon, in water if you are not going to use it for another week or so.
8. Close the software window and leave the instrument on.
9. Clean up the area and dispose your samples.
10. Sign the use log.