**Applying %CV – The Great Equalizer**

Using %CV at the cross-over between 2 different lot #s of control material when materials have a short out-of date shelf life

1. Perform cross-over when the system is stable. If the system is unstable, then you should investigate and troubleshoot the system and not perform parallel testing.
2. Calculate the % CV of the current lot number (currently in-use) by using the Mean obs and SD obs.

|  |  |  |
| --- | --- | --- |
| **Mean obs** | **SD obs** | **%CV** |
| 100 umol/L | 5 umol/L |  |

1. Calculate the Mean obsusing the new lot number by analyzing the QC material 8-10 times. Confirm that the values obtained fall within the initial range using the package insert as a guideline only.

|  |  |  |  |
| --- | --- | --- | --- |
| **Run #** | **Value (umol/L)** | **Run #** | **Value (umol/L)** |
| **1** | 115 | **6** | 116 |
| **2** | 117 | **7** | 114 |
| **3** | 114 | **8** | 117 |
| **4** | 116 | **9** | 115 |
| **5** | 115 | **10** | 115 |
| **Mean obs new lot # =** | | | |

1. Using the %CV from the current method and the Mean obs from the new lot number (assuming the system has remained stable with the same amount of inherent randomness), calculate the new lot number’s SD.

CV% current lot # = (SD / obs new lot #) × 100%

Solving for SD

(CV% current lot # ÷ 100%) × obs new lot # = SD new lot #

SD new lot #  =

1. Calculate your ranges for ± 1SD, ± 2 SD, ± 3 SD, ± 4 SD. To avoid errors with rounding, perform the rounding off at the conclusion

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **± 1SD** | **± 2 SD** | **± 3 SD** | **± 4 SD** |
| **Range** |  |  |  |  |

1. Verify the mean and SD on the new lot number when data from a longer period of stable operation becomes available.