

ATTENTION: PLEASE NOTE THAT OUR RECOMMENDED SETTINGS HAVE CHANGED. FOR MORE INFORMATION ON THESE CHANGES PLEASE SEE TSD 0711 VIACHECK™ FOR CELL VIABILITY ANALYZERS: BEST PRACTICES.

## DESCRIPTION

Analytical instruments such as viability analyzers require a program of routine maintenance and QC to ensure that each instrument yields accurate and consistent results, and that comparable performance is achieved between instruments. ViaCheck™ Viability and Concentration Standards may be used to validate image-based viability instruments before they're commissioned, and to ensure optimum performance on an ongoing basis. The microsphere standards are pre-stained, and need only be loaded into the analyzer for confirmation of live / dead ratios and counts. Non-biological surrogates remove the need for sample preparation, and offer exceptional stability and reproducibility.

ViaCheck Viability and Concentration Controls are comprised of individual or mixed populations of (viable) and (non-viable) microsphere surrogates. The suspension simulates a sample of live / dead (or dying) cells stained with Trypan Blue. ViaCheck are intended to serve as reference materials for use with image-based instruments that rely on the Trypan Blue dye exclusion method. ViaCheck have been successfully used with instruments such as the Vi-CELL®, CEDEX® HiRes, Countess™, etc.

## CHARACTERISTICS

### Concentration\*:

VC60N, VC60NSS	1 x 10 <sup>6</sup> particles / mL
VC70N, VC70NSS	4 x 10 <sup>6</sup> particles / mL
VC80N, VC80NSS	8 x 10 <sup>6</sup> particles / mL

\*Nominal values. Lot-specific value reported on label and Certificate of Analysis.

## MATERIAL

### Material Supplied

Microspheres suspended in a solution of buffered salts and surfactant containing 0.08% sodium azide, 20mL bottle or SingleShot™ packaging.

### Material Required

Cell viability analyzer (eg. Coulter Vi-CELL® XR)  
 Precision pipets with disposable tips to deliver 500µL

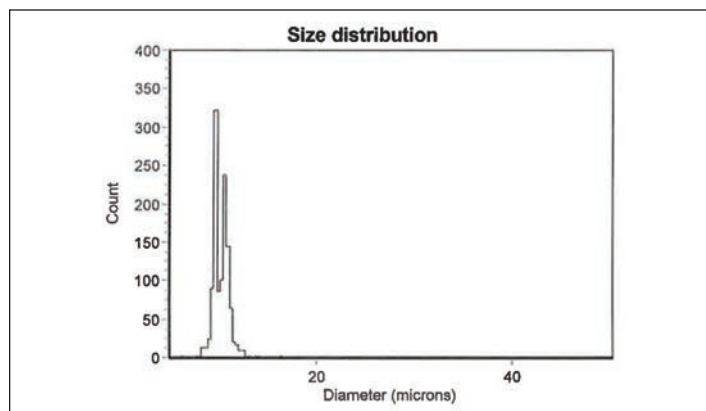
## PROCEDURE

Researchers are advised to optimize the use of particles in any application. For the best accuracy be sure to work carefully and quickly when sampling and pipetting ViaCheck™ particles. Allowing the particles to stand for even a short period of time could lead to inaccurate data and results. We suggest that only a single, but no more than 3, samples be loaded into the carousel at a time to safeguard against settling.

1. Mix the bottle or vial of particles to ensure a well dispersed suspension (vortex, manual inversion, tube rotator).
2. Pipet sample from the bottle/vial into the analyzer sample cup.
3. Place the sample cup in the analyzer sampling station.
4. Using the Vi-CELL™ XR analyzer menu, set up and save a "CELL TYPE" for Viability controls at the settings below. Note: The settings below allow the user to analyze the ViaCheck™ Viability Control Particles and may have to be adjusted for each instrument.
5. Run the sample according to the analyzer's instructions.

Cell Type	Concentration Settings
Minimum Cell Diameter (µm)	5
Maximum Cell Diameter (µm)	50
Minimum Circularity	0
Dilution Factor	1.0
Cell Brightness (%)	85
Cell Sharpness (%)	100
Viable Cell Spot Brightness (%)	75
Viable Cell Spot Area (%)	5
Decluster Degree	Low
Aspirate Cycles	1
Trypan Blue Mixes	3

## Representative Vi-CELL® XR data : ViaCheck™ Concentration Control Particles



### RESULTS

Cell Count	1156
Viable Cell Count	0
Viability (%)	0
Total Cells / mL (x 1.0E6)	1.03
Viable Cells / mL (x 1.0E6)	0
Average Diameter (µm)	10.25
Average Circularity	0.95
Images	50
Average Cells / Image	23.1
Average Background Intensity	205

### IMPORTANT NOTE ON EXPECTED RESULTS

Certificates of Analysis (COAs) for ViaCheck™ products provide formal lot-specific values for concentration and viability that may be used to establish instrument QC pass / fail criteria. Facilities may establish specific pass / fail criteria after taking historical instrument performance and study objectives into consideration. Users will often base these criteria around the lot-specific result that is issued, e.g. results within some percentage of the reported values on the COA based on established control limits. See "Establishing control limits for the instrument" in *TSD 0711 ViaCheck™ for Cell Viability Analyzers: Best Practices*.

### REFERENCES

Lew C, Gomez JA, Rhyner MN. "Instrument-to-instrument Variability in the Vi-CELL Automated Viability Analyzer." [www.particle.com](http://www.particle.com), 2012, Beckman Coulter

### RELATED LITERATURE

TSD 0711 ViaCheck™ for Cell Viability Analyzers: Best Practices  
TSD 0706 Handling & Pipetting Concentration Standards  
TSD 0708 Optimization of Vi-CELL® XR Settings for calibration using ViaCheck™ Controls.

### TRADEMARKS

ViaCheck™ & SingleShot™ are trademarks of Polysciences, Inc.  
Vi-CELL® is a registered trademark of Beckman Coulter, Inc.  
CEDEX® is a registered trademark of Roche Inc.  
Countess™ is a trademark of Thermo Fisher.

### STORAGE AND STABILITY

Store at 2-8°C. Refrigerated storage is intended to deter the growth of opportunistic microorganisms within the suspensions; it is important to note that biocontamination would alter particle counts. Freezing of particles may result in irreversible aggregation.

### SAFETY

This particle suspension contains sodium azide. Sodium azide may react with lead and copper plumbing to form explosive metal azides. Upon disposal of material, flush with a large volume of water to prevent azide accumulation. Please consult the Safety Data Sheet for more information.

**This product is for research use only and is not intended for use in humans or for *in vitro* diagnostic use.**

### ORDERING INFORMATION

Cat. Code	Description	Size
VC60N	ViaCheck™ Concentration Control (1 x 10 <sup>6</sup> )	20mL
VC60NSS	ViaCheck™ Concentration Control (1 x 10 <sup>6</sup> ) SingleShots™	25 or 75 Vials
VC70N	ViaCheck™ Concentration Control (4 x 10 <sup>6</sup> )	20mL
VC70NSS	ViaCheck™ Concentration Control (4 x 10 <sup>6</sup> ) SingleShots™	25 or 75 Vials
VC80N	ViaCheck™ Concentration Control (8 x 10 <sup>6</sup> )	20mL
VC80NSS	ViaCheck™ Concentration Control (8 x 10 <sup>6</sup> ) SingleShots™	25 or 75 Vials

### RELATED PRODUCTS

Cat. Code	Description	Size
VC10B	ViaCheck™ 0% Viability Control	20mL
VC10BSS	ViaCheck™ 0% Viability Control SingleShots™	25 or 75 Vials
VC25B	ViaCheck™ 25% Viability Control	20mL
VC25BSS	ViaCheck™ 25% Viability Control SingleShots™	25 or 75 Vials
VC20B	ViaCheck™ 50% Viability Control	20mL
VC20BSS	ViaCheck™ 50% Viability Control SingleShots™	25 or 75 Vials
VC30B	ViaCheck™ 75% Viability Control	20mL
VC30BSS	ViaCheck™ 75% Viability Control SingleShots™	25 or 75 Vials
VC40B	ViaCheck™ 90% Viability Control	20mL
VC40BSS	ViaCheck™ 90% Viability Control SingleShots™	25 or 75 Vials
VC50B	ViaCheck™ 100% Viability Control	20mL
VC50BSS	ViaCheck™ 100% Viability Control SingleShots™	25 or 75 Vials

Order online anytime at [www.bangslabs.com](http://www.bangslabs.com).