

## QC-Beads™

### For Use as Controls in Counting Sperm Using Manual and Automated Methods (revised 5/1/03)

#### Description:

**Hi QC-Beads™**: 4 ml bead suspension of known concentration with 0.1% sodium azide. See **Expected Values** for the number of beads/ml. Ready to use.

**Lo QC-Beads™**: 4 ml bead suspension of half the concentration of the **Hi QC-Beads™** with 0.1% sodium azide. See **Expected Values** for the number of beads/ml. Ready to use.

#### Expected Values:

##### When using a counting chamber of 0.1 mm thick, such as a hemacytometer:

The average count for the **Hi QC-Beads™** should fall between 37 - 49 million beads/ml. Repeat the counting procedure if your count falls outside this range.

The average count for the **Lo QC-Beads™** should fall between 18 - 25 million beads/ml. Repeat the counting procedure if your count falls outside this range.

##### When using a counting chamber of 20 um thick, such as a Cell-Vu, Micro-Cell, or Standard Count:

The average count for the **Hi QC-Beads™** should fall between 30 - 40 million beads/ml. Repeat the counting procedure if your count falls outside this range.

The average count for the **Lo QC-Beads™** should fall between 15 - 21 million beads/ml. Repeat the counting procedure if your count falls outside this range.

##### When using a Makler Chamber:

The average count for the **Hi QC-Beads™** should fall between 53 - 67 million beads/ml. Repeat the counting procedure if your count falls outside this range.

The average count for the **Lo QC-Beads™** should fall between 25 - 35 million beads/ml. Repeat the counting procedure if your count falls outside this range.

#### Uses:

These products are suitable for validating the accuracy of manual and automated methods of sperm counting using two bead suspensions of different known bead density.

#### Recommendations:

The researcher should perform a quality control check using the two bead suspensions each day prior to counting sperm samples.

#### Storage and Stability:

Store the reagents at room temperature. They can be used until the expiration date on each label. The expiration date is one year from the date of manufacture. Do not freeze.

#### Precaution:

Keep reagent vials tightly capped at all times to prevent evaporation.

**Limitation:**

The **QC-Beads™** cannot be used to validate the accuracy of manual and automated methods of counting moving sperm.

**Procedure for Manual Counting of QC-Beads™:**

Count the beads using a standard counting procedure for counting sperm.

1. Invert the vial several times to resuspend the **Hi QC-Beads™**.
2. Using a pipette, remove the volume recommended for the counting chamber you are using. (If using a hemacytometer, dilute the **Hi QC-Beads™** before counting.)
3. Pipette the bead suspension into the counting chamber.
4. Immediately recap the vial of **Hi QC-Beads™**.
5. Wait about 1 - 3 minutes to allow the beads to stop moving and then observe using a microscope.
6. Count at least 200 beads.
7. Calculate the concentration of beads according to the counting chamber manufacturer's instructions.
8. Repeat steps 1- 7 using a fresh aliquot of beads.
9. Compare the 2 results. If the results are within 10% of each other, then average the 2 counts.
10. The average count should be within the range of the **Expected Values**. If the results are not within this range, then repeat steps 1-9.
11. Repeat steps 1-10 using the **Lo QC-Beads™**.

**Procedure for Automated Counting of QC-Beads™ :**

Count the beads using a standard counting procedure for counting sperm.

1. Invert the vial several times to resuspend the **Hi QC-Beads™**.
2. Using a pipette, remove the volume recommended for the counting chamber you are using.
3. Pipette the bead suspension into the counting chamber.
4. Immediately recap the vial.
5. Place the counting chamber in the automated analyzer and follow the directions for performing a sperm count.
6. Count at least 5 fields so as to count a total of at least 200 beads.
7. Record the concentration of beads.
8. Repeat steps 1-7 using a fresh aliquot of beads.
9. Compare the 2 results. If the results are within 10% of each other, then average the 2 counts.
10. The average count should be within the range of the **Expected Values**. If the results are not within this range, then repeat steps 1- 9.
11. Repeat steps 1-10 using the **Lo QC-Beads™**.