

BD Viper™ System

1

Minimizing the Risk of Contamination with Amplified Technologies on the BD Viper System (SHQ-065)

BD Viper System

The BD Viper System consists of a temperature controlled heating sub-system that controls temperatures for the priming/warming heaters, robotic pipetting arm, automatic amplification plate sealing, LCD touchscreen and onboard readers to measure amplification reactions and report results.

Concepts and Considerations

To minimize the risk of contamination, some commercially available amplified systems require workflow separation into more than one area. The BD Viper System has been designed and validated for performance in one section of the laboratory.

The sensitivity of amplified technologies increases the need to be aware of sources of potential contamination in the laboratory. Contamination can be encountered with any system designed to amplify nucleic acid, and can lead to an increase in the rate of false positive results.

Environmental Monitoring is essential to detect DNA contamination prior to the development of a problem.

When leaving the designated laboratory section, gloves and dedicated lab coats **must be** removed. Upon returning to the BD Viper laboratory section, **fresh** gloves and a **dedicated** lab coat must be worn. Dedicated lab coats should be disposable and replaced daily.



Sources or factors that can contribute to nucleic acid contamination:

- Positive controls and /or specimens (target)
- Amplified products (amplicon)
- Specimen handling and assay workflow
- Waste disposal (generation of aerosols)
- Inadequate or infrequent cleaning
- Inadequate or infrequent environmental monitoring

Signs of Environmental Contamination

- Negative QC failures
- Increase in positive prevalence
- Increase in low positive test results
- Increase in non-reproducible results
- Positive environmental monitoring sites

Actions to Minimize the Risk of Contamination

BD Viper System Workflow

- Change gloves:
 - After removing and discarding caps from lysed samples and controls
 - If suspected contact with specimen
 - At the first sign of moisture on gloves
 - Before leaving work area
 - Upon re-entry into work area
- Disposable lab coats should be discarded at the end of the day's testing; replace with new lab coat before next day's testing.

continued on page 2



Helping all people
live healthy lives

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Actions to Minimize the Risk of Contamination

continued from page 1

Specimen Handling and Processing

- If using the Dry Swab collection device use caution in removing the swab after expressing its contents into the Swab Diluent Tube.
- Re-sleeve “Dry Transport Swabs” before disposal.
- If using the Wet Swab collection device use caution in removing the swab after expressing its contents into the Swab Diluent Tube and carefully dispose of the swab in an appropriate biohazard waste container.
- Before removing caps, cool lysed samples for at least 15 minutes.
- Add urine to a UPT carefully to avoid splashing.
- Aliquot the needed quantity of Diluent (CT/GC) into a clean container.
- To avoid contamination, **Do Not** pour leftover Diluent (CT/GC) back into the original bottle.
- Because of the potential for false positivity with some non-gonococcal *Neisseria* found in the respiratory tract, contamination of reagent and specimens with respiratory aerosols should be avoided.
- Always use the clear wells when running less than a full plate to prevent the plate sealer sticking to the metal plate.

Environmental Monitoring

At least monthly, monitor the work area and equipment surfaces for the presence of DNA contamination. Refer to the BD Viper Instrument User’s Manual for the recommended monitoring areas.

Additional Monitoring Areas to Consider:

- Refrigerators or freezers used to store BD Viper samples or reagents.
- Drawers, cabinets and shelving used to store BD Viper samples or reagents.
- Telephones, chairs, laboratory notebooks and air vents within the BD Viper work area.

Cleaning

2

Cleaning Intervals

- Perform Post-Run, End of Day, and Monthly cleanup procedures according to the BD Viper Instrument User’s Manual and BD Viper Package Insert addenda.

Cleaning Solutions

- 1% (v/v) sodium hypochlorite
- 3% (w/v) hydrogen peroxide (H₂O₂)
- DNA AWAY™

Do Not Use these items for cleaning:

- Alconox™
- ELIMINase™

Waste Disposal

- Use established laboratory practices when disposing of pipette tips, sample tubes, priming and amplification microwells and other disposables.
- During End of Day Cleanup remove and discard all full and partial pipette tip boxes prior to performing the cleaning procedure.
- During End of Day Cleanup open the Lower Door of the BD Viper instrument and remove the pipette tip waste box, seal the protective waste bag containing the tips, seal the box with a lid and dispose of the box according to your facility’s guidelines.
- Always seal Priming and Amplification microwell plates with the appropriate plate sealer. Place the wells with sealers into a re-sealable disposal bag and discard.
- **Do Not Remove** sealers from the Priming and Amplification microwells at any time.



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