APPENDIX 3

CHARGE QUANTITY CALCULATION

The volumes of the charge quantity of the system were calculated as follows:

**Evaporator**

- Inner diameter of the evaporator = 0.004 m
- Length of the evaporator = 0.250 m
- Outer diameter of evaporator = 0.006 m

Net volume of the evaporator = \( \left( \frac{\pi}{4} \right) \times (0.004)^2 \times 0.250 \)

= 3.1416 x 10^{-6} m^3

Solution required (fill ratio = 0.5) = \( \frac{50}{100} \times \text{net volume} \)

= 1.5708 x 10^{-6} m^3

Solution required (fill ratio = 0.6) = \( \frac{60}{100} \times \text{net volume} \)

= 1.8850 x 10^{-6} m^3

Solution required (fill ratio = 0.7) = \( \frac{70}{100} \times \text{net volume} \)

= 2.1991 x 10^{-6} m^3