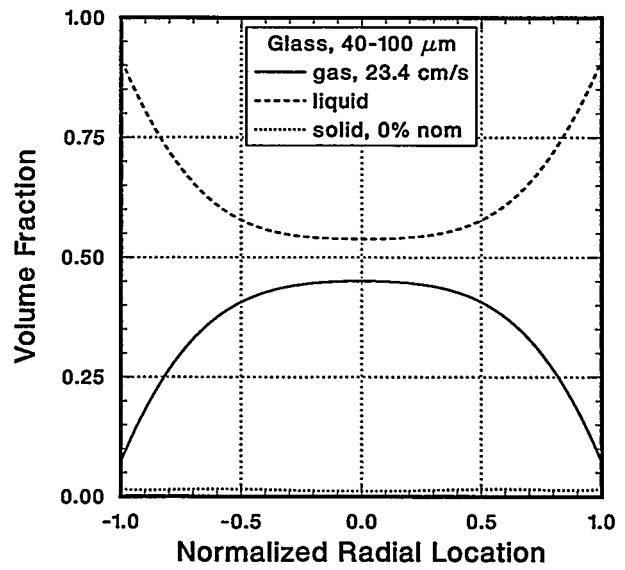
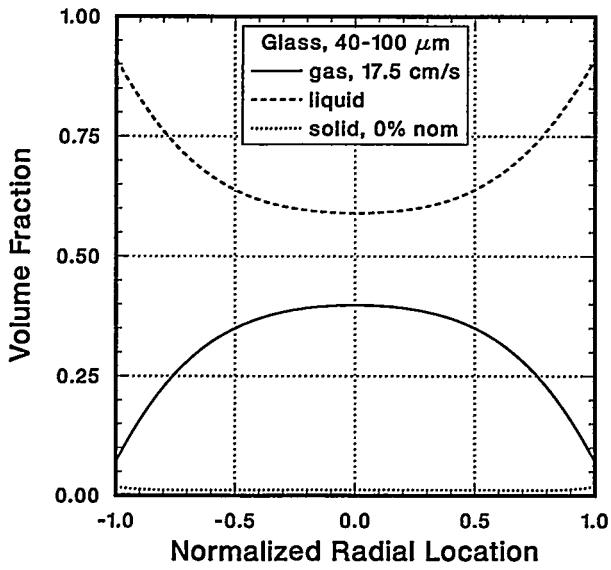
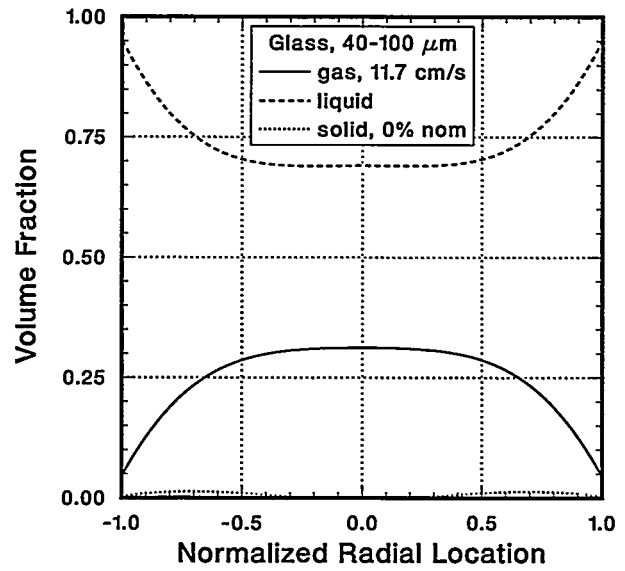
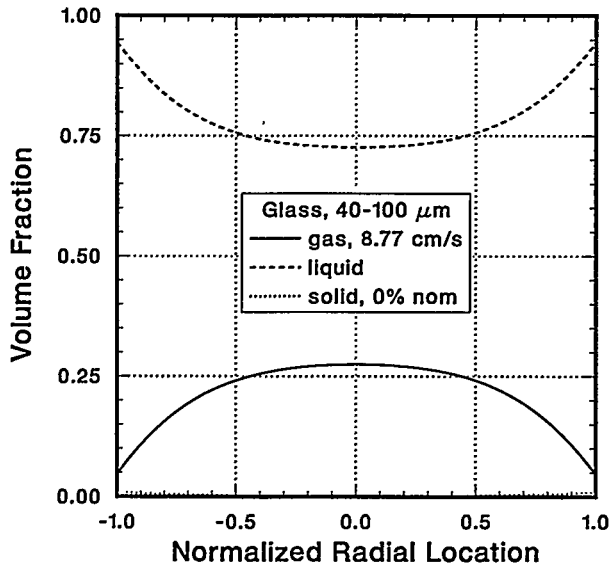


Appendix K

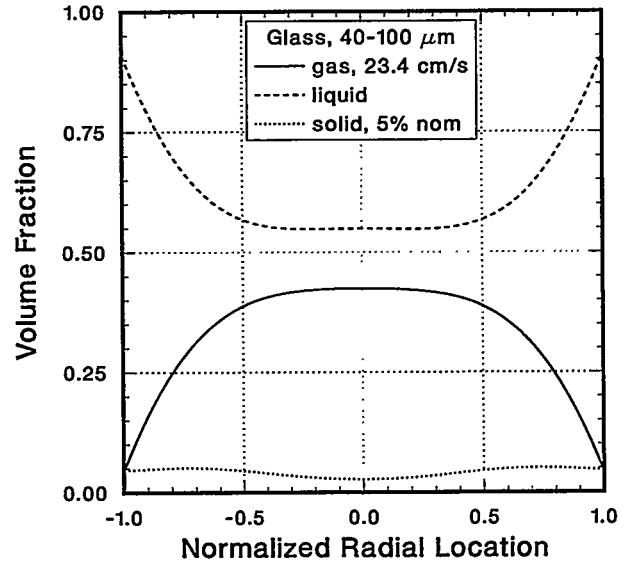
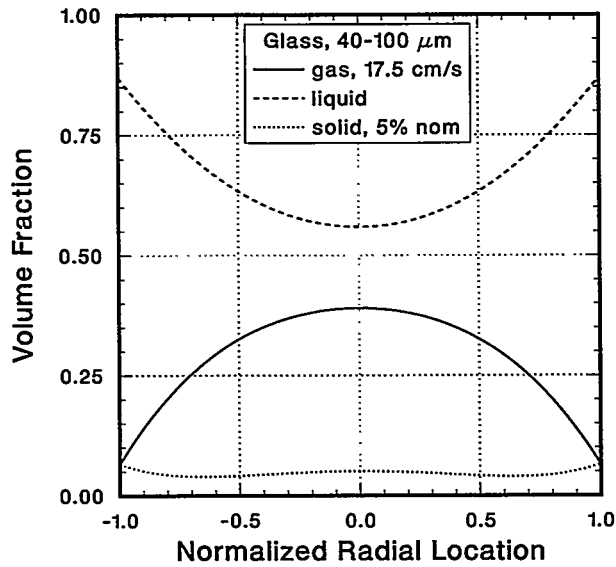
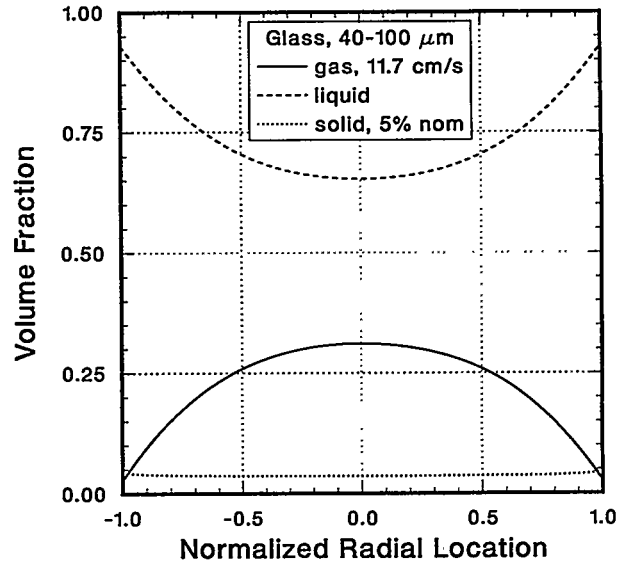
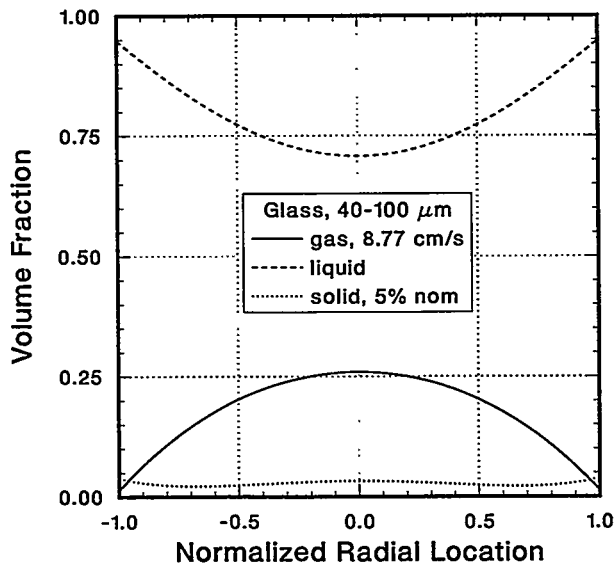
Phase Volume Fraction Profiles

This appendix contains graphs of the radial phase volume fraction profiles for all three-phase flow conditions discussed in Chapter 5. Table 5.2 lists all combinations of gas flow rates, particle types and solid volume fractions tested. The conditions that produced each graph are listed in its legend. Note that the flow conditions marked “solid, 0% nominal” include a surfactant particle coating dissolved in the liquid phase, but no solid particles. The flow conditions marked “deionized water” contain no surfactant and no solid phase. The presence of the surfactant changes the gas phase distribution through a reduction in surface tension, as comparison of the graphs shows.

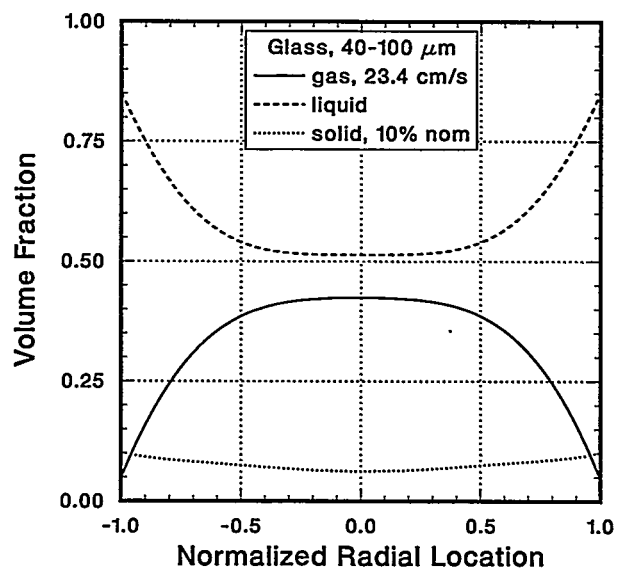
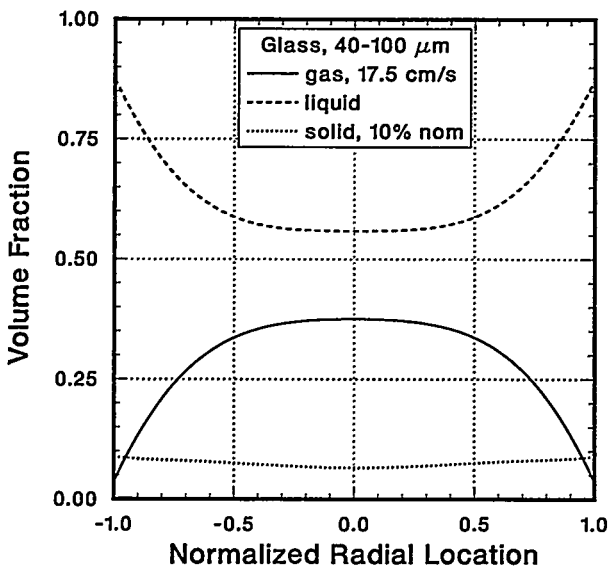
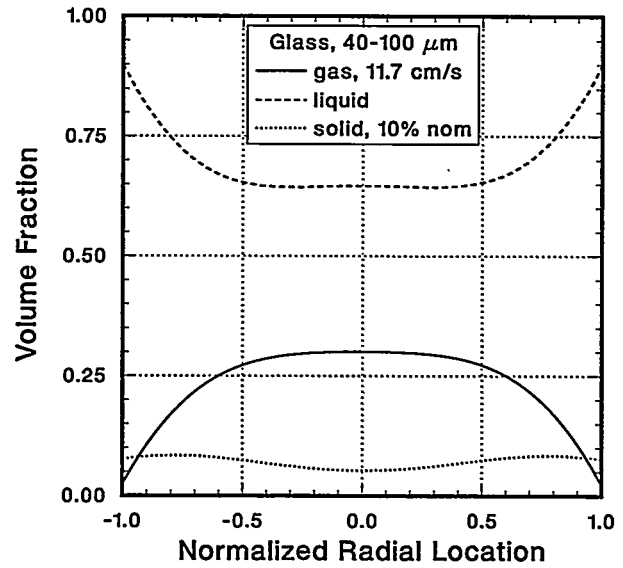
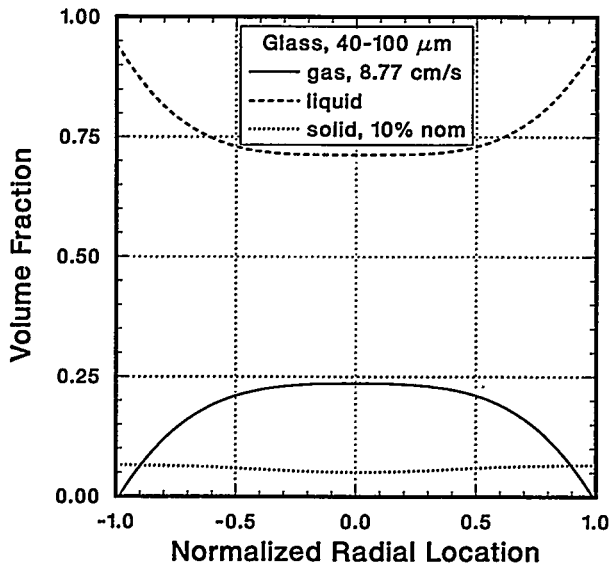
Glass: 40-100 μm , 0% by volume



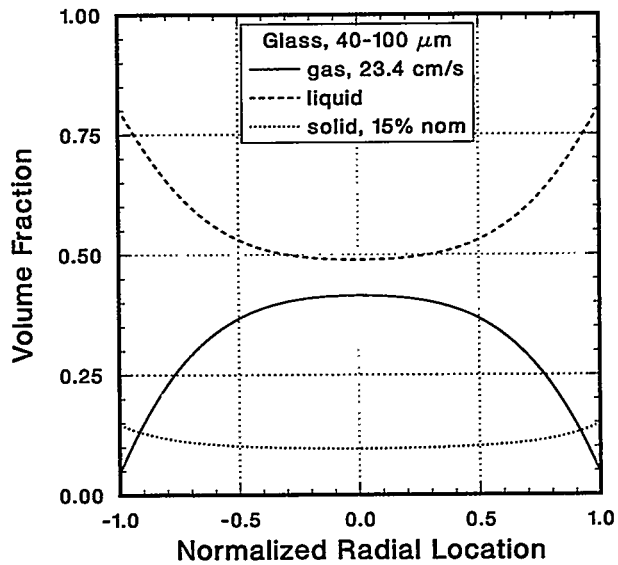
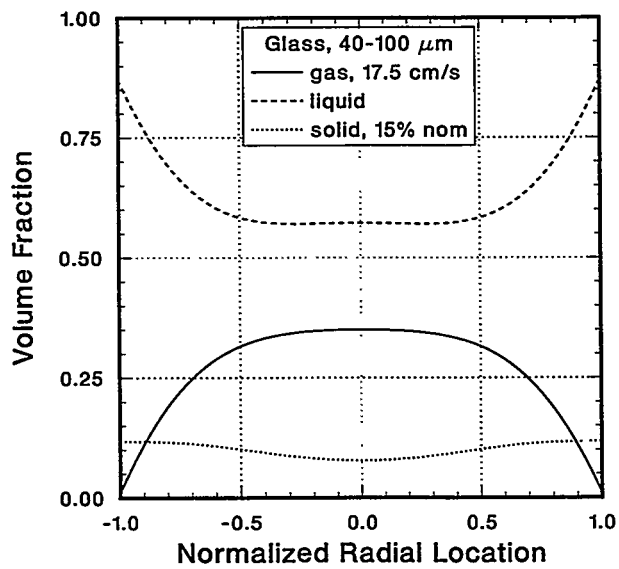
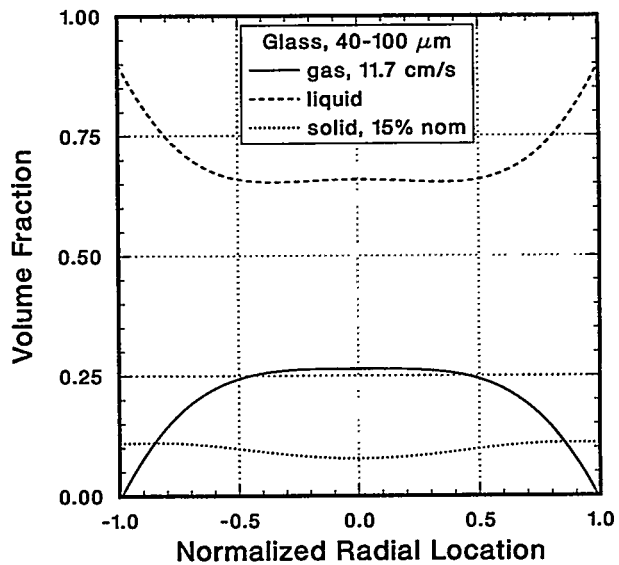
Glass: 40-100 μm , 5% by volume



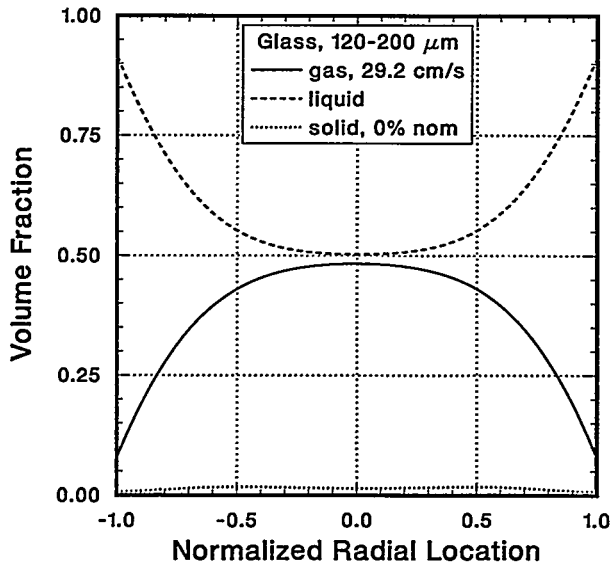
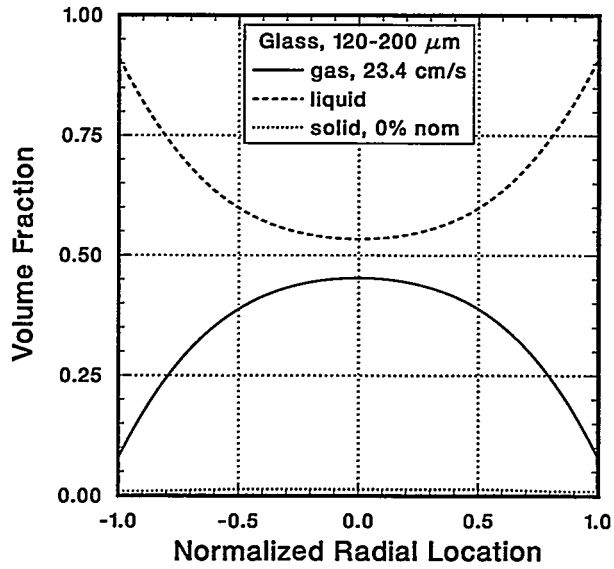
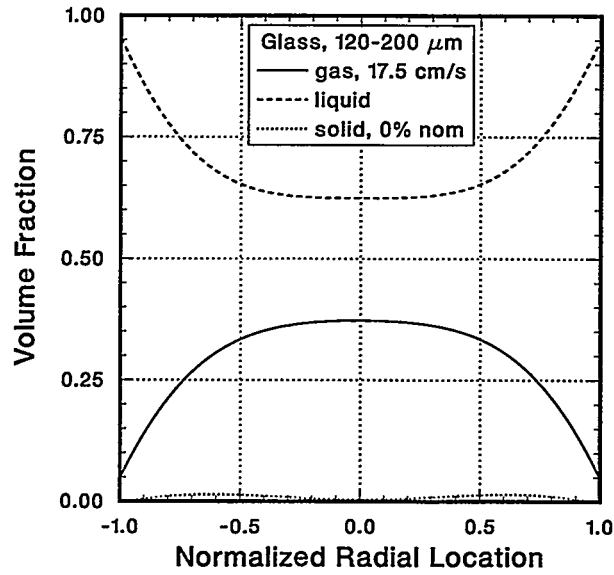
Glass: 40-100 μm , 10% by volume



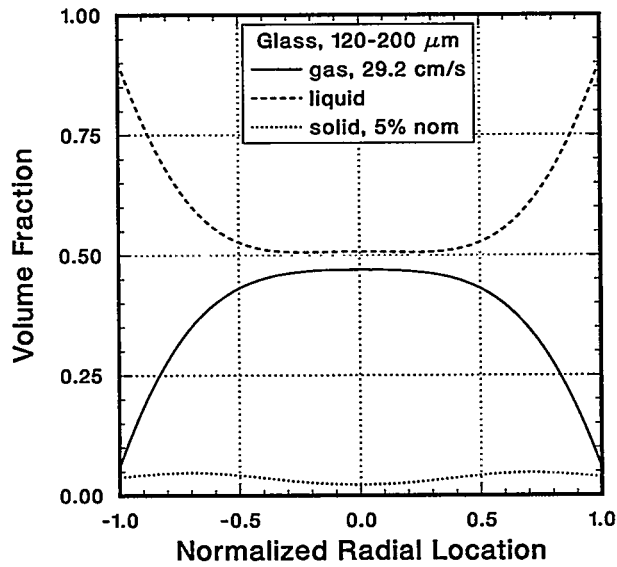
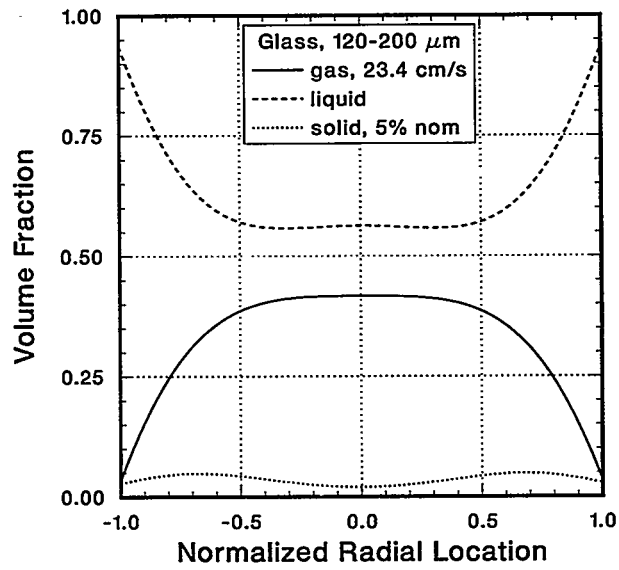
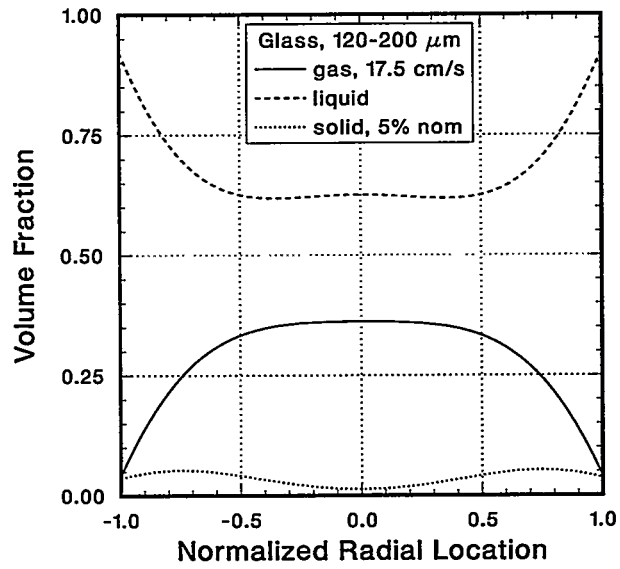
Glass: 40-100 μm , 15% by volume



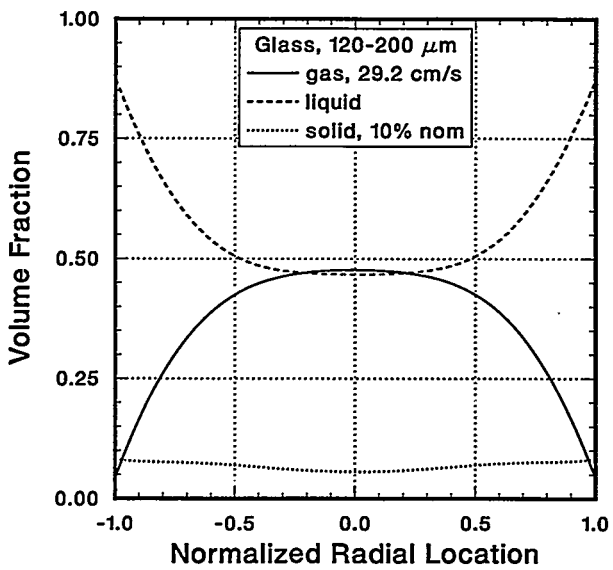
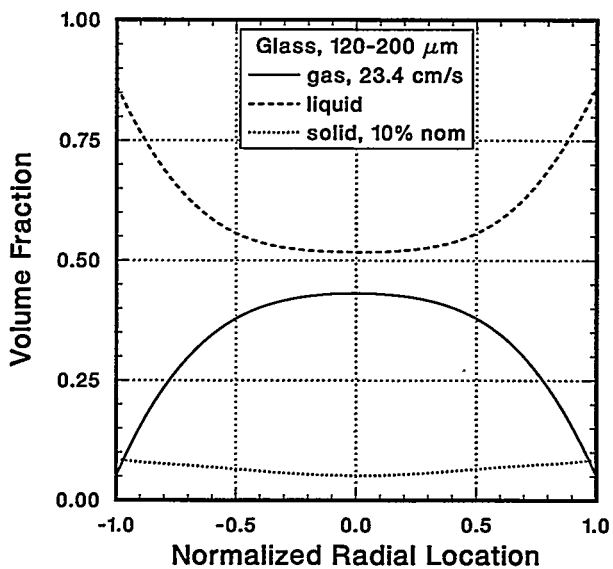
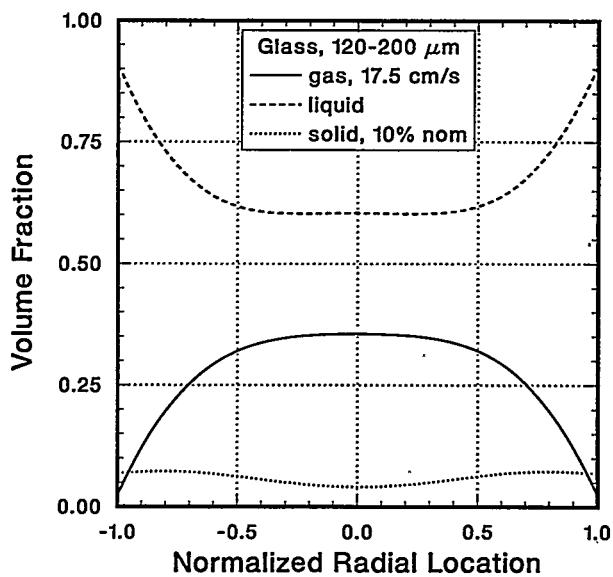
Glass: 120-200 μm , 0% by volume



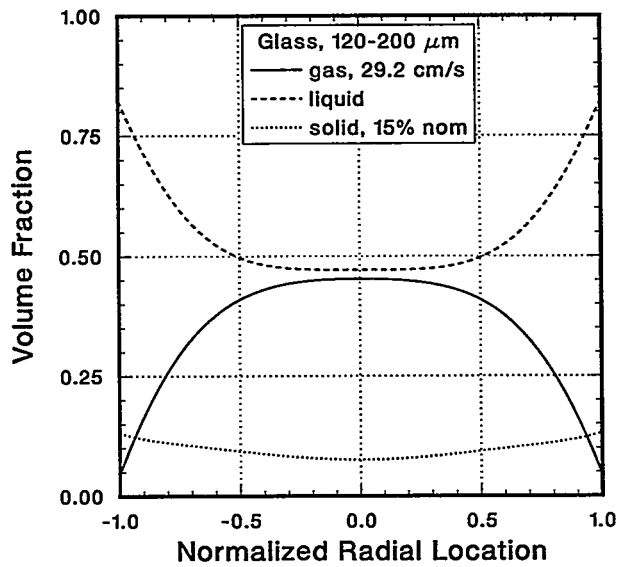
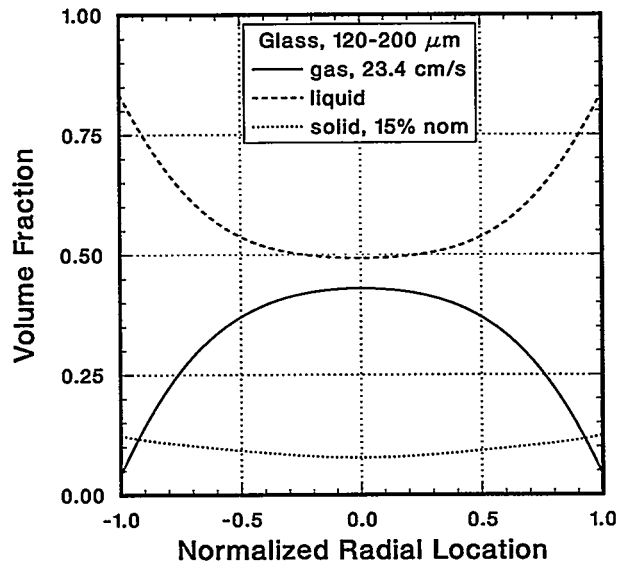
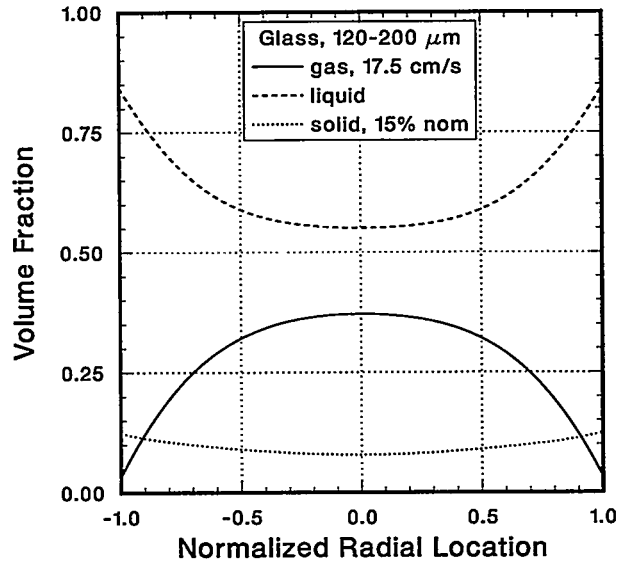
Glass: 120-200 μm , 5% by volume



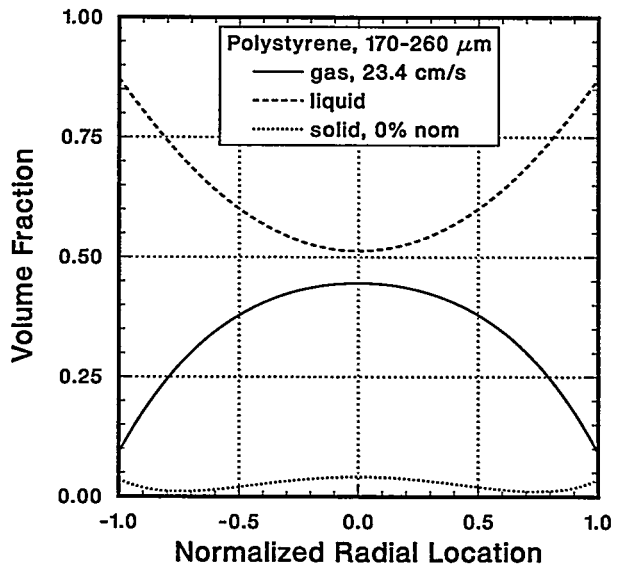
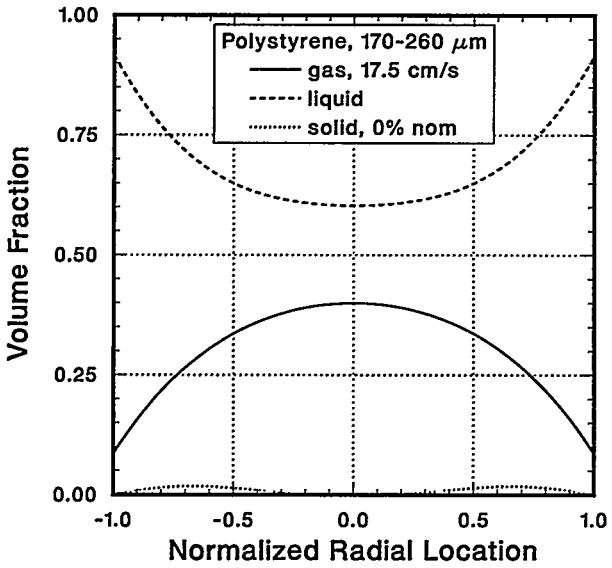
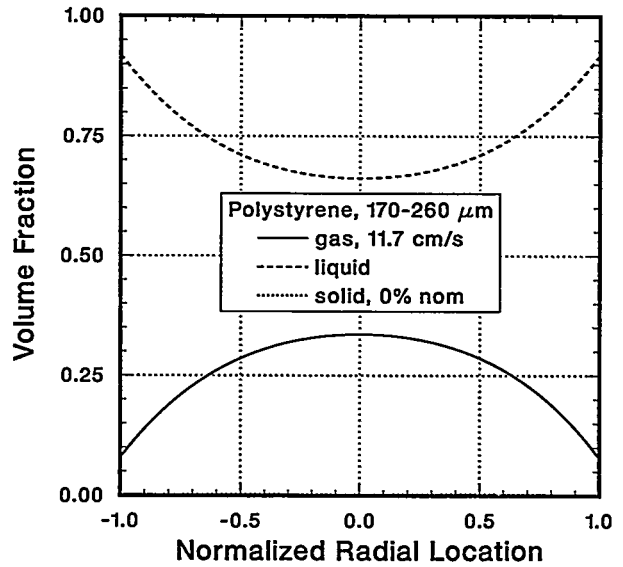
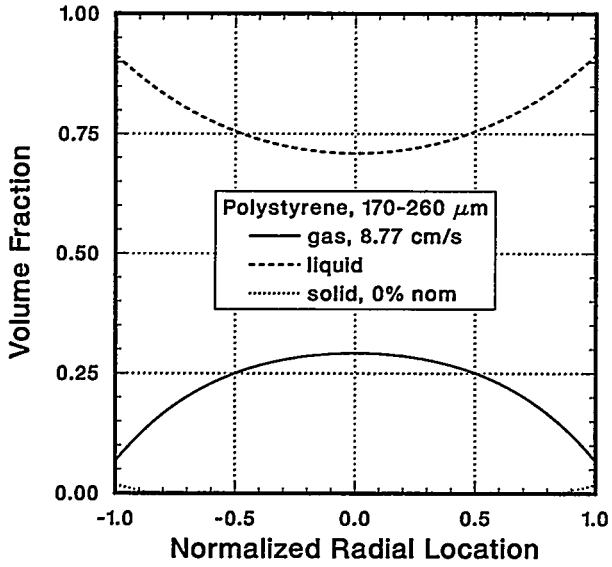
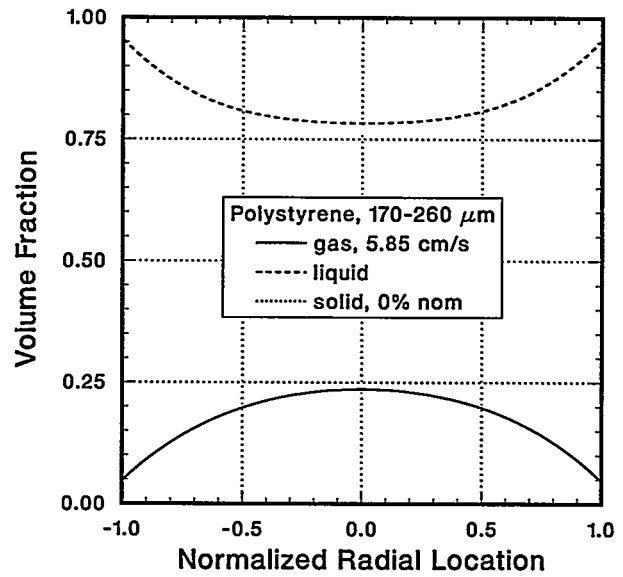
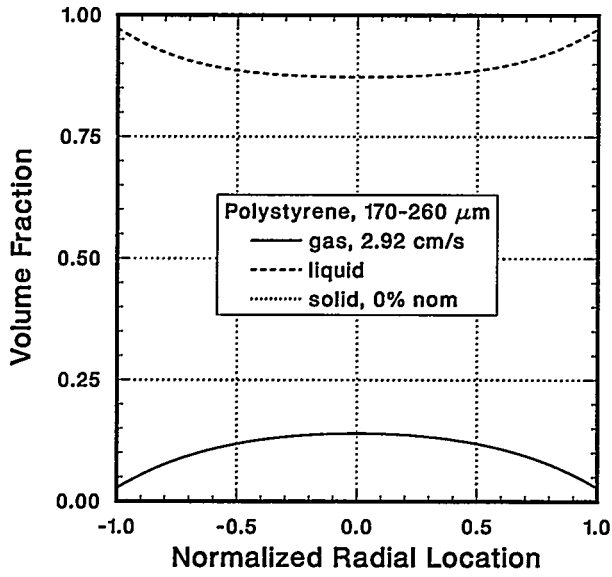
Glass: 120-200 μm , 10% by volume



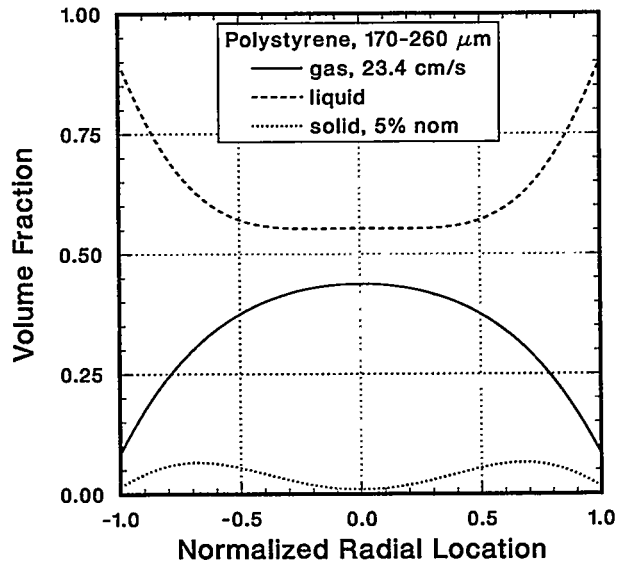
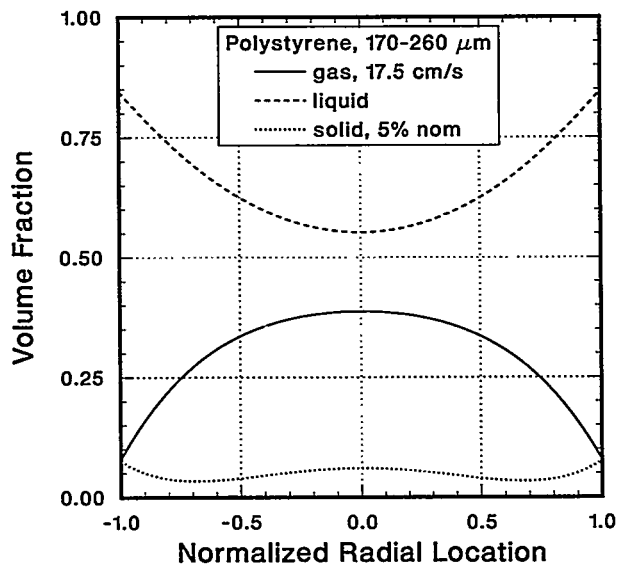
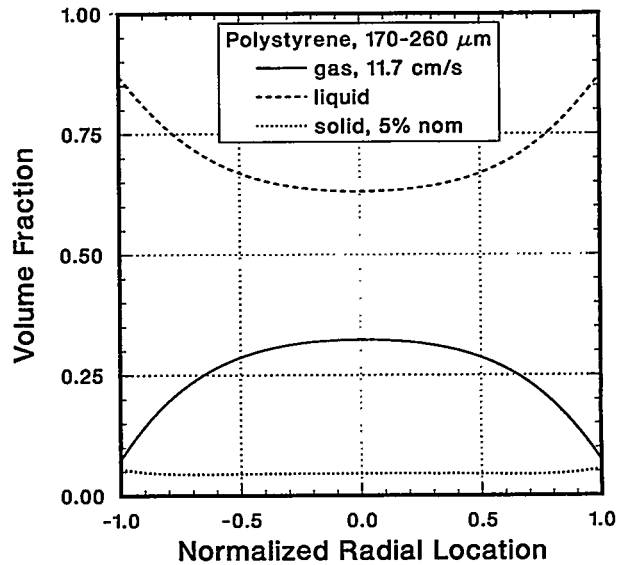
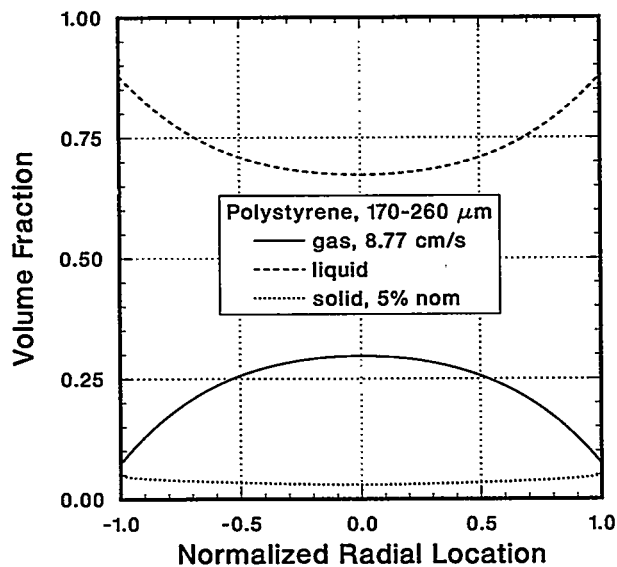
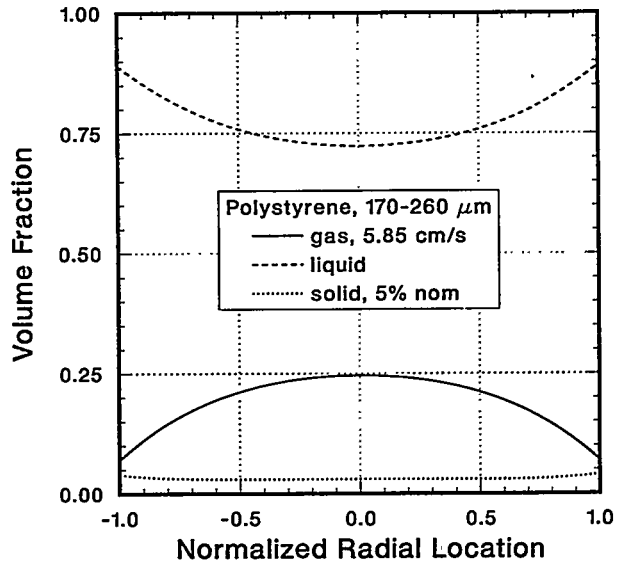
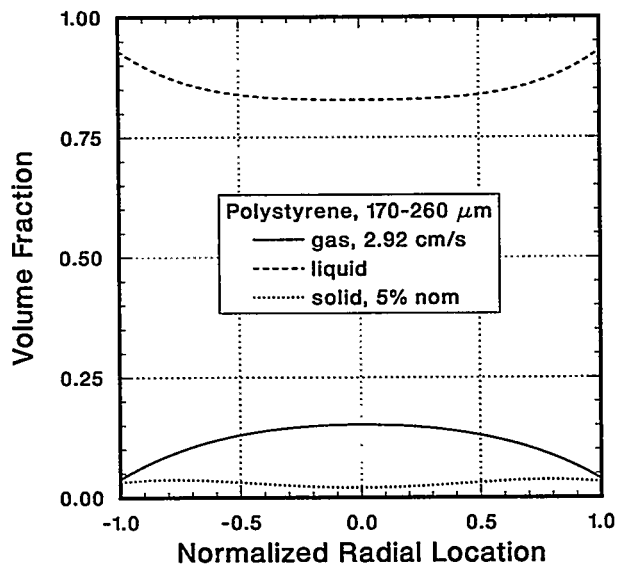
Glass: 120-200 μm , 15% by volume



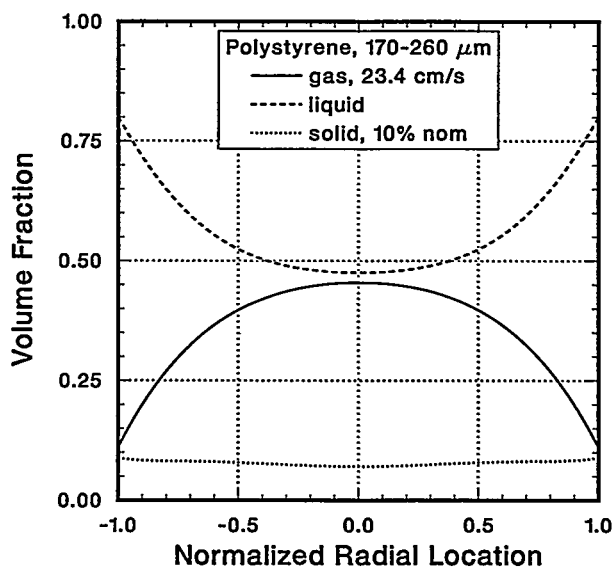
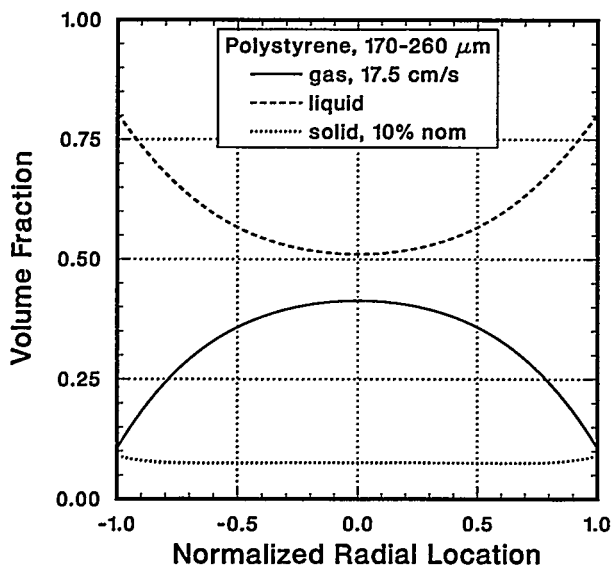
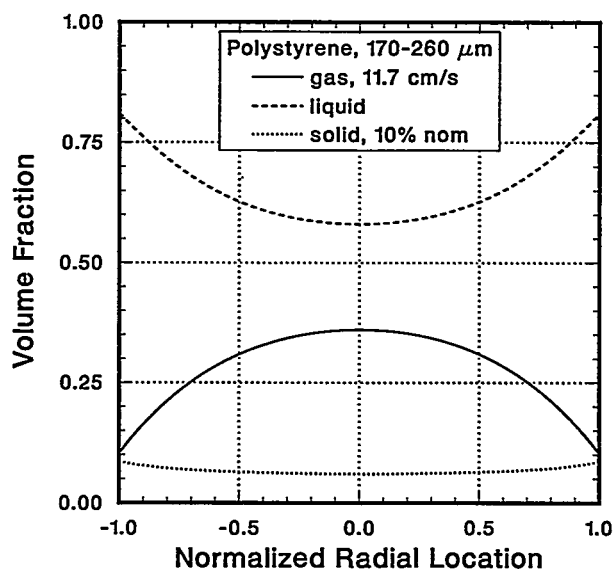
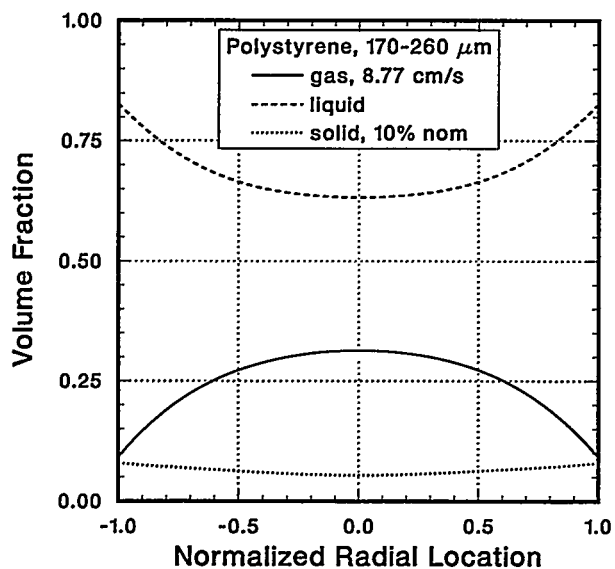
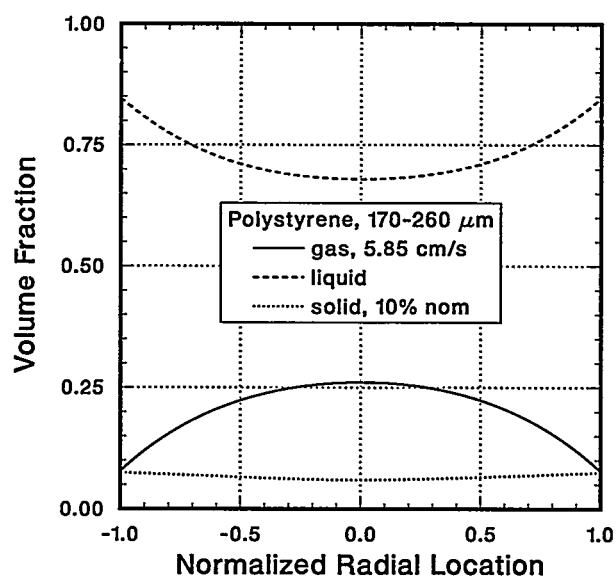
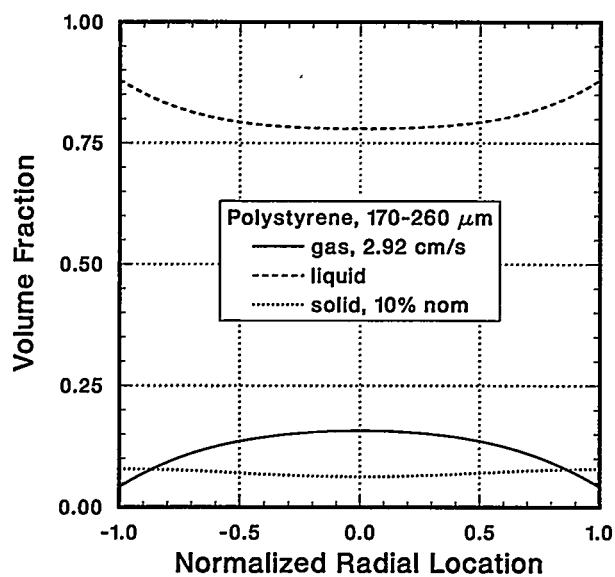
Polystyrene: 170-260 μm , 0% by volume



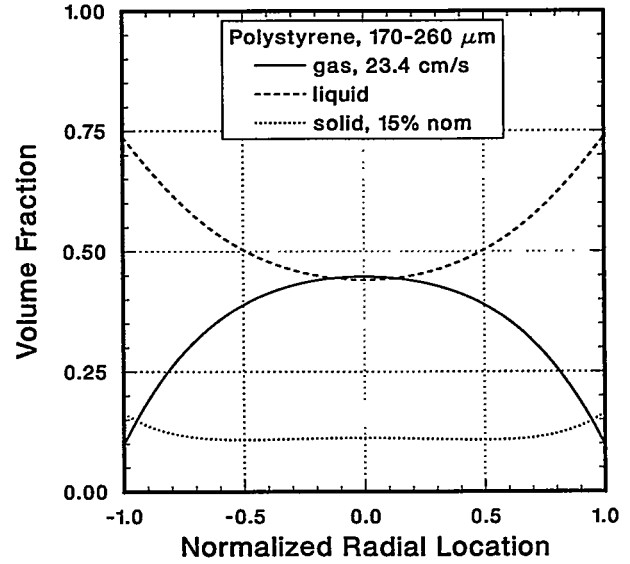
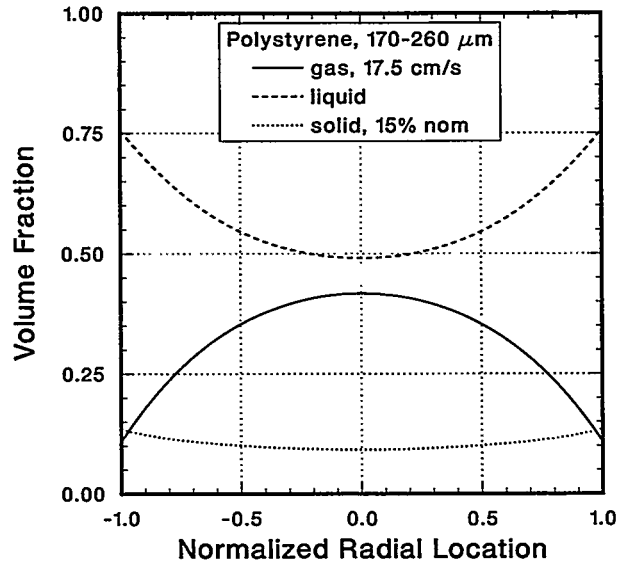
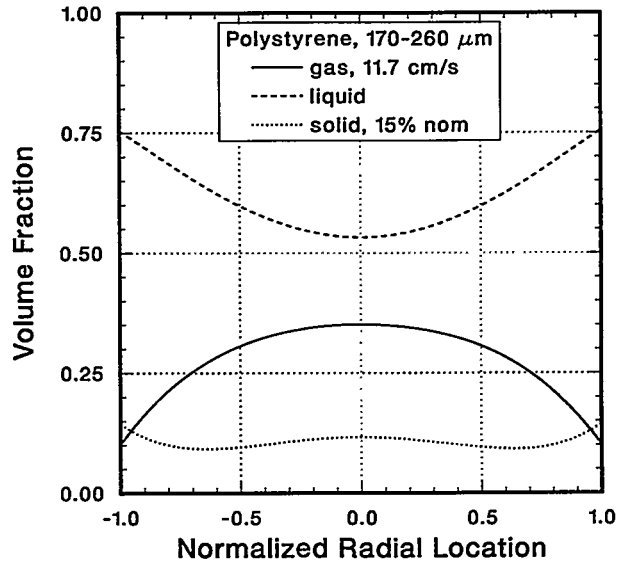
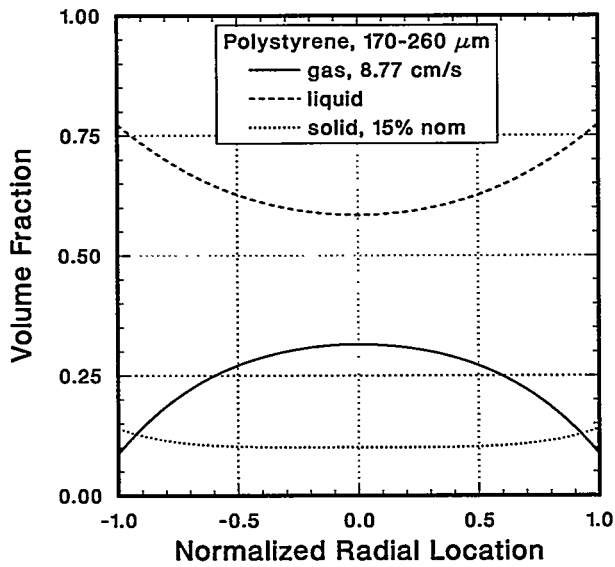
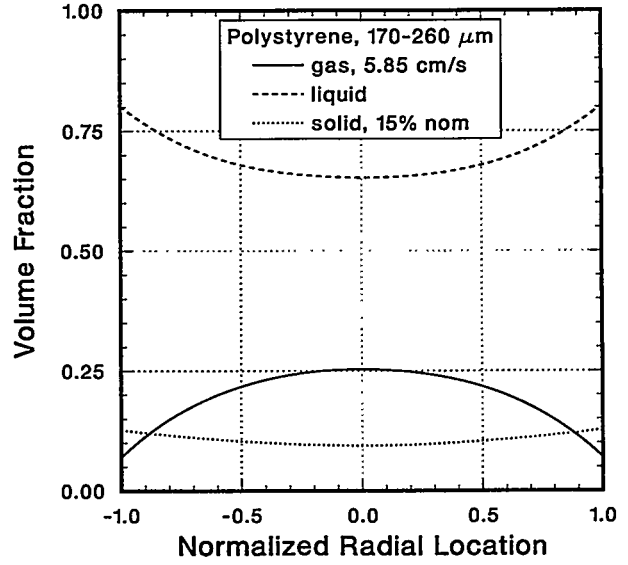
Polystyrene: 170-260 μm , 5% by volume



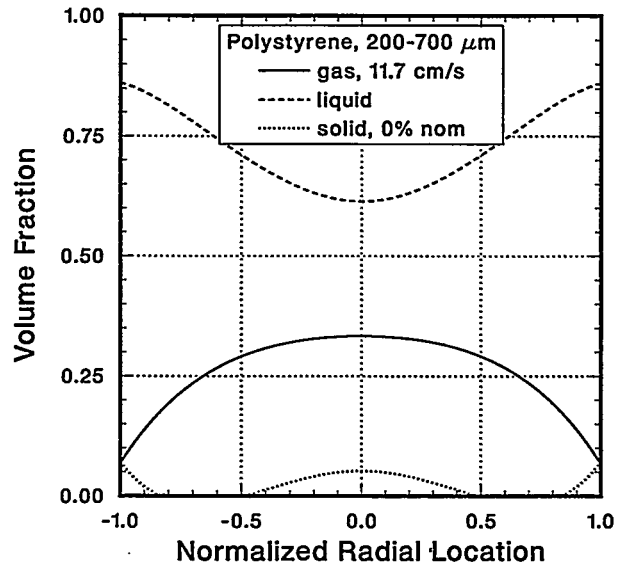
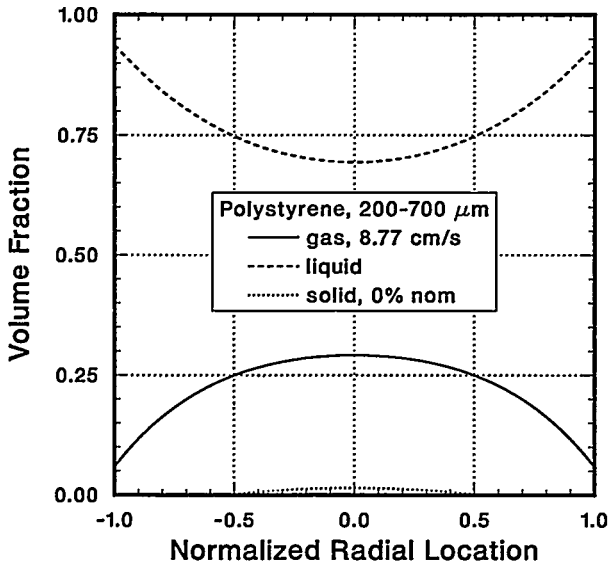
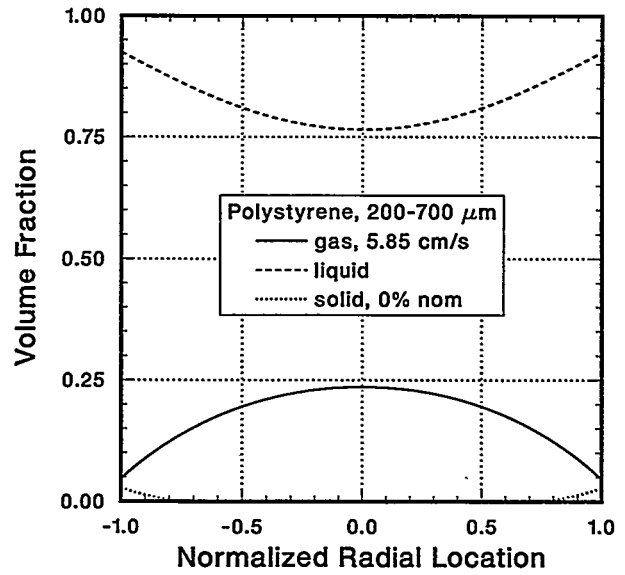
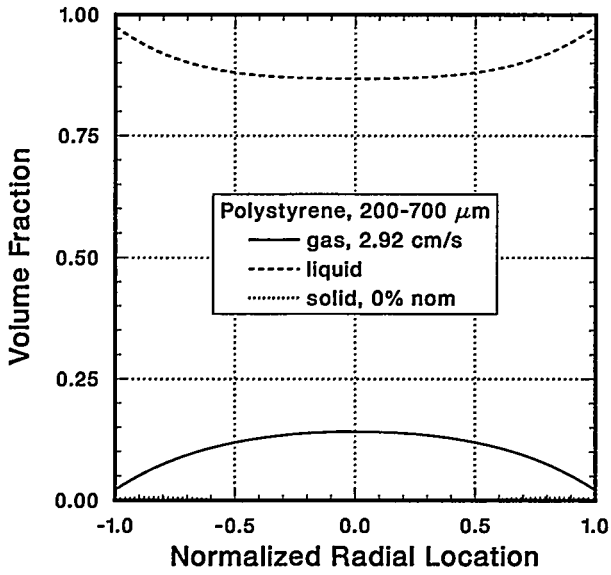
Polystyrene: 170-260 μm , 10% by volume



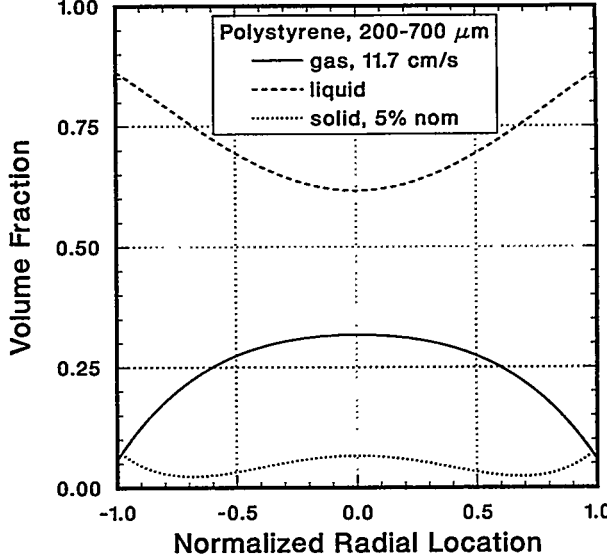
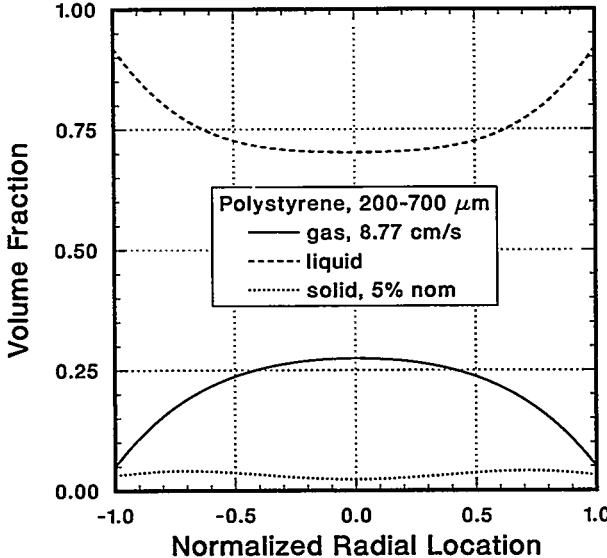
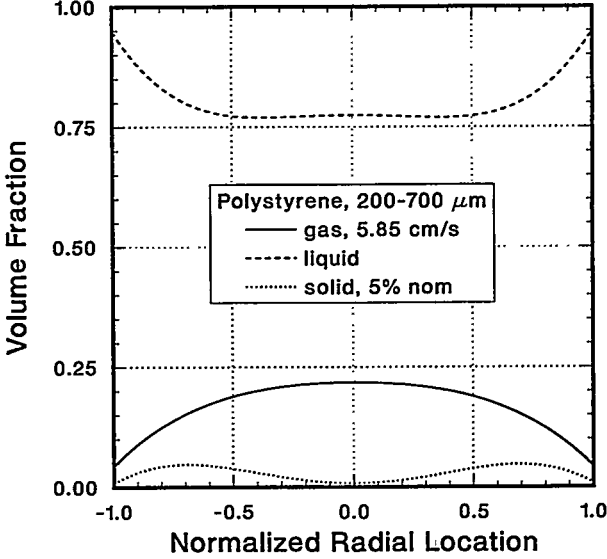
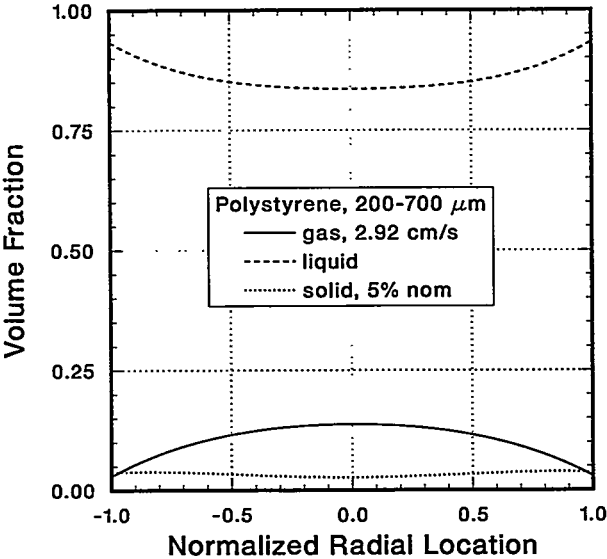
Polystyrene: 170-260 μm , 15% by volume



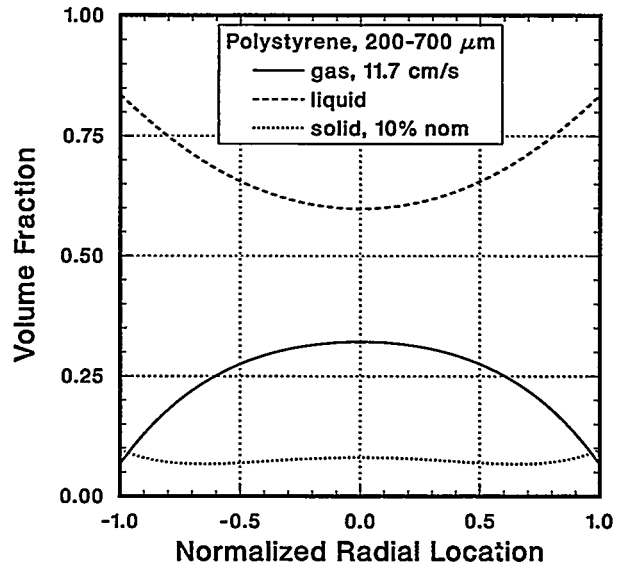
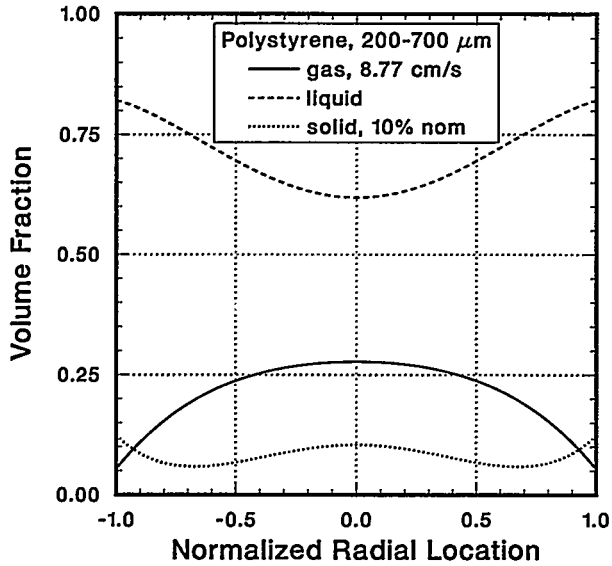
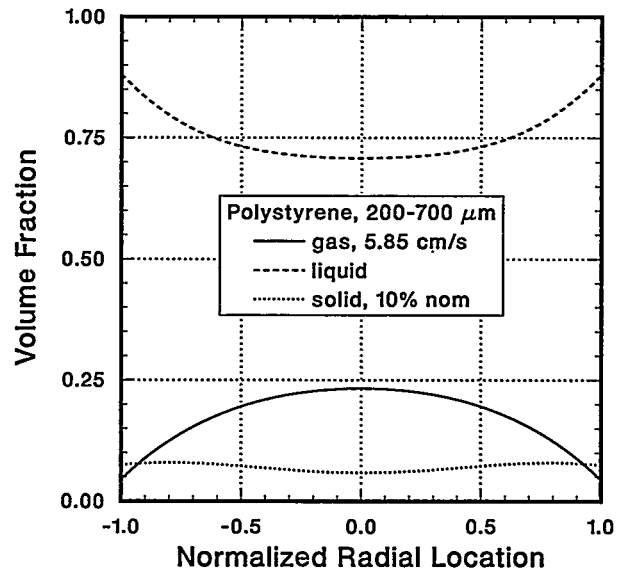
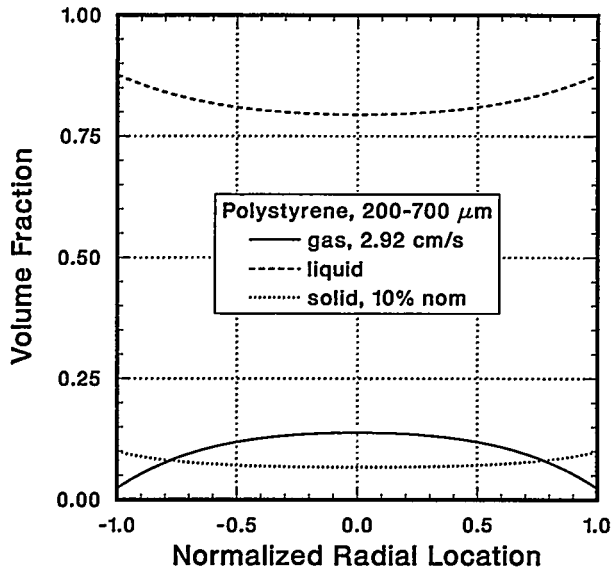
Polystyrene: 200-700 μm , 0% by volume



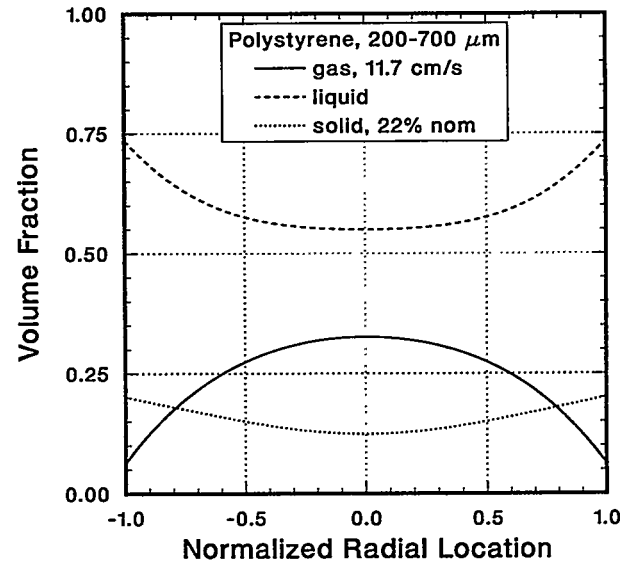
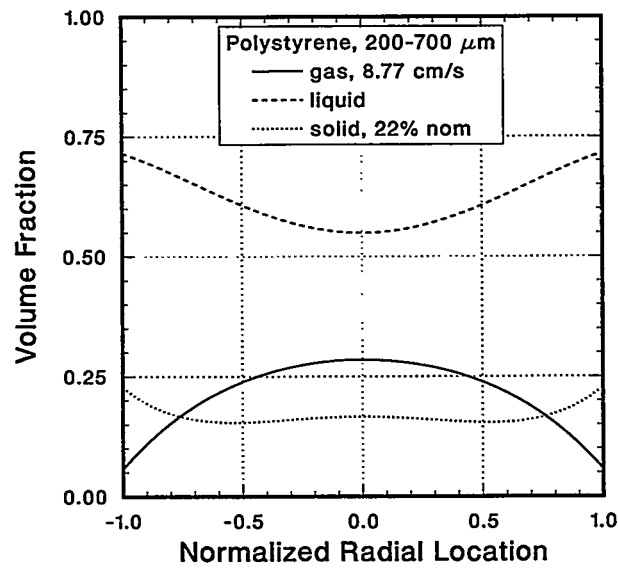
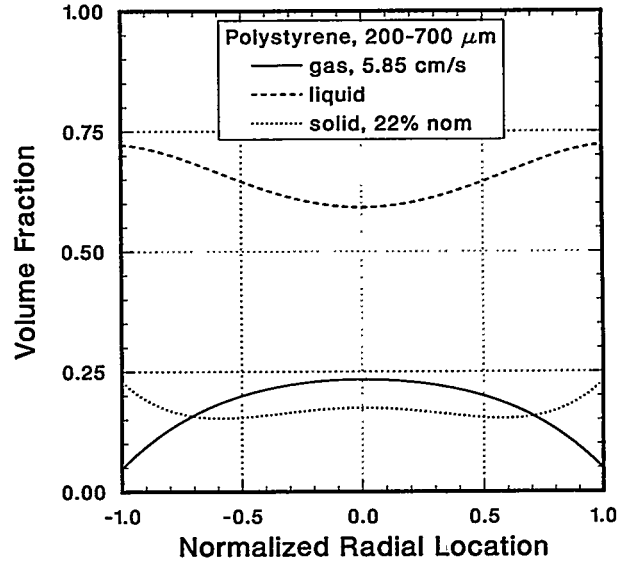
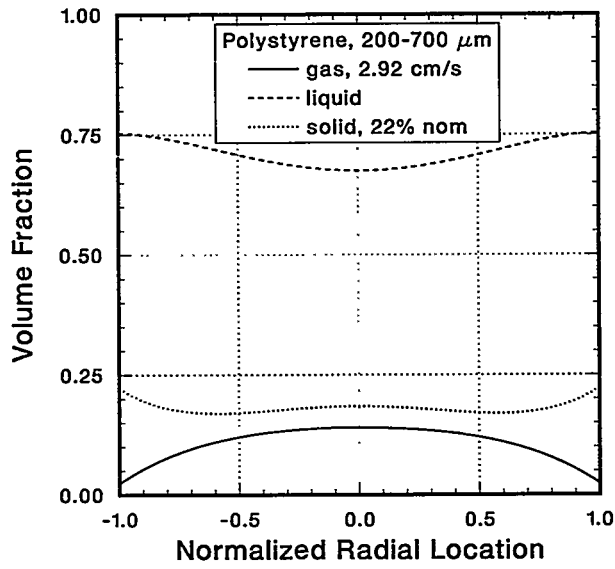
Polystyrene: 200-700 μm , 5% by volume



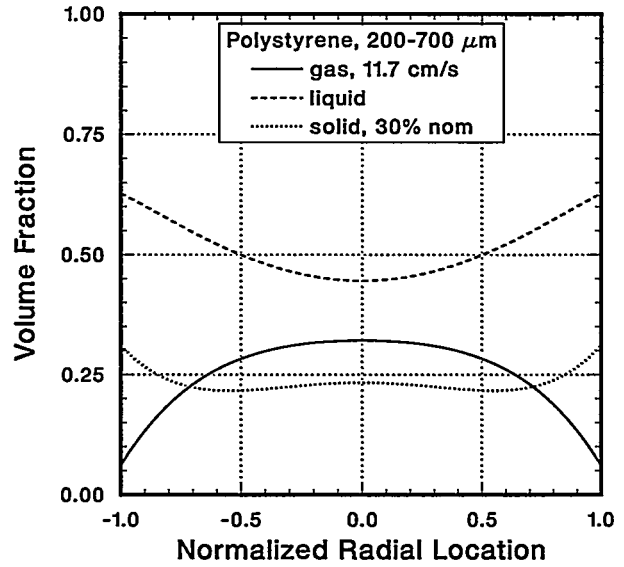
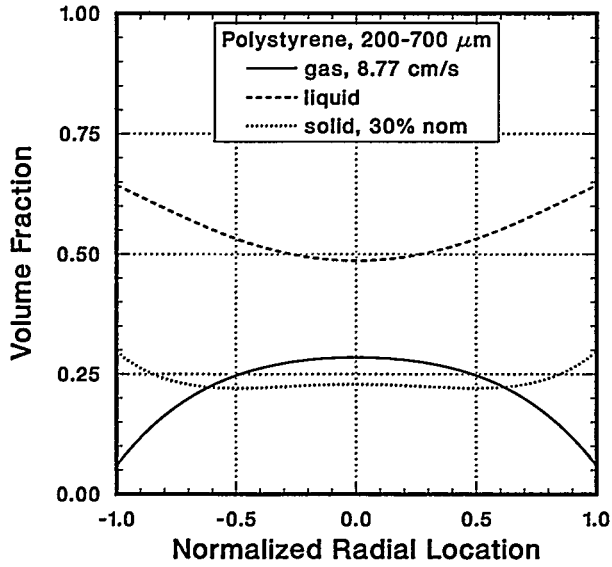
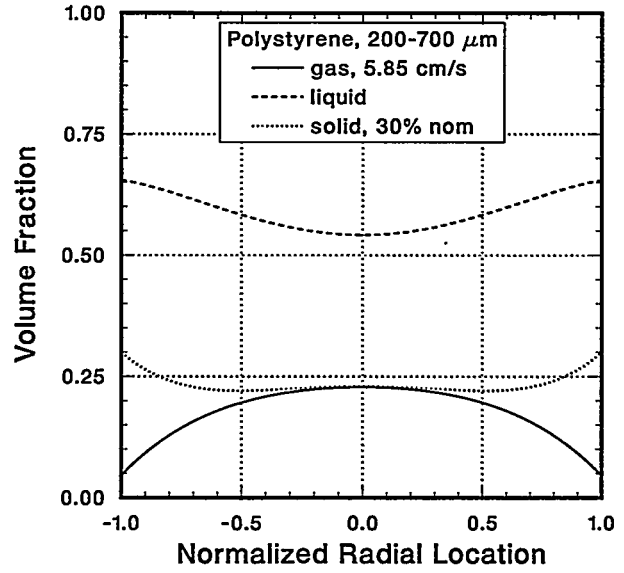
Polystyrene: 200-700 μm , 10% by volume



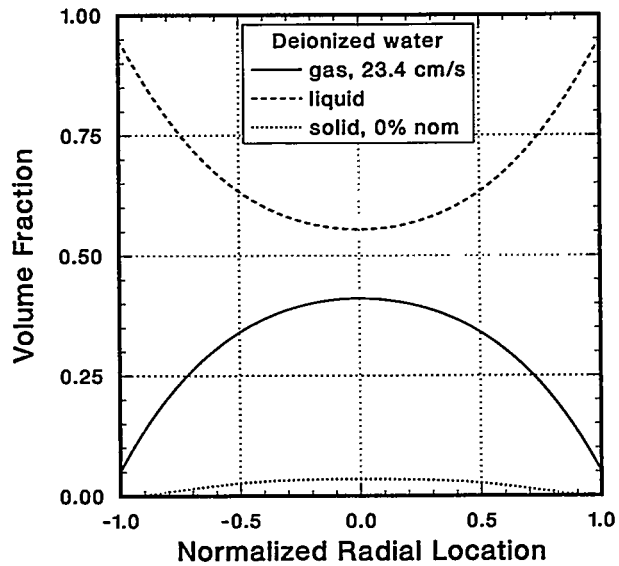
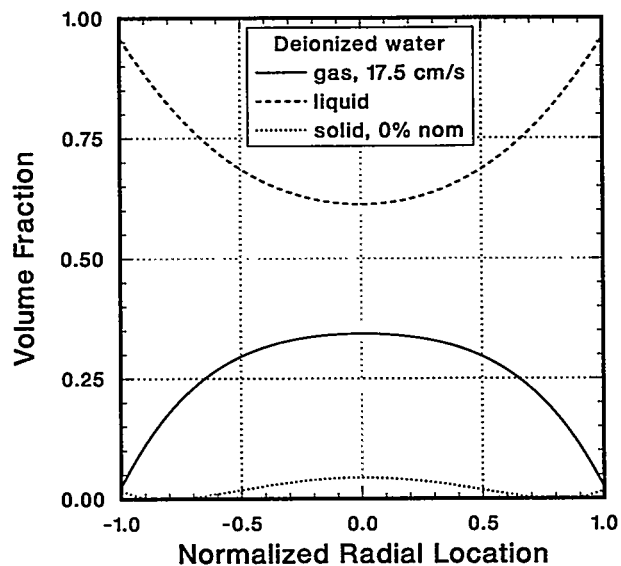
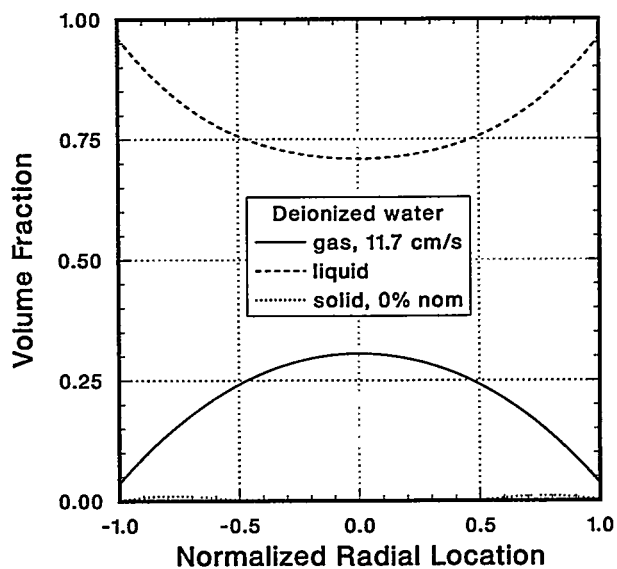
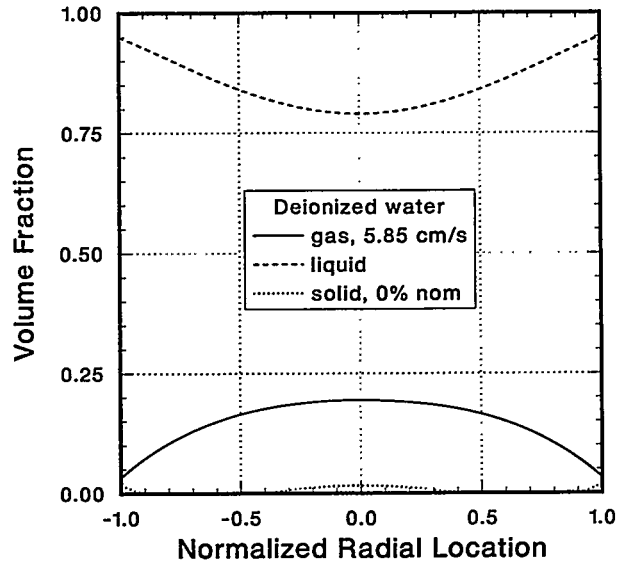
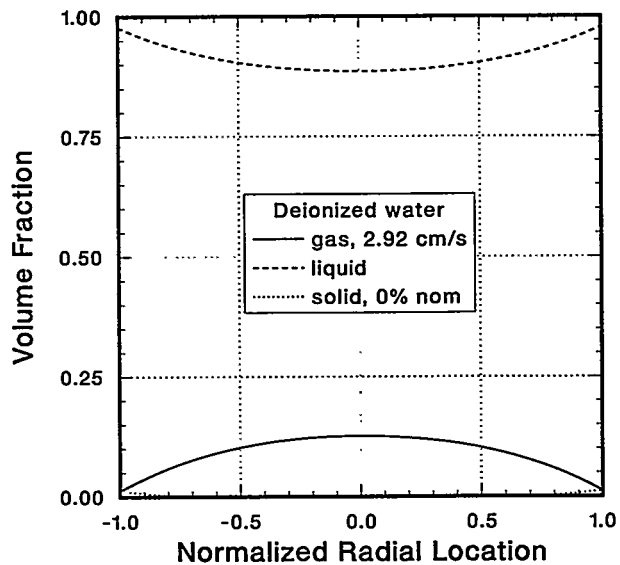
Polystyrene: 200-700 μm , 22% by volume



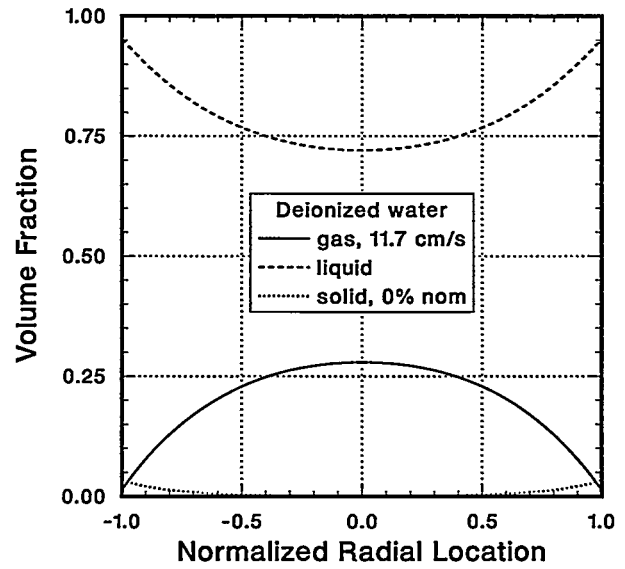
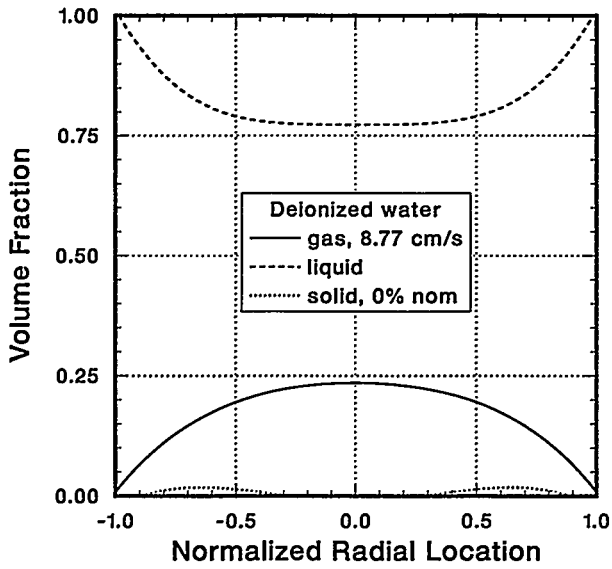
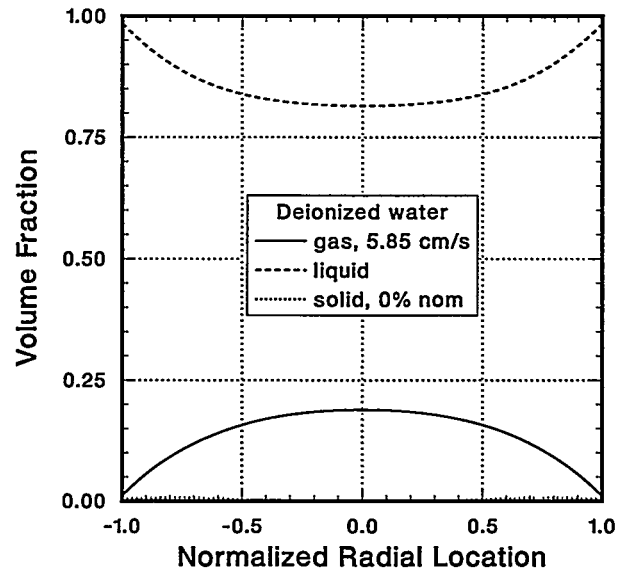
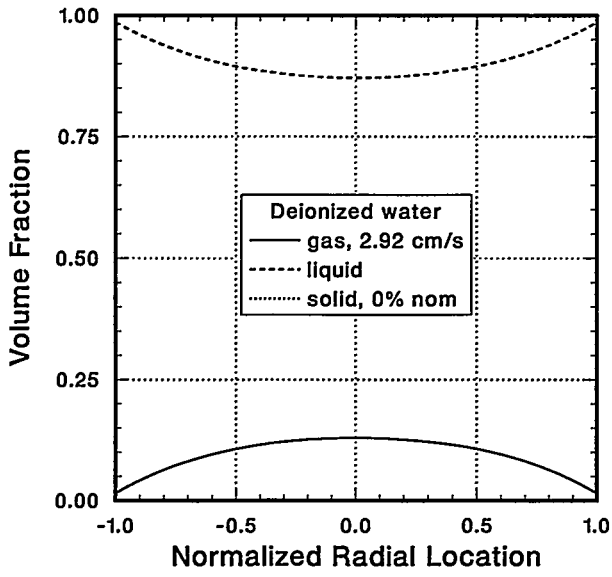
Polystyrene: 200-700 μm , 30% by volume



Deionized water



Deionized water



Distribution

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