7.2 TRANSPORT PROPERTIES OF GASES AND VOLATILE FISSION PRODUCTS AND OF THE FISSION GENERATED OXYGEN INSIDE FUEL

High temperature transport properties of the gas/volatile fission products, xenon, iodine and tellurium and the fission-generated oxygen have been investigated after developing the required experimental facilities. The generated transport data of Xe, I, and Te show that their release rates are significantly less in thoria based AHWR fuels as compared to those in urania. The chemical diffusion study of oxygen in thoria fuel made so far shows that oxygen transport coefficient in the thoria based fuel is several orders of magnitude lower than that in urania. Presently, the measurement of the chemical diffusion of oxygen in the thoria rich fuel is being extended to higher temperature (> 900 K) and under low oxygen pressure. The diffusion study of Xe, I, and Te in simulated thoria-urania fuels is also being carried out.