The NIST Center for Neutron Research currently provides a variety of pressure apparatus ranging from 2 MPa to as high as 2.5 GPa that are specially designed for neutron spectroscopy. Most of the pressure equipment can be mounted in a variety of instruments throughout NCNR’s facility, allowing for experimental flexibility and maximizing beam time use.

The sample is axially pressurized between two opposing cylindrical Tungsten Carbide pistons. Hydrostatic uniformity is ensured by immersing the sample in a pressure transmitting media such as Fluorinert FC75, (C₈F₁₈), or a 4:1 mixture of deuterated methanol and ethanol. Pressure is monitored through the change in lattice parameters of NaCl.

Inert Liquids Pressure Media
- This vessel can be used to pressurize polymer melt mixtures in a wafer form (blends and copolymers confined by an encapsulated o-ring) or soft macromolecular fluids (solutions, micellar systems). Also used to pressurize flowing liquids though the use of a separator (high pressure tubing containing a piston between the pressurizing fluid and the sample).