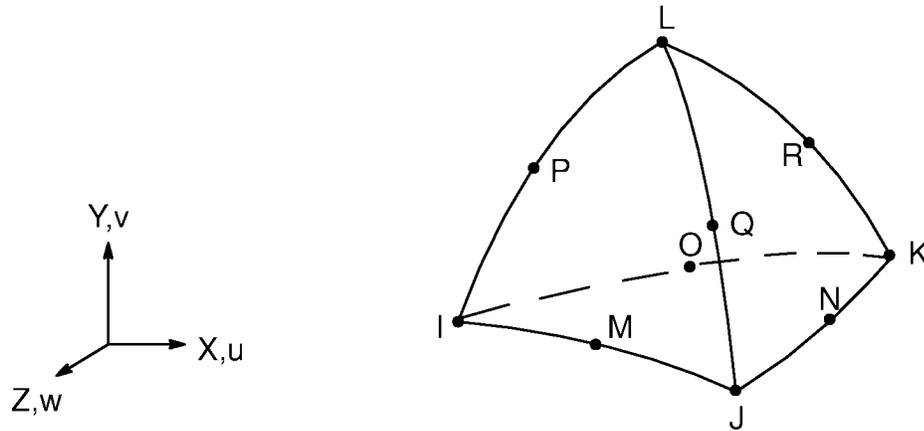


14.158 HYPER158 — 3-D 10-Node Tetrahedral Mixed U-P Hyperelastic Solid



Matrix or Vector	Shape Functions	Integration Points
Stiffness Matrix	Equations (12.8.2-1), (12.8.2-2), and (12.8.2-3)	4
Mass Matrix	Equations (12.8.2-1), (12.8.2-2), and (12.8.2-3)	4
Thermal Load Vector	Equations (12.8.2-1), (12.8.2-2), and (12.8.2-3)	4
Pressure Load Vector	Equation (12.8.2-1), (12.8.2-2), and (12.8.2-3) specialized to the face	6

Load Type	Distribution
Element Temperature	Same as shape functions
Nodal Temperature	Same as shape functions
Pressure	Linear over each face

Reference: Oden and Kikuchi(123), Sussman and Bathe(124)

14.158.1 Other Applicable Sections

For the basic element formulation, refer to Section 14.58. The hyperelastic material model (Mooney–Rivlin) is described in 4.5. Section 13.1 describes integration point locations.