

Property Formulation

$$\left(\frac{\partial p}{\partial \varrho} \right)_T = TR [1 + 2\delta\alpha_{\delta}^r + \delta^2\alpha_{\delta\delta}^r]$$

$$\left(\frac{\partial p}{\partial T} \right)_{\varrho} = \varrho R [1 + \delta\alpha_{\delta}^r - \tau\delta\alpha_{\tau\delta}^r]$$

$$\left(\frac{\partial s}{\partial \varrho} \right)_T = \frac{R}{\varrho} [-(1 + \delta\alpha_{\delta}^r - \tau\delta\alpha_{\tau\delta}^r)]$$

$$\left(\frac{\partial s}{\partial T} \right)_{\varrho} = \frac{R}{T} [-\tau^2(\alpha_{\tau\tau}^0 + \alpha_{\tau\tau}^r)]$$

$$\left(\frac{\partial u}{\partial \varrho} \right)_T = \frac{TR}{\varrho} [\tau\delta\alpha_{\tau\delta}^r]$$

$$\left(\frac{\partial u}{\partial T} \right)_{\varrho} = R [-\tau^2(\alpha_{\tau\tau}^0 + \alpha_{\tau\tau}^r)]$$

$$\left(\frac{\partial h}{\partial \varrho} \right)_T = \frac{TR}{\varrho} [\tau\delta\alpha_{\tau\delta}^r + \delta\alpha_{\delta}^r + \delta^2\alpha_{\delta\delta}^r]$$

$$\left(\frac{\partial h}{\partial T} \right)_{\varrho} = R [-\tau^2(\alpha_{\tau\tau}^0 + \alpha_{\tau\tau}^r) + (1 + \delta\alpha_{\delta}^r - \tau\delta\alpha_{\tau\delta}^r)]$$

$$\left(\frac{\partial g}{\partial \varrho} \right)_T = \frac{TR}{\varrho} [1 + 2\delta\alpha_{\delta}^r + \delta^2\alpha_{\delta\delta}^r]$$

$$\left(\frac{\partial g}{\partial T} \right)_{\varrho} = R [-\tau(\alpha_{\tau}^0 + \alpha_{\tau}^r) + (\alpha^0 + \alpha^r) + (1 + \delta\alpha_{\delta}^r - \tau\delta\alpha_{\tau\delta}^r)]$$