The Thermodynamics of Linear Fluids and Fluid Mixtures by Pekař \& Samohýl
Page 126, equation (3.238)
From constitutive equation (3.194) we have in the component form:

$$
(\operatorname{grad} P)^{i}=\frac{\partial P}{\partial x^{i}}=\frac{\partial \hat{P}}{\partial \rho} \frac{\partial \rho}{\partial x^{i}}+\frac{\partial \hat{P}}{\partial T} \frac{\partial T}{\partial x^{i}} \equiv \frac{\partial \hat{P}}{\partial \rho} h^{i}+\frac{\partial \hat{P}}{\partial T} g^{i} .
$$

Thus

$$
\begin{equation*}
\operatorname{grad} P=\frac{\partial \hat{P}}{\partial \rho} \mathbf{h}+\frac{\partial \hat{P}}{\partial T} \mathbf{g}=\frac{\partial \hat{P}}{\partial \rho} \mathbf{h} \tag{1}
\end{equation*}
$$

where (3.221) was used in the last equality. Combining (1) and (3.228), (3.238) follows.

