The subscript refers to the particular material in question. The first term is the T.E.P. of the material at zero pressure, and the second is the change in the T.E.P. due to pressure. The second term is also a function of temperature. If we integrate the emf around the circuit shown in Figure 1, the following expression results.

$$V_{ab} = \oint \alpha dT = \int_{T_0}^{T_1} \alpha_a(T)dT + \int_{T_1}^{T_2}\left[\alpha_a(T) + \Delta\alpha_a(p_i,T)\right]dT$$
$$+\int_{T_2}^{T_1}\left[\alpha_b(T) + \Delta\alpha_b(p_i,T)\right]dT + \int_{T_1}^{T_0}\alpha_b(T)dT$$

This reduces to the following when the pressure-independent and pressure-dependent terms are separated.

$$V_{ab} = \int_{T_0}^{T_2}\left[\alpha_a(T) - \alpha_b(T)\right]dT + \int_{T_1}^{T_2}\left[\Delta\alpha_a(p_i,T) - \Delta\alpha_b(p_i,T)\right]dT \quad (3)$$

The first term is just the emf, V_o, which would be induced in the circuit at zero pressure (the value tabulated for the temperature interval $T_0 \rightarrow T_2$), and the second term is the additional emf induced due to the wires being pressurized to p_i. Note that the temperature interval over which the pressure dependent term is integrated is the seal temperature to junction temperature.

To measure the change in the T.E.P. as a function of pressure, the circuit in Figure 1b can be employed.