

Table 1. Physical parameters for reference model, EX1.

	plasticity					viscosity				density		
	c_0 [Pa]	ϕ_1	ϕ_2	ϵ_1	ϵ_2	A [Pa ⁻ⁿ /s]	Q [kJ/mol]	n	ref.	ρ_0 [kg/m ³]	T_0 [K]	α [1/K]
Region 1	10^7	15°	15°	–	–	1.1×10^{-28}	223	4.0	1	2800	500	3.0×10^{-5}
Region 2	0	15°	2°	0.5	1.5	5.495×10^{-25}	498	4.48	2	3300	750	2.0×10^{-5}
Region 3	0	15°	2°	0.5	1.5	5.495×10^{-25}	498	4.48	2	3300	750	2.0×10^{-5}
Region 4	10^7	0	0	–	–	5.495×10^{-25}	498	4.48	2	3300	750	2.0×10^{-5}
Region 5	0	15°	2°	0.5	1.5	5.495×10^{-25}	498	4.48	2	3300	750	2.0×10^{-5}

References for viscosity parameters: 1. wet quartzite, *Gleason and Tullis* [1995]; 2. wet Åheim dunite, *Chopra and Paterson* [1984]. Physical constants in the models are: $g = 10.0 \text{ m/s}^2$, $c_p = 750 \text{ J/kg/K}$, $H = 0 \text{ W/m/K}$, $\kappa = 1.0 \times 10^{-6} \text{ m}^2/\text{s}$, and $R = 8.31 \text{ J/mol/K}$.

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