Table S1. Summary of characteristic Raman peaks of typical minerals in the antigorite dehydration.

	(P, T) (GPa,K)	*v*Tetrahedron (cm^{-1})	*v*OH (cm^{-1})	Reference
Antigorite	Ambient	228, 375, 685, 1048	3664, 3691	This study
Antigorite	Ambient	229, 378, 683, 1045	3669, 3700	Debret et al. (2013) [1]
Fo	Quenched	819, 852	—	This study
Fo	Ambient	820, 853	—	Debret et al. (2013) [1]
Cen	Quenched	661, 683, 1012, 1031	—	This study
Cen	Ambient	666, 689, 1021, 1034	—	Lin et al. (2003) [2]
Phase A	Quenched	218, 560, 852	3398, 3449	This study
Phase A	Ambient	220, 550, 807, 845	3400, 3517	Maurice et al. (2018) [3]
Talc	Quenched	196, 367, 679	3680	This study
Talc	ambient	195, 363, 676	—	Likhacheva et al. (2021) [4]
Talc	ambient	188, 357, 676	3679	Chollet et al. (2009) [5]

Table S2. Composition (wt. %) of reaction products in antigorite dehydration.

Mineral	Forsterite	Clinoestatite	Phase A	Talc
SiO_2	40.02	54.92	26.08	58.37
Al_2O_3	0.28	1.15	0.17	2.42
FeO_T	9.66	5.68	5.49	1.99
Cr_2O_3	0.13	0.11	0.15	0.22
MgO	48.61	34.80	53.04	33.78
TiO_2	0.02	0.03	0.01	0.08
MnO	0.10	0.16	0.08	0.01
NiO	n.d.	n.d.	n.d.	n.d.
CaO	0.03	0.16	0.11	0.18
P_2O_5	n.d.	n.d.	n.d.	n.d.
K_2O	n.d.	0.01	0.01	n.d.
Na_2O	0.02	0.03	0.02	0.04
Total	98.87	97.04	85.15	97.09

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