



Supplementary Material 2. Pictures of typical run products from the three reactions investigated. **a)** Reflected light microscope image of the reaction quartz (Qz) - coesite (Co) in V18 (3.87 GPa, 1300 °C, 24 h). **b)** Back-scattered electron image of the reaction anorthite (An) + gehlenite (Gh) + corundum (Crn) = kushiroite (Ku) in V113 (1.54 GPa, 1300 °C, 24 h). **c)** Back-scattered electron image of the reaction jadeite (Jd) + quartz (Qz) = albite (Ab) in A070 (2.35 GPa, 800 °C, 24 h).