

Supplementary Tables to:

Progressive veining during peridotite carbonation: insights from listvenites in Hole BT1B, Samail ophiolite (Oman)

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Supplementary Table S1a: Overview of thin sections of serpentinites and listvenites with high vein densities and/or well-defined cross cutting relationships in Oman Drilling Project Hole BT1B (lat: 23.3643° / lon: 58.1825°). Depth is down-hole distance relative to the top of Hole BT1B. Deformation microstructures and folding of veins in some of the foliated samples are described in more detail in Menzel et al. (2021). ViP = virtual polarizing microscopy scan.

Sample ID (exp. 5057_4B)	Lithology comment and identified vein generations (c.f. Table 1, Table 2)	Depth (m)	ViP	SEM	CL	SEM-CL
BT1B_13-3_62-64	Listvenite with 2 generations of lc1 carbonate veins, cut by lq4 veins, localized cataclasite, and late lc6 dolomite veins	23.46	x	x		
BT1B_14-1_7-11	Strongly veined listvenite with spheroidal to euhedral magnesite, with two cross-cutting sets of parallel and partly anastomosing lc1 veins; lc2; rare lq4	24.02	x	x	x	
BT1B_14-3_60-66	Foliated listvenite with aligned magnesite ellipsoids; Fe-magnesite in folded veins partly replaced by Fe-(hydr)oxides; prominent lq4 vein (4 mm); en-echelon lc6 veins	25.80	x	x		
BT1B_14-3_77-80	Foliated listvenite with aligned magnesite ellipsoids; relatively wide lc1 veins parallel to foliation; lc2, lc3, lq1, lq3, lq4, lc6	25.96	x	x	x	x
BT1B_15-1_32-35	Foliated listvenite with aligned magnesite ellipsoids; lc1 veins parallel to foliation are partly folded; 2 generations of lq4 cut foliation; narrow lc5, lc6	26.27	x	x		
BT1B_16-3_28-31	Foliated listvenite with high density of locally folded lc1 veins; lc6	29.09	x	x		
BT1B_18-3_16-19	Strongly veined listvenite (likely $I_{ss0} \pm lc1$) cut by localized cataclasites, which is cut by a quartz-magnesite lq4 vein; lc5 magnesite veins along fault planes; dolomite lc6 cuts all	35.22	x	x		
BT1B_20-1_64-68	Foliated listvenite with mylonitic appearance; two generations of lc1 (oblique and normal to foliation), locally lc1 veins are transposed; lq4, lc6	39.84	x	x		
BT1B_21-3_35-40	Foliated to mesh-pseudomorphic (I_{ss0}) listvenite with high lc1 vein density oblique to foliation, locally folded; lc4	44.39	x	x	x	x
BT1B_27-2_6-8	Strongly veined listvenite with spheroidal to mesh-pseudomorphic (I_{ss0}) magnesite; anastomosing to locally folded lc1 veins; I_{ss2} ; lc2; lq3; lq4 (5 mm); lc4; lc6	58.36	x	x		
BT1B_31-4_12-14	Strongly veined listvenite with branched, subparallel lc1 magnesite-dolomite veins that form an s-c resembling fabric and a macroscopic foliation; foliation-normal lq4; lc4 (two generations); vuggy lc6	66.08	x	x	x	
BT1B_32-1_5-9	Strongly veined, foliated fine-grained listvenite with branched, narrow subparallel magnesite veins (unclear vein type); lc6 dolomite veins with strong oscillatory growth zoning in CL	66.70	x	x		
BT1B_35-1_30-32	Strongly veined listvenite with parallel to branched lc1 Fe-magnesite veins partly replaced by Fe-hydroxides; lc2; lc3; lc4	71.75	x	x	x	
BT1B_39-2_67-72	Mesh/bastite serpentinite, locally foliated, with minor ss1 serpentine veins and common anastomosing Fe-poor magnesite sc2 and thin sq1 veins subparallel to foliation	83.45	x	x		
BT1B_39-3_9-13	Serpentinite with common branched Fe-poor magnesite sc2 veins; sq1 (minor); ss2 with some carbonate	83.79	x	x		
BT1B_39-4_14-18	Strongly veined, carbonate rich and foliated serpentinite, with anastomosing sc2 veins (Fe-poor magnesite with minor dolomite) forming an s-c resembling fabric; ss2 (with common magnesite); minor sq1; Mn-bearing sc3 magnesite;	84.36	x	x		
BT1B_42-2_19-24	Sheared and folded serpentinite with cleavage-parallel dolomite-quartz sc1 veins; minor sc2 magnesite veins; common sq1	91.75	x	x		
BT1B_44-2_47-50	Strongly veined, carbonate-rich serpentinite; common mesh ($ss0$) and crack-seal serpentine ($ss2$) with pseudomorph carbonate; very common, locally folded sc1 veins (Fe-poor, bright luminescent magnesite \pm dolomite); very common and closely spaced parallel Fe-magnesite – dolomite sc2 veins; a single sq2 vein (4 mm) cuts all other veins	98.32	x	x	x	

BT1B_44-3_9-11	Strongly veined, carbonate-rich serpentinite; common mesh (ss0) and crack-seal serpentine (ss2) with pseudomorph carbonate; common sc1 veins (Fe-poor magnesite ± dolomite); common and closely spaced parallel Fe-magnesite – dolomite sc2 veins (± talc); minor sq1; thin sq2 exploiting sc2 veins	98.80	x	x		
BT1B_48-1_32-37	Variably veined listvenite, partly dolomite-rich. Densely spaced, parallel lc1 magnesite veins in one domain; a single, extremely wide-blocky lq4 vein (5 mm); common lc4 with brown luminescent dolomite; bright luminescent, late dolomite reactivating the lc4 vein	109.67	x	x	x	
BT1B_51-1_20-25	Strongly veined, partly sheared listvenite in contact with massive listvenite preserving mesh-structures after dunite. Massive part: ubiquitous l _{ss0} mesh-pseudomorph magnesite vein net; minor lq3 and lc4 veins. Veined / sheared part: partly folded/transposed lc1 magnesite veins; lq3; lc4	115.65	x	x		
BT1B_52-1_55-58	Fuchsite-bearing listvenite with relatively wide, parallel lc carbonate veins (partly dolomite-bearing), cut by narrow lq4 and lc4 veins	119.04	x	x		
BT1B_55-3_68-72	Massive, fuchsite-bearing listvenite, with quartz patches resembling bastite. Ubiquitous mesh-pseudomorph carbonate/quartz veins (l _{ss0}); common magnesite lc1 veins; lq2; lq4; lc4	130.16	x	x		
BT1B_56-1_55-60	Massive, fuchsite-bearing listvenite, with quartz patches resembling bastite. Mesh-pseudomorph quartz veins with interstitial magnesite (l _{ss0}) are ubiquitous. Minor magnesite lc1 veins; 2 generations of syntaxial lq4 veins; lc4	131.25	x	x	x	
BT1B_56-4_45-50	Listvenite with spheroidal magnesite and bundled, wide-blocky to fibrous lc1 veins; common microcrystalline quartz veins and patches (lq2; two generations)	133.61	x			
BT1B_60-3_53-58	Listvenite with very coarse grained carbonate and microcrystalline quartz; common lc1 veins; single prominent lq2 vein (2 mm)	141.89	x		x	
BT1B_67-2_36-40	Massive listvenite cut by a strongly veined zone. Abundant lc1 magnesite veins with Fe-rich centers; common microcrystalline quartz (lq2) in patches and veins; brecciated lc6 dolomite.	162.11	x	x		x
BT1B_68-3_60-65	Massive, fuchsite-bearing listvenite with white, strongly veined domain. Common Fe-magnesite lc1 veins; lq4; all cut by late magnesite lc5	166.64	x	x		
BT1B_74-1_59-61	Carbonate-bearing mesh/bastite serpentinite and foliated serpentinite. Veins in non-foliated part: ss0, common ss1, ss2; in foliated part: foliation-normal ss1, ss2, and narrow antitaxial to wide-blocky magnesite-dolomite veins	182.94	x	x		

Supplementary Table S1b: Field samples of foliated serpentinites with cleavage-parallel serpentine veins.

Sample ID	Lithology comment	latitude / longitude	ViP	SEM	SEM-CL
OM20-12	Foliated serpentinite with parallel chrysotile veins; moderately flattened magnetite mesh cells	23.3945 / 58.1803	x		
OM20-13	Foliated serpentinite with parallel chrysotile veins; flattened magnetite mesh cells	23.3981 / 58.1800	x		