

Data report: electrical properties of gabbroic and troctolitic rocks from IODP Hole U1309D, Atlantis Massif, Table T3. Physical and electrical properties. (See table notes.)

Core, section, interval (cm)	Depth (mbsf)	Lithology	Density (g/cm <sup>3</sup> )			Waxman and Smits (1968) model							Revil and Glover (1998) model							Core bulk alteration (%)	Serpentization (%)	Cataclastic fabric				
			$\phi$	$\rho_b$	$\rho_g$	F	standard error	$C_S$	standard error	R	Fit quality	$\beta$	$\tau$	m	F	standard error	$C_S$	standard error	R	Fit quality	$\beta$	$\tau$	m			
304-U1309D-																										
SR-3, 124–126	40.11	Troctolitic gabbro	0.039	2.81	2.88	671	160	1.90	0.32	0.95	2	0.20	26.0	2.00	797	167	1.79	0.24	0.97	2	0.22	30.9	2.06	50	<1	1.5
11R-2, 48–50	66.77	Gabbro	0.017	2.84	2.88	438	37	5.37	0.26	0.99	2	0.32	7.6	1.50	579	68	5.25	0.30	0.99	1	0.38	10.0	1.57	50	<1	0.5
25R-1, 33–35	143.03	Gabbro	0.019	2.72	2.76	375	85	11.22	1.09	0.94	2	0.46	7.2	1.50	575	122	11.39	0.83	0.97	2	0.57	11.1	1.61	40	<1	1.5
25R-3, 94–96	146.49	Olivine-bearing gabbro	0.013	2.94	2.97	731	93	1.57	0.15	0.99	2	0.19	9.5	1.52	859	140	1.47	0.16	0.99	1	0.20	11.2	1.56	40	<1	0.5
26R-3, 83–85	150.94	Olivine-bearing gabbro	0.019	2.95	2.99	540	133	5.10	0.66	0.94	2	0.36	10.3	1.59	724	230	4.96	0.71	0.94	2	0.42	13.9	1.66	30	<1	0
28R-4, 45–47	161.38	Gabbro	0.015	2.93	2.95	453	63	2.23	0.29	0.99	x1	0.17	6.9	1.46	514	97	1.97	0.33	0.98	x1	0.17	7.8	1.49	20	<1	0.5
29R-3, 64–66	165.45	Gabbro	0.016	2.90	2.94	592	59	1.50	0.12	0.99	1	0.15	9.4	1.54	686	79	1.40	0.12	0.99	1	0.16	10.9	1.58	40	<1	0.5
32R-1, 9–11	176.39	Olivine-bearing gabbro	0.031	2.84	2.90	514	52	2.70	0.19	0.99	2	0.22	15.9	1.80	623	38	2.57	0.10	1.00	1	0.24	19.3	1.85	35	<1	0.5
36R-1, 10–12	195.70	Oxide gabbro	0.011	3.36	3.39	235	21	2.67	0.21	0.99	2	0.11	2.6	1.21	268	15	2.56	0.12	1.00	1	0.12	2.9	1.24	10	<1	0
43R-1, 57–79	229.37	Olivine gabbro	0.015	2.93	2.96	382	103	1.02	0.27	0.96	3	0.07	5.9	1.42	417	99	0.94	0.21	0.97	3	0.07	6.4	1.45	40	<1	0
44R-1, 18–20	233.38	Olivine gabbro	0.018	2.95	2.98	583	82	1.26	0.18	0.99	x1	0.13	10.4	1.58	655	117	1.11	0.20	0.99	x1	0.13	11.7	1.61	40	<1	0
44R-2, 83–85	235.53	Disseminated oxide gabbro	0.015	2.86	2.89	621	68	0.68	0.06	1.00	1	0.08	8.9	1.52	691	69	0.62	0.05	1.00	1	0.08	9.9	1.54	30	<1	0.5
51R-1, 74–76	267.54	Gabbro	0.018	2.88	2.91	369	82	0.91	0.20	0.97	2	0.06	6.6	1.47	404	77	0.84	0.16	0.98	2	0.06	7.2	1.49	20	<1	1.5
54R-3, 45–47	284.34	Troctolite	0.008	2.78	2.79	89	20	55.22	6.24	0.96	xx3	0.50	0.7	0.93	293	81	80.92	6.40	0.98	xx3	0.83	2.3	1.17	60	10–50	0.5
58R-1, 110–112	301.50	Olivine gabbro	0.011	2.94	2.96	810	196	0.29	0.08	0.97	2	0.05	8.6	1.47	873	191	0.26	0.06	0.98	2	0.04	9.2	1.49	20	<1	0.8
59R-1, 58–60	305.78	Olivine gabbro	0.012	2.93	2.95	393	48	0.88	0.11	0.99	2	0.06	4.6	1.34	429	35	0.81	0.07	1.00	1	0.06	5.0	1.36	30	<1	0.3
63R-3, 41–43	327.77	Olivine-rich troctolite	0.033	2.77	2.82	59	32	130.36	23.33	0.77	x3	0.60	1.9	1.19	348	29	190.94	3.82	1.00	x1	0.93	11.4	1.71	50	50–90	0.5
64R-1, 58–60	329.78	Olivine-rich troctolite	0.014	2.78	2.81	138	53	70.20	7.09	0.82	3	0.66	2.0	1.16	461	31	83.12	0.94	1.00	1	0.88	6.6	1.44	60	50–90	0.3
66R-2, 93–95	341.23	Troctolite	0.009	2.76	2.78	416	144	13.75	1.74	0.86	3	0.53	3.9	1.29	646	174	13.91	1.10	0.95	3	0.64	6.0	1.38	60	50–90	0.3
67R-3, 17–19	346.43	Gabbro (fine-grained)	0.008	3.00	3.02	548	105	0.15	0.04	0.99	2	0.02	4.1	1.29	574	95	0.13	0.03	0.99	2	0.02	4.3	1.30	30	<1	0
70R-2, 76–78	359.45	Olivine gabbro	0.013	2.81	2.83	306	69	12.39	1.34	0.96	x2	0.43	4.0	1.32	446	73	13.04	0.82	0.99	x2	0.54	5.9	1.41	30	<1	0.8
71R-1, 14–16	362.94	Troctolitic gabbro	0.007	2.96	2.97	576	129	0.51	0.12	0.98	2	0.06	3.8	1.27	626	130	0.46	0.10	0.98	2	0.05	4.1	1.28	10	<1	0.5
71R-5, 13–15	368.26	Olivine gabbro	0.008	2.82	2.83	510	52	0.15	0.02	1.00	1	0.02	4.3	1.31	531	54	0.13	0.02	1.00	1	0.01	4.5	1.31	30	<1	0
73R-2, 86–88	374.71	Troctolitic gabbro	0.009	2.91	2.92	1742	497	0.18	0.05	0.96	2	0.06	16.0	1.59	1875	489	0.16	0.04	0.97	2	0.06	17.2	1.61	40	<1	0
77R-3, 21–23	394.34	Olivine gabbro	0.010	2.98	2.99	156	30	19.03	1.90	0.96	2	0.37	1.5	1.09	238	17	20.84	0.61	1.00	1	0.50	2.3	1.18	40	<1	0
305-U1309D-																										
83R-2, 29–31	416.44	Olivine gabbro	0.010	2.96	2.98	686	164	0.11	0.04	0.98	2	0.01	7.2	1.43	716	171	0.09	0.03	0.98	2	0.01	7.5	1.44	10	<10	0
88R-1, 2–4	439.02	Olivine gabbro	0.009	3.06	3.08	1035	178	0.17	0.03	0.99	2	0.03	9.7	1.49	1097	163	0.15	0.03	0.99	1	0.03	10.3	1.50	10	<1	0
89R-1, 92–94	444																									

Notes:  $\phi$  = porosity,  $\rho_b$  = bulk density,  $\rho_g$  = grain density,  $F$  = formation factor,  $C_S$  = surface electrical conductivity,  $R$  = Pearson's linear correlation coefficient. Fit quality: 1 = good, 2 = medium, 3 = poor, x = 1 point removed, xx = 2 points removed (see text and Fig. F1 for further explanations).  $\beta$  = surface condition fraction,  $\tau$  = electrical tortuosity,  $m$  = cementation index. Cataclastic fabric intensity scale: 0 (undeformed) to 5 (cataclastite), as defined in the "[Methods](#)" chapter. Core bulk alteration, cataclastic fabric intensity, and degree of serpentinization are those of the intervals from where the measured sample was taken, as estimated onboard from macroscopic observation of hand samples.