

TABLE DR1. $^{40}\text{Ar}/^{39}\text{Ar}$ INCREMENTAL HEATING DATA FOR SILLS IN THE DOHERTY MOUNTAIN FOLD COMPLEX, SOUTHWEST MONTANA.

Temp (°C)	$^{40}\text{Ar}_R$	$^{39}\text{Ar}_K$	$^{40}\text{Ar}_R/^{39}\text{Ar}_K$	$^{39}\text{Ar}/^{37}\text{Ar}$	% $^{40}\text{Ar}_R$	% ^{39}Ar	Apparent Age (Ma at 1 σ)
PMD20: Biotite; 81.9 mg; measured $^{40}\text{Ar}/^{36}\text{Ar}_a = 299.0$; J-value = $0.006305 \pm 0.2\%$ (1 σ).							
900	0.04750	0.02488	1.909	3.51	0.20	0.30	21.6 \pm 1.4
1000	1.2328	0.19573	6.298	13.3	0.59	2.34	70.25 \pm 0.22
1050	2.6394	0.38172	6.914	35.5	0.85	4.57	76.98 \pm 0.13
1100	3.2098	0.46279	6.936	39.8	0.93	5.54	77.21 \pm 0.16
1150	3.3610	0.48577	6.919	38.9	0.96	5.82	77.03 \pm 0.14
1200	3.6133	0.52166	6.927	39.9	0.96	6.25	77.11 \pm 0.06
1250	3.6706	0.52999	6.926	42.1	0.97	6.35	77.11 \pm 0.09
1300	5.2463	0.75501	6.949	30.4	0.97	9.04	77.35 \pm 0.12
1350	7.2788	1.0496	6.935	29.9	0.97	12.57	77.20 \pm 0.09
1375	7.6209	1.0998	6.929	44.7	0.98	13.17	77.14 \pm 0.13
1400	7.5407	1.0889	6.925	52.7	0.97	13.04	77.10 \pm 0.15
1430	7.4040	1.0665	6.942	42.1	0.97	12.77	77.28 \pm 0.14
1500	6.9420	0.68948	6.942	9.40	0.97	8.26	77.28 \pm 0.06
Total Gas			6.903				76.85 \pm 0.16
PMD1: Biotite; 53.6 mg; measured $^{40}\text{Ar}/^{36}\text{Ar}_a = 298.9$; J-value = $0.006375 \pm 0.2\%$ (1 σ)							
800	0.43382	0.10132	4.282	2.51	0.60	2.17	48.58 \pm 0.18
900	0.25650	0.04304	5.959	1.30	0.73	0.92	67.27 \pm 0.82
1000	1.3013	0.19031	6.838	2.09	0.67	4.07	76.97 \pm 0.19
1050	1.2041	0.17681	6.810	22.7	0.90	3.78	76.67 \pm 0.20
1100	1.6838	0.24391	6.903	38.4	0.94	5.22	77.69 \pm 0.14
1150	2.4438	0.35483	6.887	49.3	0.95	7.59	77.52 \pm 0.11
1250	2.6353	0.38662	6.816	48.9	0.95	8.27	76.73 \pm 0.18
1300	9.0492	1.3258	6.825	30.4	0.97	28.35	76.84 \pm 0.22
1350	5.6974	0.83330	6.837	52.7	0.99	17.82	76.97 \pm 0.06
1400	5.7453	0.84134	6.829	43.6	0.99	17.99	76.87 \pm 0.09
1450	1.1066	0.16144	6.855	23.5	0.99	3.45	77.16 \pm 0.07
1500	1.1897	0.17371	6.849	8.05	0.96	0.37	77.09 \pm 0.29
Total Gas			6.774				76.27 \pm 0.16

Note: $^{40}\text{Ar}/^{39}\text{Ar}_a$ is measured atmospheric argon used for mass-discrimination at time of analysis;

$^{40}\text{Ar}_R$ is radiogenic ^{40}Ar in volts signal; $^{39}\text{Ar}_K$ is potassium-derived ^{39}Ar in volts signal;

$^{40}\text{Ar}_R/^{39}\text{Ar}_K$ is the ratio of $^{40}\text{Ar}_R$ to $^{39}\text{Ar}_K$ after correction for mass-discrimination and interfering isotopes—the measured production ratios used for correction of interfering isotopes are:

$$(^{40}\text{Ar}/^{39}\text{Ar})_K = 9.35 \times 10^{-3}, (^{38}\text{Ar}/^{39}\text{Ar})_K = 1.304 \times 10^{-2}, (^{37}\text{Ar}/^{39}\text{Ar})_K = 3.00 \times 10^{-4}, (^{36}\text{Ar}/^{37}\text{Ar})_{Ca} =$$

$$2.70 \times 10^{-4}, (^{39}\text{Ar}/^{37}\text{Ar})_{Ca} = 7.20 \times 10^{-4}, \text{ and } (^{38}\text{Ar}/^{37}\text{Ar})_{Ca} = 4.70 \times 10^{-5}; ^{39}\text{Ar}/^{37}\text{Ar} = \text{ratio of } ^{39}\text{Ar}_K \text{ to}$$

$^{37}\text{Ar}_{Ca}$ (this value can be converted to the approximate K/Ca by multiplying by 0.49); % $^{40}\text{Ar}_R$

and % ^{39}Ar are the percent of radiogenic ^{40}Ar and percent of total ^{39}Ar released in each

temperature step. Temperature steps in bold are those used in the calculation of the weighted-

mean plateau age. Conversion of volts signal to moles Ar can be made using a conversion factor of 1.267×10^{-12} moles argon per volt signal.