

MATERIAL SUPLEMENTARIO

del artículo

Caracterización de las rocas metacarbonatadas y rocas adyacentes en el arroyo El Mezquite dentro del Complejo Plutónico de La Paz, Baja California Sur, México: sucesión de eventos geológicos en función de relaciones de campo y geocronología

por

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Tabla S1. Cálculos termométricos de Ti en zircón. Para equilibrios zircon+rutilo+cuarzo se asume aTi=1 y aSi=1. En los magmas silicatados (sin rutilo) los valores de aTi son típicamente de 0.6–0.9. En las rocas subsaturadas en SiO₂ deben considerarse valores de aSi ≥0.5.

Sample	Ti (ppm)	Age (Ma)	Sin Calibrar	Calibrado	
			T(°C) aSi=1; aTi=1	T(°C) aSi=1; aTi=0.6	
Terr-EM_Zrn-01	5.3		689	674	LXES-1001
Terr-EM_Zrn-03	7.0		713	697	
Terr-EM_Zrn-05	7.2		716	700	Desv. Estandar 44
Terr-EM_Zrn-06	3.9		665	651	
Terr-EM_Zrn-08	15.2		787	769	Promedio 701
Terr-EM_Zrn-09	17.3		800	781	Desv. Estandar 42
Terr-EM_Zrn-10	6.5		707	691	
Terr-EM_Zrn-12	3.5		656	642	
Terr-EM_Zrn-13	7.7		722	706	
Terr-EM_Zrn-15	10.0		745	728	
Terr-EM_Zrn-17	3.1		647	633	
Terr-EM_Zrn-19	5.0		685	670	
Terr-EM_Zrn-20	9.1		737	720	
Terr-EM_Zrn-21	9.5		741	724	
Terr-EM_Zrn-24	5.2		688	673	
Terr-EM_Zrn-25	7.2		716	700	
Terr-EM_Zrn-26	5.7		696	681	
Terr-EM_Zrn-27	18.2		805	787	
Terr-EM_Zrn-28	5.9		699	683	
Terr-EM_Zrn-29	14.7		783	765	
Terr-EM_Zrn-32	7.9		725	708	
Terr-EM_Zrn-33	5.9		698	683	
Terr-EM_Zrn-34	11.3		758	741	
Terr-EM_Zrn-35	10.4		749	732	
Terr-EM_Zrn-36	7.3		716	701	
Terr-EM_Zrn-37	9.4		740	724	
Terr-EM_Zrn-38	15.2		787	768	
Terr-EM_Zrn-39	8.4		729	713	
Terr-EM_Zrn-40	7.8		723	707	
Terr-EM_Zrn-48	8.9		734	718	
Terr-EM_Zrn-49	5.5		693	678	
Terr-EM_Zrn-52	5.0		685	670	
Terr-EM_Zrn-53	6.3		704	689	
Terr-EM_Zrn-54	4.1		668	653	
Terr-EM_Zrn-55	8.6		732	716	
Terr-EM_Zrn-56	12.4		766	749	
Terr-EM_Zrn-57	12.9		770	753	
Terr-EM_Zrn-58	7.0		713	697	
Terr-EM_Zrn-59	12.2		765	747	
Terr-EM_Zrn-61	7.3		717	701	
Terr-EM_Zrn-65	8.5		731	714	
Terr-EM_Zrn-66	4.2		671	657	
Terr-EM_Zrn-67	2.3		625	612	
Terr-EM_Zrn-70	6.4		706	690	
Terr-EM_Zrn-71	8.2		727	711	
Terr-EM_Zrn-72	3.6		658	644	
Terr-EM_Zrn-75	1.9		611	598	

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Tabla S1 (cont.). Cálculos termométricos de Ti en zircón. Para equilibrios zircon+rutilo+cuarzo se asume $a_{Ti}=1$ y $a_{Si}=1$. En los magmas silicatados (sin rutilo) los valores de a_{Ti} son típicamente de 0.6–0.9. En las rocas subsaturadas en SiO_2 deben considerarse valores de $a_{Si} \geq 0.5$.

Sample	Ti (ppm)	Age (Ma)	Sin Calibrar	Calibrado	
			T(°C) aSi=1; aTi=1	T(°C) aSi=0.5; aTi=0.6	
TN-EM_Zrn-01	2.41		628	614	LXES-1001
TN-EM_Zrn-02	6.95		713	697	
TN-EM_Zrn-03	3.28		651	637	Desv. Estandar 34
TN-EM_Zrn-04	3.00		644	630	
TN-EM_Zrn-05	3.77		662	647	
TN-EM_Zrn-06	2.91		642	628	
TN-EM_Zrn-07	3.51		656	642	
TN-EM_Zrn-08	6.68		709	694	
TN-EM_Zrn-09	4.26		671	657	
TN-EM_Zrn-10	3.67		660	645	
TN-EM_Zrn-11	2.19		620	607	
TN-EM_Zrn-13	3.33		652	638	
TN-EM_Zrn-14	3.53		657	643	
TN-EM_Zrn-15	1.81		607	594	
TN-EM_Zrn-16	2.30		624	611	
TN-EM_Zrn-18	2.32		625	612	
TN-EM_Zrn-20	2.59		633	619	
TN-EM_Zrn-21	4.63		678	663	
TN-EM_Zrn-22	5.89		698	683	
TN-EM_Zrn-24	1.90		610	598	
TN-EM_Zrn-25	4.46		675	661	
TN-EM_Zrn-26	4.50		676	661	
TN-EM_Zrn-27	4.46		675	661	
TN-EM_Zrn-28	3.80		662	648	
TN-EM_Zrn-29	0.88		559	548	
TN-EM_Zrn-30	1.97		613	600	

LXES-1001	
Promedio	650
Desv. Estandar	34
Promedio	636
Desv. Estandar	33

Tabla S2. Análisis isotópicos U-Pb en zircón

	U Th		Proporciones corregidas						Edad corregida (Ma)						
	ppm		Th/U	²⁰⁷ Pb/ ²⁰⁶ Pb	±2se abs	²⁰⁷ Pb/ ²³⁵ U	±2se abs	²⁰⁶ Pb/ ²³⁸ U	±2se abs	²⁰⁶ Pb/ ²³⁸ U	±2se	²⁰⁷ Pb/ ²³⁵ U	±2se	Best age (Ma)	±2se
TN-EM_Zrn-03	569.6	364.2	0.64	0.05092	0.00312	0.08762	0.00646	0.01227	0.00037	78.6	2.35	85.1	6	78.6	2.35
TN-EM_Zrn-14	600.5	231.8	0.39	0.05216	0.00405	0.08992	0.00681	0.01264	0.0004	81	2.57	87.3	6.33	81	2.57
TN-EM_Zrn-27	444.5	193.8	0.44	0.04616	0.00416	0.08074	0.00753	0.01271	0.00036	81.4	2.31	78.6	7.08	81.4	2.31
TN-EM_Zrn-24	598.9	267.9	0.45	0.05185	0.00441	0.09194	0.00804	0.01287	0.0003	82.4	1.91	89	7.41	82.4	1.91
TN-EM_Zrn-26	532.4	191.9	0.36	0.05176	0.00355	0.09252	0.00692	0.01293	0.00027	82.8	1.74	89.7	6.44	82.8	1.74
TN-EM_Zrn-16	467.6	233.9	0.5	0.04683	0.004	0.08334	0.00714	0.01295	0.00031	83	1.94	82.5	7.3	83	1.94
TN-EM_Zrn-13	276.5	83.7	0.3	0.0504	0.00936	0.08865	0.01564	0.01298	0.0008	83.2	5.09	85.8	14.52	83.2	5.09
TN-EM_Zrn-20	371.5	144.2	0.39	0.04845	0.00457	0.09063	0.00962	0.01328	0.00039	85	2.46	87.6	8.93	85	2.46
TN-EM_Zrn-06	501.9	216.7	0.43	0.05059	0.00351	0.09239	0.00693	0.01331	0.00038	85.2	2.39	89.5	6.42	85.2	2.39
TN-EM_Zrn-25	386.6	128.2	0.33	0.06201	0.00661	0.11336	0.01037	0.01334	0.00043	85.4	2.75	108.7	9.4	85.4	2.75
TN-EM_Zrn-30	457.6	224.3	0.49	0.05301	0.00587	0.09571	0.01037	0.01336	0.00047	85.5	3.01	92.3	9.58	85.5	3.01
TN-EM_Zrn-01	452.6	228.9	0.51	0.04786	0.00404	0.08771	0.00761	0.01335	0.00035	85.5	2.2	85.1	7.07	85.5	2.2
TN-EM_Zrn-11	546.4	269.5	0.49	0.05243	0.00391	0.09592	0.00748	0.01335	0.00037	85.5	2.38	92.8	6.9	85.5	2.38
TN-EM_Zrn-05	439.4	185.4	0.42	0.04915	0.00395	0.09041	0.00761	0.01336	0.00027	85.6	1.73	87.6	7.07	85.6	1.73
TN-EM_Zrn-09	506.4	290.8	0.57	0.04641	0.00372	0.08671	0.0075	0.01339	0.00033	85.7	2.07	84.2	6.96	85.7	2.07
TN-EM_Zrn-10	427.4	176.8	0.41	0.05152	0.0041	0.09498	0.00799	0.01341	0.00035	85.8	2.22	91.8	7.4	85.8	2.22
TN-EM_Zrn-04	588.2	302.6	0.51	0.05408	0.00483	0.10075	0.00939	0.01352	0.00032	86.6	2.04	97	8.63	86.6	2.04
TN-EM_Zrn-07	352.2	123.7	0.35	0.04938	0.0044	0.09341	0.00878	0.01359	0.00036	87	2.28	90.3	8.16	87	2.28
TN-EM_Zrn-02	409.2	139.4	0.34	0.05529	0.00773	0.10463	0.01644	0.01358	0.00038	87	2.41	99.8	14.46	87	2.41
TN-EM_Zrn-29	475	184.2	0.39	0.0481	0.00443	0.08847	0.00808	0.01359	0.00027	87	1.69	85.8	7.49	87	1.69
TN-EM_Zrn-08	343.8	130	0.38	0.0529	0.00433	0.09914	0.00825	0.01367	0.00037	87.5	2.33	95.7	7.6	87.5	2.33
TN-EM_Zrn-15	361.5	135.6	0.38	0.05047	0.00576	0.09496	0.01079	0.01367	0.0004	87.5	2.53	91.5	10.06	87.5	2.53
TN-EM_Zrn-22	470.1	210.8	0.45	0.04639	0.00415	0.08703	0.00781	0.01381	0.0005	88.4	3.16	84.4	7.27	88.4	3.16
TN-EM_Zrn-18	435.3	212.3	0.49	0.04953	0.00446	0.09411	0.00827	0.01385	0.0004	88.7	2.53	91.1	7.66	88.7	2.53
TN-EM_Zrn-21	322.1	126.5	0.39	0.05328	0.00556	0.10245	0.0111	0.01394	0.00044	89.2	2.83	98.6	10.18	89.2	2.83
TN-EM_Zrn-28	456.6	160.9	0.35	0.05594	0.00483	0.10689	0.0094	0.01389	0.00037	88.9	2.36	102.8	8.58	88.9	2.36
Terr-EM_Zrn-62	569.6	181.5	0.32	0.06296	0.00548	0.11806	0.01078	0.01363	0.00046	87.3	2.92	113.1	9.79	87.3	2.92
Terr-EM_Zrn-12	350.2	67.6	0.19	0.05392	0.00594	0.1116	0.01268	0.01529	0.00058	97.8	3.71	106.9	11.52	97.8	3.71
Terr-EM_Zrn-34	325.4	362.2	1.11	0.05837	0.00602	0.13289	0.01707	0.01601	0.00053	102.4	3.37	125.5	15.12	102.4	3.37
Terr-EM_Zrn-28	292.6	51.3	0.18	0.05202	0.00591	0.11221	0.01226	0.01633	0.00064	104.4	4.08	107.5	11.23	104.4	4.08
Terr-EM_Zrn-08	101	84.7	0.84	0.05057	0.00861	0.11067	0.01841	0.0167	0.00085	106.7	5.42	105.2	16.77	106.7	5.42
Terr-EM_Zrn-26	174.5	140.7	0.81	0.0544	0.0058	0.1305	0.01579	0.01703	0.0007	108.8	4.46	123.5	14.15	108.8	4.46
Terr-EM_Zrn-17	94.5	65.2	0.69	0.06904	0.0168	0.16133	0.03382	0.01713	0.00094	109.5	5.93	149	29.67	109.5	5.93
Terr-EM_Zrn-72	216.3	129.7	0.6	0.05466	0.0079	0.12889	0.01967	0.01718	0.00062	109.8	3.95	121.4	17.55	109.8	3.95
Terr-EM_Zrn-70	486	429.8	0.88	0.06303	0.00846	0.15108	0.02169	0.01722	0.00067	110	4.24	142.1	19.39	110	4.24
Terr-EM_Zrn-29	304.6	191.1	0.63	0.06579	0.00763	0.1575	0.02085	0.01738	0.00086	111.1	5.47	147.6	18.08	111.1	5.47
Terr-EM_Zrn-19	133	70.7	0.53	0.0688	0.00969	0.16276	0.02097	0.01754	0.00082	112	5.19	152.2	18.26	112	5.19
Terr-EM_Zrn-40	209	196	0.94	0.04937	0.00633	0.11812	0.01547	0.01765	0.00067	112.8	4.22	112.3	14.11	112.8	4.22
Terr-EM_Zrn-56	109.3	64.7	0.59	0.06024	0.0101	0.14251	0.02138	0.01768	0.00102	112.9	6.44	133.3	18.73	112.9	6.44
Terr-EM_Zrn-15	124.7	55.4	0.44	0.05677	0.00801	0.13423	0.01959	0.0177	0.00085	113.1	5.35	126.2	17.65	113.1	5.35
Terr-EM_Zrn-23	108.1	59.7	0.55	0.0608	0.00979	0.14572	0.02261	0.0178	0.00109	113.7	6.87	136.5	19.76	113.7	6.87
Terr-EM_Zrn-16	336.4	211.5	0.63	0.0648	0.00803	0.15899	0.02265	0.01783	0.00078	113.9	4.93	148.9	19.61	113.9	4.93
Terr-EM_Zrn-50	153.8	77.3	0.5	0.05111	0.0088	0.12491	0.02342	0.01784	0.00115	113.9	7.28	118.1	20.74	113.9	7.28
Terr-EM_Zrn-35	163.2	146	0.89	0.06048	0.00678	0.14647	0.01659	0.01788	0.00071	114.2	4.47	137.7	14.69	114.2	4.47
Terr-EM_Zrn-57	254.6	205.9	0.81	0.06493	0.0062	0.1597	0.01697	0.0179	0.00058	114.4	3.65	149.4	14.83	114.4	3.65
Terr-EM_Zrn-21	119.9	85.3	0.71	0.05477	0.00608	0.13471	0.01561	0.01793	0.00072	114.5	4.54	130.2	15.29	114.5	4.54
Terr-EM_Zrn-55	124.2	55.6	0.45	0.05714	0.00734	0.14078	0.01846	0.01795	0.00083	114.6	5.23	132.3	16.44	114.6	5.23
Terr-EM_Zrn-61	91.6	39.4	0.43	0.05581	0.01159	0.13539	0.02796	0.01795	0.00081	114.7	5.13	130.6	26.67	114.7	5.13
Terr-EM_Zrn-24	226	192.2	0.85	0.05222	0.00574	0.12971	0.01559	0.01797	0.00052	114.8	3.27	122.8	13.88	114.8	3.27
Terr-EM_Zrn-67	142.4	117.4	0.82	0.07304	0.01453	0.17918	0.03607	0.01799	0.00122	114.9	7.7	163.8	30.75	114.9	7.7
Terr-EM_Zrn-75	256.2	232.3	0.91	0.05956	0.00917	0.14786	0.02321	0.01801	0.00068	115	4.28	137.7	20.52	115	4.28
Terr-EM_Zrn-65	411.8	340	0.83	0.05121	0.0046	0.12762	0.01283	0.01805	0.00045	115.3	2.84	121.3	11.55	115.3	2.84
Terr-EM_Zrn-06	105.8	51.4	0.49	0.06596	0.00877	0.15656	0.01873	0.01807	0.00089	115.4	5.62	146.3	16.46	115.4	5.62
Terr-EM_Zrn-25	815.5	492.8	0.6	0.05112	0.00326	0.12694	0.00972	0.0181	0.00043	115.6	2.73	121.1	8.73	115.6	2.73

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Tabla S2 (cont.). Análisis isotópicos U-Pb en zircón

	U Th		Proporciones corregidas							Edad corregida (Ma)					
	ppm		Th/U	$^{207}\text{Pb}/^{206}\text{Pb}$	$\pm 2\text{se abs}$	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{se abs}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{se abs}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{se}$	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{se}$	Best age (Ma)	$\pm 2\text{se}$
Terr-EM_Zrn-10	118.5	65.9	0.56	0.06399	0.00991	0.15715	0.02433	0.01826	0.00075	116.6	4.75	145.7	21.26	116.6	4.75
Terr-EM_Zrn-03	127.2	95.5	0.75	0.06323	0.00768	0.15613	0.01877	0.01834	0.00081	117.1	5.1	145.9	16.43	117.1	5.1
Terr-EM_Zrn-39	230.7	228.3	0.99	0.05012	0.00478	0.1266	0.01374	0.01835	0.00062	117.2	3.89	120.3	12.41	117.2	3.89
Terr-EM_Zrn-59	157.7	142.2	0.9	0.06467	0.00775	0.16297	0.01904	0.01841	0.00076	117.6	4.83	151.9	16.57	117.6	4.83
Terr-EM_Zrn-36	122.8	75	0.61	0.06998	0.00704	0.17483	0.01854	0.01844	0.00077	117.8	4.89	162.3	16.15	117.8	4.89
Terr-EM_Zrn-66	130.9	81.2	0.62	0.06044	0.01156	0.1508	0.0284	0.01844	0.00086	117.8	5.42	139.1	24.83	117.8	5.42
Terr-EM_Zrn-13	108	58.6	0.54	0.05537	0.00881	0.13713	0.0216	0.01847	0.00107	117.9	6.77	128.9	19.31	117.9	6.77
Terr-EM_Zrn-38	330.9	452.3	1.37	0.05242	0.00471	0.13585	0.01485	0.01847	0.00072	118	4.56	128.5	13.13	118	4.56
Terr-EM_Zrn-07	152.2	108.2	0.71	0.06406	0.00814	0.16055	0.02125	0.01849	0.00084	118.1	5.3	149.4	18.43	118.1	5.3
Terr-EM_Zrn-54	183.4	140.2	0.76	0.04889	0.00535	0.12398	0.01435	0.01855	0.00067	118.5	4.22	120.4	12	118.5	4.22
Terr-EM_Zrn-01	82.2	36.8	0.45	0.06362	0.0106	0.16003	0.02778	0.01855	0.00121	118.5	7.63	148.2	23.88	118.5	7.63
Terr-EM_Zrn-05	177	130.1	0.73	0.06216	0.0058	0.15594	0.01616	0.01862	0.00064	118.9	4.07	146.2	14.08	118.9	4.07
Terr-EM_Zrn-37	126.9	85.1	0.67	0.05723	0.00731	0.14275	0.01882	0.01867	0.00094	119.2	5.93	134	16.61	119.2	5.93
Terr-EM_Zrn-09	224.5	173.2	0.77	0.05351	0.00653	0.13867	0.01791	0.01866	0.00052	119.2	3.3	130.5	15.84	119.2	3.3
Terr-EM_Zrn-20	143.9	65.4	0.45	0.06803	0.01231	0.17396	0.03245	0.01874	0.00115	119.7	7.28	160.9	28.21	119.7	7.28
Terr-EM_Zrn-04	119	88	0.74	0.06455	0.01007	0.16501	0.02666	0.01878	0.00094	119.9	5.96	153	22.73	119.9	5.96
Terr-EM_Zrn-32	140.3	103.8	0.74	0.05041	0.00593	0.12821	0.0158	0.01879	0.0008	120	5.03	121.4	14.36	120	5.03
Terr-EM_Zrn-33	117.3	64.7	0.55	0.05796	0.00787	0.147	0.02167	0.01873	0.00082	120.7	4.75	141.2	20.49	120.7	4.75
Terr-EM_Zrn-49	122.5	71.9	0.59	0.05623	0.00835	0.14274	0.0198	0.01893	0.00083	120.9	5.24	133.8	17.57	120.9	5.24
Terr-EM_Zrn-58	130.3	84.5	0.65	0.06015	0.00809	0.15759	0.02068	0.01902	0.00072	121.5	4.54	146.9	17.95	121.5	4.54
Terr-EM_Zrn-11	106.7	64.8	0.61	0.05644	0.0117	0.14133	0.02646	0.01904	0.00108	121.5	6.83	131.8	23.05	121.5	6.83
Terr-EM_Zrn-71	109.8	65.8	0.6	0.06329	0.00947	0.1687	0.02598	0.01916	0.00105	122.3	6.63	155.5	22.28	122.3	6.63