TABLE DR1. ISOTOPIC COMPOSITIONS OF DOLOMITE AND CALCITE AND CALCULATED TEMPERATURES AND WATER COMPOSITIONS

Sample number*	Δ_{47} (‰)†	$\delta^{18}O$ (‰)§	$T(\Delta_{47})$ (°C)#	$T(\delta^{18}O)$ (°C)**	$\delta^{18}O(H_2O)$(‰)††
Latemar Dolomite					
A-15	0.536±0.022	25.1±0.2	56±10	58±1	–0.6±1.5
A-46	0.504±0.022	22.6±0.2	72±11	77±2	–0.9±1.5
C-11	0.551±0.022	27.2±0.2	50±9	45±1	+0.4±1.5
D-2	0.532±0.022	25.0±0.2	58±10	60±1	–0.5±1.5
E-4	0.521±0.022	26.7±0.2	63±10	48±1	+2.0±1.5
7-L	0.571±0.022	27.2±0.2	42±9	45±1	–1.0±1.5
7-6	0.535±0.022	23.1±0.2	57±10	73±1	–2.6±1.5
8-6	0.509±0.022	26.8±0.2	69±11	48±1	+2.9±1.5
13-A	0.527±0.022	24.6±0.2	60±10	62±1	–0.5±1.5
13-B	0.506±0.022	21.6±0.2	71±11	85±2	–2.0±1.5
Average					–0.3
Std Dev					1.7
Other Dolomite					
CV45	0.569±0.010				
CVLV	0.623±0.012				
PC1C	0.283±0.022				
Latemar Calcite					
A-17	0.566±0.022	27.5±0.14	52±9	29	+3.8±1.5
A-35	0.585±0.022	29.0±0.14	44±9	22	+3.9±1.5
A-39	0.546±0.022	26.4±0.14	61±10	35	+4.0±1.5
B-12	0.515±0.022	26.1±0.14	76±11	37	+5.9±1.5
9-C	0.555±0.022	27.9±0.14	57±10	27	+4.9±1.5
Average					+4.5
Std Dev					0.9

*Latemar sample numbers from Carmichael (2006) and Carmichael et al. (2008).

†See text for explanation of uncertainties.

§Values are with reference to VSMOW.

#Temperature from measured Δ_{47} using the Guo et al. (2009) calibrations. Uncertainty is based on the 2 SD uncertainty in Δ_{47}.

**Temperature calculated from measured $\delta^{18}O$ assuming $\delta^{18}O(H_2O) = 0$, using the calibrations of Vasconcelos et al. (2005) and O'Neil et al. (1969) for dolomite and calcite, respectively. Uncertainty is based on the 2 SD uncertainty in $\delta^{18}O$ (<1 °C for calcite).

††$\delta^{18}O$ (VSMOW) of H_2O coexisting with carbonate calculated from measured $\delta^{18}O$ at $T(\Delta_{47})$, using the calibrations of Vasconcelos et al. (2005) and O'Neil et al. (1969) for dolomite and calcite, respectively. Uncertainty is based on the 2 SD uncertainty in $T(\Delta_{47})$ and in $\delta^{18}O$ of carbonate.