Data Supplement. Unsaturation-index $U^{K'}_{37}$ and other supplementary data for surface sediments along the Peru-Chile margin.

Core	Area	Depth (m)	Lat (°S)	Long (°W)	$U^{K'}_{37}$	$U^{K'}_{37}$-SST (°C)	maSST (°C)	Residuals (°C)	Summer-SST (°C)	Winter-SST (°C)	NO_3 (µM)	PO_4 (µM)	Reference
Equatorial upwelling area													
VNTR01-10GC	Open-ocean	3405	0.04	-110.48	0.87	24.44	24.18	0.3	25.40	22.20	6.80	0.85	Prahl et al. (2006)
VNTR01-12GC	Open-ocean	3535	-3.00	-110.50	0.80	22.38	24.79	-2.4	26.30	20.30	7.90	0.85	Prahl et al. (2006)
VNTR01-9PC	Open-ocean	3860	-3.01	-95.07	0.88	24.74	24.63	0.1	26.00	22.10	8.80	0.85	Prahl et al. (2006)
VNTR01-19PC	Open-ocean	3448	-4.51	-102.02	0.91	25.62	23.75	1.9	27.60	26.80	7.90	0.85	Prahl et al. (2006)
Peru													
MW08708-0002	Upwelling	255	-11.07	-78.05	0.78	21.79	19.86	1.9	21.36	17.33	7.20	1.07	McCaffrey et al. (1990)
RR9702A-80MC	Upwelling	448	-13.48	-76.89	0.70	19.44	18.88	0.6	20.17	16.55	10.60	1.33	Prahl et al. (2006)
RR9702A-82MC	Upwelling	264	-13.70	-76.71	0.74	20.62	18.88	1.7	19.61	16.53	10.60	1.33	Prahl et al. (2006)
MW08708-0003PC	Upwelling	250	-15.10	-75.70	0.71	19.74	19.06	0.7	20.43	16.35	6.50	1.14	McCaffrey et al. (1990)
SC7	Upwelling	105	-15.10	-75.70	0.65	17.97	19.06	-1.1	20.43	16.35	6.50	1.14	McCaffrey et al. (1990)
RR9702A-83MC	Transition	1419	-13.17	-77.26	0.75	20.91	19.06	1.9	21.18	16.64	10.50	1.41	Prahl et al. (2006)
RR9702A-68MC	Open-ocean	3228	-16.01	-76.38	0.69	19.15	19.56	-0.4	22.80	16.60	3.90	0.92	Prahl et al. (2006)
RR9702A-77MC	Open-ocean	2588	-16.13	-76.98	0.68	18.85	19.56	-0.7	22.90	16.90	3.90	0.92	Prahl et al. (2006)
RR9702A-66MC	Open-ocean	2575	-16.13	-77.10	0.68	18.85	19.56	-0.7	22.80	16.60	3.90	0.92	Prahl et al. (2006)
RR9702A-74MC	Open-ocean	3476	-16.24	-76.24	0.68	18.85	19.56	-0.7	22.80	16.60	3.90	0.92	Prahl et al. (2006)
RR9702A-72MC	Open-ocean	3782	-16.51	-76.19	0.70	19.44	20.07	-0.6	22.80	16.60	3.90	0.92	Prahl et al. (2006)
RR9702A-70MC	Open-ocean	4124	-16.73	-76.01	0.66	18.26	20.07	-1.8	22.80	16.60	3.90	0.92	Prahl et al. (2006)
Northern Chile													
MINOX 2	Upwelling	200	-20.30	-70.23	0.47	12.68	20.67	-8.0	20.79	17.17	1.40	0.58	This study
MINOX 3	Upwelling	314	-20.30	-70.25	0.54	14.74	20.67	-5.9	20.79	17.17	1.40	0.58	This study
MINOX 4	Upwelling	500	-20.30	-70.28	0.57	15.51	20.67	-5.2	20.79	17.17	1.40	0.58	This study
Iquique 2	Upwelling	103	-21.18	-70.27	0.59	16.32	19.96	-3.6	20.52	16.84	0.50	0.62	This study
MINOX 5	Transition	850	-20.30	-70.47	0.63	17.51	20.67	-3.2	20.79	17.17	1.40	0.58	This study
GeoB 7108-3	Transition	1006	-22.84	-70.58	0.65	17.91	19.3	-1.4	20.73	15.92	0.70	0.72	This study
GeoB 7115-1	Transition	523	-24.00	-70.60	0.62	17.18	18.28	-1.1	20.21	15.28	0.40	0.74	This study
GeoB 7112-1	Transition	2508	-24.03	-70.82	0.55	14.89	18.25	-3.4	20.21	15.28	0.60	0.66	This study
GeoB 7119-1	Transition	954	-26.00	-70.87	0.54	14.70	17.04	-2.3	20.16	15.25	1.50	0.62	This study
GeoB 7116-1	Transition	1996	-26.00	-71.00	0.47	12.66	17.04	-4.4	19.56	14.96	1.50	0.62	This study
GeoB 3374-1	Transition	1352	-27.47	-71.17	0.66	18.26	16.39	1.9	19.56	14.59	2.20	0.51	Kim et al. (2002)
GeoB 7131-1	Transition	1650	-28.38	-71.50	0.38	10.03	16.17	-6.1	17.85	13.65	4.00	0.47	This study
GeoB 7130-1	Transition	2080	-28.42	-71.61	0.66	18.15	16.17	2.0	17.85	13.65	4.00	0.47	This study
GeoB 7133-1	Transition	635	-29.38	-71.64	0.54	14.82	15.76	-0.9	16.86	12.92	3.90	0.43	This study
GeoB 7134-1	Transition	1888	-29.72	-71.77	0.48	12.84	15.76	-2.9	16.73	12.98	3.90	0.43	This study
RR9702A-62MC	Open-ocean	2937	-18.09	-79.04	0.70	19.44	20.07	-0.6	22.50	17.60	1.20	0.48	Prahl et al. (2006)
RR9702A-60MC	Open-ocean	2480	-20.88	-81.50	0.68	18.85	19.9	-1.0	21.40	18.00	0.60	0.44	Prahl et al. (2006)
RR9702A-54MC	Open-ocean	1323	-21.36	-81.44	0.74	20.62	19.73	0.9	21.10	17.90	0.60	0.42	Prahl et al. (2006)
RR9702A-52MC	Open-ocean	3418	-23.19	-73.35	0.63	17.38	18.72	-1.3	20.40	16.00	0.40	0.67	Prahl et al. (2006)
RR9702A-50MC	Open-ocean	3396	-23.61	-73.61	0.64	17.68	18.72	-1.0	20.40	16.00	0.50	0.66	Prahl et al. (2006)
Central/southern Chile													
GeoB 7142-2	Upwelling	481	-31.18	-71.75	0.49	13.34	15.53	-2.2	16.33	13.05	4.20	0.54	This study
THIO99 E5D	Upwelling	200	-35.73	-73.21	0.58	15.80	14.03	1.8	14.13	12.23	3.70	0.65	This study
RR9702A-44MC	Upwelling	172	-35.76	-73.01	0.51	13.85	14.03	-0.2	14.13	12.23	3.70	0.65	Prahl et al. (2006)
Average St18	Upwelling	90	-36.00	-73.19	0.45	12.09	14.13	-2.0	14.61	12.4	4.20	0.81	This study
RR9702A-34MC	Upwelling	133	-36.53	-73.45	0.49	13.26	14.13	-0.9	14.15	12.16	4.20	0.81	Prahl et al. (2006)
RR9702A-22MC	Upwelling	430	-40.01	-74.12	0.49	13.26	13.47	-0.2	14.66	11.29	3.70	0.64	Prahl et al. (2006)
GeoB 7138-1	Transition	2732	-30.13	-71.87	0.47	12.70	15.4	-2.7	16.63	13.27	3.80	0.50	This study
GeoB 7137-2	Transition	1199	-30.17	-71.73	0.44	11.65	15.4	-3.7	16.63	13.27	3.80	0.50	This study
GeoB 7148-1	Transition	2289	-31.97	-71.93	0.47	12.79	15.53	-2.7	16.87	12.95	4.20	0.54	This study
GeoB 7150-1	Transition	1591	-32.28	-71.95	0.48	12.91	15.63	-2.7	16.63	12.94	3.60	0.59	This study
GIK 17748-2	Transition	2545	-32.75	-72.03	0.57	15.62	15.63	0.0	16.79	13.16	3.60	0.59	Kim et al. (2002)
GeoB 3301-1	Transition	969	-33.15	-71.98	0.59	16.21	14.87	1.3	15.65	12.58	5.70	0.74	Kim et al. (2002)
GeoB 3302-1	Transition	1498	-33.22	-72.10	0.59	16.21	14.87	1.3	16.12	12.92	5.70	0.74	This study
GeoB 7153-1	Transition	863	-33.80	-72.16	0.37	9.76	14.87	-5.1	15.80	12.67	5.70	0.74	This study
GeoB 7154-2	Transition	1385	-33.80	-72.27	0.33	8.64	14.87	-6.2	15.80	12.67	5.70	0.74	This study
Average St40	Transition	1000	-36.00	-73.70	0.53	14.44	14.13	0.3	14.61	12.4	4.20	0.81	This study
RR9702A-39MC	Transition	510	-36.17	-73.57	0.51	13.85	14.13	-0.3	14.61	12.4	4.20	0.81	Prahl et al. (2006)
RR9702A-42MC	Transition	1028	-36.17	-73.68	0.48	12.97	14.13	-1.2	13.65	12.13	4.20	0.81	Prahl et al. (2006)
GeoB 7162-3	Transition	798	-36.54	-73.67	0.51	13.96	14.13	-0.2	14.15	12.16	4.20	0.81	This study
GeoB 7165-1	Transition	797	-36.54	-73.67	0.51	13.85	14.13	-0.3	13.45	12.09	4.20	0.81	This study
GeoB 7202-1	Transition	629	-38.12	-73.93	0.38	10.09	14.18	-4.1	15.42	11.86	3.80	0.78	This study
GeoB 7198-1	Transition	2287	-38.17	-74.39	0.36	9.49	14.18	-4.7	15.10	11.71	3.80	0.78	This study
GeoB 7213-1	Transition	1190	-39.73	-74.29	0.38	9.93	13.81	-3.9	15.25	11.47	4.00	0.75	This study
GeoB 7211-1	Transition	890	-39.93	-74.27	0.38	10.06	13.81	-3.8	15.25	11.47	4.00	0.75	This study
RR9702A-20MC	Transition	1055	-39.97	-74.47	0.48	12.97	13.81	-0.8	15.25	11.47	4.00	0.75	Prahl et al. (2006)
GeoB 3313-1	Transition	852	-41.00	-74.45	0.51	13.85	13.14	0.7	15.00	11.14	3.60	0.53	Kim et al. (2002)
GeoB 7195-1	Transition	521	-41.21	-74.41	0.41	10.89	13.14	-2.3	15.00	11.14	3.60	0.53	This study
GeoB 3314-2	Transition	1652	-41.60	-74.98	0.39	10.27	13.14	-2.9	14.90	10.91	3.60	0.53	This study
GeoB 7175-3	Transition	1973	-42.45	-75.21	0.53	14.44	12.66	1.8	14.57	10.45	4.40	0.48	This study
GeoB 7174-2	Transition	1222	-42.54	-75.00	0.50	13.58	12.66	0.9	14.71	10.4	4.40	0.48	This study
GeoB 7179-1	Transition	2760	-42.57	-75.34	0.44	11.65	12.66	-1.0	14.54	10.36	4.40	0.48	This study
GeoB 7177-2	Transition	905	-42.58	-74.84	0.49	13.40	12.66	0.7	14.30	10.3	4.40	0.48	This study
GeoB 7186-1	Transition	1171	-44.15	-75.16	0.38	10.02	11.8	-1.8	13.72	9.87	4.80	0.67	This study
RR9702A-10MC	Transition	2879	-46.32	-76.54	0.43	11.50	10.92	0.6	13.00	9.08	6.40	0.80	Prahl et al. (2006)
GeoB 3368-4	Open-ocean	3240	-30.37	-71.97	0.63	17.38	15.4	2.0	16.46	13.31	3.80	0.50	Kim et al. (2002)
RR9702A-48MC	Open-ocean	3920	-32.59	-73.65	0.57	15.62	15.38	0.2	17.40	13.10	4.80	0.71	Prahl et al. (2006)
RR9702A-46MC	Open-ocean	3852	-33.28	-73.53	0.53	14.44	14.87	-0.4	16.90	12.60	5.70	0.74	Prahl et al. (2006)
RR9702A-31MC	Open-ocean	3946	-37.67	-75.43	0.50	13.56	14.34	-0.8	17.00	11.70	2.60	0.77	Prahl et al. (2006)
RR9702A-25MC	Open-ocean	4087	-39.89	-75.89	0.49	13.26	13.81	-0.5	16.10	10.90	4.00	0.75	Prahl et al. (2006)
RR9702A-27MC	Open-ocean	3850	-40.48	-75.92	0.48	12.97	13.62	-0.6	15.40	10.50	4.10	0.63	Prahl et al. (2006)
RR9702A-12MC	Open-ocean	3523	-43.42	-76.25	0.47	12.68	12.34	0.3	13.50	9.20	4.00	0.43	Prahl et al. (2006)
RR9702A-14MC	Open-ocean	3471	-43.54	-76.48	0.45	12.09	12.34	-0.3	13.50	9.20	4.00	0.43	Prahl et al. (2006)
GeoB 7190-1	Open-ocean	3285	-44.28	-75.86	0.35	9.26	11.8	-2.5	13.87	9.92	4.80	0.67	This study
RR9702A-08MC	Open-ocean	3014	-46.35	-76.67	0.43	11.50	10.92	0.6	11.90	7.40	6.40	0.80	Prahl et al. (2006)
RR9702A-06MC	Open-ocean	3280	-46.88	-76.60	0.40	10.62	10.92	-0.3	11.90	7.40	6.40	0.80	Prahl et al. (2006)
RR9702A-04MC	Open-ocean	3354	-47.00	-76.62	0.41	10.91	10.5	0.4	11.90	7.40	8.70	1.00	Prahl et al. (2006)
RR9702A-01MC	Open-ocean	3964	-50.65	-76.96	0.38	10.03	8.8	1.2	9.70	7.20	12.00	1.08	Prahl et al. (2006)

$U^{K'}_{37}$ calculations were conducted according to e.g., Prahl and Wakeham (1987), and were converted to alkenone-based temperature ($U^{K'}_{37}$-SST) using the equation of Prahl et al. (1988), i.e., $U^{K'}_{37} = 0.034T + 0.039$, where T = temperature (°C). Analytical accuracy was ±0.2°C in our laboratory.