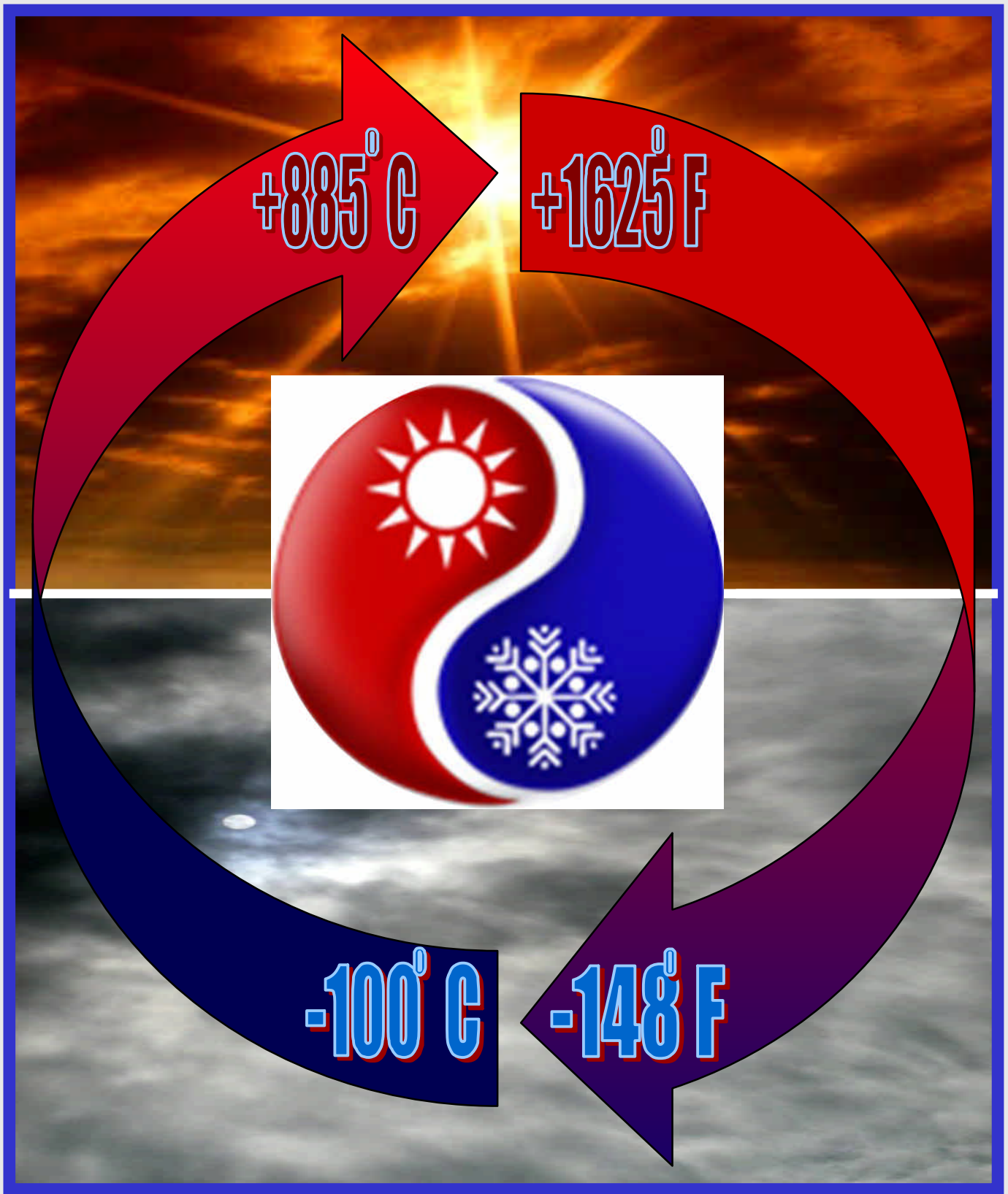


PlusICE[®]

Phase Change Materials

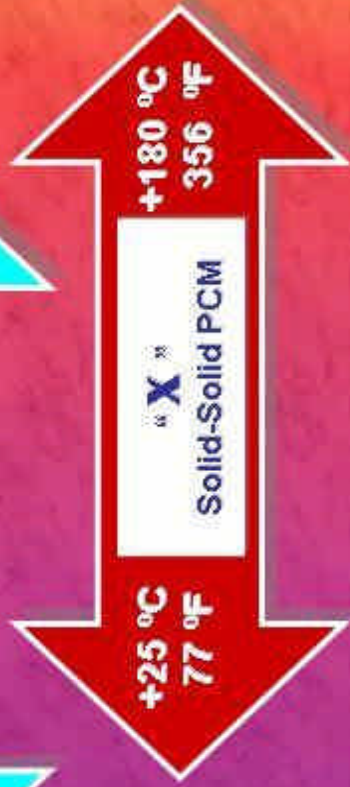


PCM

PHASE CHANGE MATERIAL PRODUCTS LIMITED



PlusICE Range



Temperature Range



PlusICE PCM TEMPERATURE (H) RANGE

2011-1

PCM Type	Phase Change Temperature		Density		Latent Heat Capacity		Volumetric Heat Capacity		Specific Heat Capacity		Thermal Conductivity	
	(°C)	(°F)	(kg/m ³)	(lb / ft ³)	(kJ/kg)	(Btu / lb)	(MJ/m ³)	(Btu / ft ³)	(kJ/kg K)	(Btu / lb°F)	(W/m K)	(Btu / ft ² h°F)
HIGH TEMPERATURE PCM SOLUTIONS												
H105	104	219	1,700	106	125	54	213	5,704	1.500	0.355	0.500	0.289
H115	114	237	2,200	137	100	43	220	5,905	1.505	0.357	0.503	0.291
H120	120	248	2,220	139	120	52	266	7,150	1.510	0.358	0.506	0.292
H160	162	324	1,910	119	105	45	201	5,383	1.505	0.357	0.509	0.294
H190	191	376	2,300	144	170	73	391	10,494	1.510	0.358	0.512	0.296
H220	220	428	2,000	125	100	43	200	5,368	1.515	0.359	0.515	0.298
H230	227	441	1,553	97	105	45	163	4,377	1.520	0.360	0.518	0.299
H250	250	482	2,380	149	280	120	666	17,886	1.525	0.361	0.521	0.301
H255	254	489	2,380	149	270	116	643	17,247	1.530	0.362	0.524	0.303
H280	282	540	2,250	140	160	69	360	9,662	1.535	0.364	0.527	0.305
H285	285	545	2,200	137	85	37	187	5,019	1.540	0.365	0.530	0.306
H290	292	558	2,200	137	150	65	330	8,857	1.545	0.366	0.533	0.308
H300	302	576	1,900	119	130	56	247	6,629	1.550	0.367	0.537	0.310
H305	305	581	1,570	98	150	65	236	6,321	1.555	0.368	0.541	0.313
H320	320	608	2,100	131	70	30	147	3,945	1.500	0.355	0.545	0.315
H325	327	621	2,110	132	80	34	169	4,531	1.505	0.357	0.549	0.317
H335	334	633	2,110	132	80	34	169	4,531	1.510	0.358	0.553	0.320
H355	353	667	2,060	129	230	99	474	12,717	1.520	0.360	0.556	0.321
H380	382	720	2,050	128	225	97	461	12,380	1.525	0.361	0.559	0.323
H395	395	743	2,330	145	215	92	501	13,445	1.530	0.362	0.562	0.325
H425	425	797	2,100	131	220	95	462	12,400	1.535	0.364	0.565	0.327
H430	430	806	2,160	135	125	54	270	7,247	1.540	0.365	0.568	0.328
H485	483	901	2,220	139	200	86	444	11,917	1.545	0.366	0.571	0.330
H500	500	932	2,220	139	300	129	666	17,875	1.550	0.367	0.569	0.329
H500	500	932	2,140	134	140	60	300	8,041	1.555	0.368	0.567	0.328
H525	525	977	2,350	147	155	67	364	9,776	1.560	0.370	0.565	0.327
H535	535	995	2,320	145	130	56	302	8,095	1.565	0.371	0.563	0.325
H610	610	1,130	2,070	129	410	176	849	22,779	1.570	0.372	0.561	0.324
H640	640	1,184	2,380	149	338	145	804	21,591	1.575	0.373	0.559	0.323
H650	652	1,206	2,450	153	300	129	735	19,727	1.580	0.374	0.557	0.322
H690	687	1,269	2,400	150	250	108	600	16,104	1.585	0.375	0.560	0.324
H695	695	1,283	2,460	154	280	120	689	18,487	1.590	0.377	0.563	0.325
H700	699	1,290	2,410	150	250	108	603	16,171	1.595	0.378	0.566	0.327
H705	706	1,303	2,430	152	250	108	608	16,305	1.600	0.379	0.569	0.329
H705	705	1,301	2,040	127	452	194	922	24,749	1.595	0.378	0.573	0.331
H725	725	1,337	2,210	138	602	259	1,330	35,708	1.590	0.377	0.577	0.334
H755	755	1,391	2,160	135	466	200	1,007	27,016	1.585	0.375	0.581	0.336
H845	845	1,553	2,530	158	276	119	698	18,742	1.580	0.374	0.585	0.338
H885	885	1,625	2,290	143	236	102	540	14,505	1.575	0.373	0.589	0.340

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PlusICE PCM (HYDRATED SALT) (S) RANGE

2011-1

PCM Type	Phase Change Temperature		Density		Latent Heat Capacity		Volumetric Heat Capacity		Specific Heat Capacity		Thermal Conductivity	
	(°C)	(°F)	(kg/m ³)	(lb / ft ³)	(kJ/kg)	(Btu / lb)	(MJ/m ³)	(Btu / ft ³)	(kJ/kg K)	(Btu / lb°F)	(W/m K)	(Btu / ft ² h°F)
HYDRATED SALT BASED PCM SOLUTIONS												
S117	117	243	1,450	90.5	160	69	232	6,227	2.61	0.618	0.700	0.405
S89	89	192	1,550	96.8	151	65	234	6,282	2.48	0.588	0.670	0.387
S83	83	181	1,600	99.9	141	61	226	6,055	2.31	0.547	0.620	0.358
S72	72	162	1,666	104.0	127	55	212	5,679	2.13	0.505	0.580	0.335
S58	58	136	1,505	94.0	145	62	218	5,857	2.55	0.604	0.690	0.399
S50	50	122	1,601	99.9	100	43	160	4,297	1.59	0.377	0.430	0.249
S46	46	115	1,587	99.1	210	90	333	8,945	2.41	0.571	0.450	0.260
S44	44	111	1,584	98.9	100	43	158	4,251	1.61	0.381	0.430	0.249
S34	34	93	2,100	131.1	115	49	242	6,482	2.10	0.497	0.520	0.301
S32	32	90	1,460	91.1	200	86	292	7,837	1.91	0.452	0.510	0.295
S30	30	86	1,304	81.4	190	82	248	6,650	1.90	0.450	0.480	0.277
S27	27	81	1,530	95.5	183	79	280	7,515	2.20	0.521	0.540	0.312
S25	25	77	1,530	95.5	180	77	275	7,392	2.20	0.521	0.540	0.312
S23	23	73	1,530	95.5	175	75	268	7,186	2.20	0.521	0.540	0.312
S21	22	72	1,530	95.5	170	73	260	6,981	2.20	0.521	0.540	0.312
S19	19	66	1,520	94.9	160	69	243	6,527	1.90	0.450	0.430	0.249
S17	17	63	1,525	95.2	160	69	244	6,549	1.90	0.450	0.430	0.249
S15	15	59	1,510	94.3	160	69	242	6,485	1.90	0.450	0.430	0.249
S13	13	55	1,515	94.6	160	69	242	6,506	1.90	0.450	0.430	0.249
S10	10	50	1,470	91.8	155	67	228	6,115	1.90	0.450	0.430	0.249
S8	8	46	1,475	92.1	150	65	221	5,938	1.90	0.450	0.440	0.254
S7	7	45	1,700	106.1	150	65	255	6,844	1.85	0.438	0.400	0.231

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 PlusICE PCM (ORGANIC) (A) RANGE 2011-1												
PCM Type	Phase Change Temperature		Density		Latent Heat Capacity		Volumetric Heat Capacity		Specific Heat Capacity		Thermal Conductivity	
	(°C)	(°F)	(kg/m ³)	(lb / ft ³)	(kJ/kg)	(Btu / lb)	(MJ/m ³)	(Btu / ft ³)	(kJ/kg K)	(Btu / lb°F)	(W/m K)	(Btu / ft ² h°F)
ORGANIC PCM SOLUTIONS												
A164	164	327	1,500	93.6	290	125	435	11,675	nd	n/d	nd	n/d
A144	144	291	880	54.9	115	49	101	2,716	2.2	0.521	0.230	0.133
A133	133	271	880	54.9	126	54	111	2,976	2.2	0.521	0.230	0.133
A95	95	203	900	56.2	205	88	185	4,952	2.2	0.521	0.220	0.127
A82	82	180	850	53.1	155	67	132	3,536	2.21	0.524	0.220	0.127
A70	70	158	890	55.6	173	74	154	4,133	2.2	0.521	0.230	0.133
A62	62	144	910	56.8	145	62	132	3,542	2.2	0.521	0.220	0.127
A60	60	140	910	56.8	145	62	132	3,542	2.22	0.526	0.220	0.127
A58	58	136	910	56.8	132	57	120	3,224	2.22	0.526	0.220	0.127
A55	55	131	905	56.5	135	58	122	3,279	2.22	0.526	0.220	0.127
A53	53	127	910	56.8	130	56	118	3,175	2.22	0.526	0.220	0.127
A42	42	108	905	56.5	105	45	95	2,550	2.22	0.526	0.210	0.121
A39	39	102	900	56.2	105	45	95	2,536	2.22	0.526	0.220	0.127
A32	32	90	845	52.8	130	56	110	2,948	2.20	0.521	0.210	0.121
A28	28	82	789	49.3	155	67	122	3,282	2.22	0.526	0.210	0.121
A26	26	79	790	49.3	150	65	119	3,181	2.22	0.526	0.210	0.121
A25	25	77	785	49.0	150	65	118	3,160	2.26	0.535	0.180	0.104
A24	24	75	790	49.3	145	62	115	3,075	2.22	0.526	0.180	0.104
A23	23	73	785	49.0	145	62	114	3,055	2.22	0.526	0.180	0.104
A22	22	72	785	49.0	145	62	114	3,055	2.22	0.526	0.180	0.104
A17	17	63	785	49.0	150	65	118	3,160	2.22	0.526	0.180	0.104
A15	15	59	790	49.3	130	56	103	2,756	2.26	0.535	0.180	0.104
A9	9	48	775	48.4	140	60	109	2,912	2.16	0.512	0.210	0.121
A8	8	46	773	48.3	150	65	116	3,112	2.16	0.512	0.210	0.121
A6	6	43	770	48.1	150	65	116	3,100	2.17	0.514	0.210	0.121
A4	4	39	766	47.8	200	86	153	4,112	2.18	0.516	0.210	0.121
A3	3	37	765	47.8	200	86	153	4,107	2.20	0.521	0.210	0.121
A2	2	36	765	47.8	200	86	172	4,616	2.20	0.521	0.210	0.121

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PlusICE PCM (EUTECTIC) (E) RANGE

PCM Type	Phase Change Temperature		Density		Latent Heat Capacity		Volumetric Heat Capacity		Specific Heat Capacity		Thermal Conductivity	
	(°C)	(°F)	(kg/m ³)	(lb / ft ³)	(kJ/kg)	(Btu / lb)	(MJ/m ³)	(Btu / ft ³)	(kJ/kg K)	(Btu / lb °F)	(W/m K)	(Btu / ft ² h°F)
EUTECTIC PCM SOLUTIONS												
E0	0	32	1,000	62.4	332	143	332	8,911	4.186	0.992	0.580	0.335
E-2	-2.0	28	1,070	66.8	306	132	327	8,777	3.80	0.900	0.580	0.335
E-3	-3.7	25	1,060	66.2	312	134	331	8,884	3.84	0.910	0.600	0.347
E-4	-3.9	25	1,060	66.2	282	121	299	8,025	3.78	0.895	0.580	0.335
E-6	-6.0	21	1,110	69.3	275	118	305	8,186	3.83	0.907	0.560	0.324
E-10	-10.0	14	1,140	71.2	286	123	326	8,750	3.33	0.789	0.560	0.324
E-11	-11.6	11	1,090	68.0	301	129	328	8,804	3.55	0.841	0.570	0.329
E-12	-12.3	10	1,110	69.3	250	108	278	7,462	3.47	0.822	0.560	0.324
E-14	-14.8	5	1,220	76.2	243	105	296	7,945	3.51	0.832	0.530	0.306
E-15	-15.0	5	1,060	66.2	303	130	321	8,616	3.87	0.917	0.530	0.306
E-19	-18.7	-2	1,125	70.2	282	121	344	9,233	3.29	0.779	0.580	0.335
E-21	-20.6	-5	1,240	77.4	263	113	326	8,750	3.13	0.741	0.510	0.295
E-22	-22.0	-8	1,180	73.7	234	101	276	7,408	3.34	0.791	0.570	0.329
E-26	-26.0	-15	1,250	78.0	260	112	325	8,723	3.67	0.869	0.580	0.335
E-29	-29.0	-20	1,420	88.6	222	95	264	7,086	3.69	0.874	0.640	0.370
E-32	-32.0	-26	1,290	80.5	243	105	313	8,401	2.95	0.699	0.560	0.324
E-34	-33.6	-28	1,205	75.2	240	103	286	7,676	3.05	0.723	0.540	0.312
E-37	-36.5	-34	1,500	93.6	213	92	302	8,106	3.15	0.746	0.540	0.312
E-46	-46.0	-51	1,205	75.2	240	103	289	7,762	3.05	0.723	0.540	0.312
E-50	-49.8	-58	1,325	82.7	218	94	283	7,596	3.28	0.777	0.560	0.324
E-60	-60.0	-76	1,280	79.9	172	74	220	5,909	2.90	0.687	0.440	0.254
E-62	-62.0	-80	1,300	81.2	180	77	234	6,281	4.01	0.950	0.580	0.335
E-75	-75.0	-103	902	56.3	102	44	92	2,469	2.43	0.576	0.170	0.098
E-78	-78.0	-108	880	54.9	115	49	101	2,716	1.96	0.464	0.140	0.081
E-90	-90.0	-130	786	49.1	90	39	71	1,906	2.56	0.606	0.140	0.081
E-114	-114.0	-173	782	48.8	107	46	84	2,255	2.39	0.566	0.170	0.098

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PCM Type	Phase Change Temperature		Density		Latent Heat Capacity		Volumetric Heat Capacity		Specific Heat Capacity		Thermal Conductivity	
	(°C)	(°F)	(kg/m ³)	(lb / ft ³)	(kJ/kg)	(Btu / lb)	(MJ/m ³)	(Btu / ft ³)	(kJ/kg K)	(Btu / lb°F)	(W/m K)	(Btu / ft ² h°F)
SOLID-SOLID PCM SOLUTIONS												
X25	25	77	1,055	65.9	110	47	116	3,115	1.63	0.386	0.360	0.208
X30	30	86	1,050	65.5	105	45	110	2,959	1.65	0.391	0.360	0.208
X40	40	104	1,046	65.3	125	54	131	3,509	1.67	0.396	0.360	0.208
X55	55	131	1,060	66.2	115	49	122	3,272	1.62	0.384	0.360	0.208
X70	70	158	1,085	67.7	125	54	136	3,640	1.57	0.372	0.360	0.208
X80	80	176	1,193	74.5	140	60	167	4,483	1.52	0.360	0.360	0.208
X90	90	194	1,200	74.9	135	58	162	4,348	1.51	0.358	0.360	0.208
X95	95	203	1,215	75.9	140	60	170	4,565	1.51	0.358	0.360	0.208
X120	120	248	1,245	77.7	180	77	224	6,015	1.50	0.355	0.360	0.208
X130	130	266	1,280	79.9	260	112	333	8,932	1.47	0.348	0.360	0.208
X165	165	329	1,304	81.4	230	99	300	8,050	1.43	0.339	0.360	0.208
X180	180	356	1,330	83.0	280	120	372	9,995	1.40	0.332	0.360	0.208
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Note: For other temperatures please consult our technical team.												