

Dachs E., Geiger C.A. and Benisek A. (2012): Almandine garnet:

Lattice and non-lattice heat capacity behavior and standard thermodynamic properties

Appendix 1: PPMS data

Almandine(R41) PPMS 1			Almandine(R41) PPMS 2		
Formula weight	497.753	g/mol	Formula weight	497.753	g/mol
Sample weight	17.36	mg	Sample weight	17.36	mg
T [K]	Cp [J/mol.K]	σ (Cp) [J/mol.K]	T [K]	Cp [J/mol.K]	σ (Cp) [J/mol.K]
3.04965	1.42295	0.00707793	3.06277	1.44636	0.00715671
3.05049	1.42406	0.00717031	3.06341	1.44983	0.00720227
3.05229	1.42871	0.0069791	3.06582	1.45933	0.00781127
3.30426	2.01633	0.00659151	3.31874	2.05175	0.00752726
3.30496	2.01819	0.00676431	3.31918	2.05344	0.00676495
3.30644	2.02614	0.00769272	3.32071	2.06023	0.00795888
3.56971	2.77056	0.00881713	3.58523	2.81812	0.00933794
3.57051	2.77261	0.008826	3.58597	2.81624	0.0086579
3.57148	2.77471	0.00997539	3.58726	2.82145	0.00991959
3.8593	3.73358	0.010994	3.8761	3.79353	0.0105493
3.85948	3.73609	0.0109978	3.8763	3.78645	0.0107055
3.86096	3.74286	0.0125748	3.87764	3.79931	0.0125032
4.17068	4.94788	0.0135464	4.18883	5.02512	0.014058
4.17112	4.95033	0.0141407	4.18903	5.02698	0.0138085
4.17208	4.95565	0.0156872	4.19023	5.02979	0.0157852
4.5072	6.4626	0.0165194	4.52602	6.54277	0.0170534
4.50724	6.46207	0.0157888	4.52615	6.53971	0.0158994
4.50831	6.45966	0.0188842	4.52721	6.54914	0.0189409
4.87243	8.28183	0.0206149	4.89263	8.38154	0.0200876
4.87253	8.28459	0.0196545	4.89268	8.38408	0.0212934
4.8736	8.28655	0.0230613	4.8936	8.39155	0.0235187
5.26637	10.5173	0.0249625	5.28747	10.6405	0.0250892
5.26666	10.5261	0.0260343	5.28749	10.6361	0.0263294
5.26769	10.5247	0.030096	5.2882	10.6417	0.0319816
5.69683	13.2048	0.0281508	5.71878	13.3495	0.0284629
5.69702	13.2213	0.0297508	5.71879	13.3548	0.0309177
5.69779	13.2165	0.0359092	5.7196	13.3466	0.0342459
6.09616	15.9843	0.0656958	6.11867	16.1171	0.0376735
6.09923	16.0146	0.0345123	6.12227	16.178	0.0357319
6.09924	16.0038	0.0345784	6.12231	16.1643	0.0354061
6.15585	16.4096	0.0343737	6.1751	16.5216	0.0403351
6.1561	16.4158	0.0389674	6.17857	16.5485	0.0365418
6.1568	16.4135	0.0413182	6.17863	16.5588	0.0364258
6.22545	16.9051	0.0423934	6.24819	17.0708	0.0432458
6.22862	16.9389	0.0354756	6.25161	17.1134	0.0372985
6.22883	16.9474	0.0364926	6.25169	17.111	0.0373214
6.35438	17.8779	0.041593	6.37735	18.0452	0.0441976
6.35729	17.8965	0.16965	6.38055	18.083	0.038937
6.35784	17.9176	0.0380372	6.38114	18.0891	0.0402329
6.48433	18.8553	0.0449704	6.50802	19.0329	0.0449194

6.48778	18.898	0.0391135	6.51078	19.0757	0.0856315
6.48786	18.8937	0.0405998	6.51146	19.0616	0.0397908
6.61387	19.8459	0.0462538	6.6367	20.0001	0.0504509
6.61696	19.8833	0.0420847	6.64065	20.0659	0.0424157
6.61712	19.8799	0.0730817	6.64109	20.0771	0.0440457
6.65512	20.1747	0.044961	6.68806	20.3828	0.0465133
6.65666	20.2036	0.0464342	6.68916	20.4138	0.0424205
6.65699	20.213	0.0451311	6.69435	20.5513	0.0541983
6.74318	20.8911	0.0724265	6.76719	21.0387	0.046385
6.74583	20.9039	0.0445294	6.77042	21.1117	0.0436304
6.74624	20.9122	0.0770764	6.77057	21.0991	0.0451094
6.86799	21.8842	0.05208	6.89625	22.098	0.0521496
6.8754	21.953	0.0452661	6.89985	22.1336	0.0464078
6.87546	21.9728	0.0489533	6.90002	22.1539	0.0452063
7.00505	23.0014	0.0966203	7.03099	23.2516	0.0546008
7.008	23.0495	0.0478037	7.03756	23.3029	0.0491371
7.02053	23.2712	0.0792359	7.0401	23.449	0.0430122
7.12996	24.0702	0.0615488	7.14802	24.2102	0.0584984
7.13255	24.1124	0.0478155	7.15116	24.248	0.0481631
7.1326	24.1154	0.0487085	7.15131	24.2496	0.0485152
7.18842	24.5494	0.0493709	7.20851	24.7107	0.0499477
7.18888	24.5494	0.0500784	7.20956	24.7244	0.0567874
7.19252	24.5857	0.0571053	7.21173	24.734	0.059467
7.25886	25.1328	0.126779	7.27764	25.2928	0.0617914
7.26152	25.1919	0.0646915	7.28078	25.3218	0.0511974
7.26166	25.1693	0.0535796	7.28134	25.3417	0.116228
7.38836	26.2601	0.101268	7.40735	26.392	0.176594
7.39119	26.2337	0.111431	7.41044	26.4967	0.0850209
7.39127	26.3038	0.052856	7.41052	26.4559	0.0543727
7.5178	27.4223	0.0632093	7.53697	27.5757	0.0650168
7.52085	27.4504	0.0680742	7.53994	27.6216	0.0565981
7.52104	27.4676	0.0559061	7.54011	27.6315	0.0567231
7.64743	28.6069	0.0653331	7.66671	28.7754	0.0673693
7.64999	28.6426	0.0571743	7.66949	28.8238	0.0597264
7.65041	28.6545	0.0562728	7.66993	28.8344	0.197759
7.76837	29.7709	0.0620259	7.79055	29.9515	0.063459
7.76938	29.7628	0.0604765	7.79062	29.9276	0.06127
7.77223	29.7879	0.072655	7.79503	30.1297	0.246614
7.77796	29.8653	0.113512	7.79725	30.0407	0.070084
7.78057	29.8947	0.0652884	7.80035	30.0587	0.0618294
7.78067	29.9007	0.0615611	7.8004	30.0658	0.0696749
7.90751	31.0924	0.101404	7.92705	31.2516	0.0698722
7.90999	31.1611	0.063327	7.92955	31.3194	0.0640452
7.91018	31.1651	0.060827	7.93007	31.3242	0.342307
8.03664	32.3839	0.155612	8.05665	32.5648	0.102683
8.03915	32.4083	0.0668381	8.0596	32.6187	0.153646
8.03987	32.4246	0.070238	8.0597	32.5787	0.0667582
8.16599	33.6728	0.072606	8.18633	33.8545	0.0779916
8.16815	33.7038	0.0684843	8.18901	33.914	0.0920433
8.16867	33.6925	0.0678405	8.18904	33.8919	0.0668969

8.29547	35.0091	0.0937235	8.31611	35.206	0.080163
8.29792	35.0398	0.0709401	8.31841	35.2542	0.0753263
8.29805	35.0621	0.0710019	8.31864	35.2726	0.0770112
8.39587	36.06	0.0740413	8.4186	36.3009	0.0748382
8.39635	36.096	0.0739934	8.41926	36.3007	0.162706
8.40164	36.1219	0.089883	8.42396	36.3444	0.0979584
8.42575	36.3475	0.148249	8.44669	36.6005	0.0812085
8.42816	36.4389	0.0756651	8.44915	36.643	0.0776876
8.42847	36.4423	0.0805015	8.44921	36.6586	0.163976
8.55487	37.8483	0.0940322	8.57635	38.0785	0.0902465
8.55758	37.8627	0.0790093	8.57842	38.1201	0.0806587
8.55801	37.8971	0.08011	8.57889	38.1428	0.0794745
8.68422	39.3683	0.0978933	8.70509	39.624	0.314763
8.687	39.447	0.0831512	8.70804	39.6701	0.0859708
8.68725	39.4529	0.0838043	8.70856	39.6711	0.0876046
8.81353	40.9719	0.097456	8.83536	41.36	1.64762
8.81623	41.0043	0.0865576	8.83733	41.2517	0.129618
8.81636	41.034	0.0877808	8.8393	41.3002	0.0946994
8.94386	42.585	0.10079	8.96539	42.6785	0.190258
8.94636	42.6662	0.0920571	8.96813	42.8969	0.0935102
8.94708	42.6905	0.0919024	8.96839	42.9223	0.131026
9.06946	44.1905	0.0926473	9.09334	44.5067	0.130512
9.07255	44.2254	0.104041	9.09597	44.5482	0.094819
9.07289	44.2417	0.0938082	9.09716	44.57	0.0967934
9.07339	44.2828	0.0950405	9.09747	44.5387	0.0947648
9.07541	44.2926	0.127571	9.09753	44.553	0.145033
9.07612	44.2889	0.0964759	9.09785	44.5524	0.116429
9.19478	45.7669	0.106912	9.21575	45.9206	0.0897522
9.20403	45.8875	0.0849383	9.2259	45.9713	0.0725172
9.20483	45.8919	0.0819691	9.22631	45.9734	0.0722455
9.30868	44.8544	0.162493	9.35117	42.642	0.306225
9.32777	43.7648	0.255071	9.35141	42.5634	0.305362
9.33045	43.5579	0.267013	9.35296	42.3187	0.329119
9.45345	35.6192	0.42155	9.4768	33.9953	0.416518
9.45593	35.5174	0.419826	9.47812	34.0427	0.403963
9.46129	35.03	0.431191	9.48112	33.7466	0.409354
9.56273	29.1143	0.267007	9.58613	27.9377	0.242405
9.58644	27.8029	0.286646	9.60778	26.8276	0.265863
9.59083	27.5637	0.288525	9.6116	26.5978	0.26908
9.69753	23.8019	0.153569	9.72074	23.2064	0.139323
9.71738	23.2746	0.158151	9.73862	22.7331	0.146549
9.71936	23.2079	0.15941	9.74081	22.6713	0.148032
9.80084	21.529	0.111538	9.82648	21.1218	0.100717
9.80287	21.5326	0.108102	9.82792	21.1514	0.161127
9.80591	21.3708	0.383632	9.83063	21.0861	0.0996496
9.83187	21.0536	0.0967783	9.85534	20.7085	0.0853899
9.84688	20.7947	0.0935125	9.86928	20.511	0.0845829
9.84788	20.8033	0.0916868	9.87033	20.4929	0.0853208
9.96314	19.5312	0.0674701	9.98616	19.349	0.0569661
9.97666	19.3975	0.0552519	9.99897	19.2377	0.0542863

9.97748	19.423	0.0581357	9.99996	19.2241	0.0550401
10.0935	18.6348	0.053717	10.1164	18.5078	0.0521889
10.1049	18.5533	0.0484467	10.1288	18.4487	0.0397198
10.1058	18.5669	0.0427096	10.1303	18.4353	0.0390836
10.2237	18.0095	0.0414448	10.247	17.8906	0.0551573
10.2371	17.9905	0.0359218	10.2607	17.8933	0.0339717
10.2376	17.9824	0.0377656	10.2615	17.8924	0.0365166
10.3534	17.5838	0.040256	10.3746	17.5125	0.0581033
10.3709	17.5332	0.0316332	10.3941	17.4707	0.030455
10.371	17.5256	0.0272075	10.3945	17.4747	0.0287501
10.4821	17.2682	0.0441927	10.5103	17.178	0.0381927
10.5002	17.2132	0.0277366	10.5235	17.1602	0.0250801
10.5004	17.2197	0.0326687	10.5239	17.1567	0.0270164
10.577	17.0535	0.0395282	10.6011	17.008	0.0678185
10.6003	17.0168	0.0379494	10.6261	16.9672	0.0275913
10.6006	17.0095	0.0264664	10.6269	16.9667	0.052978
10.6142	16.9808	0.0385192	10.6402	16.9136	0.0317087
10.6284	16.9648	0.0268	10.651	16.9139	0.0337679
10.6299	16.9276	0.107714	10.6529	16.9194	0.0242042
10.7445	16.7519	0.0336793	10.7678	16.723	0.0365252
10.758	16.7486	0.0456602	10.7815	16.7128	0.0262668
10.7584	16.7532	0.0267335	10.7816	16.7144	0.0237063
10.8745	16.5782	0.0377649	10.8982	16.5368	0.0323381
10.8873	16.573	0.023336	10.911	16.538	0.0234961
10.8878	16.5686	0.026441	10.9114	16.5421	0.0276881
11.004	16.4177	0.0347629	11.0227	16.4026	0.0341158
11.0166	16.418	0.0229392	11.0387	16.3933	0.026942
11.0167	16.4214	0.029456	11.04	16.3827	0.0276143
11.113	16.3111	0.025594	11.1482	16.2745	0.0317707
11.1319	16.2816	0.0451743	11.1601	16.2714	0.0249364
11.148	16.2725	0.0242564	11.1644	16.2763	0.0279724
11.4323	16.0323	0.0389566	11.4581	16.0177	0.0345627
11.4542	16.024	0.0242203	11.4805	16.0064	0.0239377
11.455	16.0307	0.023901	11.4817	16.0129	0.0236626
12.3521	15.5446	0.0372521	12.3793	15.5369	0.0382324
12.3762	15.554	0.0240552	12.403	15.5345	0.0230536
12.3777	15.548	0.0243237	12.4045	15.5299	0.0234115
13.3472	15.2496	0.0401019	13.3755	15.2534	0.0387434
13.3734	15.2509	0.0242379	13.4012	15.2382	0.0261576
13.375	15.2532	0.0272289	13.4042	15.2406	0.0273996
14.4255	14.9962	0.0392524	14.4533	14.988	0.666968
14.451	14.9908	0.0267994	14.4819	14.9809	0.0250957
14.4549	14.9933	0.210827	14.4827	14.983	0.0351831
15.5862	14.7643	0.041083	15.6208	14.7692	0.0400182
15.6188	14.6852	0.179059	15.6483	14.77	0.0286874
15.6195	14.7698	0.0320737	15.6511	14.7708	0.0290889
16.8514	14.5369	0.0400353	16.8835	14.5489	0.0430581
16.8811	14.5513	0.0295407	16.9131	14.5509	0.0273548
16.8854	14.5528	0.0310291	16.9159	14.5492	0.028105
18.2173	14.3302	0.0406686	18.251	14.3296	0.0391282

18.2487	14.3371	0.0292994	18.2815	14.3321	0.0313079
18.2514	14.3209	0.0302435	18.286	14.3359	0.0323742
19.6991	14.1464	0.0450635	19.7333	14.1604	0.0382664
19.7286	14.1668	0.0361822	19.7598	14.1796	0.0375513
19.7296	14.1723	0.0395216	19.7606	14.1623	0.0347035
21.3045	14.0581	0.0402797	21.3325	14.0924	0.0907087
21.3222	14.089	0.0424303	21.3531	14.0989	0.0429916
21.3296	14.0973	0.038002	21.3598	14.0876	0.036886
23.0246	14.1654	0.0586946	23.0571	14.1572	0.0447207
23.0535	14.1554	0.0397749	23.0836	14.191	0.0405776
23.0543	14.1712	0.0440333	23.0847	14.1945	0.0385427
24.893	14.429	0.0537939	24.9227	14.4232	0.0723934
24.9199	14.4584	0.0426742	24.949	14.4441	0.0706697
24.924	14.4641	0.0424392	24.9533	14.4704	0.0387822
26.917	15.0117	0.0432685	26.9436	15.0272	0.045255
26.9384	15.013	0.0360776	26.9681	15.0567	0.114936
26.9671	14.9951	0.0481712	26.9946	15.0179	0.0429562
29.0988	15.9193	0.0438794	29.1274	15.956	0.0502563
29.1292	15.9462	0.0465122	29.1576	15.9614	0.0430682
29.1459	15.9222	0.0573567	29.1749	15.9265	0.0638895
31.4639	17.2758	0.0645989	31.4891	17.291	0.0521615
31.499	17.3013	0.0408669	31.5226	17.3614	0.0510293
31.5043	17.2805	0.0385238	31.5302	17.3434	0.0401919
34.0553	19.1242	0.052327	34.0809	19.1513	0.0426576
34.0591	19.1017	0.0617809	34.0921	19.3333	0.401239
34.0664	19.1146	0.0435229	34.0935	19.1582	0.0428828
36.8208	21.4083	0.0491648	36.8452	21.4478	0.0530778
36.8282	21.4345	0.051403	36.8541	21.4584	0.0518946
36.8412	21.4284	0.055519	36.8721	21.474	0.0546968
39.8137	24.3153	0.065227	39.8358	24.3612	0.0558332
39.8228	24.3398	0.0647734	39.8438	24.3602	0.0601222
39.8411	24.3704	0.0616544	39.8683	24.3848	0.060237
43.0426	27.7783	0.0620589	43.0648	27.8393	0.060094
43.0497	27.7935	0.06224	43.0713	27.842	0.0610687
43.0739	27.8229	0.0650816	43.0982	27.8842	0.0665933
46.542	31.8748	0.0725317	46.5572	31.9177	0.0729775
46.551	31.8962	0.082947	46.5644	31.9361	0.0724934
46.5641	31.3884	0.56438	46.5929	31.9591	0.0704668
50.3132	36.5696	0.0896924	50.3291	37.0049	2.22375
50.3196	36.7531	0.111746	50.3356	36.6589	0.07363
50.3474	36.6494	0.0956316	50.4076	36.7694	0.0824385
54.4126	42.035	0.121563	54.4242	42.0893	0.0971902
54.4159	42.0292	0.0960886	54.4299	42.133	0.0943233
54.4409	42.0811	0.0928211	54.4629	42.1991	0.0843394
58.834	48.1236	0.120332	58.8499	48.2354	0.127981
58.8381	48.2203	0.168605	58.8559	48.3035	0.109344
58.8677	48.4241	0.156081	58.8978	48.3426	0.108357
63.6222	55.0736	0.106559	63.6407	55.2152	0.117604
63.6235	55.1113	0.113063	63.6414	55.9076	1.55736
63.6738	55.1963	0.124027	63.6995	55.2797	0.145508

68.7968	62.857	0.729139	68.8095	62.9939	0.121233
68.7989	62.9277	0.124964	68.8116	63.053	0.123535
68.8474	63.0458	0.131613	68.8749	63.2446	0.531533
74.3811	71.5029	0.299751	74.3914	71.6548	0.132665
74.3863	71.6033	0.141928	74.3977	71.6661	0.141109
74.4393	71.609	0.164191	74.4549	71.7922	0.432128
80.4103	81.0211	0.161024	80.4221	81.1507	0.153594
80.4148	81.0071	0.160571	80.4236	81.1563	0.152349
80.4725	81.1774	0.181652	80.4822	81.3209	0.194967
86.9209	91.3849	0.180963	86.9146	92.149	0.714539
86.9232	91.4215	0.191604	86.9342	91.5458	0.175821
86.9901	91.5853	0.201677	87.0087	91.6676	0.244829
93.9794	102.496	0.205047	93.9747	102.52	0.185029
93.9908	102.482	0.203493	93.9801	102.57	1.35729
94.0605	102.605	0.247974	94.0612	102.731	0.251478
101.609	114.571	0.226013	101.608	114.686	0.217888
101.618	114.629	0.229416	101.615	114.723	0.217869
101.699	114.821	0.284151	101.685	114.901	0.265153
109.857	127.142	0.316091	109.861	127.708	0.245673
109.873	127.646	0.245631	109.874	127.608	0.562144
109.942	127.715	0.279767	109.961	127.966	0.333474
118.777	141.484	0.297722	118.755	141.64	2.39581
118.797	141.457	0.278767	118.789	141.534	0.275596
118.853	141.697	0.315991	118.85	141.713	0.28794
128.417	155.682	0.314172	128.415	155.95	0.29275
128.435	155.917	0.319287	128.428	156.024	0.283459
128.481	155.913	0.313196	128.487	155.406	2.74395
138.855	171.154	0.344858	138.852	171.292	0.322529
138.868	171.194	0.338375	138.868	171.386	0.319971
138.907	171.258	0.442474	138.934	171.369	0.422377
150.125	187.155	0.349868	150.095	187.337	1.76713
150.141	187.195	0.320919	150.131	187.338	0.321263
150.161	187.15	0.35531	150.148	187.375	0.350409
162.304	203.187	0.378036	162.301	201.869	0.995136
162.312	203.276	0.331376	162.308	203.419	0.330359
162.321	203.28	0.481257	162.308	203.347	0.352964
175.468	220.141	0.358785	175.469	220.103	0.350615
175.473	220.087	0.379416	175.469	220.156	0.388054
175.489	220.189	0.409532	175.488	220.296	0.370689
189.699	236.96	0.38923	189.693	236.901	0.342337
189.705	236.874	0.429413	189.706	234.023	1.48493
189.736	236.935	0.466954	189.736	237.152	0.429396
205.045	254.288	0.381843	205.02	255.134	3.07966
205.088	254.188	0.433409	205.046	254.448	0.44709
205.121	254.102	1.1897	205.074	254.451	0.431506
221.641	271.384	0.439923	221.613	272.043	0.505302
221.666	271.89	0.552044	221.66	272.082	0.504207
221.707	271.948	0.534281	221.69	272.129	0.489559
239.525	288.863	0.581335	239.526	288.644	0.522456
239.624	289.328	0.57508	239.621	289.151	0.501062

239.65	289.51	0.609314	239.652	289.168	0.494682
258.841	306.22	0.637152	258.853	305.795	0.551847
259.005	306.074	0.599155	259.005	305.986	0.551546
259.029	306.186	0.618158	259.031	306.321	0.51443
279.736	322.248	0.849419	279.77	317.496	3.87725
279.948	323.215	0.792159	279.948	322.697	0.839346
279.954	322.885	0.817918	279.98	322.509	1.68134
302.604	339.817	1.18497	302.606	340.245	0.631653
302.612	339.763	0.839857	302.622	340.299	0.670829
302.978	340.495	0.796966	303.014	340.887	0.605964

Almandine(R41)		PPMS 3	
Formula weight	497.753	g/mol	
Sample weight	17.36	mg	
T	Cp	$\sigma(\text{Cp})$	
[K]	[J/mol.K]	[J/mol.K]	
3.05412	1.43017	0.00758115	
3.05478	1.4324	0.00745016	
3.05687	1.4408	0.00750826	
3.30874	2.02892	0.00699335	
3.30934	2.03196	0.00702156	
3.31089	2.03953	0.00759766	
3.57397	2.78809	0.00882637	
3.57463	2.7863	0.00828847	
3.57577	2.79208	0.00996799	
3.86344	3.74955	0.0106282	
3.86368	3.74911	0.0107802	
3.86516	3.76174	0.0124812	
4.17505	4.96636	0.0144131	
4.17543	4.96959	0.0140862	
4.17641	4.97488	0.0161612	
4.51145	6.4834	0.0167003	
4.5116	6.48274	0.0158791	
4.51275	6.48705	0.0192496	
4.87677	8.30435	0.0211988	
4.87682	8.30674	0.0212795	
4.87804	8.31151	0.0248231	
5.27075	10.5497	0.0247857	
5.27098	10.5558	0.0263993	
5.27166	10.5577	0.0298804	
5.70105	13.2507	0.0301193	
5.7012	13.2457	0.0315343	
5.70216	13.2523	0.034292	
6.10007	16.0004	0.0417146	
6.10286	16.0373	0.0353232	
6.10304	16.0432	0.0345479	
6.15755	16.4133	0.0426972	
6.15963	16.4264	0.0365857	
6.15997	16.4292	0.0351016	
6.2287	16.9425	0.0428433	
6.23206	16.9795	0.0372854	
6.23213	16.9799	0.0367256	
6.35752	17.9148	0.167093	
6.36134	17.9516	0.173791	
6.36193	17.9066	0.170993	
6.48831	18.8918	0.0447882	

6.49132	18.9376	0.184011
6.49135	18.9002	0.217633
6.61737	19.9036	0.0478137
6.62058	19.9138	0.0413589
6.62083	19.9363	0.0475302
6.66264	20.2254	0.0453587
6.66267	20.2298	0.0445029
6.67213	20.3683	0.17915
6.74675	20.9161	0.0520838
6.74962	20.9419	0.0425702
6.75001	20.95	0.0489523
6.87567	21.9485	0.0541613
6.879	21.9891	0.0473539
6.87904	21.981	0.0469618
7.01034	23.0869	0.0589697
7.01073	23.0712	0.0582456
7.01403	23.1354	0.0556683
7.13256	24.0926	0.0525069
7.13467	24.1408	0.0471155
7.13474	24.1343	0.0488877
7.19054	24.5834	0.0914946
7.19143	24.5857	0.0548832
7.19364	24.5871	0.0604534
7.2616	25.195	0.108237
7.2638	25.1734	0.0767143
7.26432	25.2081	0.0504903
7.39097	26.3033	0.0615807
7.39323	26.3263	0.0586714
7.39342	26.3309	0.0519423
7.52057	27.4418	0.089099
7.52284	27.4861	0.0608858
7.52297	27.5179	0.0551201
7.64989	28.6414	0.0639072
7.65217	28.7095	0.0718335
7.65257	28.6809	0.100075
7.77101	29.7931	0.061619
7.77168	29.7993	0.0618136
7.77402	29.8051	0.0813776
7.78056	29.8717	0.0728648
7.78276	29.923	0.0629451
7.78281	29.9101	0.0624816
7.9092	31.1598	0.0996885
7.91202	31.2094	0.0628257
7.91228	31.1837	0.0638717
8.03876	32.4189	0.0722496
8.04134	32.4272	0.194712
8.04174	32.4492	0.0664242
8.16758	33.6956	0.0831424
8.17042	33.7317	0.0678546
8.17101	33.7095	0.177632

8.29716	35.0418	0.0860494
8.29983	35.0622	0.0720093
8.30003	35.0969	0.0730796
8.39892	36.1422	0.19034
8.39929	36.1301	0.0770698
8.40473	36.1846	0.0879865
8.42749	36.4287	0.0853089
8.43034	36.4925	0.147906
8.43069	36.4882	0.0754498
8.55706	37.9018	0.0918809
8.5598	37.7618	0.391207
8.55995	37.9807	0.081555
8.68623	39.4488	0.196036
8.68893	39.4662	0.123618
8.68998	39.4806	0.0848798
8.81584	41.031	0.100134
8.81816	41.0776	0.0882889
8.81868	41.0755	0.0880456
8.94608	42.6532	0.103345
8.94834	42.7012	0.216556
8.94904	42.7215	0.0914368
9.07441	44.2824	0.103203
9.07441	44.2265	0.577245
9.0756	44.2785	0.0970803
9.07607	44.3064	0.0970973
9.07747	44.3667	0.188078
9.07767	44.3643	0.0962558
9.19599	45.8072	0.0997651
9.20615	45.8976	0.0803189
9.20631	45.9007	0.0798475
9.31012	44.7374	0.163296
9.32951	43.5663	0.263293
9.33338	43.3574	0.270801
9.45694	35.3041	0.408884
9.45791	35.1866	0.408871
9.46298	34.7286	0.425098
9.5638	28.873	0.254988
9.58636	27.6266	0.28204
9.5906	27.3733	0.290077
9.69984	23.6818	0.147135
9.71932	23.1488	0.154053
9.72102	23.1118	0.154922
9.80498	21.4596	0.104261
9.80546	21.4474	0.107633
9.80611	21.4011	0.111507
9.83268	20.988	0.0850296
9.84756	20.7592	0.0874908
9.85041	20.6841	0.113486
9.96394	19.5146	0.0559652
9.97751	19.4002	0.0571508

9.98005	19.3869	0.0553806
10.0956	18.6099	0.0493516
10.1084	18.5354	0.0404252
10.1095	18.5517	0.0478027
10.2243	18.0122	0.0456784
10.2391	17.9488	0.0392641
10.2391	17.9702	0.0381621
10.3555	17.5608	0.0419615
10.3723	17.5201	0.0342932
10.3728	17.5208	0.0289705
10.4889	17.2256	0.0354865
10.502	17.2051	0.031121
10.5022	17.1953	0.0248422
10.5775	17.0325	0.0420765
10.6028	17.0057	0.0253465
10.603	17.002	0.0244196
10.6182	16.96	0.0335825
10.6309	16.9557	0.0260381
10.6311	16.9478	0.0278338
10.7454	16.7457	0.038105
10.7594	16.7473	0.0266771
10.7595	16.7433	0.0242658
10.8768	16.5678	0.0322764
10.8887	16.5647	0.0228768
10.8894	16.5613	0.0274961
11.0023	16.4258	0.0360467
11.0178	16.4083	0.0234243
11.0179	16.4171	0.026295
11.1262	16.2867	0.0334897
11.143	16.2942	0.0250277
11.1449	16.2842	0.0291367
11.4333	16.0327	0.0358353
11.4563	16.022	0.0240722
11.4567	16.0247	0.0553642
12.3537	15.5483	0.0403776
12.3773	15.5593	0.0247849
12.3793	15.5488	0.18099
13.3506	15.2614	0.0365107
13.3749	15.2614	0.0265267
13.3771	15.2581	0.0279786
14.4257	14.9956	0.0402024
14.4518	15.0068	0.0258327
14.4547	15.0148	0.0292255
15.5884	14.7806	0.328966
15.6184	14.7765	0.0330185
15.6208	14.7824	0.0273849
16.8499	14.5557	0.0434538
16.879	14.5441	0.309755
16.8855	14.5736	0.0317831
18.2132	14.3475	0.0408028

18.2456	14.3434	0.0274538
18.2507	14.3505	0.0303643
19.697	14.1763	0.044939
19.7269	14.1976	0.033332
19.7282	14.1836	0.0355712
21.299	14.0906	0.0471312
21.3217	13.9615	0.754773
21.3265	14.1177	0.0378503
23.0198	14.0073	0.569766
23.0466	14.2022	0.0396608
23.0468	14.1849	0.0420978
24.8831	14.4595	0.0551439
24.9166	14.4853	0.0463785
24.9236	14.4902	0.0428956
26.915	15.0497	0.0434137
26.9349	15.0615	0.0335617
26.9547	15.0665	0.0419015
29.0915	15.9858	0.0658406
29.1188	15.9893	0.0430783
29.1281	16.0002	0.167604
31.4496	17.32	0.0984234
31.4907	17.1571	0.522857
31.4938	17.3459	0.0416411
34.0452	19.1515	0.0446101
34.0519	19.1543	0.0555098
34.0574	19.1643	0.0423442
36.8142	21.4774	0.0563449
36.8233	21.4783	0.0593009
36.8327	21.494	0.0639841
39.8053	24.3993	0.066496
39.8085	24.404	0.0693446
39.8335	24.3602	0.164694
43.0304	27.8876	0.0758928
43.0495	28.0343	0.767046
43.0671	27.8659	0.0752589
46.5316	31.9463	0.0789277
46.5391	31.9378	0.0919089
46.561	31.9583	0.0813802
50.308	36.6591	0.0809184
50.3206	36.6818	0.089471
50.3352	36.6731	0.431882
54.3976	42.1431	0.0989666
54.3989	42.1712	0.0988076
54.4267	42.3138	0.119419
58.8247	48.337	0.122599
58.8283	48.2657	0.121872
58.868	48.3801	0.116657
63.6117	55.1932	0.122517
63.613	55.2053	0.121154
63.6724	55.318	0.160966

68.7821	63.0449	0.125013
68.7848	63.0805	0.121057
68.8371	63.2191	0.142358
74.3645	71.7384	0.149774
74.3655	71.5724	0.135592
74.4298	72.6941	1.40325
80.3827	81.1251	0.15723
80.3904	81.0837	0.159518
80.4615	81.1809	0.18325
86.9058	91.5446	0.177361
86.907	91.5431	0.17907
86.9832	91.6221	0.561205
93.9599	102.589	0.198681
93.9697	102.626	0.195744
94.0341	102.806	0.255174
101.6	114.712	0.218727
101.608	114.76	0.236399
101.679	114.869	0.271912
109.846	127.744	0.257927
109.856	127.782	0.262445
109.92	127.825	0.270914
118.77	141.586	0.272133
118.779	141.632	0.289266
118.837	141.712	0.32458
128.409	155.991	0.310363
128.421	155.989	0.300368
128.473	155.883	0.310618
138.847	171.072	0.344065
138.862	171.275	0.313284
138.899	171.386	0.420071
150.112	187.216	0.33071
150.124	187.186	0.322142
150.143	187.28	0.36207
162.295	203.258	0.935072
162.299	203.281	0.407294
162.306	203.39	0.337411
175.444	220.131	0.341957
175.456	220.073	0.376497
175.481	220.084	0.414417
189.675	236.767	0.377632
189.695	237.206	0.42988
189.729	237.084	0.425817
205.03	254.115	0.397681
205.072	254.261	0.467435
205.109	254.209	0.451054
221.62	271.554	0.457139
221.687	271.586	0.489193
221.724	271.579	0.500518
239.531	288.664	0.502882
239.647	288.964	0.491397

239.686	289.203	0.503293
258.874	306.078	0.476109
259.037	305.71	0.584238
259.06	305.425	0.538283
279.75	321.094	0.842571
279.968	322.303	0.609301
279.989	321.785	0.627757
302.629	339.323	0.651556
302.631	339.747	1.11274
302.96	339.517	0.717306

Dachs E., Geiger C.A. and Benisek A. (2012): Almandine garnet:

Lattice and non-lattice heat capacity behavior and standard thermodynamic properties

Appendix 1: DSC data

Almandine(R41) DSC Series 1 mean of 3			Almandine(R41) DSC Series 2 mean of 4		
T [K]	Cp [J/mol.K]	σ (Cp) [J/mol.K]	T [K]	Cp [J/mol.K]	σ (Cp) [J/mol.K]
282.051	325.646	0.691614	282.067	326.366	2.34651
286.523	328.837	0.209716	286.54	329.649	2.34
291.002	332.131	0.10826	291.018	332.814	2.23178
295.491	335.581	0.0297377	295.506	336.172	2.39185
299.987	338.919	0.28917	300.002	339.152	2.47136
304.487	342.094	0.726975	304.502	342.547	2.20852
308.992	345.416	0.468637	309.008	345.533	2.23659
313.507	348.53	0.61544	313.522	348.942	2.46701
318.026	351.654	0.546861	318.04	351.549	1.78089
322.547	354.265	0.546459	322.562	354.595	1.83665
327.077	356.758	0.402049	327.09	357.532	1.77387
331.613	359.11	0.0761074	331.626	360.426	1.0923
336.147	362.767	1.15622	336.159	363.53	1.44719
340.683	365.215	0.928093	340.697	366.166	1.33379
345.215	367.691	1.14451	345.229	368.793	1.63574
349.748	370.462	1.29176	349.761	371.297	1.73565
354.28	373.14	1.17764	354.292	373.844	1.67067
358.812	375.727	0.784495	358.824	376.336	1.57471
363.342	378.118	0.603868	363.354	378.765	1.57794
383.037	389.239	0.708613	383.062	389.222	1.07033
387.564	390.85	0.0985207	387.589	391.289	1.05784
392.087	393.016	0.0984344	392.112	393.635	1.08355
396.607	395.229	0.0754476	396.632	395.535	1.29584
401.125	397.503	0.424925	401.151	397.448	1.23919
405.647	399.431	0.511129	405.673	402.573	1.07326
410.168	401.269	0.876113	410.195	401.933	1.11624
414.689	403.175	0.719105	414.715	403.65	1.34274
419.207	404.845	0.617303	419.233	405.458	1.54227
423.726	406.703	0.657773	423.751	407.422	1.48641
428.241	408.598	0.866881	428.267	409.337	1.78008
432.764	410.719	0.748055	432.789	411.257	1.81289
437.278	412.722	0.820892	437.305	413.408	1.99195
441.795	414.693	0.793809	441.821	415.321	2.00492
446.304	416.298	0.526133	446.33	416.936	1.91191
450.816	417.894	0.5341	450.841	418.848	1.98253
455.324	419.39	0.309175	455.349	420.717	1.71799
459.838	421.344	0.456796	459.863	422.443	1.30782
464.349	423.115	0.303906	464.375	424.206	1.22912
482.888	429.186	0.543583	482.914	430.243	1.69126
487.397	430.978	0.502255	487.424	431.525	1.67466

491.904	432.771	0.540534	491.932	433.089	1.45946
496.411	434.325	0.608407	496.438	434.165	1.79593
500.918	435.729	0.761452	500.945	435.824	1.88212
505.427	436.966	0.857042	505.453	437.363	1.74731
509.934	438.525	1.10687	509.961	438.745	1.69196
514.44	439.75	0.827	514.466	439.937	1.72749
518.948	440.953	1.03432	518.973	441.064	1.89131
523.451	441.854	1.2982	523.477	442.206	2.19743
527.957	442.841	1.12201	527.983	443.247	2.50958
532.457	443.841	1.34377	532.484	444.54	2.65237
536.965	444.969	1.59528	536.991	445.797	2.62712
541.467	446.071	1.22888	541.493	446.846	2.51049
545.971	447.036	1.2589	545.997	448.059	1.95295
550.474	448.432	1.39261	550.5	449.541	1.64699
554.979	449.936	1.36324	555.005	450.679	1.71595
559.482	451.062	1.29296	559.509	451.969	1.80452
563.987	452.17	1.16307	564.012	453.121	2.00722
582.754	457.115	0.361576	582.781	458.65	1.39707
587.26	458.221	0.721013	587.285	459.693	1.41535
591.761	459.292	0.792637	591.786	460.417	1.47237
596.263	460.181	0.756186	596.29	461.172	1.80342
600.764	461.03	0.292103	600.789	462.141	2.06876
605.269	462.013	0.190218	605.294	462.919	2.03047
609.767	463.166	0.450534	609.793	463.603	2.20355
614.27	464.529	0.614537	614.297	464.53	2.27896
618.773	465.767	0.257787	618.799	465.503	2.49337
623.278	466.528	0.4261	623.303	466.382	2.73385
627.784	467.664	0.196021	627.81	467.13	3.03992
632.286	468.037	0.306092	632.313	467.888	3.27156
636.793	468.913	0.348725	636.819	468.672	3.32135
641.296	469.687	0.348821	641.323	469.373	3.16856
645.795	470.224	0.555334	645.821	470.249	3.02507
650.294	471.036	0.982444	650.32	470.962	3.00108
654.798	471.836	1.0214	654.825	472.035	2.89798
659.3	472.598	0.899481	659.325	473.028	2.78924
663.804	473.56	0.799548	663.83	474.01	2.88648
682.626	475.41	1.04702	682.652	477.251	3.16713
687.132	476.341	1.48633	687.158	477.61	3.25374
691.634	477.36	2.2376	691.659	478.318	3.10356
696.137	478.416	2.30979	696.161	479.038	3.1385
700.638	479.034	1.96266	700.662	479.567	3.26821
705.145	479.631	1.89416	705.17	480.237	3.21288
709.654	480.217	2.00814	709.68	480.762	3.52542
714.161	481.131	2.02161	714.185	481.187	3.63275
718.668	481.938	1.95975	718.69	482.033	3.5859
723.17	482.927	2.0394	723.193	482.984	3.21759
727.679	483.702	2.20033	727.702	484.022	3.02067
732.183	483.997	2.5041	732.206	485.097	3.13355
736.694	484.837	2.45775	736.717	486.396	2.79225
741.2	485.492	2.25674	741.224	487.095	2.5294

745.703	486.252	2.26727	745.726	488.315	2.51152
750.208	487.124	1.87847	750.232	489.169	2.5045
754.711	487.787	1.57052	754.735	489.841	2.3113
759.218	488.435	2.04763	759.241	490.307	1.83286
763.721	489.513	1.82909	763.744	490.996	1.60202

Dachs E., Geiger C.A. and Benisek A. (2012): Almandine garnet:

Lattice and non-lattice heat capacity behavior and standard thermodynamic properties

Appendix 1: PPMS data

Almandine(R22) PPMS 1			Almandine(R22) PPMS 2		
Formula weight	497.896	g/mol	Formula weight	497.896	g/mol
Sample weight	25.85	mg	Sample weight	25.85	mg
T [K]	Cp [J/mol.K]	σ (Cp) [J/mol.K]	T [K]	Cp [J/mol.K]	σ (Cp) [J/mol.K]
3.0317	2.55784	0.00575134	3.03245	2.55438	0.00557176
3.03214	2.55935	0.00612755	3.0326	2.55557	0.00600826
3.03267	2.56001	0.00706798	3.03341	2.56251	0.00662064
3.28095	3.26898	0.00878413	3.2865	3.28288	0.00850743
3.2845	3.28567	0.00731943	3.28986	3.29623	0.0070576
3.28475	3.28475	0.00694135	3.29027	3.29896	0.0069239
3.54833	4.16378	0.00928191	3.56097	4.20517	0.00889029
3.54843	4.16288	0.00877974	3.56114	4.20716	0.0093279
3.54956	4.17011	0.0104902	3.56216	4.2079	0.0108
3.83599	5.26256	0.0104797	3.85675	5.33912	0.0103967
3.83616	5.26277	0.0112204	3.85692	5.34278	0.0113022
3.83699	5.2669	0.0131189	3.85792	5.34144	0.0134041
4.14602	6.59672	0.0132019	4.17697	6.7365	0.013487
4.14629	6.60516	0.014816	4.17702	6.73755	0.0135264
4.14791	6.60371	0.0161333	4.17868	6.74299	0.0168767
4.48102	8.22464	0.0161653	4.5221	8.427	0.0163687
4.4814	8.229	0.0181889	4.52231	8.42649	0.0161798
4.48291	8.23402	0.0200931	4.52415	8.43909	0.0204083
4.84474	10.1848	0.0189648	4.89681	10.475	0.0197029
4.84503	10.1837	0.0188664	4.8972	10.4729	0.0195549
4.8474	10.1914	0.0236181	4.8997	10.4866	0.0247478
5.23688	12.5412	0.0227075	5.30295	12.9466	0.0236602
5.23752	12.5429	0.0248348	5.30341	12.9443	0.0236245
5.23901	12.5446	0.0333179	5.30584	12.9579	0.0311428
5.66545	15.3397	0.027325	5.74699	15.8941	0.0286915
5.6662	15.3463	0.0277964	5.74747	15.9058	0.0289914
5.66841	15.3693	0.0363752	5.75018	15.9255	0.0361016
6.0653	18.1848	0.0385032	6.06647	18.1804	0.0335404
6.06653	18.2095	0.0312267	6.06734	18.1874	0.0314771
6.06676	18.2066	0.0317251	6.06774	18.2023	0.0301804
6.12292	18.6098	0.0328479	6.1947	19.1427	0.0396004
6.1235	18.6136	0.0315916	6.19619	19.1741	0.0324579
6.12688	18.6328	0.0376862	6.19667	19.1572	0.0333804
6.19391	19.1458	0.0379285	6.2226	19.3513	0.0332237
6.19533	19.1657	0.0339712	6.22313	19.3507	0.0339648
6.19569	19.1722	0.0336446	6.22698	19.3849	0.0375239
6.32319	20.126	0.0446522	6.32386	20.1178	0.0414008
6.32411	20.1578	0.0346568	6.325	20.1551	0.0337304
6.32449	20.1523	0.0347065	6.3255	20.1343	0.0339623
6.45253	21.1243	0.0421078	6.45387	21.1063	0.0410398

6.45392	21.1301	0.0367502	6.45492	21.1435	0.0365308
6.45436	21.1471	0.0359478	6.45524	21.1428	0.0360492
6.58167	22.153	0.0425289	6.5826	22.1142	0.0434
6.58297	22.1513	0.0357154	6.58393	22.1414	0.0373785
6.58317	22.1401	0.0387538	6.5843	22.1359	0.0378223
6.6161	22.3878	0.0454348	6.71184	23.135	0.0421596
6.61635	22.3945	0.0398614	6.71322	23.1793	0.0379909
6.62662	22.5165	0.0659533	6.71329	23.1664	0.0398492
6.71008	23.1551	0.0506866	6.73605	23.3088	0.0474335
6.71179	23.1709	0.0385152	6.73652	23.339	0.0391728
6.71235	23.174	0.039234	6.74859	23.3593	0.430033
6.83911	24.1797	0.0508827	6.84072	24.1897	0.0457735
6.84106	24.2242	0.0400027	6.84197	24.1991	0.0377494
6.84128	24.2353	0.0408598	6.84243	24.203	0.0408313
6.96416	25.2281	0.0450638	6.96547	25.2099	0.0477132
6.96774	25.2789	0.0433366	6.9686	25.2635	0.0434344
6.97679	25.3982	0.104492	6.97955	25.3848	0.0766465
7.10157	26.3685	0.04415	7.10222	26.355	0.0464838
7.10258	26.3894	0.0424087	7.10293	26.3623	0.0432622
7.10258	26.3934	0.0438348	7.10373	26.3739	0.0420825
7.15641	26.814	0.0441573	7.23131	27.4224	0.0474023
7.15703	26.8182	0.0432944	7.23215	27.4462	0.0440515
7.16278	26.8865	0.0448648	7.23242	27.4351	0.0435588
7.2305	27.4475	0.0460559	7.2983	27.9728	0.0436126
7.23128	27.4618	0.0437539	7.29862	27.9698	0.0449048
7.2316	27.4586	0.0440561	7.30413	28.0294	0.0473404
7.3595	28.5289	0.0470929	7.36003	28.4977	0.0482939
7.36023	28.5303	0.0448973	7.36103	28.5359	0.0455886
7.3605	28.5406	0.0449683	7.36126	28.5191	0.0458859
7.48852	29.5935	0.0472823	7.48924	29.5858	0.0499977
7.48935	29.6263	0.0468741	7.49022	29.6131	0.0458312
7.4897	29.6039	0.0471347	7.49029	29.6064	0.044931
7.61748	30.6709	0.05015	7.61813	30.6691	0.05054
7.61844	30.7089	0.048779	7.61912	30.693	0.0485712
7.61889	30.6985	0.0470691	7.61944	30.6936	0.0484707
7.73414	31.6239	0.047484	7.74791	31.7265	0.0508113
7.73498	31.6149	0.0461179	7.74914	31.7526	0.048761
7.73498	31.6146	0.048109	7.74975	31.7625	0.0474076
7.74743	31.7501	0.047782	7.87645	32.6719	0.0494705
7.74879	31.7482	0.0475007	7.87835	32.7003	0.0453471
7.74905	31.7625	0.0472594	7.87836	32.7208	0.0432701
7.87599	32.6923	0.0441365	7.89572	32.7999	0.0416539
7.87767	32.7186	0.0444327	7.90291	32.8302	0.0433041
7.87779	32.7279	0.0448809	7.90311	32.8528	0.0423073
8.00393	33.4216	0.0378213	8.00444	33.4022	0.0408714
8.00643	33.4609	0.0376879	8.00706	33.4322	0.0372409
8.00667	33.45	0.0370846	8.00741	33.409	0.0361088
8.13147	33.8214	0.0299617	8.13202	33.7912	0.0331375
8.13506	33.8315	0.0316231	8.13574	33.7913	0.0306579
8.13548	33.8269	0.030504	8.13576	33.7958	0.0312595

8.25889	33.7115	0.031543	8.25957	33.6862	0.0328026
8.26361	33.7222	0.0293907	8.26427	33.7002	0.0313668
8.26395	33.7137	0.0326451	8.26463	33.6953	0.031222
8.36052	33.314	0.0364897	8.38692	33.1416	0.040849
8.3609	33.3344	0.0397582	8.39396	33.0966	0.0421451
8.3611	33.3203	0.0388501	8.39431	33.0747	0.0431669
8.38692	33.1406	0.0390912	8.51235	31.9175	0.0623018
8.39328	33.1069	0.0447307	8.5223	31.7684	0.0698326
8.39395	33.0999	0.0419023	8.52312	31.7467	0.0712167
8.51227	31.9454	0.0601784	8.55613	31.2594	0.0821945
8.5217	31.8334	0.0705176	8.55633	31.2654	0.0801003
8.52232	31.7738	0.0693837	8.55647	31.2948	0.0802356
8.63554	29.7414	0.101084	8.63564	29.7106	0.100347
8.64832	29.3623	0.122717	8.65006	29.2595	0.126073
8.65094	29.2922	0.123389	8.65022	29.3066	0.121044
8.76336	26.392	0.119503	8.76232	26.3313	0.11756
8.77813	25.9266	0.134598	8.77716	25.8952	0.138823
8.78027	25.8503	0.136837	8.77905	25.8229	0.139044
8.89316	23.2018	0.105021	8.89206	23.184	0.098365
8.90836	22.8364	0.110919	8.90721	22.8251	0.113105
8.9084	22.8053	0.115119	8.91103	22.7549	0.112716
9.02489	20.6953	0.0823416	9.02621	20.6529	0.0796166
9.03367	20.5448	0.0839825	9.03725	20.4513	0.0833826
9.03385	20.545	0.0849282	9.03803	20.4615	0.0810974
9.03672	20.5258	0.0825997	9.15718	19.0272	0.0522099
9.03714	20.4659	0.0834793	9.16724	18.937	0.0504369
9.03748	20.4855	0.0813655	9.16838	18.929	0.0504536
9.15585	19.0475	0.0555856	9.24362	18.3636	0.0374644
9.16693	18.9494	0.0504397	9.26599	18.2218	0.0348698
9.16793	18.9501	0.0512881	9.26723	18.2189	0.0369765
9.28616	18.1074	0.0408232	9.28751	18.0777	0.0381503
9.29694	18.0535	0.03052	9.29677	18.0475	0.0321902
9.29733	18.0518	0.030468	9.29823	18.0409	0.0363189
9.41591	17.5491	0.0370507	9.41719	17.5376	0.0324927
9.42562	17.5354	0.0231104	9.42642	17.5155	0.0239132
9.42685	17.5222	0.0270935	9.42666	17.5169	0.0232958
9.54718	17.1765	0.0268434	9.54726	17.1534	0.0292426
9.55607	17.1663	0.0197184	9.55621	17.1476	0.0198845
9.55638	17.1633	0.0189516	9.55718	17.1383	0.0188379
9.67484	16.8848	0.034411	9.67634	16.8736	0.0330405
9.68464	16.8788	0.0183367	9.68556	16.8686	0.0182381
9.68604	16.8803	0.0223609	9.68594	16.8614	0.017197
9.74978	16.7475	0.0336585	9.80504	16.6416	0.0302619
9.76929	16.7253	0.017765	9.81469	16.6415	0.0183953
9.7701	16.7325	0.022241	9.81529	16.6434	0.0169286
9.80515	16.6542	0.0278502	9.93435	16.4364	0.0297936
9.8142	16.6587	0.0166855	9.94369	16.4401	0.016157
9.8144	16.6442	0.0172531	9.94407	16.4394	0.0153202
9.93388	16.4668	0.0247706	10.0143	16.3304	0.0357589
9.94243	16.4571	0.0176437	10.0343	16.3175	0.014989

9.94368	16.4508	0.0224229	10.0354	16.3215	0.0197199
10.0614	16.2895	0.0310067	10.0629	16.2753	0.0283524
10.0715	16.2918	0.0149216	10.0718	16.2796	0.0161518
10.0728	16.2937	0.0207831	10.0731	16.2774	0.0217025
10.1929	16.1485	0.0260859	10.1931	16.1316	0.029066
10.2016	16.1511	0.0149628	10.2019	16.1476	0.0150748
10.2023	16.1431	0.0139746	10.2029	16.1381	0.0186862
10.3214	16.0367	0.0245678	10.3217	16.0156	0.0273672
10.3303	16.0372	0.0149298	10.3313	16.0274	0.0150696
10.3311	16.0402	0.022834	10.3317	16.0174	0.0136855
10.4501	15.9341	0.023405	10.4509	15.9236	0.0269404
10.4594	15.9354	0.0156181	10.46	15.9174	0.0150184
10.4599	15.9384	0.0134292	10.4606	15.9311	0.0241116
10.541	15.8818	0.0322278	10.5795	15.8287	0.0303517
10.5602	15.873	0.0160381	10.5894	15.8368	0.013004
10.5606	15.8762	0.0185788	10.5895	15.8404	0.0141753
10.5791	15.8548	0.0230295	10.7085	15.7566	0.0270877
10.5884	15.8474	0.0146112	10.7183	15.7626	0.0138537
10.5891	15.8526	0.0194581	10.719	15.7644	0.020452
10.7077	15.7667	0.0261158	10.8386	15.6956	0.0292553
10.7173	15.7809	0.0138635	10.8471	15.6808	0.0345545
10.7175	15.7874	0.020879	10.8483	15.7043	0.015354
10.8356	15.6977	0.0309473	10.8485	15.6994	0.0146183
10.8467	15.7076	0.0158004	10.8668	15.6902	0.014621
10.8469	15.7118	0.020989	10.8674	15.6881	0.01733
10.9632	15.6526	0.022744	10.9674	15.6401	0.0234177
10.9746	15.6473	0.0156956	10.9775	15.6335	0.0136634
10.9749	15.6591	0.0198409	10.978	15.6463	0.0132445
11.0845	15.6032	0.0201305	11.0778	15.601	0.0211524
11.0989	15.6018	0.0191803	11.0965	15.5675	0.0313697
11.1004	15.6026	0.0157837	11.109	15.581	0.0170052
11.396	15.4619	0.0291982	11.7511	15.3761	0.0338766
11.4155	15.4786	0.0138269	11.7718	15.3847	0.013331
11.4158	15.4753	0.0168387	11.772	15.383	0.0159903
12.3242	15.2807	0.0299529	12.7267	15.2093	0.0306942
12.3449	15.2888	0.0138667	12.7486	15.2201	0.0150856
12.345	15.301	0.0174343	12.7489	15.2211	0.0148428
13.3227	15.1434	0.0277821	13.7804	15.0521	0.0275079
13.3448	15.1401	0.0135539	13.8033	15.0564	0.0160963
13.3449	15.1474	0.0161925	13.8038	15.064	0.0135205
14.4	14.9682	0.0261087	14.923	14.8922	0.0265674
14.4227	14.9735	0.0162148	14.9475	14.8979	0.0129497
14.4241	14.9753	0.012367	14.9481	14.8983	0.016222
15.5684	14.7914	0.0240108	16.1613	14.6923	0.0258935
15.5915	14.8022	0.0167949	16.1857	14.7035	0.0164027
15.5917	14.8004	0.0123096	16.1874	14.6972	0.0120584
16.8287	14.5912	0.0267812	17.5037	14.4724	0.0269701
16.8544	14.5986	0.0136905	17.5313	14.4851	0.0130764
16.8549	14.5996	0.0129125	17.5314	14.4775	0.0143122
18.1936	14.3916	0.0289753	18.9622	14.2858	0.0248906

18.2223	14.3967	0.013082	18.9861	14.297	0.0155147
18.223	14.4037	0.0199393	18.9881	14.2958	0.0130666
19.6758	14.2322	0.0284125	20.5433	14.174	0.0269454
19.7015	14.248	0.0165801	20.5554	14.1844	0.0145518
19.7028	14.2453	0.0193439	20.5652	14.184	0.0213864
21.2787	14.1683	0.0254744	22.2513	14.1747	0.02884
21.2929	14.172	0.0152813	22.2642	14.1902	0.0155415
21.3011	14.1748	0.0199035	22.274	14.1886	0.0171735
23.0032	14.2524	0.0291479	24.0994	14.3824	0.0299354
23.0249	14.2636	0.0202165	24.1204	14.3924	0.0197925
23.0304	14.2633	0.0163848	24.1235	14.3906	0.0157274
24.8726	14.5349	0.0296585	26.1051	14.8371	0.0276129
24.8937	14.5496	0.0194241	26.1214	14.8544	0.0225271
24.8967	14.5467	0.0164854	26.1269	14.852	0.0167034
26.8874	15.0957	0.033801	28.2727	15.616	0.0337264
26.9107	15.1165	0.0199053	28.304	15.5947	0.0344409
26.913	15.1075	0.0184683	28.3094	15.609	0.0297018
29.0736	15.994	0.0408231	30.6246	16.8258	0.0375167
29.105	16.0176	0.0368867	30.6549	16.8369	0.024788
29.1176	15.9869	0.0358646	30.659	16.8524	0.0222608
31.4373	17.3291	0.044807	33.1731	18.5592	0.0455029
31.4727	17.3915	0.0240023	33.2073	18.5494	0.0260854
31.4734	17.3675	0.0255936	33.2121	18.5438	0.0257943
33.9842	19.1395	0.0418777	35.9656	20.7408	0.0301776
34.0237	19.1674	0.0278339	35.9707	20.7411	0.0301451
34.0272	19.173	0.0260841	35.982	20.7375	0.0422596
36.7504	21.4617	0.0572884	38.9638	23.5217	0.0348962
36.7946	21.4822	0.032217	38.9685	23.527	0.0353595
36.8079	21.4921	0.029864	38.9858	23.5324	0.0414068
39.7848	24.3703	0.0366035	42.2029	26.9356	0.0398397
39.79	24.38	0.0372862	42.2108	26.945	0.0511093
39.8092	24.3803	0.0471894	42.2182	26.9264	0.0708823
43.0196	27.8272	0.0422907	45.7177	30.9385	0.0477284
43.0253	27.8368	0.0430759	45.7199	30.9464	0.0464382
43.0458	27.8519	0.0525913	45.7451	30.9854	0.0467014
46.519	31.9178	0.0494248	49.5215	35.6602	0.0533024
46.5234	31.9188	0.0492085	49.522	35.6587	0.0536812
46.547	31.9487	0.0602146	49.5597	35.7374	0.0750712
50.2995	36.6798	0.0566544	53.644	41.126	0.0622658
50.2996	36.6819	0.0557244	53.6446	41.1377	0.0614942
50.3351	36.7487	0.0594343	53.6835	41.2157	0.0824856
54.3912	42.1611	0.062416	58.1115	47.3554	0.0699514
54.3933	42.1621	0.0643481	58.1123	47.3598	0.0691512
54.428	42.2314	0.0700274	58.1533	47.4336	0.0751146
58.8166	48.3561	0.0738828	62.9449	54.328	0.0801434
58.817	48.3445	0.0729668	62.9467	54.3358	0.0791978
58.86	48.4433	0.0946521	62.9907	54.4176	0.086678
63.593	55.2543	0.0847232	68.177	62.1817	0.0936519
63.5964	55.2656	0.0822632	68.1809	62.178	0.0917246
63.6399	55.3464	0.0907757	68.2255	62.2612	0.0951575

68.753	63.0786	0.0952808	73.847	70.9495	0.114678
68.7584	63.0633	0.0961694	73.8553	70.9251	0.0982257
68.8044	63.17	0.109726	73.8987	71.047	0.109712
74.3448	71.6575	0.0999971	79.9817	80.5026	0.117072
74.3491	71.6925	0.101765	79.9886	80.4934	0.109986
74.3958	71.8114	0.121133	80.033	80.6131	0.117378
80.3726	81.107	0.119772	86.6256	91.0179	0.140555
80.3807	81.1411	0.118313	86.6343	91.0079	0.128095
80.431	81.2125	0.119897	86.6787	91.0854	0.129724
86.8932	91.4322	0.14384	93.8145	102.284	0.148624
86.9043	91.4156	0.131336	93.8204	102.352	0.164136
86.9523	91.5377	0.13509	93.8736	102.391	0.164353
93.9358	102.481	0.157317	101.625	114.819	0.165576
93.9384	102.454	0.144708	101.635	114.855	0.181345
94.0175	102.646	0.142239	101.684	114.877	0.165584
101.591	114.736	0.162643	110.067	128.241	0.17835
101.601	114.766	0.175897	110.081	128.239	0.183988
101.648	114.83	0.163554	110.13	128.337	0.175681
109.827	127.875	0.179829	119.217	142.633	0.180406
109.84	127.901	0.183311	119.224	142.632	0.191625
109.886	127.966	0.182998	119.277	142.728	0.203901
118.736	141.904	0.202487	129.11	157.456	0.206263
118.75	141.952	0.202378	129.129	157.486	0.219601
118.806	142.024	0.216752	129.163	157.488	0.22058
128.377	156.268	0.209856	138.784	171.578	0.217905
128.389	156.377	0.221346	138.795	171.642	0.242898
128.435	156.508	0.234715	138.842	172.004	0.200814
138.784	171.593	0.235827	139.828	173.112	0.221671
138.801	171.572	0.246102	139.842	173.149	0.238256
138.842	171.647	0.196153	139.875	173.159	0.240175
150.049	187.47	0.246057	150.04	187.456	0.238341
150.065	187.584	0.267868	150.063	187.524	0.242056
150.093	187.455	0.211369	150.091	187.472	0.215431
162.203	204.334	0.264035	151.35	189.3	0.267461
162.22	204.408	0.281797	151.378	189.394	0.314004
162.24	204.39	0.23806	151.392	189.297	0.21812
175.385	220.523	0.268736	162.203	204.338	0.270871
175.393	220.462	0.291602	162.217	204.38	0.253841
175.413	220.689	0.354145	162.239	204.311	0.276834
189.622	237.288	0.29381	175.374	220.68	0.300986
189.632	237.203	0.31028	175.389	220.664	0.293257
189.634	237.273	0.278158	175.405	220.665	0.286875
204.991	254.455	0.30537	189.621	237.411	0.305891
204.998	254.59	0.299301	189.627	237.349	0.33102
204.999	254.617	0.333313	189.635	237.437	0.293431
221.586	272.237	0.362839	204.983	254.655	0.303268
221.601	272.351	0.360855	204.985	254.783	0.310564
221.613	272.118	0.404605	204.995	254.759	0.334933
239.505	289.138	0.348733	221.579	272.242	0.350874
239.56	289.298	0.362123	221.597	272.12	0.32817

239.568	289.297	0.354454	221.611	272.209	0.365812
258.828	305.999	0.661089	239.494	289.167	0.349042
258.941	305.882	0.366799	239.554	289.25	0.340442
258.944	305.873	0.386868	239.568	289.334	0.377465
279.673	321.753	0.497913	258.82	306.052	0.657869
279.871	322.031	0.42536	258.93	305.907	0.362126
279.877	322.061	0.451509	258.941	305.912	0.373774
302.551	338.491	0.369732	279.673	322.239	0.44662
302.554	338.457	0.404399	279.865	322.452	0.455053
303.164	338.922	0.342645	279.868	322.411	0.445576
			302.534	339.012	0.405118
			302.539	339.13	0.377626
			303.128	339.457	0.351013

Almandine(R22)		PPMS 3	
Formula weight	497.896	g/mol	
Sample weight	25.85	mg	
T	Cp	$\sigma(\text{Cp})$	
[K]	[J/mol.K]	[J/mol.K]	
3.03322	2.55521	0.00562542	
3.03323	2.55565	0.00567429	
3.03396	2.55859	0.00674871	
3.28244	3.27	0.00905614	
3.28582	3.28141	0.0072288	
3.28594	3.2824	0.00817677	
3.54962	4.16123	0.00932168	
3.54984	4.16219	0.00884623	
3.55092	4.16581	0.0103057	
3.83753	5.25544	0.01038	
3.8376	5.25707	0.0113201	
3.83861	5.2585	0.0136955	
4.1478	6.59514	0.0132589	
4.14808	6.59483	0.0142268	
4.14958	6.60274	0.0167055	
4.48307	8.22176	0.0159022	
4.48309	8.22387	0.0162479	
4.48487	8.22965	0.0204293	
4.84684	10.1758	0.0195373	
4.84709	10.1746	0.0190057	
4.84932	10.1969	0.0229325	
5.23904	12.5305	0.0236511	
5.23961	12.5412	0.0253531	
5.24136	12.5388	0.0333266	
5.66781	15.3297	0.027623	
5.66841	15.3253	0.02672	
5.67106	15.3649	0.0357864	
6.06788	18.1786	0.0361601	
6.06896	18.1954	0.0314033	
6.06963	18.1957	0.0311453	
6.12566	18.6053	0.034197	
6.1262	18.5906	0.0322642	
6.12996	18.6225	0.0364192	
6.19673	19.1428	0.0381019	
6.19777	19.1582	0.0350767	
6.19869	19.1657	0.0366935	
6.32567	20.1188	0.040723	
6.32701	20.1352	0.0342487	
6.3273	20.1498	0.0357548	
6.45575	21.1285	0.0410816	

6.45686	21.128	0.036195
6.4573	21.1366	0.0370948
6.58405	22.1065	0.0451232
6.58575	22.1483	0.0385651
6.5864	22.1407	0.0373074
6.61902	22.3441	0.0469797
6.61927	22.4047	0.0377266
6.63013	22.4683	0.0822564
6.71343	23.1387	0.0512305
6.71506	23.168	0.0390425
6.71562	23.1632	0.0397272
6.84253	24.188	0.0519696
6.84417	24.2286	0.0407211
6.84456	24.2109	0.040015
6.96726	25.1942	0.0497092
6.97121	25.2622	0.0439363
6.98114	25.383	0.0679207
7.10427	26.3568	0.0441322
7.10531	26.3771	0.044396
7.10565	26.3813	0.0415829
7.15988	26.805	0.0434617
7.16016	26.8022	0.0435623
7.16607	26.8744	0.0466841
7.23337	27.4429	0.0471055
7.23459	27.4391	0.0432948
7.23472	27.4516	0.0450226
7.36241	28.5071	0.0477392
7.36332	28.5103	0.0444085
7.36352	28.5243	0.045034
7.49144	29.5814	0.0490134
7.49241	29.5934	0.0458293
7.49259	29.6223	0.0460409
7.62054	30.6768	0.0508072
7.62155	30.6818	0.0477532
7.62184	30.7032	0.0486669
7.7378	31.6044	0.0482622
7.73867	31.6116	0.0487643
7.73875	31.6265	0.0475585
7.75025	31.7208	0.048391
7.75146	31.7536	0.0487696
7.75193	31.7506	0.0484525
7.87889	32.6626	0.0478622
7.8805	32.6984	0.0448585
7.88089	32.7087	0.0454054
8.00695	33.3988	0.0402216
8.00955	33.4228	0.0394424
8.00976	33.4451	0.0370584
8.13443	33.7768	0.0307037
8.13814	33.7963	0.0320266
8.13855	33.7963	0.0305702

8.26203	33.7116	0.0318357
8.26672	33.7024	0.0312479
8.26721	33.7028	0.0302217
8.36459	33.2911	0.0475854
8.36481	33.2875	0.0375577
8.36485	33.2864	0.0387074
8.38989	33.1144	0.0421893
8.39646	33.1052	0.0418795
8.39666	33.0724	0.0434202
8.51533	31.9432	0.0608975
8.52337	31.8227	0.0705386
8.52398	31.7707	0.0709221
8.63965	29.6873	0.103132
8.65166	29.2997	0.124291
8.65423	29.2616	0.124418
8.76519	26.3417	0.118706
8.78149	25.8726	0.134801
8.78345	25.8155	0.137254
8.89627	23.1809	0.108718
8.91163	22.8047	0.11278
8.91207	22.7669	0.115422
9.02768	20.6857	0.0826183
9.03916	20.5065	0.0842756
9.03923	20.5003	0.0827797
9.04042	20.4351	0.0834513
9.04084	20.452	0.0819025
9.04114	20.4577	0.083587
9.16007	19.0356	0.0515724
9.16858	18.949	0.0509992
9.17084	18.9407	0.0503148
9.28943	18.1006	0.0410192
9.29964	18.0557	0.0320988
9.30075	18.0443	0.0309376
9.41998	17.552	0.0288464
9.42889	17.5356	0.0243248
9.42952	17.5173	0.0231875
9.55031	17.16	0.0293213
9.55925	17.1468	0.0201564
9.55996	17.1449	0.0186561
9.6796	16.872	0.0294971
9.68846	16.8752	0.0178059
9.68902	16.8661	0.0167829
9.75456	16.7355	0.0333637
9.77347	16.7176	0.0182311
9.77454	16.7174	0.0227909
9.80824	16.6537	0.0268539
9.81753	16.6449	0.0162465
9.81793	16.6355	0.0155713
9.93732	16.4496	0.0276811
9.94652	16.4387	0.0172816

9.94681	16.4402	0.0153231
10.066	16.2784	0.0267665
10.0754	16.275	0.0163404
10.0764	16.2772	0.0189162
10.1959	16.1279	0.0249909
10.2055	16.1349	0.0146167
10.2056	16.1342	0.0143239
10.3249	16.0231	0.0252688
10.3344	16.024	0.0147982
10.3345	16.0306	0.0138931
10.4538	15.9203	0.0254487
10.4633	15.928	0.0159138
10.4636	15.9262	0.0141334
10.5457	15.8619	0.0316089
10.565	15.8576	0.0142406
10.5656	15.8589	0.0177816
10.5829	15.8403	0.0243955
10.5922	15.839	0.0156154
10.5931	15.8366	0.0130111
10.7118	15.765	0.0253737
10.7211	15.7768	0.0144027
10.7219	15.7769	0.0203733
10.8414	15.6986	0.0267466
10.851	15.707	0.0156812
10.8516	15.707	0.0185766
10.9691	15.6345	0.0305116
10.9802	15.6334	0.0134907
10.9809	15.6407	0.0180305
11.1097	15.5821	0.0159553
11.1103	15.5837	0.0148155
11.1107	15.5678	0.0125355
11.4013	15.4656	0.0311881
11.4205	15.4661	0.013812
11.4213	15.4671	0.0173881
12.3299	15.2742	0.0303665
12.3499	15.2906	0.0143578
12.3501	15.2971	0.0184101
13.329	15.1312	0.0271567
13.35	15.1351	0.0127979
13.3503	15.1396	0.0159266
14.4067	14.9598	0.0270997
14.4291	14.9741	0.0169705
14.4296	14.9682	0.0127436
15.5731	14.7995	0.0262811
15.5967	14.8072	0.0196226
15.5977	14.7932	0.0119243
16.8344	14.5911	0.0284925
16.8615	14.598	0.0142814
16.8622	14.601	0.013096
18.1999	14.3947	0.0300719

18.2289	14.4013	0.0130489
18.2306	14.4053	0.0134151
19.6847	14.2421	0.0253471
19.7098	14.2485	0.0160856
19.71	14.2453	0.0125559
21.2825	14.1679	0.0295771
21.2997	14.182	0.01619
21.3081	14.1673	0.017954
23.0082	14.2485	0.0303889
23.0371	14.2724	0.0180542
23.0378	14.2698	0.0149468
24.879	14.5424	0.0281593
24.903	14.5532	0.0190268
24.9055	14.5551	0.0171201
26.8958	15.1042	0.0334165
26.9204	15.1324	0.0267406
26.9211	15.1144	0.0174155
29.0813	16.0001	0.0365689
29.1111	16.0277	0.038778
29.1274	16.0089	0.038463
31.4495	17.3546	0.0379269
31.4843	17.3751	0.0249008
31.4865	17.3753	0.023539
33.993	19.1716	0.0406094
34.0365	19.1858	0.0273131
34.0385	19.186	0.0261755
36.7583	21.4824	0.0588192
36.8033	21.4968	0.031855
36.8164	21.5072	0.0303456
39.797	24.3987	0.0367286
39.8028	24.3957	0.036777
39.82	24.4152	0.044833
43.0304	27.8519	0.0422867
43.0349	27.8597	0.0425055
43.0553	27.8804	0.0530498
46.5314	31.9558	0.0497656
46.5362	31.9638	0.0491014
46.5578	31.9855	0.0611223
50.3106	36.7235	0.0564863
50.3124	36.7291	0.0561059
50.3483	36.783	0.0607197
54.403	42.1935	0.0632727
54.4035	42.2039	0.0640211
54.4397	42.2828	0.0698672
58.8285	48.3911	0.0724693
58.83	48.4025	0.0737647
58.8755	48.4922	0.0964316
63.6051	55.2976	0.0835843
63.6071	55.3107	0.0825985
63.654	55.4113	0.0935894

68.7684	63.135	0.0964456
68.7713	63.1257	0.0906751
68.8175	63.2426	0.106015
74.3555	71.7695	0.101223
74.3612	71.74	0.102438
74.4111	71.8893	0.129117
80.3831	81.1831	0.120496
80.3875	81.1927	0.120106
80.4429	81.3497	0.133596
86.904	91.5035	0.132786
86.9154	91.5184	0.129775
86.9659	91.6737	0.146544
93.9746	102.662	0.143007
93.9842	102.657	0.145579
94.0341	102.745	0.14539
101.597	114.811	0.168259
101.608	114.838	0.168319
101.654	114.925	0.165339
109.837	128.053	0.178789
109.844	128.049	0.185724
109.893	128.103	0.179292
118.747	142	0.204972
118.756	142.07	0.204384
118.812	142.212	0.211522
128.379	156.461	0.220233
128.394	156.567	0.21978
128.44	156.567	0.186374
138.784	171.789	0.221659
138.802	171.773	0.229024
138.847	171.827	0.212496
150.048	187.697	0.238291
150.063	187.737	0.26622
150.096	187.779	0.216788
162.207	204.645	0.251333
162.226	204.601	0.258863
162.243	204.65	0.233302
175.375	220.813	0.267474
175.388	220.844	0.294842
175.41	220.827	0.390616
189.623	237.652	0.283542
189.636	237.758	0.319558
189.642	237.679	0.291252
204.982	254.941	0.336081
204.995	254.892	0.28549
205	254.949	0.353621
221.585	272.564	0.383804
221.594	272.524	0.339104
221.612	272.682	0.37728
239.488	289.673	0.455719
239.553	289.633	0.344717

239.567	289.809	0.373984
258.814	306.458	0.448114
258.933	306.349	0.379549
258.946	306.496	0.37647
279.69	322.705	0.403274
279.875	323.305	0.454354
279.88	323.13	0.438322
302.544	339.4	0.403021
302.548	339.289	0.416719
303.13	339.77	0.345554

Dachs E., Geiger C.A. and Benisek A. (2012): Almandine garnet:

Lattice and non-lattice heat capacity behavior and standard thermodynamic properties

Appendix 1: DSC data

Almandine(R22) DSC Series 1 mean of 5			Almandine(R22) DSC Series 2 mean of 5		
T [K]	Cp [J/mol.K]	σ (Cp) [J/mol.K]	T [K]	Cp [J/mol.K]	σ (Cp) [J/mol.K]
282.067	327.365	0.889122	282.251	326.64	1.29577
286.537	330.615	0.773223	286.72	329.626	1.32338
291.013	333.93	0.721344	291.196	332.897	1.35946
295.498	337.357	1.27333	295.681	335.987	1.43044
299.987	340.187	0.714318	300.171	339.146	1.41149
304.486	342.91	0.693713	304.668	342.26	1.3115
308.989	345.831	0.668298	309.171	345.001	1.2232
313.5	349.586	0.535095	313.682	348.561	1.10872
318.016	352.237	0.820114	318.199	351.292	0.942964
322.54	355.442	1.07824	322.724	354.238	1.03977
327.068	357.997	0.725953	327.253	357.098	1.10711
331.601	360.65	0.689856	331.786	359.977	0.920245
336.132	363.522	1.03187	336.317	362.882	0.770708
340.666	365.643	0.861247	340.852	365.385	0.857061
345.197	368.6	0.918888	345.382	368.119	0.711996
349.729	371.151	0.8327	349.914	370.626	0.841369
354.259	373.675	0.775996	354.443	373.307	0.850288
358.788	376.22	0.615545	358.972	375.758	0.912612
363.316	378.683	0.466861	363.5	378.066	0.991938
382.79	388.893	0.268003	382.905	388.329	1.82646
387.314	391.094	0.310974	387.429	390.49	1.86544
391.835	393.368	0.521042	391.95	392.697	1.81983
396.356	395.548	0.849652	396.47	394.852	1.59438
400.874	397.671	1.24095	400.988	396.837	1.46483
405.393	399.891	1.10994	405.508	398.867	1.51394
409.911	401.916	0.980392	410.027	400.882	1.44761
414.43	403.953	0.812318	414.546	402.86	1.39504
418.947	405.813	0.867406	419.061	404.655	1.3913
423.465	407.745	1.07114	423.577	406.422	1.51905
427.978	409.542	0.963913	428.09	408.21	1.55497
432.498	411.188	0.600741	432.61	410.123	1.50749
437.012	412.837	0.20755	437.124	411.851	1.47075
441.527	414.485	0.32659	441.639	413.769	1.57276
446.036	416.14	0.605344	446.149	415.644	1.41653
450.546	417.813	0.54303	450.659	417.234	1.33005
455.053	419.541	0.426958	455.164	418.883	1.3981
459.565	421.212	0.529758	459.676	420.641	1.46688
464.074	422.768	0.589494	464.184	422.436	1.69407
482.651	429.858	0.500213	482.769	429.498	2.02511
487.157	431.362	0.530721	487.276	431.083	2.09008

491.665	432.565	0.759629	491.783	432.715	2.00923
496.171	434.021	0.747768	496.289	434.253	1.97771
500.676	435.486	0.929648	500.796	435.8	1.86793
505.182	437.005	0.973353	505.302	437.247	1.75828
509.687	438.272	1.01852	509.807	438.589	1.63192
514.191	439.409	1.05511	514.309	440.032	1.61202
518.694	440.807	0.913323	518.814	441.389	1.63068
523.198	441.982	0.929894	523.315	442.57	1.54233
527.702	443.363	0.922857	527.82	443.771	1.56735
532.201	444.627	1.0559	532.32	445.026	1.7034
536.705	446.149	1.49752	536.824	446.289	1.86329
541.205	447.356	1.64095	541.325	447.468	1.98108
545.71	448.519	1.52929	545.83	448.615	1.96313
550.212	449.574	1.06882	550.332	449.756	2.15944
554.716	450.519	0.890719	554.835	450.672	2.19415
559.218	451.641	0.644507	559.336	451.782	2.11216
563.721	452.906	0.742402	563.838	452.683	1.93842
582.512	457.077	0.520767	582.639	456.764	2.2658
587.015	458.038	0.620306	587.141	457.754	2.15722
591.514	458.853	0.204911	591.641	459.049	2.31646
596.017	459.914	0.164045	596.144	460.228	2.32143
600.518	461.004	0.343152	600.642	461.485	2.25818
605.02	461.933	0.433863	605.144	462.639	2.48542
609.519	462.737	0.450782	609.642	463.885	2.59697
614.018	463.728	0.606645	614.143	464.921	2.75766
618.519	464.666	0.774121	618.643	466.094	2.80825
623.021	465.451	0.985212	623.144	467.001	2.61616
627.526	466.18	1.01414	627.648	468.101	2.4281
632.027	467.239	1.00801	632.15	469.131	2.45336
636.53	468.128	1.18831	636.654	470.126	2.51147
641.031	469.149	1.21224	641.154	470.921	2.45205
645.533	470.083	1.45324	645.656	471.775	2.38476
650.03	470.979	1.41781	650.153	472.494	2.32305
654.532	471.744	1.3982	654.656	473.017	2.23905
659.033	472.408	1.59749	659.155	473.39	2.05018
663.536	473.184	1.74949	663.658	474.05	1.87221
682.381	476.504	0.415651	682.51	475.771	1.1067
686.887	477.366	0.878862	687.012	476.73	1.14046
691.387	478.441	1.58894	691.512	477.575	1.2865
695.889	479.081	1.44512	696.017	478.347	1.34051
700.388	480.008	1.70208	700.519	479.13	1.41678
704.894	480.986	2.10189	705.023	479.85	1.40981
709.402	481.62	2.41955	709.53	480.514	1.65821
713.905	482.583	2.87289	714.033	480.973	1.5936
718.411	483.223	2.96416	718.539	481.485	1.37757
722.914	483.927	3.01558	723.04	482.075	1.05179
727.419	484.327	2.92456	727.545	482.702	0.778637
731.921	484.719	3.09493	732.047	483.449	0.818666
736.429	485.468	2.98788	736.555	484.031	0.881784
740.935	486.123	2.96635	741.061	484.617	1.13663

745.439	486.863	2.88004	745.564	485.344	1.25012
749.944	487.59	2.76463	750.068	486.054	1.2037
754.446	488.371	2.5712	754.568	486.631	1.36162
758.949	489.701	3.34041	759.07	487.228	1.34842
763.45	489.431	2.08867	763.572	487.717	1.54502

Dachs E., Geiger C.A. and Benisek A. (2012): Almandine garnet:

Lattice and non-lattice heat capacity behavior and standard thermodynamic properties

Appendix 1: PPMS data

Almandine(R51) PPMS 1			Almandine(R51) PPMS 2		
Formula weight	497.959	g/mol	Formula weight	497.959	g/mol
Sample weight	24.55	mg	Sample weight	24.55	mg
T [K]	Cp [J/mol.K]	σ (Cp) [J/mol.K]	T [K]	Cp [J/mol.K]	σ (Cp) [J/mol.K]
3.03808	1.44992	0.00533048	3.03001	1.40772	0.0041857
3.03823	1.42208	0.00626891	3.03057	1.40923	0.00426794
3.04178	1.41829	0.00679709	3.03308	1.41584	0.0053884
3.29262	2.04038	0.00685017	3.28114	1.98831	0.00710183
3.29556	2.0012	0.00740096	3.28278	1.99348	0.00594922
3.29671	2.03323	0.00831434	3.28331	1.99289	0.00593349
3.55782	2.75609	0.00568445	3.54673	2.73124	0.0071807
3.55857	2.75465	0.00697377	3.54684	2.73215	0.00715589
3.55934	2.78341	0.0116307	3.54907	2.74189	0.00911712
3.84722	3.73273	0.0133618	3.83429	3.68628	0.00926996
3.84824	3.71756	0.010387	3.83443	3.68629	0.00864958
3.85117	3.73354	0.0146085	3.83656	3.69298	0.0112251
4.15811	4.93213	0.0158344	4.14463	4.87439	0.0120294
4.15877	4.94661	0.0163084	4.14464	4.8761	0.0123536
4.16325	4.97752	0.0115051	4.14684	4.88663	0.0143925
4.49562	6.42502	0.0234394	4.47926	6.35051	0.0139255
4.49566	6.39757	0.0180067	4.47954	6.35351	0.0149192
4.49715	6.40964	0.0220554	4.48165	6.36291	0.0186171
4.85861	8.22738	0.0253316	4.84322	8.16009	0.0172361
4.86047	8.21051	0.0185638	4.84339	8.15671	0.0171304
4.86082	8.24533	0.0214914	4.84584	8.17036	0.0217676
5.25235	10.4254	0.0270341	5.2353	10.3602	0.0211071
5.25238	10.383	0.019782	5.23533	10.3587	0.0205028
5.25445	10.4955	0.0338975	5.23853	10.3761	0.0252603
5.68004	13.0957	0.0391681	5.66381	13.0118	0.0259084
5.68156	13.144	0.0293505	5.66387	13.0096	0.025649
5.68245	13.1379	0.041014	5.6676	13.0272	0.0294113
6.13831	16.282	0.0323603	6.12149	16.1454	0.0308948
6.13918	16.2725	0.0352096	6.12168	16.1575	0.0300401
6.15029	16.3442	0.0333263	6.12621	16.1906	0.0335725
6.6358	19.9973	0.043132	6.61453	19.8515	0.0403528
6.6361	20.0242	0.0374343	6.61596	19.861	0.0388579
6.63717	19.7789	0.0548264	6.62474	19.8779	0.383063
7.08884	23.7219	0.0453182	7.08884	23.7074	0.0452853
7.09093	23.7381	0.042774	7.09093	23.7235	0.0427423
7.09132	23.7359	0.0420335	7.09132	23.7214	0.0420022
7.16852	24.3733	0.0445461	7.15543	24.2854	0.0435997
7.16886	24.3864	0.04599	7.15569	24.2866	0.0435099
7.17329	24.419	0.0567936	7.16289	24.369	0.0452987
7.18985	24.5763	0.0482779	7.18985	24.5612	0.0482432

7.19193	24.5988	0.043797	7.19193	24.5837	0.0437644
7.19205	24.6062	0.0440704	7.19205	24.5911	0.0440377
7.29046	25.4257	0.0488625	7.29046	25.41	0.0488271
7.29249	25.4714	0.0446465	7.29249	25.4557	0.0446131
7.29271	25.4565	0.0444435	7.29271	25.4409	0.0444102
7.39126	26.3026	0.051536	7.39126	26.2864	0.0514989
7.39323	26.3381	0.049018	7.39323	26.3219	0.0489821
7.39367	26.3373	0.0467524	7.39367	26.3212	0.0467176
7.49221	27.2021	0.0527079	7.49221	27.1854	0.0526698
7.49416	27.24	0.0483147	7.49416	27.2233	0.0482787
7.49433	27.251	0.0480489	7.49433	27.2343	0.0480131
7.59321	28.1454	0.0531818	7.59321	28.1281	0.0531431
7.59495	28.1735	0.0516425	7.59495	28.1562	0.0516045
7.59543	28.1669	0.0510778	7.59543	28.1496	0.0510401
7.69423	29.0922	0.0555454	7.69423	29.0743	0.0555051
7.69573	29.1327	0.0525363	7.69573	29.1148	0.0524974
7.69614	29.1313	0.0519037	7.69614	29.1134	0.0518652
7.74672	29.6001	0.0545382	7.73404	29.4965	0.0530174
7.74717	29.5975	0.0529248	7.73432	29.4899	0.0535033
7.7535	29.6742	0.061678	7.74312	29.5834	0.0567816
7.79497	30.0639	0.0582498	7.79497	30.0454	0.0582076
7.79659	30.1019	0.0562477	7.79659	30.0834	0.0562066
7.79679	30.1048	0.0556838	7.79679	30.0863	0.0556429
7.89529	31.0692	0.065781	7.89529	31.0501	0.0657346
7.89762	31.1023	0.0555587	7.89762	31.0832	0.0555175
7.8979	31.1177	0.0549339	7.8979	31.0985	0.054893
7.99575	32.0518	0.0669695	7.99575	32.0321	0.066922
7.99808	32.1154	0.0559578	7.99808	32.0957	0.0559159
7.99862	32.1058	0.056259	7.99862	32.086	0.056217
8.09669	33.0647	0.0701489	8.09669	33.0443	0.0700994
8.09887	33.1087	0.0583083	8.09887	33.0884	0.0582648
8.09915	33.1367	0.0605221	8.09915	33.1163	0.0604775
8.19755	34.1174	0.0695151	8.19755	34.0964	0.0694655
8.19944	34.1831	0.0624627	8.19944	34.1621	0.0624167
8.19969	34.1891	0.0609634	8.19969	34.1681	0.0609181
8.29843	35.2423	0.0724649	8.29843	35.2206	0.0724134
8.29999	35.2762	0.0640396	8.29999	35.2546	0.0639923
8.30075	35.2513	0.0639942	8.30075	35.2296	0.063947
8.37304	36.0327	0.0658383	8.36139	35.9484	0.0663121
8.37345	36.0704	0.0668153	8.36166	35.9687	0.0670111
8.38458	36.2117	0.0762065	8.37445	36.1217	0.0749369
8.39923	36.3331	0.075088	8.39923	36.3107	0.0750347
8.40089	36.4119	0.0671562	8.40089	36.3895	0.0671069
8.40127	36.4317	0.0654773	8.40127	36.4093	0.0654288
8.50024	37.5609	0.0767687	8.50024	37.5378	0.0767141
8.5018	37.5896	0.0710957	8.5018	37.5665	0.0710439
8.50201	37.59	0.0713154	8.50201	37.5669	0.0712635
8.60091	38.7985	0.0811908	8.60091	38.7747	0.0811333
8.60266	38.8195	0.0756697	8.60266	38.7956	0.075615
8.60271	38.8408	0.0764512	8.60271	38.8169	0.0763962

8.7019	40.0982	0.0873478	8.7019	40.0735	0.0872866
8.70305	40.1633	0.0797953	8.70305	40.1386	0.079738
8.70349	40.1523	0.0785731	8.70349	40.1277	0.0785164
8.80303	41.5158	0.0943548	8.80303	41.4903	0.0942893
8.804	41.5699	0.0850613	8.804	41.5443	0.0850008
8.80414	41.5614	0.0870902	8.80414	41.5359	0.0870286
8.90385	43.0493	0.100504	8.90385	43.0228	0.100435
8.9046	43.0744	0.093181	8.9046	43.048	0.0931156
8.90513	43.0801	0.092582	8.90513	43.0536	0.092517
9.00397	44.6505	0.10127	9.00397	44.623	0.101199
9.00508	44.681	0.0956091	9.00508	44.6535	0.0955418
9.0053	44.6328	0.0972277	9.0053	44.6053	0.0971596
9.0458	45.2505	0.0955622	9.03408	45.154	0.0967086
9.04822	45.3245	0.0945953	9.03732	45.1987	0.0966288
9.0484	45.3444	0.0948816	9.03745	45.1792	0.0959113
9.09978	46.1007	0.0943414	9.09978	46.0724	0.0942743
9.1057	46.1999	0.0917039	9.1057	46.1715	0.091638
9.10592	46.2093	0.0917625	9.10592	46.1808	0.0916966
9.18601	46.5195	0.0761301	9.18601	46.4909	0.0760718
9.20087	45.722	0.188345	9.20087	45.6939	0.188225
9.20479	45.4993	0.20609	9.20479	45.4714	0.205959
9.29685	37.6806	0.590539	9.29685	37.6575	0.590175
9.29736	37.8331	0.569491	9.29736	37.8099	0.56914
9.30315	36.8163	0.617432	9.30315	36.7937	0.617052
9.39757	29.1969	0.378231	9.39757	29.1789	0.377998
9.40023	29.1225	0.369932	9.40023	29.1046	0.369704
9.40476	28.7605	0.371734	9.40476	28.7429	0.371505
9.48786	25.036	0.180571	9.48786	25.0206	0.180459
9.5027	24.4974	0.188926	9.5027	24.4823	0.188809
9.50549	24.3857	0.188252	9.50549	24.3707	0.188135
9.5923	22.2528	0.105628	9.5923	22.2391	0.105561
9.60466	21.9592	0.112447	9.60466	21.9457	0.112376
9.60476	21.9857	0.108569	9.60476	21.9722	0.108501
9.69453	20.643	0.0700636	9.69453	20.6303	0.0700181
9.70538	20.4781	0.0721598	9.70538	20.4655	0.0721131
9.70608	20.4964	0.0712564	9.70608	20.4838	0.0712102
9.77463	19.7756	0.0565916	9.76708	19.8391	0.0565521
9.77664	19.7681	0.0565121	9.76717	19.8391	0.056824
9.77843	19.7448	0.059194	9.76811	19.8238	0.0595066
9.79676	19.5715	0.0567585	9.79676	19.5594	0.0567208
9.80542	19.5011	0.0510863	9.80542	19.4891	0.0510519
9.80634	19.4881	0.0506978	9.80634	19.4762	0.0506636
9.89765	18.8255	0.0451555	9.89765	18.814	0.0451246
9.90842	18.7762	0.0393428	9.90842	18.7646	0.0393149
9.90889	18.7636	0.0376828	9.90889	18.7521	0.0376558
9.99863	18.2756	0.0389237	9.99863	18.2644	0.0388962
10.009	18.2426	0.0308934	10.009	18.2314	0.0308701
10.0097	18.2429	0.0299032	10.0097	18.2317	0.0298803
10.0995	17.8668	0.0340057	10.0995	17.8558	0.033981
10.11	17.8372	0.0262605	10.11	17.8262	0.0262394

10.1104	17.8372	0.0246661	10.1104	17.8262	0.0246457
10.2	17.5285	0.0329173	10.2	17.5177	0.0328933
10.2103	17.5125	0.0240323	10.2103	17.5018	0.0240124
10.2112	17.5084	0.0211429	10.2112	17.4977	0.021124
10.3006	17.2546	0.0333718	10.3006	17.244	0.0333477
10.3112	17.2536	0.021017	10.3112	17.243	0.0209983
10.3113	17.2466	0.0201062	10.3113	17.236	0.0200878
10.4007	17.0372	0.03065	10.4007	17.0267	0.0306273
10.4114	17.0288	0.0204337	10.4114	17.0184	0.0204154
10.4122	17.025	0.0259688	10.4122	17.0146	0.0259483
10.5016	16.8316	0.0320324	10.5016	16.8213	0.0320091
10.5124	16.8281	0.0178531	10.5124	16.8177	0.0178357
10.5129	16.8237	0.017629	10.5129	16.8134	0.0176116
10.5455	16.7572	0.0362222	10.5416	16.7863	0.0186441
10.5673	16.7376	0.018675	10.5595	16.7453	0.0189669
10.5682	16.7347	0.0214764	10.5598	16.75	0.0246408
10.6022	16.6696	0.0323989	10.6022	16.6594	0.0323755
10.6129	16.6534	0.0195019	10.6129	16.6432	0.0194841
10.6134	16.6631	0.0168658	10.6134	16.6529	0.0168487
10.7026	16.5181	0.0332347	10.7026	16.5079	0.033211
10.7134	16.5172	0.0193577	10.7134	16.507	0.0193401
10.7143	16.5182	0.0231975	10.7143	16.508	0.0231784
10.8043	16.3938	0.0267798	10.8043	16.3837	0.0267592
10.814	16.3911	0.0173746	10.814	16.381	0.0173576
10.8147	16.392	0.0229283	10.8147	16.382	0.0229094
10.9028	16.2747	0.0292662	10.9028	16.2647	0.0292445
10.9145	16.2633	0.0163553	10.9145	16.2533	0.0163386
10.9154	16.2678	0.0201109	10.9154	16.2578	0.0200932
11.0049	16.155	0.0261209	11.0049	16.145	0.0261007
11.0153	16.1483	0.016	11.0153	16.1383	0.0159835
11.0154	16.1497	0.0153798	11.0154	16.1398	0.0153635
11.102	16.0558	0.0272462	11.102	16.046	0.0272256
11.1158	16.0514	0.014461	11.1158	16.0416	0.0144448
11.1165	16.0601	0.0217648	11.1165	16.0502	0.0217466
11.4008	15.8199	0.0310231	11.3988	15.8264	0.016426
11.4204	15.8122	0.0154157	11.4151	15.8299	0.0213862
11.4211	15.8189	0.0199151	11.4152	15.8216	0.0156758
12.3268	15.3927	0.0303438	12.3281	15.4037	0.0159978
12.3478	15.3957	0.0141439	12.3441	15.4006	0.0149089
12.3479	15.3984	0.018441	12.3447	15.4049	0.0219558
13.3193	15.1338	0.0332082	13.3279	15.1486	0.0159454
13.3437	15.1406	0.0149514	13.3445	15.1477	0.013309
13.3449	15.1406	0.013883	13.3449	15.1503	0.0149065
14.3936	14.8897	0.0319685	14.4052	14.9035	0.0147199
14.4189	14.9076	0.0159672	14.4238	14.9136	0.0172886
14.4199	14.8998	0.0134932	14.4241	14.9111	0.0136249
15.5558	14.688	0.0288697	15.5737	14.7103	0.0149195
15.5837	14.6931	0.0133509	15.5918	14.7062	0.0205503
15.5847	14.6984	0.0135792	15.5922	14.7034	0.0141775
16.8145	14.4694	0.0302648	16.8331	14.4912	0.0193254

16.8435	14.4831	0.0148087	16.856	14.4936	0.0154421
16.8455	14.4822	0.0188609	16.8565	14.4974	0.0135633
18.1844	14.2727	0.02766	18.1959	14.3007	0.0237723
18.2086	14.2801	0.014448	18.2229	14.3039	0.0140508
18.2103	14.2781	0.0167447	18.2259	14.3013	0.0187258
19.6527	14.1194	0.0314714	19.6811	14.1455	0.0169384
19.6834	14.1314	0.0147017	19.703	14.1598	0.0171088
19.6857	14.1318	0.0173014	19.7049	14.1563	0.0191229
21.2534	14.0458	0.0328134	21.2713	14.0757	0.0321383
21.2626	14.0664	0.0168604	21.2983	14.0972	0.0172644
21.2746	14.0698	0.0224098	21.3013	14.0989	0.0144415
22.9819	14.1559	0.0246203	23.0033	14.1985	0.0267924
22.9874	14.1692	0.0170125	23.0288	14.2098	0.0222794
22.9997	14.1723	0.0198746	23.0297	14.208	0.0167607
24.8405	14.4513	0.0324572	24.8759	14.5051	0.0247039
24.8591	14.4705	0.0228853	24.8954	14.5251	0.0164395
24.8677	14.4711	0.0184561	24.9004	14.5253	0.0222093
26.8574	15.0335	0.0340653	26.8954	15.1043	0.022886
26.8745	15.0303	0.0226934	26.9149	15.1179	0.0182542
26.9048	15.0444	0.0268243	26.9188	15.1169	0.0234667
29.0556	16.0204	0.0480683	29.084	16.0557	0.0296397
29.0572	15.9824	0.020057	29.1065	16.0736	0.0381548
29.0593	15.9993	0.02233	29.1228	16.0816	0.029922
31.4212	17.3836	0.0307068	31.4488	17.4634	0.0338455
31.4235	17.3845	0.0263311	31.475	17.4776	0.0244088
31.4357	17.3999	0.0260141	31.4815	17.4904	0.030173
33.9771	19.2636	0.0291882	34.0032	19.3534	0.0347185
33.9861	19.2774	0.0295197	34.0387	19.393	0.0355114
33.9937	19.2667	0.0441967	34.0402	19.383	0.0286791
36.6468	21.6753	0.0722932	36.7618	21.8637	0.0529809
36.7556	21.7514	0.0347404	36.8074	21.884	0.0329312
36.7589	21.7405	0.0442448	36.8153	21.8918	0.0317177
39.7379	24.3208	0.0378873	39.7969	24.4764	0.0364254
39.7446	24.3303	0.0383415	39.8025	24.4753	0.0373798
39.7638	24.3416	0.042675	39.8202	24.4848	0.0456679
42.9696	27.7357	0.0432818	43.0298	27.8851	0.0437857
42.9755	27.7488	0.0438072	43.0352	27.8926	0.0437889
42.9961	27.7644	0.0550372	43.0588	27.9128	0.0522818
46.466	31.7746	0.0502576	46.5292	31.9366	0.0497755
46.4729	31.7921	0.0526295	46.5362	31.9428	0.0509231
46.4992	31.8169	0.0593746	46.5591	31.9536	0.0704596
50.2455	36.4749	0.0579295	50.3121	36.659	0.0575893
50.2495	36.477	0.0589779	50.3178	36.67	0.0592483
50.2864	36.5355	0.0556756	50.3535	36.7141	0.0558732
54.3356	41.9122	0.06598	54.4036	42.1233	0.0659593
54.3385	41.9061	0.0662031	54.4064	42.1158	0.0676078
54.3805	41.9951	0.0674947	54.4505	42.1949	0.069834
58.7587	48.0651	0.0746478	58.8287	48.2671	0.0736573
58.7632	48.0698	0.0764355	58.8315	48.2703	0.0766461
58.8117	48.1698	0.093495	58.8791	48.3859	0.0908738

63.5361	54.9239	0.0880893	63.6056	55.1462	0.0838083
63.5397	54.9443	0.0883073	63.6101	55.1713	0.0866256
63.6004	55.0549	0.119336	63.6662	55.2769	0.114674
68.6864	62.671	0.0971823	68.7689	62.9293	0.099829
68.6914	62.686	0.0994755	68.7731	62.9008	0.0954362
68.7604	62.8151	0.146571	68.8362	63.028	0.131071
74.2731	71.2165	0.105947	74.3602	71.4878	0.108334
74.2797	71.2351	0.108256	74.3617	71.4991	0.109212
74.35	71.3812	0.154544	74.4261	71.6562	0.154721
80.3043	80.6021	0.125746	80.3905	80.8186	0.117399
80.3107	80.5765	0.121646	80.3931	80.8374	0.126443
80.3827	80.7667	0.169288	80.4616	81.0217	0.173378
86.8268	90.806	0.144168	86.9092	91.1116	0.144555
86.8331	90.8285	0.140145	86.9172	91.0879	0.133969
86.9044	90.9703	0.173879	86.9786	91.2622	0.17358
93.9094	101.898	0.15061	93.9768	102.074	0.141633
93.9183	101.87	0.154698	93.981	102.092	0.151704
93.996	102.086	0.198855	94.0397	102.205	0.169064
101.532	114.024	0.168944	101.599	114.233	0.178411
101.545	114.029	0.17423	101.605	114.203	0.166963
101.62	114.201	0.209913	101.663	114.293	0.193251
109.77	127.044	0.191143	109.841	127.279	0.195851
109.783	127.028	0.190675	109.849	127.256	0.191885
109.869	127.22	0.272095	109.902	127.424	0.210262
118.685	141.002	0.208189	118.765	141.163	0.194465
118.698	141.032	0.212601	118.773	141.21	0.195945
118.777	141.207	0.30324	118.827	141.3	0.213202
128.317	155.34	0.218854	128.4	155.461	0.205641
128.33	155.423	0.242291	128.413	155.454	0.208428
128.394	155.468	0.231721	128.467	155.629	0.228252
138.726	170.578	0.248964	138.817	170.686	0.230642
138.742	170.565	0.237775	138.828	170.731	0.252929
138.806	170.652	0.246146	138.878	170.757	0.238132
149.977	186.381	0.248934	150.076	186.389	0.256218
149.995	186.435	0.27926	150.088	186.574	0.255166
150.04	186.446	0.241644	150.109	186.549	0.247438
162.176	203.059	0.282559	162.249	203.214	0.266143
162.194	203.181	0.265497	162.257	203.289	0.276293
162.217	203.278	0.340218	162.275	203.337	0.294129
175.361	219.461	0.263981	175.416	219.461	0.289766
175.363	219.431	0.285481	175.418	219.371	0.283698
175.39	219.394	0.293757	175.442	219.326	0.327995
189.593	236.129	0.289311	189.655	236.065	0.286084
189.601	236.211	0.29793	189.66	236.136	0.464299
189.609	236.22	0.308905	189.661	236.162	0.315709
204.966	253.496	0.313111	205.007	253.149	0.466382
204.969	253.594	0.327255	205.027	253.069	0.316825
204.988	253.528	0.339312	205.035	253.04	0.347123
221.556	270.892	0.312286	221.602	270.614	0.466931
221.581	270.942	0.340195	221.651	270.609	0.348997

221.602	271.031	0.390031	221.661	270.445	0.353016
239.455	287.963	0.327028	239.527	287.477	0.421288
239.534	288.005	0.356033	239.617	287.458	0.372902
239.549	288.085	0.387815	239.622	287.418	0.359482
258.785	304.809	0.363122	258.86	303.216	0.396736
258.912	304.986	0.377958	259.005	303.603	0.401547
258.921	304.816	0.381855	259.007	303.404	0.393984
279.644	321.564	0.472878	279.745	319.785	0.356622
279.835	321.576	0.412219	279.951	320.023	0.416199
279.836	321.73	0.482104	279.953	319.971	0.407385
302.502	337.916	0.42203	302.626	335.218	0.478667
302.511	338.13	0.720303	302.628	335.211	0.432794
303.005	338.322	0.337349	303.096	335.504	0.394062

Almandine(R51)		PPMS 3	
Formula weight	497.959	g/mol	
Sample weight	24.55	mg	
T	Cp	$\sigma(\text{Cp})$	
[K]	[J/mol.K]	[J/mol.K]	
3.05179	1.45178	0.00591211	
3.05223	1.45266	0.0060036	
3.05471	1.45991	0.00611404	
3.30727	2.05114	0.00593526	
3.30769	2.05234	0.00640948	
3.30949	2.05814	0.00723947	
3.5728	2.8069	0.00804104	
3.573	2.80826	0.00753586	
3.57534	2.81849	0.00902718	
3.8619	3.76953	0.00968176	
3.86201	3.77189	0.0094042	
3.86423	3.78379	0.0120253	
4.17393	4.98511	0.0126052	
4.17404	4.98685	0.0129457	
4.17627	5.00132	0.0151478	
4.5102	6.49106	0.0148814	
4.51023	6.4876	0.0196943	
4.51252	6.50258	0.0187762	
4.87515	8.30419	0.0185206	
4.87545	8.30502	0.0180953	
4.87836	8.31247	0.040265	
5.26926	10.5398	0.0232032	
5.26935	10.5317	0.0222438	
5.27208	10.5527	0.0275516	
5.69961	13.2172	0.0276672	
5.69965	13.2161	0.0268849	
5.70322	13.2446	0.0322293	
6.15823	16.374	0.0325021	
6.15878	16.376	0.0328357	
6.16234	16.4259	0.0400078	
6.65189	20.1036	0.0368774	
6.6636	20.182	0.0428837	
6.66867	20.2511	0.0779864	
7.08884	23.7085	0.0452879	
7.09093	23.7247	0.0427449	
7.09132	23.7225	0.0420046	
7.18817	24.5063	0.0452227	
7.18831	24.5195	0.0453184	
7.18985	24.5624	0.0482459	
7.19193	24.5849	0.043767	

7.19205	24.5923	0.0440403
7.19506	24.5848	0.049529
7.29046	25.4113	0.0488299
7.29249	25.457	0.0446157
7.29271	25.4421	0.0444129
7.39126	26.2877	0.0515018
7.39323	26.3232	0.048985
7.39367	26.3224	0.0467204
7.49221	27.1867	0.0526728
7.49416	27.2246	0.0482816
7.49433	27.2356	0.0480159
7.59321	28.1295	0.0531461
7.59495	28.1576	0.0516075
7.59543	28.151	0.0510431
7.69423	29.0757	0.0555083
7.69573	29.1162	0.0525005
7.69614	29.1148	0.0518682
7.76805	29.7325	0.0549185
7.76819	29.7537	0.0556182
7.7759	29.8296	0.0616742
7.79497	30.0469	0.058211
7.79659	30.0849	0.0562098
7.79679	30.0877	0.0556462
7.89529	31.0516	0.0657383
7.89762	31.0847	0.0555207
7.8979	31.1001	0.0548962
7.99575	32.0337	0.0669258
7.99808	32.0973	0.0559192
7.99862	32.0876	0.0562203
8.09669	33.046	0.0701034
8.09887	33.09	0.0582682
8.09915	33.1179	0.060481
8.19755	34.0981	0.0694694
8.19944	34.1638	0.0624204
8.19969	34.1698	0.0609217
8.29843	35.2223	0.0724175
8.29999	35.2563	0.0639961
8.30075	35.2314	0.0639507
8.39619	36.24	0.0702396
8.39681	36.2575	0.0701169
8.39923	36.3125	0.0750389
8.40089	36.3913	0.0671108
8.40127	36.4111	0.0654327
8.4091	36.4352	0.0799825
8.50024	37.5397	0.0767184
8.5018	37.5684	0.071048
8.50201	37.5687	0.0712676
8.60091	38.7766	0.0811379
8.60266	38.7975	0.0756194
8.60271	38.8188	0.0764006

8.7019	40.0755	0.0872915
8.70305	40.1406	0.0797425
8.70349	40.1296	0.0785209
8.80303	41.4924	0.0942945
8.804	41.5464	0.0850056
8.80414	41.5379	0.0870335
8.90385	43.0249	0.100441
8.9046	43.0501	0.0931208
8.90513	43.0557	0.0925221
9.00397	44.6252	0.101205
9.00508	44.6557	0.0955472
9.0053	44.6075	0.097165
9.06695	45.4762	0.0937144
9.07297	45.6094	0.100741
9.07297	45.6149	0.107196
9.09978	46.0746	0.0942796
9.1057	46.1737	0.0916433
9.10592	46.1831	0.0917018
9.18601	46.4932	0.0760764
9.20087	45.6961	0.188234
9.20479	45.4736	0.205969
9.29685	37.6593	0.590204
9.29736	37.8117	0.569168
9.30315	36.7955	0.617082
9.39757	29.1804	0.378016
9.40023	29.106	0.369722
9.40476	28.7443	0.371523
9.48786	25.0219	0.180468
9.5027	24.4835	0.188818
9.50549	24.3719	0.188144
9.5923	22.2402	0.105567
9.60466	21.9468	0.112381
9.60476	21.9733	0.108506
9.69453	20.6313	0.0700217
9.70538	20.4665	0.0721168
9.70608	20.4848	0.0712138
9.79676	19.5604	0.0567238
9.80121	19.5395	0.0594862
9.80316	19.5157	0.0564997
9.80324	19.5273	0.056308
9.80542	19.49	0.0510546
9.80634	19.4771	0.0506663
9.89765	18.8149	0.045127
9.90842	18.7655	0.0393171
9.90889	18.753	0.0376579
9.99863	18.2653	0.0388984
10.009	18.2323	0.0308719
10.0097	18.2326	0.0298821
10.0995	17.8567	0.0339829
10.11	17.8271	0.0262411

10.1104	17.8271	0.0246473
10.2	17.5186	0.0328952
10.2103	17.5026	0.024014
10.2112	17.4985	0.0211255
10.3006	17.2449	0.0333496
10.3112	17.2439	0.0209998
10.3113	17.2368	0.0200893
10.4007	17.0276	0.0306291
10.4114	17.0192	0.0204168
10.4122	17.0154	0.0259499
10.5016	16.8221	0.032011
10.5124	16.8186	0.0178371
10.5129	16.8142	0.017613
10.5775	16.7053	0.0320988
10.5998	16.6793	0.0175985
10.6005	16.6723	0.0210998
10.6022	16.6602	0.0323774
10.6129	16.644	0.0194855
10.6134	16.6537	0.0168501
10.7026	16.5087	0.0332129
10.7134	16.5078	0.0193415
10.7143	16.5088	0.02318
10.8043	16.3845	0.0267608
10.814	16.3818	0.017359
10.8147	16.3828	0.0229109
10.9028	16.2655	0.0292462
10.9145	16.2541	0.0163399
10.9154	16.2586	0.0200946
11.0049	16.1458	0.0261023
11.0153	16.1391	0.0159848
11.0154	16.1405	0.0153648
11.102	16.0468	0.0272272
11.1158	16.0423	0.0144461
11.1165	16.051	0.021748
11.4318	15.8299	0.0323601
11.4534	15.8275	0.0197575
11.4536	15.8286	0.0165356
12.3534	15.3881	0.027839
12.3763	15.3991	0.0174786
12.3764	15.3933	0.0167271
13.35	15.1173	0.0282865
13.3738	15.122	0.0188744
13.374	15.1289	0.0166739
14.4251	14.8954	0.0328163
14.4519	14.895	0.0198447
14.453	14.8877	0.0182728
15.5934	14.6843	0.0317371
15.6187	14.6844	0.0203289
15.6197	14.6825	0.0179635
16.8531	14.4668	0.0322736

16.8821	14.4899	0.0209989
16.8837	14.4888	0.0544194
18.218	14.284	0.0331474
18.2488	14.2897	0.391017
18.2489	14.2906	0.0219321
19.6968	14.1448	0.0343838
19.7243	14.1463	0.0243524
19.7267	14.1584	0.0262141
21.2955	14.0802	0.0352271
21.3089	14.09	0.030485
21.3193	14.0849	0.0275068
23.0234	14.1896	0.0382952
23.0448	14.1995	0.0327439
23.0491	14.1996	0.0281541
24.89	14.5154	0.087059
24.9155	14.5294	0.0325564
24.9268	14.4845	0.0331104
26.9095	15.1071	0.0370328
26.9376	15.1239	0.0236193
26.949	15.0816	0.045279
29.0899	16.0497	0.0380929
29.1176	16.071	0.0245115
29.1236	16.1062	0.0338086
31.4839	17.4929	0.0294811
31.4903	17.4923	0.0301216
31.4914	17.4948	0.0317592
34.0386	19.3564	0.0349201
34.0458	19.3721	0.0361058
34.0586	19.3703	0.0449978
36.8029	21.8379	0.0444557
36.8067	21.8716	0.0414432
36.8281	22.2422	1.63561
39.799	24.4501	0.0467733
39.8051	24.4513	0.0450029
39.8292	24.4685	0.046908
43.0342	27.869	0.064786
43.0394	27.8638	0.0494025
43.0647	27.8882	0.0527507
46.5282	31.8925	0.0603171
46.5358	31.9192	0.0638037
46.5621	31.9504	0.0670114
50.3046	36.6233	0.0697296
50.309	36.5966	0.071631
50.3463	36.9091	0.765259
54.3934	42.0202	0.0814651
54.3999	42.0818	0.0806415
54.4391	42.118	0.0799395
58.8197	48.1123	0.128746
58.826	48.1998	0.127668
58.8783	48.2927	0.132539

63.6043	55.0262	0.0875589
63.6091	55.0232	0.320241
63.6673	55.135	0.24167
68.7696	62.8011	0.105844
68.7744	62.8546	0.102494
68.8391	63.0019	0.408463
74.3448	71.3157	0.137452
74.3588	71.3546	0.130927
74.4302	71.4514	0.153352
80.3821	80.9133	0.184845
80.3866	80.8821	0.192849
80.4592	81.0457	0.203882
86.8929	91.1929	0.149405
86.902	91.2472	0.179336
86.9758	91.4209	0.185406
93.9449	102.297	0.161878
93.9549	102.266	0.286502
94.0266	102.409	0.217394
101.584	114.407	0.209451
101.593	113.116	3.2391
101.665	114.515	0.188503
109.833	127.422	0.21308
109.847	127.349	0.207481
109.912	127.492	0.202837
118.744	141.375	0.460765
118.767	141.108	0.360408
118.826	141.335	0.226292
128.395	155.596	0.246907
128.413	155.661	1.12016
128.47	155.708	0.226398
138.82	170.901	0.268435
138.848	170.955	0.282444
138.882	170.986	0.259349
150.092	186.776	0.246366
150.107	186.868	0.267344
150.126	186.877	0.262538
162.288	202.993	0.274056
162.302	203.008	0.293155
162.305	202.957	0.312482
175.455	219.708	0.315715
175.456	219.719	0.311228
175.471	219.847	0.300445
189.662	236.607	0.29489
189.679	236.469	0.312994
189.706	236.642	0.354891
205.024	253.532	0.27431
205.059	253.72	0.3663
205.095	253.82	0.342811
221.608	271.037	0.452541
221.679	271.262	0.359811

221.711	271.198	0.397941
239.522	287.793	0.362164
239.631	288.478	0.414887
239.664	288.471	0.430889
258.85	304.706	0.403077
259.017	305.129	0.404567
259.042	305.387	0.99951
279.737	321.815	0.455334
279.963	322.23	0.463346
279.97	322.156	0.440384
302.624	338.471	0.527155
302.626	338.771	1.25745
302.971	338.946	0.434582

Dachs E., Geiger C.A. and Benisek A. (2012): Almandine garnet:

Lattice and non-lattice heat capacity behavior and standard thermodynamic properties

Appendix 1: DSC data

Almandine(R51) DSC Series 1 mean of 5			Almandine(R51) DSC Series 2 mean of 5		
T [K]	Cp [J/mol.K]	σ (Cp) [J/mol.K]	T [K]	Cp [J/mol.K]	σ (Cp) [J/mol.K]
281.936	324.635	1.59487	281.913	325.188	1.24941
286.393	327.907	1.70171	286.371	328.724	1.20832
290.856	331.178	1.28453	290.834	331.679	1.30151
295.329	334.252	1.8054	295.309	335.135	1.31243
299.809	337.282	1.9762	299.79	338.012	1.71251
304.297	340.561	1.27101	304.279	341.504	1.60079
308.788	343.235	1.34176	308.77	343.89	1.22273
313.288	346.742	1.14699	313.271	346.818	1.38619
317.792	349.395	1.37083	317.775	350.864	1.78752
322.305	352.143	1.0824	322.289	353.901	2.14791
326.822	355.255	1.4994	326.807	356.202	1.48482
331.346	359.9 2	0.81038	331.33	359.158	1.68114
335.873	360.827	0.752658	335.859	361.64	1.13063
340.405	363.746	0.714221	340.392	364.621	2.09003
344.935	366.417	0.564887	344.922	366.784	1.36115
349.465	368.937	0.590372	349.453	369.724	1.7012
353.993	371.413	0.493866	353.98	372.178	1.48336
358.521	373.915	0.67536	358.509	374.694	1.61929
363.045	376.377	0.671401	363.034	377.194	1.6462
382.761	386.865	0.617172	382.751	387.101	1.44962
387.285	388.941	0.508822	387.275	389.172	1.41631
391.806	391.21	0.583256	391.796	391.493	1.50804
396.325	393.266	0.490097	396.317	393.692	1.47993
400.842	395.442	0.621439	400.835	395.915	1.50881
405.362	397.515	0.710186	405.355	397.901	1.58291
409.88	399.591	0.581136	409.872	400.006	1.66744
414.4	401.562	0.407371	414.391	402.006	1.62434
418.915	403.482	0.480806	418.907	403.868	1.63321
423.43	405.427	0.538919	423.423	405.504	1.3695
427.942	407.329	0.502358	427.935	407.37	1.33902
432.462	409.164	0.586193	432.453	409.186	1.37863
436.976	411.05	0.595957	436.967	410.979	1.31235
441.494	413.155	1.41335	441.484	412.864	1.28837
446.004	414.588	0.629218	445.997	414.54	1.23276
450.514	416.243	0.744824	450.507	416.227	1.14224
455.021	418.005	0.969709	455.014	417.803	1.01483
459.534	419.491	0.722366	459.526	419.421	1.06358
464.042	421.247	0.947548	464.036	421.091	1.2254
482.79	427.508	1.08333	482.784	427.557	1.16529
487.298	428.927	0.918016	487.293	429.036	0.968767

491.804	430.165	0.71195	491.799	430.467	0.98886
496.31	431.64	0.353143	496.305	431.888	0.964216
500.816	432.922	0.255089	500.811	433.247	1.07299
505.321	434.135	0.178906	505.317	434.655	1.16757
509.832	435.39	0.25644	509.827	435.952	1.13522
514.336	436.66	0.447592	514.334	437.452	1.25313
518.843	437.86	0.725661	518.84	438.712	1.31557
523.346	439.183	0.809402	523.343	439.879	1.32434
527.85	440.385	0.957542	527.847	441.14	1.30039
532.35	441.502	1.00637	532.348	442.464	1.22149
536.858	442.752	0.962934	536.854	443.293	1.54261
541.359	443.943	1.08274	541.356	444.751	1.14264
545.864	445.245	0.930487	545.863	445.938	1.10374
550.369	446.429	0.825327	550.366	446.886	1.34423
554.873	447.655	0.929274	554.871	447.935	1.33624
559.375	448.916	0.789645	559.373	448.982	1.35841
563.878	450.185	0.775313	563.875	450.187	1.33752
582.809	455.473	1.67432	582.806	454.769	1.30172
587.313	456.693	1.82744	587.311	455.975	1.24965
591.815	457.817	2.00005	591.811	456.981	1.28953
596.321	459.015	2.09409	596.317	457.95	1.32465
600.821	460.028	2.23961	600.818	458.777	1.18211
605.325	461.219	2.34135	605.322	459.897	1.29514
609.824	462.261	2.40779	609.82	460.749	1.2921
614.326	463.151	2.55471	614.323	461.686	1.30063
618.83	464.227	2.51094	618.825	462.675	1.14704
623.332	465.008	2.50094	623.329	463.359	1.31219
627.838	465.685	2.40926	627.834	464.158	1.48606
632.341	466.641	2.52009	632.337	465.012	1.53088
636.846	467.507	2.50707	636.843	465.812	1.48393
641.347	468.331	2.33863	641.343	466.616	1.60695
645.85	468.963	2.04634	645.848	467.405	1.2974
650.35	469.629	1.97612	650.348	468.221	1.095
654.857	470.432	1.94457	654.853	469.124	1.14725
659.36	471.194	2.11008	659.358	469.757	1.06981
663.864	471.887	2.07559	663.861	470.604	1.1405
682.849	474.751	2.77866	682.848	474.47	2.73836
687.355	475.735	3.13273	687.355	475.003	2.63379
691.857	476.548	3.9809	691.857	475.882	2.88576
696.363	477.767	4.38136	696.363	476.552	2.82976
700.865	478.556	5.07225	700.865	477.216	3.09762
705.371	479.55	5.40418	705.371	477.966	3.17396
709.877	480.512	5.84907	709.877	478.705	2.72145
714.384	481.046	6.45154	714.386	479.162	2.85833
718.893	481.89	6.6107	718.894	479.874	2.70032
723.401	482.641	6.62739	723.402	480.41	2.23828
727.91	483.606	6.79304	727.911	481.322	2.52158
732.413	483.83	7.25222	732.415	482.02	2.2801
736.924	484.922	7.02061	736.927	482.82	2.32413
741.432	485.467	7.43869	741.434	483.232	1.76743

745.939	486.095	7.1673	745.939	483.608	1.80997
750.446	486.499	7.40766	750.447	484.144	2.16013
754.95	486.882	7.04845	754.952	484.82	1.95542
759.458	487.376	6.94277	759.46	485.296	1.56073
763.962	487.61	6.4131	763.965	486.003	1.83944

Almandine(R51)		DSC Series 3 mean of 5	
T [K]	Cp [J/mol.K]	σ (Cp) [J/mol.K]	
281.908	323.865	1.53871	
286.367	326.978	1.51136	
290.831	330.295	1.55768	
295.305	333.42	1.67478	
299.785	336.487	1.75197	
304.274	340.231	1.50393	
308.766	342.704	1.17264	
313.266	345.517	1.04301	
317.771	349.536	1.38139	
322.284	352.075	1.12407	
326.803	355.177	1.35975	
331.325	357.487	1.09672	
335.854	360.745	1.10296	
340.387	363.275	1.10782	
344.916	365.969	1.14906	
349.448	368.451	1.01629	
353.975	371.009	1.12041	
358.504	373.536	1.06812	
363.029	376.108	1.0487	
382.746	386.343	0.892655	
387.271	388.524	0.937759	
391.791	390.653	0.88273	
396.311	392.807	0.695528	
400.829	394.847	0.771253	
405.35	396.876	0.803973	
409.867	398.803	0.788595	
414.388	400.631	0.862524	
418.903	402.568	0.864202	
423.419	404.427	0.791306	
427.931	406.15	0.797927	
432.45	407.903	0.715567	
436.963	409.727	0.725111	
441.481	411.507	0.798962	
445.992	413.215	0.856059	
450.504	414.947	0.894614	
455.01	416.638	0.9972	
459.521	418.384	0.972927	
464.033	420.122	1.00085	
482.78	426.448	0.911064	
487.289	427.898	0.898583	

491.793	429.292	0.836673
496.301	430.726	0.825195
500.807	432.088	0.849381
505.313	433.497	0.870499
509.823	434.919	0.795493
514.329	436.258	0.700889
518.835	437.555	0.799906
523.338	438.715	0.785981
527.842	439.994	0.922969
532.343	441.399	0.909548
536.849	442.67	0.875493
541.351	443.734	0.784344
545.857	444.584	1.00902
550.362	446.023	0.834377
554.866	447.301	0.668001
559.368	448.455	0.846338
563.871	449.387	0.98695
582.801	453.603	1.32209
587.307	454.55	1.02941
591.807	455.424	0.55994
596.313	456.469	0.611611
600.813	457.694	0.489251
605.318	458.717	0.500025
609.818	459.747	0.291972
614.319	460.973	0.486772
618.822	461.761	0.71904
623.326	462.648	0.698567
627.831	463.593	0.528616
632.332	464.699	0.598706
636.837	465.445	0.347512
641.34	466.548	0.69246
645.844	467.182	0.912409
650.344	468.287	0.780482
654.85	469.303	1.15668
659.354	470.269	1.14749
663.856	470.818	0.823704
682.843	474.057	1.34275
687.35	475.289	1.99298
691.851	475.748	1.86507
696.357	476.382	1.96617
700.857	476.886	1.88052
705.364	477.906	1.97348
709.872	478.612	2.15785
714.379	479.376	2.31644
718.888	479.941	2.59269
723.395	480.196	2.00781
727.905	481.202	2.351
732.408	481.85	2.18667
736.92	482.183	1.84829
741.427	483.032	2.07562

745.933	483.566	1.70927
750.442	484.113	1.47523
754.945	484.925	1.68216
759.453	485.658	1.51008
763.957	486.187	1.15899

Dachs E., Geiger C.A. and Benisek A. (2012): Almandine garnet:

Lattice and non-lattice heat capacity behavior and standard thermodynamic properties

Appendix 1: PPMS data

Almandine(FR3) PPMS 1			Almandine(FR3) PPMS 2		
Formula weight	495.789	g/mol	Formula weight	495.789	g/mol
Sample weight	29.83	mg	Sample weight	29.83	mg
T [K]	Cp [J/mol.K]	σ (Cp) [J/mol.K]	T [K]	Cp [J/mol.K]	σ (Cp) [J/mol.K]
3.02878	2.73178	0.0058801	3.03341	2.72774	0.00579845
3.02889	2.73392	0.00632133	3.03345	2.72784	0.00621801
3.03015	2.73841	0.0078281	3.03471	2.72987	0.00762576
3.28088	3.51318	0.00725841	3.28613	3.50795	0.00778019
3.28097	3.51589	0.00793938	3.28619	3.5059	0.00785298
3.28276	3.52023	0.00864715	3.28762	3.51032	0.00908125
3.5443	4.45646	0.00868852	3.55015	4.44388	0.0091022
3.54446	4.45566	0.00977422	3.55027	4.44983	0.00973332
3.54633	4.46229	0.0115526	3.55207	4.4508	0.0114717
3.83129	5.62237	0.0110363	3.83789	5.61034	0.0104694
3.83159	5.6215	0.0118363	3.83801	5.61083	0.0109741
3.83337	5.62668	0.0150315	3.83986	5.61658	0.0148555
4.14114	7.03667	0.0133793	4.14819	7.01957	0.0137853
4.14134	7.04361	0.0150138	4.14871	7.02565	0.0148833
4.14358	7.05383	0.0170337	4.15036	7.02733	0.0193846
4.47564	8.75715	0.016364	4.48359	8.73773	0.0168824
4.47578	8.75973	0.016265	4.48382	8.73551	0.0163199
4.47876	8.77706	0.0187654	4.48644	8.75243	0.0204316
4.83883	10.8267	0.0194881	4.8475	10.8017	0.0200096
4.83903	10.8236	0.0193016	4.84782	10.8003	0.0199937
4.84267	10.8497	0.021333	4.85109	10.8177	0.0221909
5.04763	12.1124	0.0255189	5.0563	12.0853	0.0279295
5.04835	12.1237	0.0210375	5.05732	12.0962	0.0220505
5.04848	12.1309	0.0222142	5.05776	12.1035	0.0220989
5.17632	12.9635	0.026824	5.1855	12.9254	0.0281457
5.17712	12.9759	0.0233228	5.18648	12.9396	0.0234532
5.17724	12.9697	0.0234142	5.18673	12.9419	0.0230204
5.23044	13.3161	0.022993	5.23999	13.276	0.0232135
5.23071	13.3141	0.0236398	5.24026	13.2781	0.0232757
5.23531	13.3467	0.0250445	5.24448	13.3089	0.0255819
5.30494	13.8153	0.0272496	5.31454	13.7814	0.0282803
5.30557	13.8266	0.0246193	5.3153	13.798	0.0236721
5.30586	13.8311	0.0242037	5.31558	13.8027	0.0240578
5.43466	14.7019	0.0278627	5.44434	14.669	0.0302093
5.43525	14.7078	0.0247865	5.44501	14.6774	0.0253462
5.4353	14.7144	0.0258485	5.44541	14.6758	0.0265809
5.56828	15.6331	0.0298314	5.5783	15.5968	0.0300574
5.56861	15.6361	0.0267337	5.57908	15.5969	0.026616
5.56899	15.637	0.0271336	5.57937	15.6015	0.0272014
5.65844	16.2778	0.028269	5.66897	16.2336	0.0282114

5.65853	16.2808	0.028316	5.66927	16.2355	0.0289988
5.66406	16.3272	0.0307295	5.67445	16.2846	0.0312971
5.6972	16.5767	0.0298271	5.70753	16.5268	0.0317916
5.69747	16.5748	0.0291466	5.70803	16.541	0.0278012
5.69787	16.5771	0.028516	5.70841	16.5356	0.0283516
5.82619	17.5353	0.0305954	5.83698	17.4805	0.0336721
5.82651	17.5399	0.0294453	5.8375	17.4923	0.0299997
5.82672	17.543	0.0296451	5.83768	17.4992	0.0295415
5.95517	18.5132	0.0330206	5.96616	18.4678	0.0340791
5.9553	18.5254	0.0313766	5.96644	18.4784	0.0319015
5.95558	18.5125	0.0316953	5.96696	18.4803	0.0313647
6.0848	19.5201	0.0337256	6.09628	19.4717	0.0357071
6.08508	19.5295	0.0323036	6.09653	19.4901	0.0316686
6.08524	19.5291	0.0323493	6.09687	19.4839	0.0325203
6.11539	19.7616	0.033528	6.12684	19.7137	0.0336994
6.11562	19.7698	0.0332086	6.12727	19.6935	0.0338938
6.12212	19.8059	0.0354181	6.13379	19.7721	0.0365263
6.21364	20.5604	0.035288	6.22506	20.4882	0.0348547
6.21374	20.5599	0.0365358	6.22555	20.5137	0.0340812
6.21417	20.5729	0.0347086	6.22576	20.5199	0.0347711
6.3423	21.6231	0.0361981	6.35435	21.5506	0.0378529
6.34241	21.6227	0.0352982	6.35459	21.5779	0.0355143
6.34268	21.6236	0.0358622	6.35492	21.5729	0.0360165
6.47087	22.697	0.0381376	6.48344	22.6371	0.0384279
6.47102	22.6976	0.0371306	6.4837	22.6347	0.0372047
6.47132	22.6913	0.0377234	6.48371	22.6349	0.0369764
6.59994	23.7898	0.0395166	6.61237	23.7264	0.0410629
6.59999	23.7962	0.0381948	6.61276	23.7307	0.0389516
6.60002	23.7819	0.0387222	6.61297	23.7131	0.040215
6.607	24.0802	0.0991113	6.62049	23.7675	0.0503076
6.60993	23.8556	0.0385451	6.62269	23.787	0.0391346
6.61398	23.8969	0.0414918	6.62365	23.7964	0.0444086
6.72966	24.923	0.0410447	6.74251	24.8472	0.0412529
6.72983	24.9171	0.041883	6.74264	24.8584	0.0430797
6.7299	24.9083	0.0405536	6.74313	24.8417	0.0406874
6.85855	26.0677	0.0421358	6.87203	25.9977	0.0441001
6.8587	26.0657	0.0440875	6.87206	26.0048	0.0427725
6.85898	26.0634	0.0422713	6.87219	26.0097	0.0441339
6.98028	27.4341	0.0970602	6.99422	27.2241	0.075776
6.98736	27.2628	0.0457538	7.00101	27.1843	0.0448774
6.99128	27.2852	0.0478946	7.00288	27.2139	0.0459244
7.11841	28.484	0.0451022	7.13258	28.4263	0.0462533
7.11846	28.4885	0.0457847	7.1326	28.4155	0.0477756
7.11927	28.4799	0.0464962	7.13308	28.4064	0.0435886
7.14758	28.7587	0.0454522	7.16161	28.6937	0.0468593
7.14785	28.7325	0.0465356	7.16196	28.6586	0.0473066
7.1575	28.8516	0.0524798	7.17173	28.7683	0.0521181
7.24714	29.7235	0.0464525	7.26148	29.6639	0.0480395
7.24725	29.7277	0.0471784	7.26165	29.6366	0.049296
7.24797	29.7175	0.0490891	7.26234	29.6318	0.0489285

7.37676	31.0284	0.0513213	7.39162	30.9361	0.0515406
7.37703	31.013	0.0501149	7.39175	30.9254	0.0528545
7.37758	31.0096	0.0519883	7.3924	30.9534	0.0506305
7.50585	32.3545	0.0533747	7.52082	32.2773	0.055374
7.5059	32.3522	0.0545964	7.52092	32.2791	0.0558202
7.50659	32.3656	0.0557197	7.52165	32.2679	0.0558327
7.63456	33.7877	0.0586731	7.64985	33.7223	0.059751
7.63468	33.7777	0.0584551	7.65012	33.7163	0.0585007
7.63568	33.7989	0.0598631	7.65055	33.7085	0.0588683
7.7241	34.7685	0.0578745	7.74002	34.6982	0.0641312
7.7253	34.7859	0.0602705	7.74062	34.6851	0.060691
7.72545	34.7964	0.0590294	7.74087	34.6945	0.0610635
7.76367	35.2561	0.0609002	7.77911	35.152	0.0602123
7.76369	35.2648	0.0608256	7.77926	35.1624	0.0597701
7.76405	35.2854	0.0614926	7.77955	35.1613	0.0612296
7.8881	36.5365	0.0515553	7.90426	36.4587	0.0490954
7.89294	36.5612	0.0473336	7.90899	36.4737	0.0497238
7.89301	36.5676	0.0476931	7.90899	36.4658	0.050114
8.00591	35.5555	0.0993709	8.02328	35.5163	0.0972925
8.01917	35.0633	0.133969	8.0342	34.9992	0.135753
8.02008	35.0002	0.136788	8.03498	34.9513	0.138525
8.13058	30.3353	0.195435	8.14687	30.2322	0.210203
8.14556	29.38	0.237571	8.16258	29.1687	0.250365
8.14703	29.283	0.241722	8.16447	29.0242	0.253518
8.26325	24.2093	0.145579	8.27909	24.1165	0.14995
8.27508	23.7443	0.157258	8.29093	23.6137	0.164472
8.27607	23.7134	0.157206	8.29379	23.5627	0.161712
8.34767	21.8655	0.103883	8.36394	21.7866	0.107725
8.34769	21.8593	0.103998	8.36552	21.7686	0.106501
8.34862	21.8514	0.104773	8.36626	21.76	0.105624
8.39623	20.9659	0.0702114	8.41142	20.9322	0.0705666
8.40565	20.805	0.0737909	8.42137	20.769	0.0751467
8.40632	20.7962	0.073413	8.42391	20.7445	0.0744551
8.5276	19.4784	0.0421975	8.54444	19.4374	0.046943
8.53622	19.3997	0.0435007	8.55369	19.3719	0.0428268
8.53688	19.3957	0.0429588	8.55436	19.3646	0.0424916
8.65662	18.555	0.0344891	8.67378	18.5279	0.0400806
8.66532	18.5048	0.0330958	8.68325	18.4671	0.0336285
8.66596	18.5055	0.0329104	8.68382	18.4676	0.0339702
8.78584	17.8406	0.0317688	8.80335	17.7999	0.0385334
8.7942	17.8036	0.0294248	8.81199	17.774	0.0285498
8.79493	17.8027	0.0269463	8.81276	17.7723	0.0280953
8.9148	17.2982	0.0270241	8.9329	17.2617	0.0328237
8.923	17.2669	0.021628	8.94151	17.2404	0.0236401
8.92369	17.2685	0.0221241	8.94215	17.2304	0.020859
9.01	17.0011	0.0163559	9.02794	16.9741	0.0161622
9.02514	16.9596	0.0218167	9.04384	16.9243	0.0194709
9.02588	16.9508	0.0183887	9.04463	16.9185	0.0225623
9.04598	16.8909	0.0170427	9.06172	16.8635	0.0337504
9.05138	16.8819	0.0209547	9.07016	16.8587	0.0194562

9.05156	16.884	0.0185046	9.07111	16.849	0.0175736
9.1731	16.5953	0.026522	9.19135	16.5606	0.0306611
9.18129	16.5876	0.0173986	9.20006	16.5494	0.0184654
9.18194	16.5734	0.016195	9.20144	16.5545	0.0207805
9.30215	16.3317	0.0280217	9.32163	16.3069	0.0232079
9.30988	16.3328	0.0181648	9.32935	16.3022	0.0157063
9.31087	16.33	0.0222357	9.33	16.3047	0.0146164
9.43044	16.1339	0.0256048	9.44941	16.1163	0.0292323
9.43886	16.1321	0.0141953	9.45887	16.1052	0.0144223
9.43959	16.1272	0.0132878	9.4594	16.1024	0.0145097
9.55957	15.964	0.027173	9.57861	15.9405	0.0325378
9.56753	15.9708	0.0138249	9.58807	15.931	0.0142851
9.56829	15.9567	0.0126492	9.58837	15.9529	0.0129352
9.68773	15.8272	0.0268149	9.70722	15.8079	0.029141
9.69642	15.8297	0.0137433	9.71669	15.8066	0.0132534
9.69683	15.8235	0.0131177	9.71794	15.8085	0.0165746
9.74224	15.7762	0.0165646	9.76137	15.7632	0.0181862
9.75714	15.7718	0.0117861	9.77709	15.7558	0.0144453
9.75718	15.7719	0.0128721	9.77783	15.7544	0.0197309
9.81704	15.7008	0.0283387	9.83799	15.673	0.0293417
9.82611	15.7032	0.013403	9.84665	15.6838	0.0133321
9.82629	15.7038	0.0125842	9.84791	15.679	0.0117661
9.94507	15.5926	0.0271067	9.96732	15.5695	0.0286166
9.95424	15.5884	0.013666	9.97629	15.5811	0.0139812
9.95488	15.5926	0.0119285	9.9772	15.5807	0.0138805
10.0597	15.5268	0.0234284	10.0968	15.4703	0.0381269
10.08	15.5015	0.0120602	10.1063	15.4863	0.0147906
10.0815	15.5061	0.0148594	10.1094	15.4795	0.0204334
10.5313	15.2568	0.0179499	10.5528	15.2439	0.0208462
10.5464	15.2553	0.0147627	10.5687	15.2449	0.0129739
10.5471	15.2604	0.0177421	10.5696	15.2519	0.0183658
11.385	15.002	0.016401	11.4082	14.9847	0.0202235
11.4009	14.9962	0.0123566	11.4248	14.9905	0.0138063
11.4012	15.0015	0.0178461	11.4255	14.9924	0.0169616
12.3115	14.8738	0.0180155	12.337	14.8624	0.0207806
12.3285	14.8726	0.0123196	12.3553	14.8692	0.0121916
12.3293	14.874	0.0173474	12.3555	14.8736	0.0166515
13.3088	14.7513	0.0177424	13.3359	14.7565	0.0196269
13.3255	14.7564	0.0121686	13.3552	14.758	0.0118454
13.3273	14.7507	0.0163208	13.3562	14.7605	0.0181495
14.3851	14.607	0.0157532	14.4147	14.6159	0.0184121
14.4036	14.6105	0.0115699	14.4346	14.62	0.0121641
14.4041	14.6156	0.0186797	14.4359	14.623	0.0152686
15.5492	14.4511	0.0174849	15.5827	14.461	0.0191554
15.5701	14.4601	0.0179491	15.6046	14.4656	0.0108609
15.5701	14.4513	0.0118071	15.6048	14.4732	0.015911
16.8083	14.2583	0.0205895	16.8439	14.2715	0.0252881
16.832	14.2645	0.0160543	16.8686	14.2866	0.0116488
16.8329	14.2643	0.011158	16.87	14.2862	0.0130865
18.1684	14.0669	0.0259189	18.2109	14.0945	0.0269228

18.1962	14.0708	0.0125551	18.2376	14.1021	0.0133025
18.1982	14.0742	0.011176	18.2392	14.1092	0.0119959
19.65	13.9227	0.0196002	19.694	13.9701	0.0199828
19.6728	13.9347	0.0171399	19.7161	13.9818	0.0150314
19.674	13.9303	0.0188907	19.7169	13.9812	0.011314
21.243	13.8609	0.0284869	21.2921	13.9123	0.0248419
21.2612	13.87	0.0138485	21.3076	13.9236	0.0127926
21.2697	13.8723	0.0143295	21.3161	13.9266	0.0170126
22.9701	13.9562	0.0260788	23.0232	14.0257	0.0239314
22.9884	13.9695	0.01594	23.0404	14.0335	0.0166272
22.9955	13.9734	0.0145311	23.0455	14.0349	0.0166925
24.8363	14.257	0.0271798	24.8882	14.3175	0.0306558
24.8596	14.2617	0.0138901	24.9148	14.339	0.0139536
24.8618	14.2669	0.0207252	24.9248	14.3018	0.0166341
26.8547	14.8322	0.0249116	26.9114	14.8912	0.0295818
26.8764	14.955	0.0365238	26.9363	14.9281	0.0182305
26.8782	14.8257	0.0263862	26.942	14.9085	0.0267318
29.0381	15.7454	0.0320221	29.0987	15.8278	0.0342689
29.0585	15.7593	0.0195428	29.1233	15.8537	0.0213239
29.0712	15.7314	0.0229694	29.1323	15.8321	0.0332878
31.3995	17.0989	0.0316938	31.4643	17.195	0.0358406
31.4279	17.114	0.0223988	31.4972	17.2206	0.0235463
31.4319	17.1167	0.0302415	31.4988	17.2306	0.0289342
33.9544	18.9316	0.0436472	34.0224	19.035	0.0410426
33.9816	18.9332	0.0265402	34.0532	19.0435	0.0252113
33.9949	18.9443	0.0254086	34.0642	19.0584	0.0256492
36.7452	21.2517	0.0281334	36.8236	21.377	0.0292895
36.7486	21.2567	0.029615	36.8271	21.3837	0.029379
36.7648	21.2592	0.0387543	36.8435	21.3948	0.0339604
39.7365	24.1141	0.034504	39.8157	24.2478	0.0344137
39.7417	24.1233	0.0358254	39.8195	24.2584	0.0353765
39.7627	24.1348	0.0396258	39.8411	24.2657	0.0383878
42.9614	27.5403	0.0396634	43.0533	27.6946	0.0397854
42.9657	27.5555	0.0397272	43.0581	27.7068	0.0407663
42.9896	27.569	0.0496507	43.0821	27.7233	0.0442669
46.4544	31.6133	0.0457337	46.5526	31.7688	0.0465518
46.4614	31.6188	0.0466248	46.5576	31.7687	0.0479368
46.4852	31.6324	0.0671226	46.5866	31.8114	0.0532125
50.2324	36.356	0.0525296	50.3375	36.5265	0.0532335
50.2349	36.3623	0.0533759	50.3404	36.5215	0.0549727
50.2755	36.4186	0.0548523	50.3803	36.5884	0.0563556
54.3175	41.8113	0.0617386	54.4308	41.9746	0.0610765
54.3188	41.8021	0.0613496	54.4324	41.9782	0.0617746
54.3656	41.9088	0.0795089	54.473	42.0558	0.0718807
58.7354	47.9872	0.0685786	58.8571	48.1523	0.0685422
58.7378	47.9901	0.070636	58.8602	48.1687	0.0693877
58.7847	48.0791	0.0792604	58.9067	48.2385	0.0760426
63.5052	54.9146	0.0805485	63.6379	55.0965	0.0805598
63.5075	54.9133	0.0803701	63.6397	55.0916	0.080099
63.5597	55.0162	0.0957343	63.6917	55.1959	0.0942748

68.659	62.7258	0.0880703	68.8006	62.8988	0.0917359
68.6635	62.7474	0.0873452	68.8043	62.9175	0.0944934
68.7211	62.8375	0.105603	68.8591	63.0377	0.102865
74.232	71.3523	0.0987509	74.3932	71.5638	0.0975678
74.2571	71.4646	0.107951	74.3992	71.5753	0.0973247
74.3204	71.5027	0.127327	74.4529	71.6913	0.116521
80.281	80.8275	0.111681	80.4427	81.0518	0.111316
80.2868	80.8743	0.118895	80.4493	81.0792	0.111063
80.364	81.0013	0.132029	80.5048	81.1734	0.141136
86.8147	91.2251	0.126486	86.9761	91.4471	0.11447
86.8218	91.2426	0.129996	86.9815	91.4289	0.119365
86.8832	91.3595	0.146099	87.0395	91.534	0.143112
93.8521	102.369	0.133339	94.0227	102.536	0.136671
93.8586	102.451	0.137205	94.0273	102.599	0.154861
93.922	102.481	0.149423	94.0899	102.71	0.156151
101.473	114.736	0.155878	101.647	114.901	0.162738
101.48	114.7	0.163586	101.656	114.913	0.167345
101.542	114.897	0.178542	101.716	115.023	0.184257
109.704	127.926	0.166147	109.901	128.054	0.169445
109.708	127.91	0.187532	109.911	128.099	0.170699
109.772	128.066	0.199299	109.972	128.237	0.206603
118.607	142.094	0.18906	118.814	142.26	0.200344
118.611	142.186	0.197246	118.819	142.286	0.189024
118.678	142.247	0.201221	118.885	142.385	0.219397
128.221	156.687	0.192185	128.449	156.84	0.194454
128.231	156.665	0.206408	128.457	156.866	0.210222
128.293	156.828	0.210787	128.519	156.998	0.215632
138.625	172.083	0.206843	138.871	172.171	0.204528
138.631	172.116	0.222181	138.882	172.152	0.219632
138.685	172.125	0.209776	138.939	172.306	0.225248
149.865	188.141	0.221593	150.135	188.238	0.23399
149.872	188.088	0.248152	150.143	188.263	0.2579
149.92	188.169	0.255834	150.194	188.407	0.234754
162.024	205.188	0.239762	162.301	205.2	0.240998
162.033	205.239	0.265937	162.318	205.252	0.220933
162.071	205.237	0.310003	162.355	205.354	0.284027
175.168	221.547	0.251034	175.484	221.695	0.255552
175.178	221.637	0.24692	175.485	221.836	0.267546
175.208	221.717	0.327933	175.519	221.785	0.316998
189.39	238.563	0.25939	189.725	238.745	0.265681
189.393	238.615	0.27954	189.725	238.853	0.268396
189.41	238.79	0.339881	189.746	238.836	0.346388
204.724	256.01	0.302776	205.1	256.21	0.280349
204.743	256.136	0.255875	205.105	256.272	0.355006
204.744	256.085	0.289215	205.109	256.35	0.314546
221.305	273.8	0.509862	221.689	274.155	0.361679
221.33	273.836	0.295125	221.716	273.992	0.295975
221.332	273.755	0.339515	221.726	274.168	0.32205
239.188	290.87	0.490262	239.609	291.424	0.326245
239.258	290.998	0.311822	239.677	291.567	0.334372

239.266	291.023	0.334837	239.685	291.68	0.337673
258.493	307.677	0.443622	258.945	308.298	0.354602
258.613	307.989	0.360337	259.066	308.288	0.356227
258.621	308.015	0.327297	259.072	308.393	0.298322
279.35	324.601	0.357365	279.827	325.106	0.428612
279.53	324.772	0.395231	280.002	325.32	0.381353
279.531	324.792	0.370814	280.018	325.67	0.675284
302.168	341.147	0.360473	302.697	341.586	0.387154
302.169	341.127	0.394276	302.705	341.766	0.363061
302.843	341.751	0.32187	303.379	342.488	0.307837
302.502	337.916	0.42203	302.626	335.218	0.478667
302.511	338.13	0.720303	302.628	335.211	0.432794
303.005	338.322	0.337349	303.096	335.504	0.394062

Almandine(FR3)		PPMS 3	
Formula weight	495.789		g/mol
Sample weight	29.83		mg
T	Cp		σ (Cp)
[K]	[J/mol.K]		[J/mol.K]
3.05969	2.81435		0.00741989
3.05999	2.81583		0.00709794
3.06079	2.81996		0.0295254
3.31571	3.61775		0.00835816
3.31573	3.61277		0.00802409
3.31676	3.61438		0.00989485
3.58196	4.57276		0.00946319
3.58202	4.57865		0.0120451
3.58273	4.5836		0.011418
3.87183	5.74362		0.0120142
3.87258	5.84436		0.0848977
3.87361	5.7613		0.0447646
4.18457	7.22044		0.0159613
4.18482	7.2221		0.0188196
4.18579	7.18684		0.0621033
4.52129	8.96704		0.0179544
4.52166	8.9732		0.0302361
4.52365	8.99558		0.0232368
4.88752	11.0517		0.0215362
4.88795	11.0595		0.0638
4.88926	11.0496		0.024171
5.0959	12.3432		0.0271685
5.09718	12.3889		0.0232412
5.09797	12.3896		0.0264007
5.22587	13.218		0.0276529
5.22678	13.251		0.0254121
5.22715	13.2195		0.0254203
5.28196	13.5599		0.0282479
5.28239	13.5787		0.0242786
5.28538	13.5885		0.0330637
5.35521	14.0574		0.0280268
5.35624	14.0714		0.0277159
5.35673	14.1042		0.0300723
5.4854	14.97		0.0355491
5.48702	14.991		0.0295103
5.49197	14.9925		0.0266448
5.62017	15.8755		0.0336609
5.62134	15.9288		0.0292637
5.6219	15.9023		0.0284975
5.71235	16.5723		0.188529

5.71543	16.5829	0.0327759
5.71716	16.5956	0.0414793
5.74976	16.8666	0.036547
5.7513	16.8804	0.0333458
5.75164	16.8874	0.0323294
5.87938	17.7996	0.0373613
5.881	17.8024	0.033779
5.88114	17.8635	0.0343089
6.00925	18.8055	0.0395689
6.01058	18.814	0.0344589
6.01071	18.8174	0.0329744
6.13966	19.8516	0.0427351
6.14091	19.8555	0.0362516
6.14096	19.8327	0.0367743
6.17369	20.1	0.0327036
6.17438	20.0715	0.0348686
6.17736	20.1427	0.0427963
6.26852	20.832	0.0423611
6.27021	20.8511	0.0332772
6.27026	20.877	0.0410194
6.39829	21.9276	0.0443045
6.39926	21.9308	0.0375361
6.3994	21.9712	0.0393342
6.52757	23.0322	0.0513457
6.52807	23.0097	0.0456008
6.52854	23.0187	0.0406653
6.65594	24.0873	0.048122
6.65759	24.1245	0.0457653
6.65806	24.1151	0.0427967
6.6704	24.2173	0.0397397
6.67065	24.2301	0.0423169
6.68232	24.3247	0.0469688
6.78664	25.2164	0.054034
6.78847	25.2655	0.081547
6.78852	25.2919	0.0451804
6.9162	26.3908	0.204983
6.91656	26.4103	0.0490555
6.91804	26.341	0.36765
7.04643	27.6413	0.0598517
7.04827	27.6237	0.0904931
7.05559	27.6485	0.0670485
7.16793	28.7553	0.0505531
7.16816	28.7539	0.0474393
7.16836	28.7728	0.0513142
7.20045	29.0414	0.0499343
7.20092	29.0726	0.0507116
7.21021	29.1146	0.0536933
7.29761	29.9784	0.0557226
7.29768	29.9869	0.0529811
7.29802	29.9828	0.0534899

7.42806	31.3007	0.160547
7.42833	31.2966	0.0764955
7.4288	31.3179	0.0598312
7.55748	32.6815	0.192953
7.55787	32.657	0.0623336
7.5581	32.6771	0.0680892
7.68739	34.1245	0.0794782
7.68753	34.1447	0.0717709
7.68763	34.1184	0.0644902
7.78063	35.1603	0.0708727
7.7814	35.1919	0.0660405
7.78189	35.1596	0.0652853
7.81561	35.5047	0.0634004
7.81684	35.5604	0.0642657
7.81709	35.5542	0.063583
7.93889	36.5983	0.0400467
7.94505	36.5824	0.0392406
7.94534	36.559	0.0392308
8.05728	34.4688	0.140363
8.07218	33.5326	0.407555
8.07342	33.5429	0.204789
8.18286	28.247	0.475218
8.20154	27.3355	0.247443
8.2034	27.3022	0.301378
8.31828	22.9443	0.13794
8.33044	22.558	0.140731
8.33367	22.4931	0.141622
8.4061	21.0281	0.0895279
8.40617	21.0308	0.0898578
8.40658	21.0056	0.0917506
8.45165	20.3921	0.0630816
8.46179	20.2515	0.0685137
8.46247	20.2517	0.0670262
8.58279	19.1543	0.0386038
8.59358	19.0668	0.118783
8.59424	19.0604	0.0428117
8.71399	18.3082	0.0444568
8.72318	18.2419	0.0374098
8.72342	18.2873	0.0881334
8.84349	17.5393	0.186237
8.85174	17.601	0.0306585
8.8528	17.5983	0.031677
8.97287	17.1508	0.0377805
8.98122	17.1254	0.0254896
8.98208	17.1236	0.028081
9.0683	16.8578	0.0334506
9.08425	16.8395	0.0236857
9.0856	16.8305	0.0271488
9.10218	16.7698	0.0364158
9.10929	16.7604	0.0277076

9.1101	16.766	0.0234277
9.23384	16.4844	0.0293398
9.23993	16.5041	0.0261784
9.24136	16.4827	0.0264298
9.36417	16.2415	0.0284599
9.3692	16.3057	0.128203
9.37063	16.1545	0.149668
9.49192	16.0694	0.0281846
9.49971	15.8868	0.277167
9.49992	16.0137	0.633601
9.62083	15.9152	0.0295713
9.6277	15.9261	0.0403305
9.62961	15.9161	0.0227608
9.75012	15.7759	0.0311484
9.75741	15.8051	0.0220207
9.75875	15.8127	0.0302799
9.80147	15.7498	0.0261518
9.81796	15.7385	0.0219846
9.81958	15.7543	0.023601
9.87828	15.6831	0.0233261
9.88872	15.6766	0.0235479
9.88924	15.6689	0.0225506
10.0096	15.5605	0.0324392
10.0158	15.5666	0.0224744
10.0183	15.5627	0.0228434
10.1309	15.466	0.0368594
10.1426	15.4837	0.022656
10.1469	15.4741	0.0256956
10.5985	15.2359	0.0311062
10.6163	15.2505	0.0164579
10.6164	15.2451	0.0149189
11.4518	15.0188	0.0305856
11.4699	15.0297	0.0171514
11.4707	15.0337	0.0201098
12.3721	14.8822	0.0318994
12.3929	14.8843	0.0161618
12.3932	14.8884	0.0172372
13.3678	14.7528	0.0329528
13.3909	14.7749	0.0198786
13.3913	14.7618	0.0189371
14.4457	14.6145	0.028891
14.4699	14.6279	0.022414
14.4699	14.6267	0.0219795
15.6127	14.4605	0.0333412
15.6332	14.4885	0.022599
15.6361	14.4773	0.0226108
16.8752	14.2927	0.0392612
16.8989	14.2867	0.0243377
16.9014	14.2766	0.0275752
18.2415	14.1415	0.0387672

18.2657	14.1185	0.027116
18.269	14.1214	0.0297436
19.7123	13.9779	0.0306171
19.7387	14.0122	0.0296254
19.7409	13.9958	0.0319258
21.3149	13.9359	0.0369392
21.328	13.9242	0.0301298
21.3296	13.93	0.0384738
23.0378	14.0513	0.0464962
23.0495	14.0789	0.0362703
23.063	14.0339	0.0348787
24.9058	14.3626	0.0469144
24.9236	14.3797	0.0411706
24.933	14.3789	0.0405058
26.9339	14.9361	0.0304571
26.9441	14.9629	0.0249467
26.9544	14.9294	0.0232985
29.1204	15.8534	0.046431
29.1309	15.8848	0.0288649
29.1547	15.8377	0.0507592
31.4956	17.2231	0.031429
31.5003	17.2429	0.0304743
31.5071	17.2655	0.0326217
34.0546	19.0815	0.0360175
34.0606	19.0805	0.0360953
34.0732	19.08	0.0462354
36.8176	21.3688	0.0424339
36.8213	21.4199	0.0431842
36.8448	21.4604	0.0434923
39.8066	24.2641	0.0496251
39.8144	24.2926	0.0487341
39.8351	24.2873	0.0543993
43.0402	27.7292	0.0580017
43.0445	27.7428	0.0618267
43.071	27.7204	0.0576522
46.5326	31.7872	0.0663649
46.5352	31.7827	0.0678194
46.5642	31.8303	0.0673229
50.3087	36.5697	0.149432
50.3151	36.532	0.0780226
50.3411	36.6004	0.0837122
54.3964	42.084	0.0954458
54.3974	41.9864	0.0859434
54.4382	42.0519	0.0846666
58.8185	48.1606	0.106519
58.8235	48.2249	0.114765
58.8768	48.3586	0.118894
63.6061	55.0694	0.0971198
63.6085	55.0696	0.100261
63.659	55.1794	0.0969165

68.7735	62.9685	0.103364
68.7762	62.944	0.11567
68.8288	63.0598	0.116646
74.3516	71.6214	0.11679
74.355	71.6541	0.125143
74.4153	71.7316	0.137676
80.3758	81.2194	0.14044
80.3837	81.1749	0.136363
80.4476	81.445	0.29704
86.8874	91.7005	0.165644
86.8967	91.7961	0.156387
86.9595	91.8591	0.160632
93.9426	102.958	0.162253
93.9534	103.024	0.167317
94.0189	103.124	0.529758
101.57	115.199	0.193441
101.58	115.243	0.774851
101.648	115.424	0.214335
109.818	128.444	0.268298
109.838	128.477	0.217341
109.896	128.579	1.88398
118.733	142.505	0.23061
118.749	142.663	0.238576
118.816	142.673	0.243786
128.369	156.972	0.429859
128.383	156.966	0.269646
128.45	157.241	0.304313
138.802	172.751	0.32141
138.815	172.519	0.32151
138.877	172.752	0.311164
150.059	188.284	0.760187
150.086	188.903	0.353483
150.113	188.739	0.23854
162.243	205.241	0.289993
162.267	205.232	0.271236
162.28	205.351	0.280094
175.407	222.466	0.446431
175.427	222.484	0.317071
175.43	222.479	0.363831
189.636	236.924	2.44943
189.644	239.274	0.338857
189.652	239.592	0.369734
204.986	256.693	0.345985
204.987	256.927	0.344184
205.017	257.125	0.37129
221.562	274.544	0.353657
221.591	274.514	0.388987
221.62	274.753	0.417256
239.461	291.85	0.333132
239.533	292.448	0.432114

239.562	292.456	0.458931
258.767	309.254	0.487427
258.896	309.718	0.598754
258.925	309.381	0.440764
279.592	326.819	13.8082
279.823	326.792	0.468342
279.863	326.847	0.689761
302.468	343.118	0.633532
302.474	343.195	0.840147
303.106	343.846	0.411214
302.624	338.471	0.527155
302.626	338.771	1.25745
302.971	338.946	0.434582

Dachs E., Geiger C.A. and Benisek A. (2012): Almandine garnet:

Lattice and non-lattice heat capacity behavior and standard thermodynamic properties

Appendix 1: DSC data

Almandine(FR3) DSC Series 1 mean of 5			Almandine(FR3) DSC Series 2 mean of 5		
T [K]	Cp [J/mol.K]	σ (Cp) [J/mol.K]	T [K]	Cp [J/mol.K]	σ (Cp) [J/mol.K]
281.912	326.505	1.46522	281.913	325.87	0.347599
286.369	329.866	1.22983	286.371	329.131	0.275914
290.833	332.988	1.11502	290.835	332.385	0.374856
295.307	336.152	1.24713	295.308	335.615	0.406538
299.787	338.956	1.13929	299.788	338.568	0.3399
304.276	342.094	1.21431	304.276	341.88	0.197544
308.767	345.252	1.44493	308.768	344.841	0.344609
313.267	347.889	1.47775	313.267	347.837	0.260139
317.772	351.408	0.985215	317.773	351.091	0.469962
322.285	354.096	1.21213	322.286	353.536	0.68477
326.802	357.013	1.37873	326.804	356.709	0.434858
331.327	360.015	1.16899	331.328	359.782	0.195756
335.855	362.853	1.36062	335.856	362.482	0.380866
340.387	365.413	1.30353	340.388	365.21	0.385668
344.917	368.269	1.41645	344.918	367.968	0.52287
349.448	370.984	1.3783	349.449	370.52	0.276862
353.976	373.368	1.4176	353.977	373.097	0.387367
358.505	375.887	1.41302	358.505	375.66	0.385295
363.03	378.329	1.37829	363.03	378.187	0.501384
382.747	388.973	1.28716	382.746	388.429	0.233301
387.27	391.087	1.23914	387.27	390.656	0.213512
391.79	393.269	1.18575	391.791	392.868	0.184195
396.31	395.437	1.14454	396.311	394.899	0.471234
400.828	397.559	1.12051	400.827	397.015	0.295866
405.349	399.597	1.139	405.349	399.067	0.305594
409.865	401.59	1.31198	409.866	401.08	0.269743
414.386	403.609	1.16399	414.384	403.115	0.139037
418.902	405.528	1.119	418.901	405.041	0.13289
423.416	407.508	1.0919	423.415	406.955	0.146974
427.93	409.375	1.16147	427.928	408.838	0.163306
432.449	411.126	1.19902	432.447	410.642	0.11761
436.962	412.944	1.2626	436.961	412.534	0.207888
441.479	414.743	1.30185	441.478	414.324	0.235932
445.991	416.44	1.35274	445.989	416.058	0.273847
450.5	418.084	1.3964	450.499	417.799	0.184817
455.007	419.697	1.2915	455.005	419.464	0.2621
459.519	421.334	1.47677	459.517	421.126	0.266771
464.028	422.954	1.34105	464.027	422.738	0.230353
482.775	429.953	1.77385	482.774	429.157	0.20562
487.284	431.337	1.65644	487.281	430.582	0.230544

491.79	432.704	1.52759	491.788	432.024	0.207355
496.296	434.152	1.57053	496.293	433.474	0.160665
500.802	435.483	1.53171	500.799	434.754	0.28283
505.308	436.838	1.6294	505.305	436.067	0.264242
509.818	438.25	1.70417	509.815	437.257	0.250468
514.324	439.563	1.5215	514.321	438.577	0.321924
518.83	440.904	1.57896	518.827	439.974	0.24012
523.331	442.17	1.73424	523.329	441.21	0.307656
527.837	443.396	1.85613	527.833	442.331	0.370063
532.337	444.748	1.83422	532.334	443.683	0.382622
536.844	445.776	1.85417	536.841	444.838	0.352027
541.345	447.047	2.01179	541.343	445.936	0.243651
545.851	448.221	2.02266	545.849	447.402	0.412144
550.356	449.484	1.968	550.352	448.694	0.465151
554.859	450.764	1.82628	554.856	449.807	0.488729
559.362	451.957	1.99302	559.359	450.944	0.203958
563.864	452.97	2.06991	563.862	451.997	0.328027
582.795	457.682	2.40532	582.793	456.989	0.674062
587.301	458.584	2.57188	587.298	458.209	1.1038
591.801	459.689	2.62439	591.799	459.225	0.591131
596.307	460.542	2.6737	596.304	460.072	0.430577
600.807	462.192	3.1719	600.805	460.961	1.03481
605.31	462.926	2.75526	605.308	462.215	0.678917
609.809	463.792	2.75129	609.807	463.258	0.336518
614.312	464.58	3.04454	614.309	464.042	0.563004
618.815	465.718	2.79238	618.812	464.973	0.629841
623.318	466.225	3.02181	623.315	466.204	0.576536
627.822	467.443	2.76698	627.82	466.949	0.702308
632.324	468.506	2.61937	632.322	468.181	0.510244
636.829	469.337	2.64468	636.828	468.876	0.920587
641.33	470.28	2.50048	641.328	469.869	0.933335
645.833	471.069	2.4563	645.831	470.684	0.512248
650.333	472.049	2.01375	650.331	471.264	0.40889
654.84	473.085	2.16425	654.838	472.161	0.584669
659.343	473.927	2.02291	659.341	472.729	0.736364
663.845	474.648	2.11921	663.844	473.372	0.335966
682.827	476.993	2.31953	682.828	475.543	0.760918
687.333	477.385	1.80099	687.335	476.113	0.673508
691.835	478.863	2.29914	691.837	476.954	0.525344
696.341	479.004	2.48197	696.343	477.521	0.730955
700.843	479.843	2.47275	700.845	478.201	0.879122
705.349	480.345	2.98113	705.351	479.136	0.709662
709.856	481.062	2.8816	709.858	479.338	0.814057
714.363	481.867	2.75394	714.366	480.061	1.06415
718.872	482.602	3.30101	718.874	480.406	0.909012
723.38	483.223	3.49659	723.381	480.944	1.08248
727.889	483.782	4.13771	727.89	481.578	1.16394
732.392	484.619	4.51627	732.393	482.117	1.13026
736.902	485.145	4.47427	736.905	482.778	0.809922
741.41	486.02	4.7512	741.413	483.679	0.608926

745.917	486.71	4.63172	745.919	484.3	0.877713
750.424	487.353	4.66787	750.426	485.405	0.911609
754.927	487.417	4.61159	754.93	486.01	0.632635
759.437	488.409	4.99594	759.438	486.442	0.585308
763.941	488.342	5.04306	763.943	487.267	0.658632