

Příklad

Sestrojte fázový diagram Al_2SiO_5

Termodynamická data

	S	H	V	G
	J/mol K	J/mol	cm ³	J/mol
kyanit	82.8	-2593888	44.15	-2618563
andalusit	91.41	-2589921	51.52	-2617161
sillimanit	95.39	-2586094	49.86	-2614521

Řešení

D ky-and	-8.61	-3967	-7.37	-1402
D ky-sil	-12.59	-7794	-5.71	-4042
D and-sil	-3.98	-3827	1.66	-2640

	Tr (K)	dp/dT	Tr (°C)
ky-and	460.743	1168249.661	187.6
ky-sil	619.063	2204903.678	345.9
and-sil	961.558	-2397590.36	688.4

Rovnice linií

ky-and

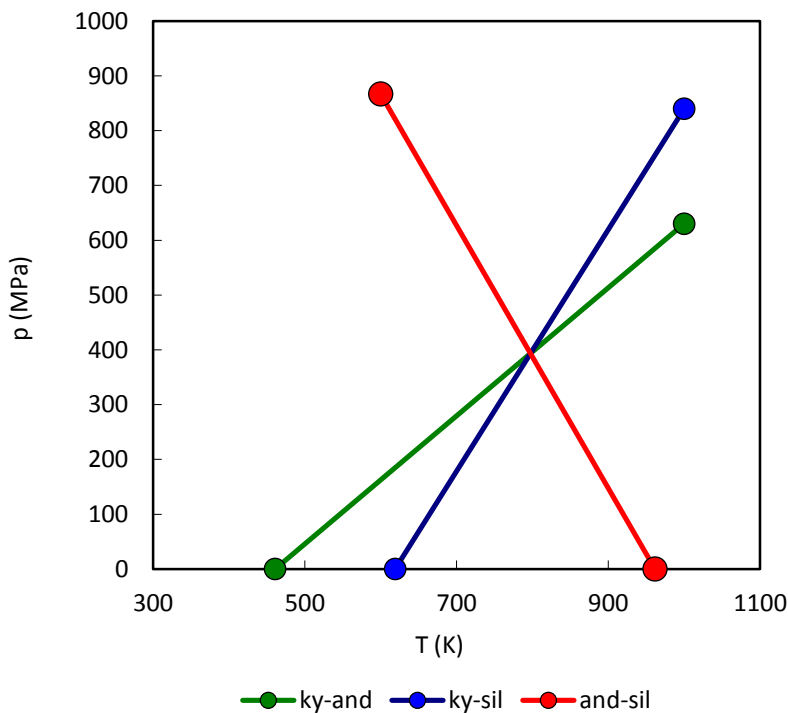
T (K)	p (MPa)
460.7	0.1
1000.0	630.1
Tr (°C)	
187.6	

ky-sil

T (K)	p (MPa)
619.1	0.1
1000.0	840.0
Tr (°C)	
345.9	

and-sil

T (K)	p (MPa)
961.6	0.1
600.0	867.0
Tr (°C)	
688.4	



Rovnice linií

Trojný bod

Ttr (K)	p tr (Mpa)	Ttr (°C)	p tr (Mpa)
797.48	393.5	524.33	393.49212
Ttr (°C)			
524.33			

ky-and

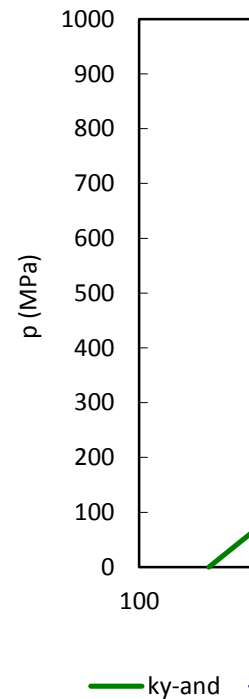
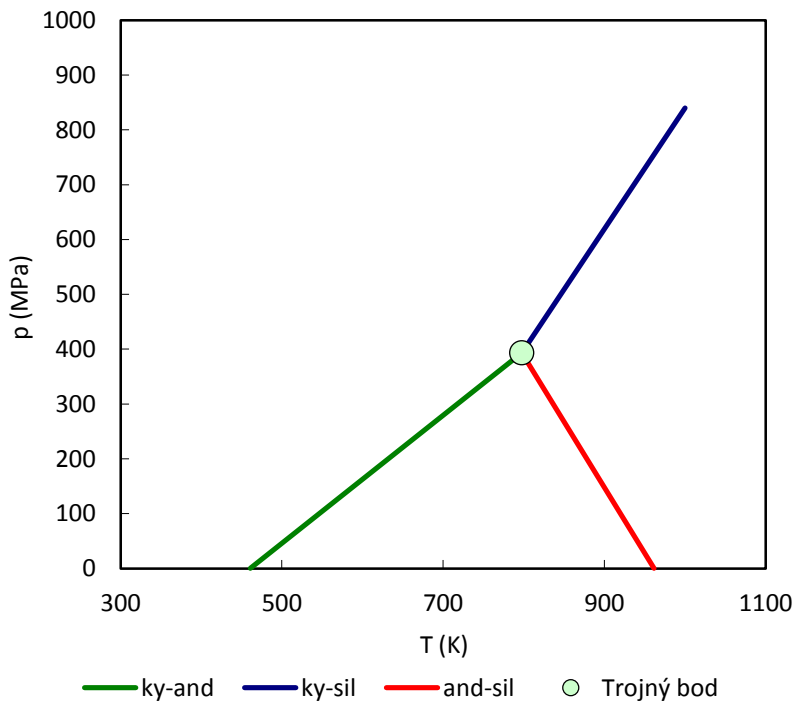
T (K)	p(MPa)
460.7	0.1
797.5	393.5
Tr (°C)	
187.6	

ky-sil

T (K)	p(MPa)
797.5	393.5
1000.0	840.0
Tr (°C)	
524.3	

and-sil

T (K)	p(MPa)
961.6	0.1
797.5	393.5
Tr (°C)	
688.4	



Experimentální data

Podle E.Althaus,1969,Neues Jahrbuch fur Mineralogie 111

1		2		3		4	
T (K)	p (GPa)	T (K)	p	T (K)	p	T (K)	p
300	0.65	300		490	0.5	660	0.85
580	0.85	604		630	0.81	710	0.9
940	0	900		844	0.35	908	0.48
580	0.85	604		630	0.81	710	0.9
1000	1.42	1000		990	1.35	1000	1.32

5		6		7		8	
T (K)	p	T (K)	p	T (K)	p	T (K)	p
300	0.1	640		700	0.56	560	0

860	0.74	884	0.76	900	0.64	796	0.26
1000	0.45	988	0	980	0.16	1000	0
864	0.74	884	0.76	900	0.64	796	0.26
1000	1.23	1000	1.19	1000	0.97	1000	0.71

9		10		11	
T (K)	p	T (K)	p	T (K)	p
460	0	550	0	300	0.03
828	0.39	716	0.22	748	0.58
1000	0.24	1000	0	1000	0.34
828	0.39	716	0.22	748	0.58
1000	0.73	1000	0.82	1000	1.19

ky-and

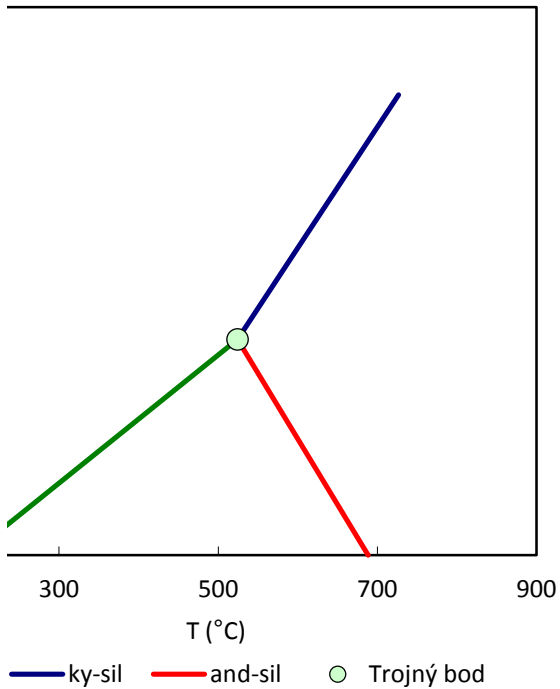
T (°C)	p(MPa)
187.6	0.1
524.3	393.5

ky-sil

T (°C)	p(MPa)
524.3	393.5
726.9	840.0

and-sil

T (°C)
688.4
524.3



1		2		3		4	
T (°C)	p (MPa)	T (°C)	p (MPa)	T (°C)	p (MPa)	T (°C)	p (MPa)
26.85	650	26.85	500	216.85	710	386.85	
306.85	850	330.85	810	356.85	800	436.85	
666.85	0	626.85	350	570.85	160	634.85	
306.85	850	330.85	810	356.85	800	436.85	
726.85	1420	726.85	1350	716.85	1500	726.85	
5		6		7		8	
T (°C)	p (MPa)	T (°C)	p (MPa)	T (°C)	p (MPa)	T (°C)	p (MPa)
26.85	100	366.85	560	426.85	400	286.85	

586.85	740	610.85	760	626.85	640	522.85
726.85	450	714.85	0	706.85	160	726.85
590.85	740	610.85	760	626.85	640	522.85
726.85	1230	726.85	1190	726.85	970	726.85

9		10		11	
T (°C)	p (MPa)	T (°C)	p (MPa)	T (°C)	p (MPa)
186.85	0	276.85	0	26.85	30
554.85	390	442.85	220	474.85	580
726.85	240	726.85	0	726.85	340
554.85	390	442.85	220	474.85	580
726.85	730	726.85	820	726.85	1190

p(MPa)

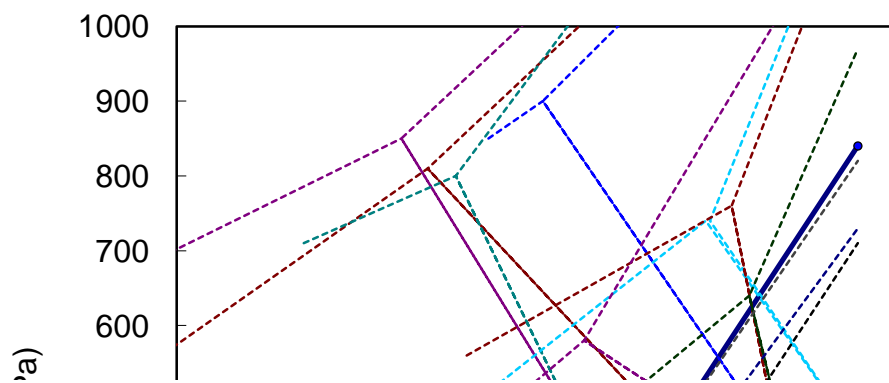
0.1
393.5

p (MPa)

850
900
480
900
1320

p (MPa)

0



260
0
260
710

