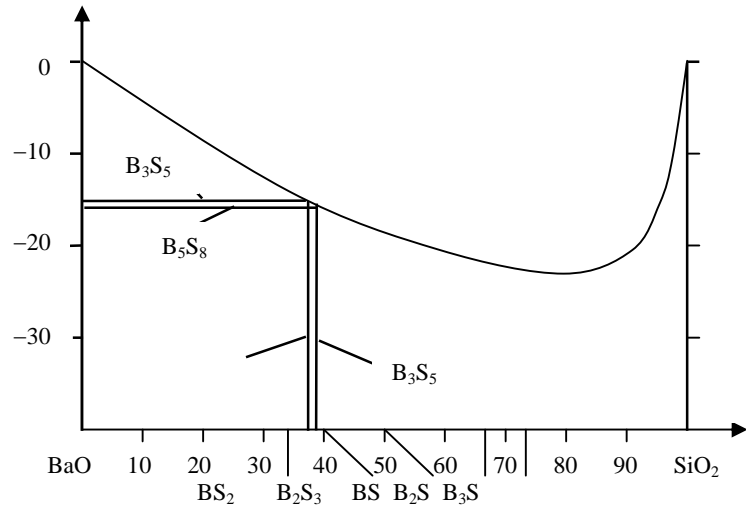


[3].

1

	$- \frac{G^0_{298}}{n}$		$- \frac{G^0_{298}}{n}$		$\frac{S^0_{298}}{n}$	
- BaCO ₃	1218,80	5	1138,89	5	112,13	5
- BaCO ₃	-		-		-	
- BaCO ₃	-		-		-	
CO ₂	393,51	5	394,38	5	213,94	5
- SiO ₂	910,44	5	856,05	5	-	
- SiO ₂	911,07	5	856,67	5	42,09	5
Ba ₃ SiO ₅	2965,95	5	2822,44	5	252,71	5
Ba ₂ SiO ₄	2297,14	2	2183,34	5	182,01	5
BaSiO ₃	1628,33	2	1544,23	5	112,13	5
Ba ₂ Si ₃ O ₈	4194,33	2	3971,75	5	266,10	5
Ba ₅ Si ₈ O ₂₁	10583,26	6	-		645,93	6
Ba ₃ Si ₅ O ₁₃	6541,26	6	-		437,23	6
BaSi ₂ O ₅	2552,99	2	2414,50	5	153,97	5

U H / n,



. 1.

[4],

. 1.

[7]

= f(T)

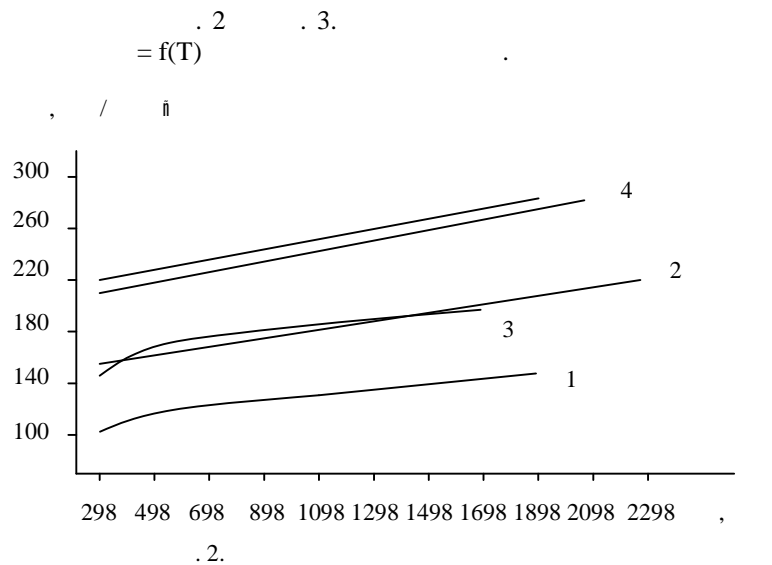
= f(T) [6]:

$$\begin{aligned}
 \text{Ba}_3\text{SiO}_5: &= 186,0206 + 0,0456 (298 - 2073) \\
 \text{Ba}_2\text{SiO}_4: &= 144,348 + 0,0335 (298 - 2233) \\
 \text{BaSiO}_3: &= 102,508 + 0,0247 (298 - 1877) \\
 \text{Ba}_2\text{Si}_3\text{O}_8: &= 211,4175 + 0,0384 (298 - 1723) - 70290 \cdot 10^{-5} \\
 \text{Ba}_5\text{Si}_8\text{O}_{21}: &= 181,11 + 0,02785 (298 - 1719) - 4063246,2 \cdot 10^{-5} \\
 \text{Ba}_3\text{Si}_5\text{O}_{13}: &= 107,57 + 0,02817 (298 - 1696) - 197565,1 \cdot 10^{-5} \\
 \text{BaSi}_2\text{O}_5: &= 172,7155 + 0,0131 (298 - 1703) - 2894490 \cdot 10^{-5}
 \end{aligned}$$

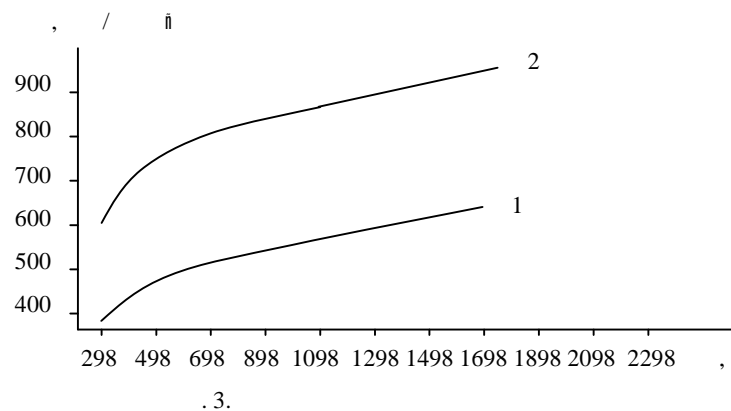
. 2.

2

	$= a + b + c \cdot 10^{-5}$					
		b 10 ³	- 10 ⁻⁵			
- BaCO ₃	86,96	48,99	11,97	5	1079	5
- BaCO ₃	154,91	-	-	5	1079-1241	5
- BaCO ₃	163,29	-	-	5	1241	5
CO ₂	44,14	9,04	8,54	5	298-2500	5
α - SiO ₂	60,29	8,17	-	5	848-2000	5
- SiO ₂	46,94	34,31	11,30	5	298-848	5
Ba ₃ SiO ₅	187,07	63,26	17,57	5	2073	10
Ba ₂ SiO ₄	144,35	33,47	-	5	2088-2233	11
BaSiO ₃	109,87	18,20	18,79	5	710-1877	8
Ba ₂ Si ₃ O ₈	211,42	38,41	0,703	5	550-1723	8
Ba ₅ Si ₈ O ₂₁	181,11	27,85	40,632	6	298-1719	6
Ba ₃ Si ₅ O ₁₃	107,57	28,17	21,975	6	298-1696	6
BaSi ₂ O ₅	172,72	13,07	28,94	5	565-1703	8



1 – B SiO₃; 2 – Ba₂SiO₄; 3 – BaSi₂O₅; 4 – Ba₃SiO₅; 5 – Ba₂Si₃O₈

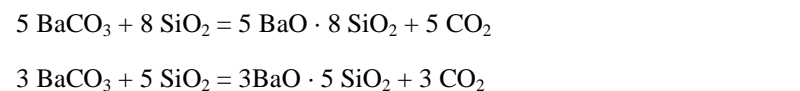


1 – Ba₃Si₅O₁₃; 2 – Ba₅Si₈O₂₁

BaO – SiO₂.
BaO – SiO₂
[8–10].
[5]
[2] [12].
BaO – SiO₂
ΔG = f(T),
[5]:

$$\Delta G(T) = \Delta G_{298}^0 - \Delta G_{298}^0 \ln T - \frac{1}{2} b T^2 - \frac{1}{2} \Delta^{-1} + y T \quad (1)$$

$$\Delta G_{298}^0 = \Delta G_{298}^0 - 298 \ln 298 - \frac{1}{2} b 298^2 - \frac{1}{2} \Delta^{-1} (298)^{-1} \quad (3)$$



1079 1241 .
BaCO₃
ΔG=f(T)
. 4.
5 BaCO₃ + 8 SiO₂ = 5 BaO · 8 SiO₂ + 5 CO₂ :
298 – 848

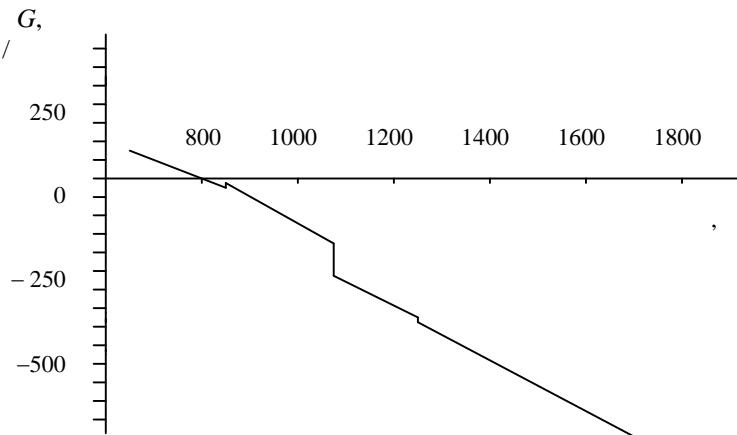
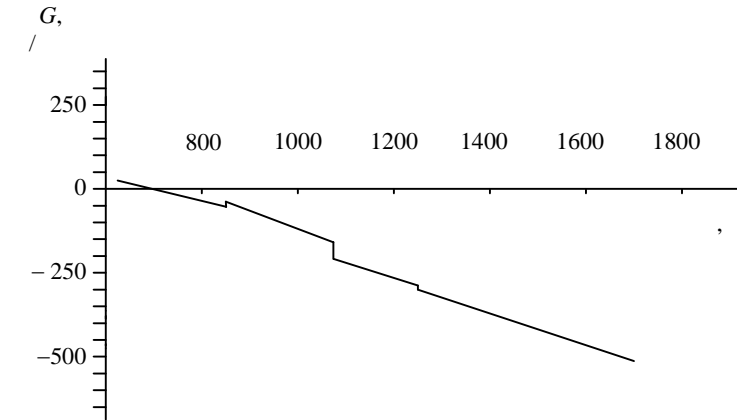
$$\Delta G(T) = 601514,65 - 168,44 \ln T + 178,76 \cdot 10^{-3} T^2 + 31,2 \cdot 10^5 T^{-1} + 239,36$$

$$\Delta G(T) = 588692,45 - 61,64 \ln T + 73,995 \cdot 10^{-3} T^2 + 76,4 \cdot 10^5 T^{-1} - 362,31$$

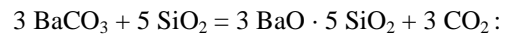
$$\Delta G(T) = 737517,4 + 277,86 \ln T - 48,355 \cdot 10^{-3} T^2 + 106,3 \cdot 10^5 T^{-1} - 2820,41$$

1241 – 1700

$$\Delta G (T) = 774796,8 + 319,71 \ln T - 48,355 \cdot 10^{-3} T^2 + 106,3 \cdot 10^5 (T)^{-1} - 3159,31$$



4. $Ba_5Si_8O_{21}$ – $Ba_3Si_5O_{13}$:



298 – 848

$$\Delta G (T) = 364577 - 87,09 \ln T + 86,71 \cdot 10^{-3} T^2 + 12,56 \cdot 10^5 (T)^{-1} + 14,03$$

848 – 1079

$$\Delta G (T) = 356543,7 - 20,34 \ln T + 21,23 \cdot 10^{-3} T^2 + 40,81 \cdot 10^5 (T)^{-1} - 362,01$$

1079 – 1241

$$\Delta G (T) = 445838,6 + 183,36 \ln T - 52,183 \cdot 10^{-3} T^2 + 58,75 \cdot 10^5 (T)^{-1} - 1836,87$$

1241 – 1700

$$\Delta G (T) = 468206,4 + 208,47 \ln T - 52,183 \cdot 10^{-3} T^2 + 58,75 \cdot 10^5 (T)^{-1} - 2040,21$$

1. ... 1985. – 136 2. Barany R., King E.G., Todd S.S. Heat of formation of crystalline silicates of strontium and barium // J. Amer. Chem. Soc. – 1957. – Vol. 79. – P. 3639-3641. 3. ... 1970.-541 4. ... 1981.- 180 5. ... 1986. – 408 6. ... BaO-Fe₂O₃-SiO₂: ... 05.17.11. – ... 2003. – 202 7. ... 1962. – 223 8. ... 1957. – ... 2, ... 5. – ... 1001-1007 9. ... 1957. – ... 2, ... 10. – ... 2438 – 2448. 10. ... 1963. – ... 308-321. 11. ... Ca₂SiO₄ – Ba₂SiO₄ // 1965. – ... 1. – ... 126-130. 12. ... 2002. – ... 16. – ... 71-76.

21.04.06