

4,5 %

3 %

: 1.

, 2002. – 656 . 2.

/ . – ., 1974. – 71 . 3.

ZrO₂ – MgO –

Al₂O₃ – SiO₂//

. – 2004. – 7. – . 2 – 5. 4.

/ . . – . : « » , 1985. – 480 .

08.10.07

666.946

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CaO – Al₂O₃ – SiO₂ – Fe₂O₃ – MgO

CaO – Al₂O₃ –

SiO₂ – Fe₂O₃ – MgO,

The aim of the paper given is thermodynamic analysis of mineral formation reactions in CaO – Al₂O₃ – SiO₂ - Fe₂O₃ –MgO system that can be used for refractory bonding obtaining.

CaO – Al₂O₃ – SiO₂ – Fe₂O₃ – MgO

[1].

CaO – Al₂O₃ –

SiO₂ – Fe₂O₃ – MgO

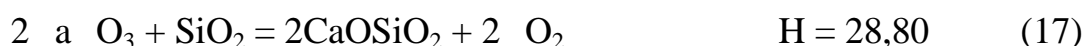
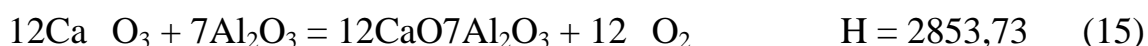
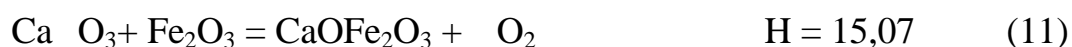
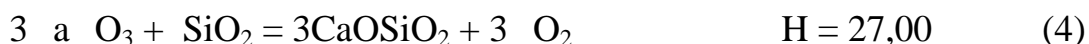
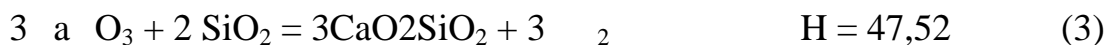
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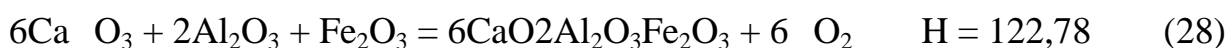
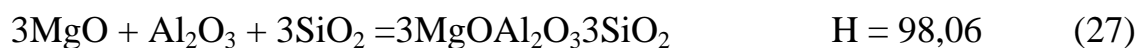
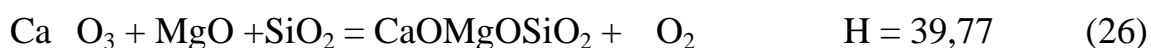
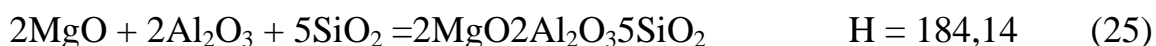
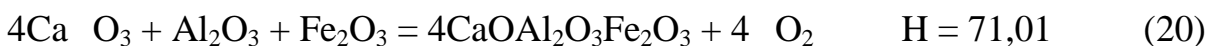
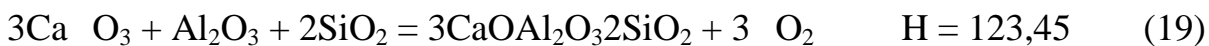
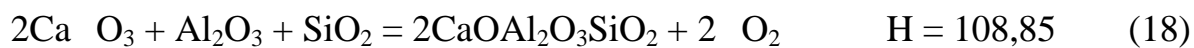
$$G(T) = \Delta G_{298}^0 + \int_{298}^T \Delta C_p dT - T \Delta S_{298}^0 - T \int_{298}^T \frac{\Delta C_p dT}{T} \quad (1)$$

$$C_p(T) = a + bT + cT^{-2} \quad (2)$$

, , - , S - (298 - 1498).

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(. 1) -

: CaOAl₂O₃, CaO2Al₂O₃, 12CaO7Al₂O₃,

2CaOFe₂O₃, 4CaOAl₂O₃Fe₂O₃, 2CaOAl₂O₃SiO₂.

1

G = f() 298 – 1498 , /

	298	498	698	898	1098	1298	1498
12	-1609,16	-2731,96	-3854,76	-4977,56	-6100,36	-7223,16	-8345,16
13	-3401,22	-5126,82	-6852,42	-8578,02	-10303,6	-12029,2	-13754,8
15	-46507,1	-79636,0	-112764	-145893	-179021	-212150	-245278
18	-2547,56	-4330,36	-6113,16	-7895,96	-9678,76	-11461,6	-13244,4
20	-1810,56	-3073,36	-4336,16	-5598,96	-6861,76	-8124,56	-9387,36
10	-1363,4	-2283,4	-3203,4	-4123,4	-5043,4	-5963,4	-6883,4

-

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- 12 $G(T) = 63,81 - 5,614^*$ -1
- 13 $G(T) = - 830,08 - 8,628 *$ -1
- 15 $G(T) = 2853,73 - 165,642 *$ -1
- 20 $G(T) = 71,01 - 6,314 *$ -1
- 18 $G(T) = 108,85 - 8,914 *$ -1
- 10 $G(T) = 7,4 - 4,6^*$ -1

1300 – 1350 ° .

(. 2).

2

	/		008, %							
						1	7	1	7	
1	0,38	29,75	2,0	0-30	0-50	47,1	56,2	6,4	11,3	1860
2	0,40	32,75	0,9	1-11	2-25	36,6	53,2	5,7	8,4	1810
3	0,42	36,25	0,4	0-30	1-25	34,6	50,4	5,3	6,3	1823
4	0,41	32,50	0,8	0-30	0-45	32,1	51,2	5,2	6,1	1800
5	0,41	32,50	0,6	1-45	2-52	34,0	51,4	5,4	6,4	1800
6	0,42	32,35	0,6	0-20	0-58	29,7	50,7	5,0	5,5	1800

(. 3).

10 – 15

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	/		008, %							-	-
				-	.	,	,	,	,		
				-	-	1	7	1	7	'	'
1	0,40	35,00	0,3	0-45	2-08	38,0	43,8	5,68	5,22	1623	30-40
2	0,40	33,75	0,6	1-00	4-30	36,8	43,9	5,32	5,87	1600	30-40
3	0,41	37,50	0,9	0-55	1-25	37,8	44,5	5,21	6,112	1650	30-40
4	0,40	33,75	0,9	2-45	4-57	35,0	42,6	6,32	5,87	1600	30-40
5	0,35	29,25	1,0	0-55	2-50	37,6	55,7	5,88	6,21	1600	30-40
6	0,35	29,75	0,4	0-35	1-45	36,4	50,7	5,19	6,50	1620	30-40

28

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28

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40 - 50 %

[2].

CaO - Al₂O₃ - MgO - SiO₂ - Fe₂O₃

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1.

CaO - Al₂O₃ - MgO -

SiO₂ - Fe₂O₃

CaOAl₂O₃, CaO2Al₂O₃, 12CaO7Al₂O₃, 2CaOFe₂O₃, 4CaOAl₂O₃Fe₂O₃,

2CaOAl₂O₃SiO₂.

2.

CaO - Al₂O₃ - MgO - SiO₂ - Fe₂O₃.

