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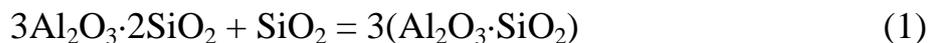
Al₂O₃ – SiO₂

Al₂O₃ – SiO₂.

The reasons of thermal effects during heating process of kaolin, which is one of the most significant mineral from clay binders were considered. Phase changes during thermal kaolin evolution process in conformity with building of constitution diagram Al₂O₃ – SiO₂ were analyzed. It is pointed out the particular character and temperature dependence of sillimanite disproportionation mechanism. It rates exothermal effects in the kaolin chamotte. Tractability observed amorphism reasons of the phase transformation products -quartz – -cristobalite is given.

Al₂O₃ – SiO₂ [1],

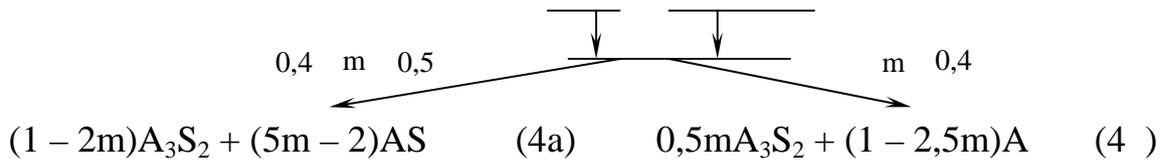
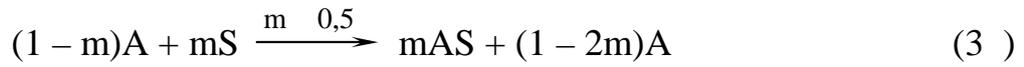
[2]:



[2] (1) -
 577 – 1107 ° -

(2) [2] 914 ° -

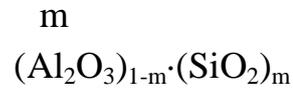
:



$$m - \quad \quad \quad 0 \quad 1,$$



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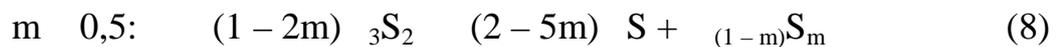
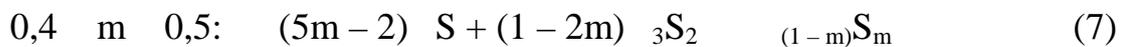
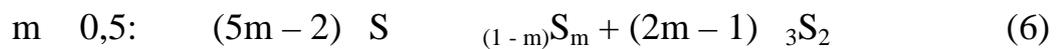
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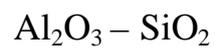
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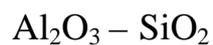




[3]

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(5)



[1]

(3) -
(.1).



[4 - 7].

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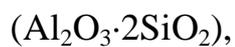
450 - 600 °

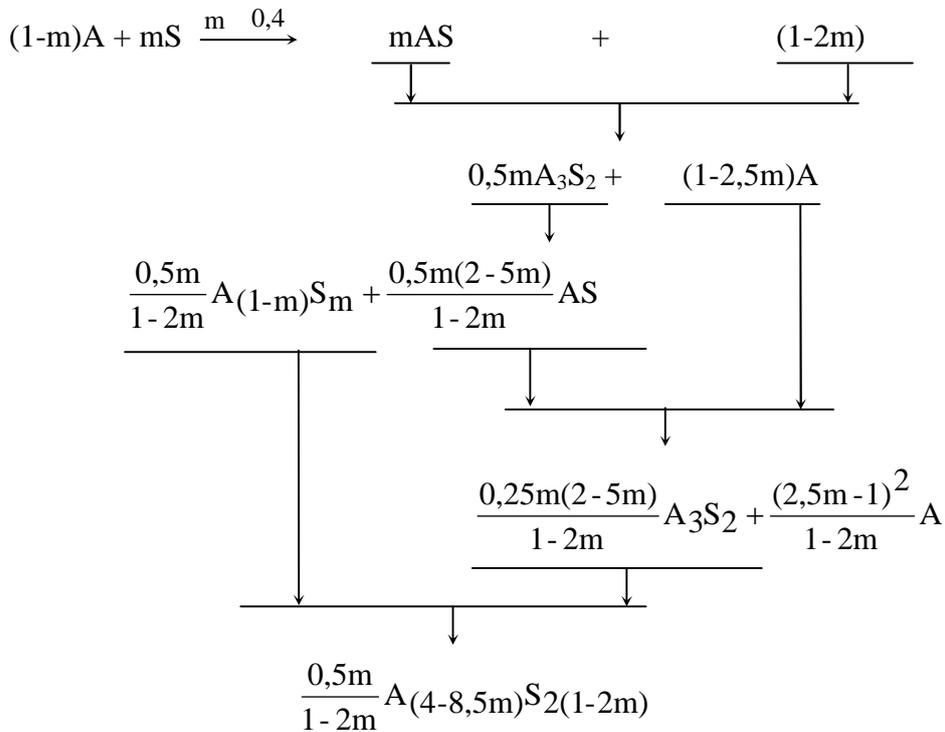
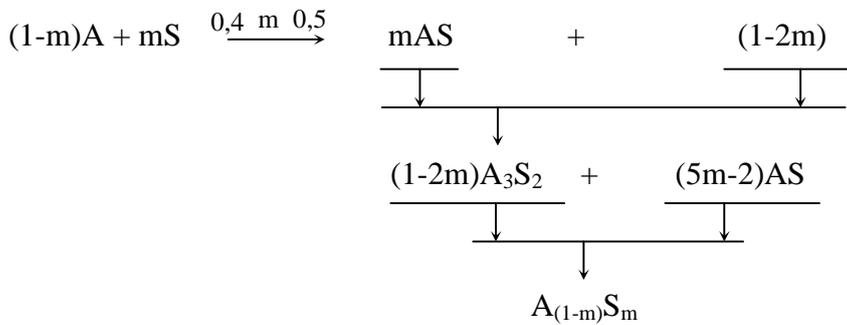
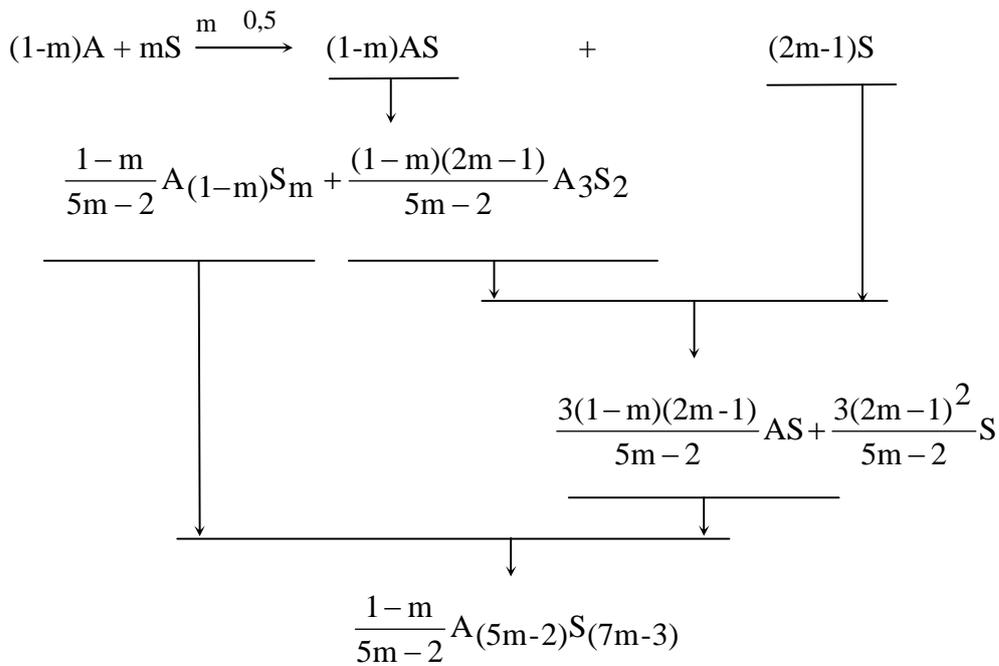
920 - 980, 1150 - 1250 1280 - 1370 ° .

. 1

450 - 600 °

800 °





. 1.

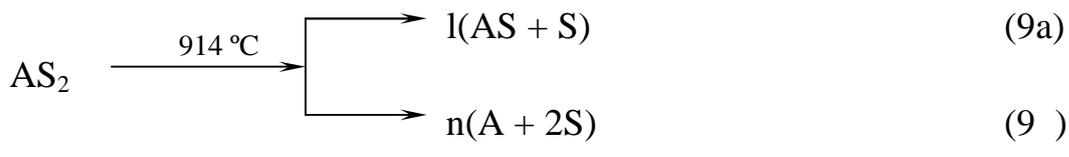
$Al_2O_3 - SiO_2$

450 – 600 ° ,	1. 2.	AS ₂ . A S.
920 – 980 ° ,	1.1 AS ₂ A + 2S AS A ₃ S ₂ 1.2 3AS ₂ A ₃ S ₂ + 4S Al. 1.3 2AS ₂ A ₂ S ₃ () + S A ₃ S ₂ + 5/3 S. 2.1 (- S) A j-A (600-900 °) 2.2 A S: 3A + 2S A ₃ S ₂ (4S) 2.3 A S: A + S AS (S)	j-A - - - : A ₂ S ₃ 2/3 - - - A ₃ S ₂ AS (S
1150 – 1250 ° ,	3.1 3(j – A) + 2S . A ₃ S ₂ 3.2 A ₃ S ₂ 3.3 3AS A ₃ S ₂ + S	
1280 – 1370 ° ,	4 : 4 .1 - 4 .2 4 .3 1,538 4 , -	

Al₂O₃ –

SiO₂ (. 2).

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 - (9)
) (, -
 - (-
 - 914 °)
 - ,
 -
 (9):



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(9), 914 ° (. 1 (9)
 920 °)

j- Al₂O₃.

Al₂O₃ - SiO₂.

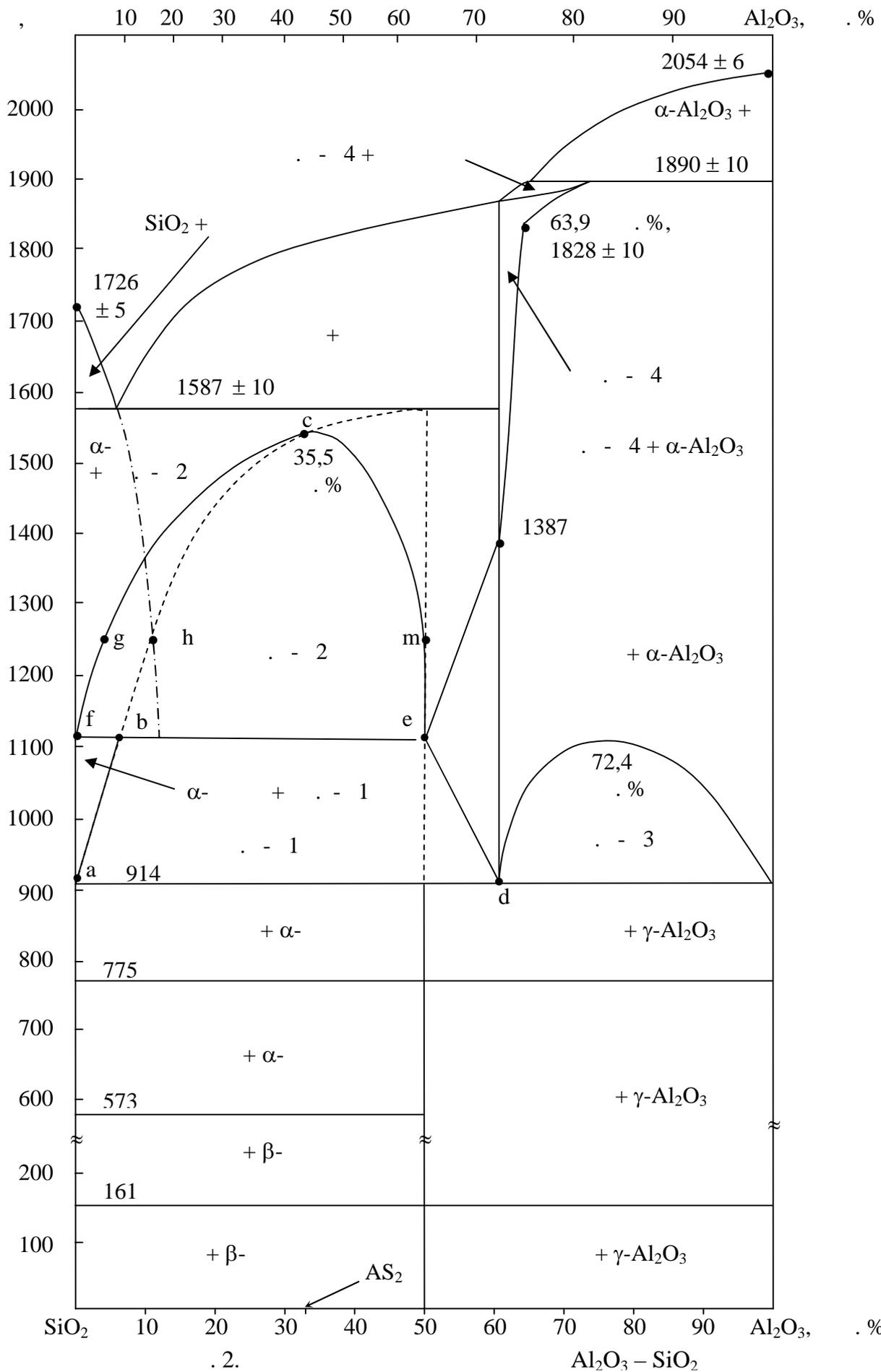
Al₂O₃ - SiO₂

(6).

,
 , . . . m,
 -
 (. 1, m 0,5, (1)).
 -
 -

« »

. 2,



$$| = \frac{(2m-1)}{1-m} \quad m = \frac{k+1}{k+2}, \quad -$$

(6):

$$(3k + 1)AS \quad AS_{(k+1)} + kA_3S_2 \quad (10)$$

2

(6)

			(6)
	m	k	(10)
1	1	+	3AS S + A ₃ S ₂
2	0,95	18	55AS AS ₁₉ + 18A ₃ S ₂
3	0,9	8	25AS AS ₉ + 8A ₃ S ₂
4	0,8	3	10AS AS ₄ + 3A ₃ S ₂
5	0,75	2	7AS AS ₃ + 2A ₃ S ₂
6	0,66(6)	1	4AS AS ₂ + 1A ₃ S ₂
7	0,6	0,5	2,5AS AS _{1,5} + 0,5A ₃ S ₂
8	0,5	0	1AS AS _{1,0}

$$1 - 6 (\quad . 2) \quad ,$$

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. 2

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m 0,66(6)

(,

7 . 2).

(. 2)

(m = 0,645),

[1]

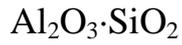
,

(

. 1).

Al₂O₃ – SiO₂

. («c – m – e») -
 (. 2) -
 0,66(6) m 0,5 (. 2). -
 (. 1), -
 (. 2). , -
 (10) k -
 4 – 6 (. 2). -
 (Al₂O₃·2SiO₂) -
 , -
 . -
 . -
 . -
 914 ° Al₂O₃·19SiO₂ 1100 ° («a – b» -
 . 2 . 2) -
 1550 ° («b – » . 2 . 2). , -
 , , -
 – . -
 . -
 900 – 1150 ° (. 2: «d – e», . 2). -
 (. 2 914 1100 °) -
 - - , « -
 » , -
 : , -
 . -
 , -
 , -
 , -
 Al₂O₃·19SiO₂ Al₂O₃·SiO₂ (. 2). -



(. 2

«e – f»)

(. 2).

– . 2
« – 1387°»,
« »,
«d – e» 1020 °
« – 1387°» 1020 1387 °C.
«f – g – c» . 2
«b – h – c», . .

(«f» . 2),
, $\text{Al}_2\text{O}_3 \cdot 19\text{SiO}_2$
(«b» . 2). –
1250 °
 $\text{Al}_2\text{O}_3 \cdot 9\text{SiO}_2$ («h» . 2, m ~ 0,9
3 . 2).

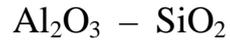
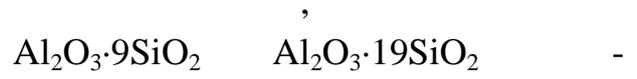
$\text{Al}_2\text{O}_3 \cdot 24\text{SiO}_2$ («g» . 2, m ~ 0,96 k = 25
(10)). «f – » « » (. 2)
:I– «e – m – c»

(. 1);
II – « – 1387°» (7)

«e – m»

. 2.

1250 °



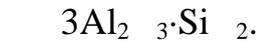
, ,

«e – m» «m – c».

«g – » «h – » -

« - 1387°»

((7)) -



1250 – 1387 °

-

«m – c».

,

-

-

«b – h – c» -

(

. 2).

«m – »

1500 ° -

«m – » (

1570 °),

1570 °

(1587 °) –

(. 2).

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Al₂O₃ – SiO₂ (. 2)

Al₂O₃ – SiO₂ // . – 2005. – 6. –
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Al₂O₃ – SiO₂ //
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2684. **7.** //
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17.04.07