54.44.677.042.62

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MgO – MgCl₂

Mg – MgCl₂,

298 – 1200 .

Mg – MgCl₂.

System MgO - MgCl₂ is considered, thermodynamic calculation possiblereactions with participation of connections of magnesium in an interval of temperatures 298 - 1200 is lead. The opportunity of use of chloride of magnesium is proved as a binding reagent. Recommendations on a mode of rise in temperature are given at heat treatment systems MgO - MgCl₂.
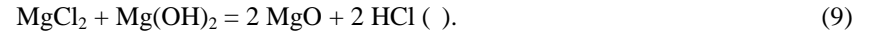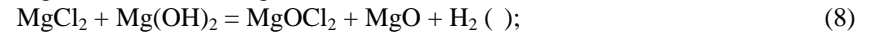
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MgO – MgCl₂,

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ΔG_T^0 ,

[9].

: (298 – 400), (400 – 1200) (= 1200 – 1300).

MgO – MgCl₂ ,
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, :

MgO + H₂O ( ) = Mg(OH)₂. (1)

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MgCl₂ + MgO = MgCl₂ · MgO; (2)
MgCl₂ + Mg(OH)₂ = MgCl₂ · MgO + H₂O ( ). (3)

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MgCl₂ + 3 Mg(OH)₂ = MgCl₂ · 3Mg(OH)₂; (4)
MgCl₂ + Mg(OH)₂ = 2 Mg(OH)Cl; (5)
MgCl₂ + H₂O ( ) = Mg(OH)Cl + HCl ( ); (6)
MgCl₂ + H₂O ( ) = MgOCl₂ + H₂ ( ); (7)
MgCl₂ + Mg(OH)₂ = MgOCl₂ + MgO + H₂ ( ); (8)
MgCl₂ + Mg(OH)₂ = 2 MgO + 2 HCl ( ). (9)

(2 – 4) ,
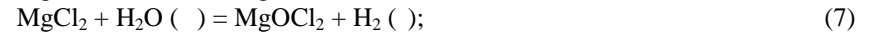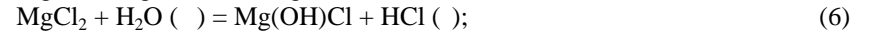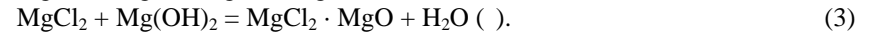
MgO– MgCl₂
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ΔG^0_T MgO – MgCl$_2$ (   )

	298	400	600	800	1000	1200
(1)	- 27,75	- 23,27	-	-	-	-
(2)	- 65,4	- 66,11	- 67,51	- 68,91	- 70,31	- 71,71
(3)	- 29,54	- 45,67	- 76,48	- 105,67	- 132,82	- 157,66
(4)	- 54,33	- 56,04	- 59,38	- 62,73	- 66,08	- 69,43
(5)	- 32,93	- 34,34	- 37,10	- 39,86	- 42,62	- 45,38
(6)	6,22	- 4,38	-	-	-	-
(7)	168,82	117,10	-	-	-	-
(8)	196,07	140,37	31,56	- 75,63	- 180,58	- 282,90
(9)	99,87	72,13	19,20	- 31,43	- 79,49	-124,78
(10)	35,86	20,44	- 8,97	- 36,76	- 62,51	- 85,95
(11)	66,40	53,23	28,15	4,21	- 18,44	- 39,70
(12)	161,91	117,35	32,48	- 47,54	- 121,46	- 188,41
(13)	29,54	45,67	76,48	105,67	132,82	157,66
(14)	52,02	43,42	25,40	6,53	- 12,86	- 32,59
(15)	117,41	109,53	92,91	75,44	57,45	39,12
(16)	64,01	51,69	28,17	5,33	- 16,98	- 38,83
(17)	11,99	8,27	2,77	- 1,20	- 4,12	- 6,24

[8]

(6).

(6)

= 350 ,   (5)

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MgOCl$_2$ (7, 8),
(9)   MgO – MgCl$_2$.

MgO – MgCl$_2$ 298 – 400
: Mg(OH)$_2$, MgCl$_2$ · MgO,
MgCl$_2$ · 3Mg(OH)$_2$ Mg(OH)Cl.
550   -
:

$$Mg(OH)_2 = MgO + H_2O \ ( ).\qquad\qquad(10)$$

:

$$Mg(OH)Cl = MgO + HCl \ ( );\qquad\qquad(11)$$
$$3\,Mg(OH)_2 \cdot MgCl_2 = MgCl_2 + 3\,MgO + 3\,H_2O \ ( ).\qquad(12)$$

:

$$MgCl_2 \cdot MgO + H_2O \ ( ) = MgCl_2 + Mg(OH)_2.\qquad(13)$$

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(10 -12),
(2),
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[8],
850   :

$$MgCl_2 = MgCl_2 \ ( ),\qquad\qquad(14)$$

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$$MgCl_2 \cdot MgO = MgCl_2 \ ( ) + MgO.\qquad\qquad(15)$$

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,   (15)   .

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:

$$MgCl_2 + H_2O \ ( ) = MgO + 2\,HCl \ ( );\qquad(16)$$

$$MgCl_2 (\ ) + H_2O (\ ) = MgO + 2\,HCl (\ );\qquad\qquad (17)$$

,   (16)   (17)

850   700   ,   ,
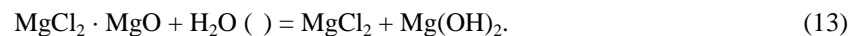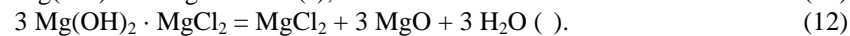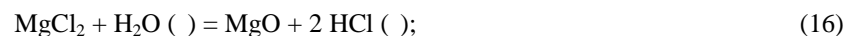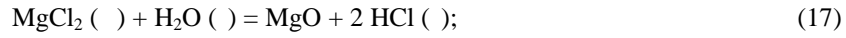
$MgO – MgCl_2$

(2)

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, $MgO – MgCl_2,$

298 – 1200 .

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$MgO – MgCl_2$

1200 .

$MgO – MgCl_2.$

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The ways of intensification of limiting stage of process are defined basing on approaches for turbulent flow. The problem was solving for condenser of distillation units. The optimal design of vertical tube condenser with thin-layer film phase flow. The developed unit provides two kinds of enhanced phase flowthin-layer and film that lets to do free removing of gas separated flow liquid inside tubs. In this case the efficiency of heat transfer surface is increased.

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40 %   ,

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