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29 2005 .

Mg, Fe, Al, Si, Ti.

Al, Si, K, Ti

Na, Ca, Mg, F .

: Na, Ca,

POSTSEDIMENTARY TRANSFORMATIONS AND REDISTRIBUTION OF ROCK-FORMING ELEMENTS IN TERRIGENOUS DEPOSITS OF SOME RUSSIA REGIONS

V.I. Koporulin

Geological Institute RAS

Postsedimentary transformations of terrigenous deposits were studied in some regions of the Russia. Four types of such transformations with different mineral conversations of clastic and clay minerals were recognized. Each type was initiated by the set of factors: sedimentary paleoenvironment, mineral composition of the deposits, their postsedimentary depth of burial, hydrochemical and hydrodynamic conditions in stratisphere. Obtained data revealed that mineral transformations were accompanied by redistribution of main rock-forming elements: Ca, Na, Mg, Fe, Al, Si, Ti. The redistribution pattern was specific for each type. It is suggested that the enrichment of terrigenous deposits in Al, Si, K, Ti and depletion in Na, Ca, Mg were important results of these processes.

Key words: terrigenous deposits, clastic and clay minerals, element redistribution.

2 () [, 1959].

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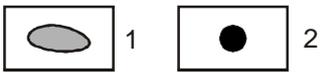
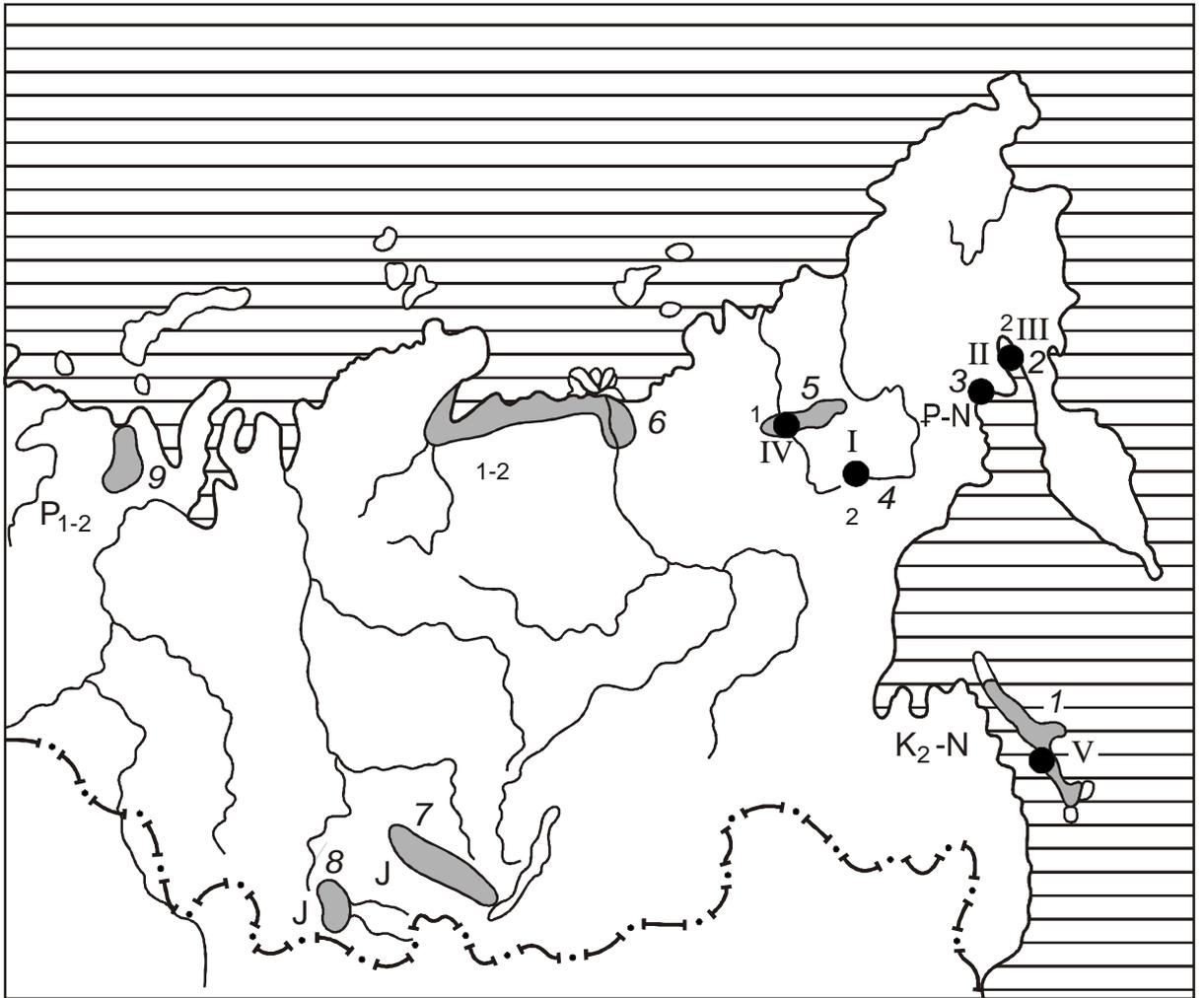
(), (),
 (), ().
 : - , -
 (1, 2, 3); - (), : - (K₂-
 (), (), () - - N), (K₂),
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 () () [, 1976]. ,
 (2), (1), (J₂)
 (2), (P₁₋₂) (J₁₋₃), (.1).

1,5-2
 6-
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 [, 1962;
 1968; , 1972; , 1972;
 1972 ; Kisch, 1983; Weaver, 1989;
 1992; , 1992; Oysal, Golding, 2000;
 , 2002, .].
 5-7

: Si, Al, Fe, Mg, Ca, Na, K, Ti,

[Hower, Eberl, 1976; Awwileer, 1993], ().

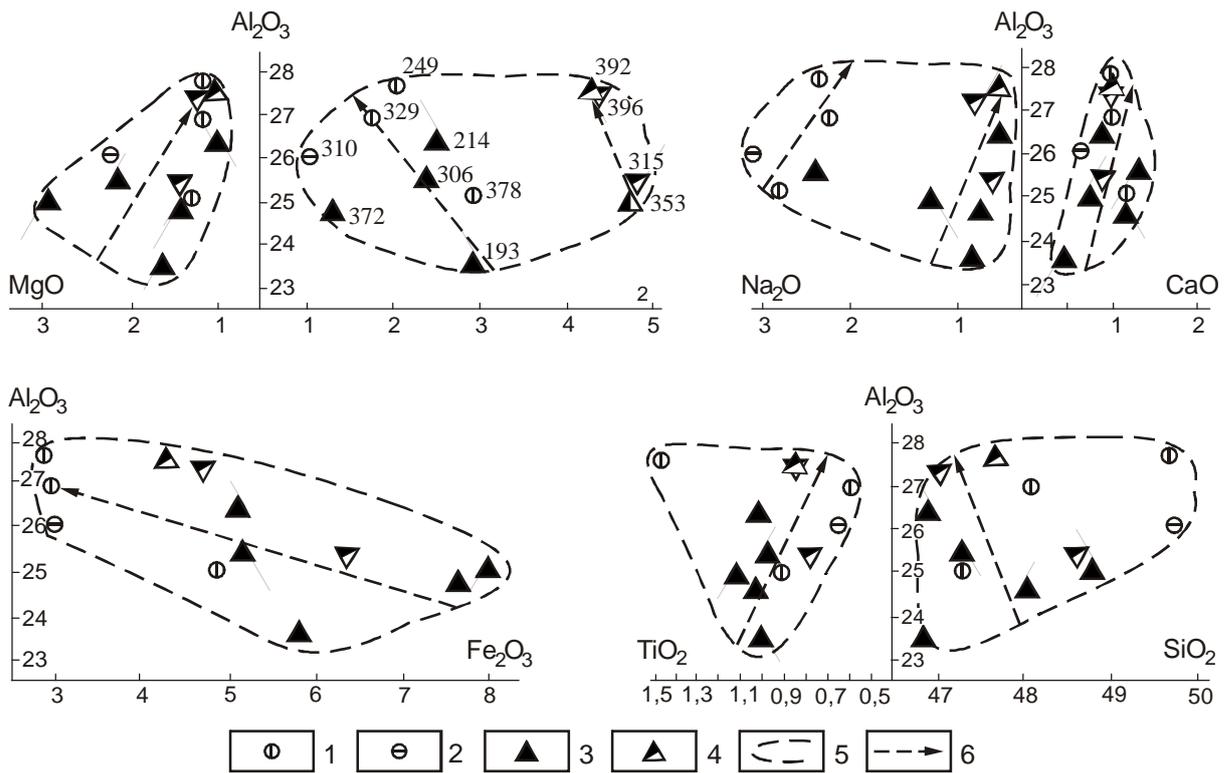
[Weaver, Beck, 1971; Ahn, Peacor, 1986; Ohr et al., 1991; Furlan et al., 1996]. [, 1966, 1992].



1. 1- ; 2- ; 3- ; 4- ; 5- ; 6- ; 7- ; 8- ; 9- ; I- ; II- ; III- ; IV- ; V- .

([1972]).

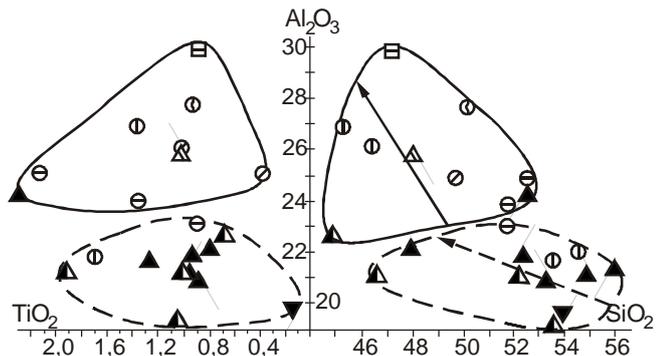
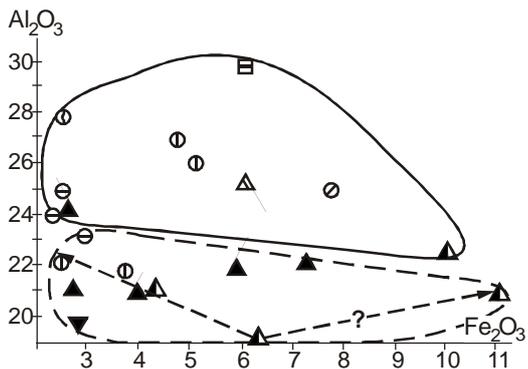
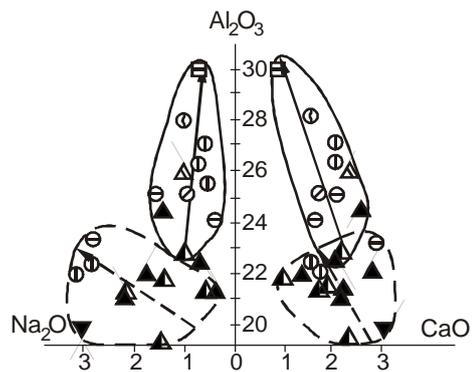
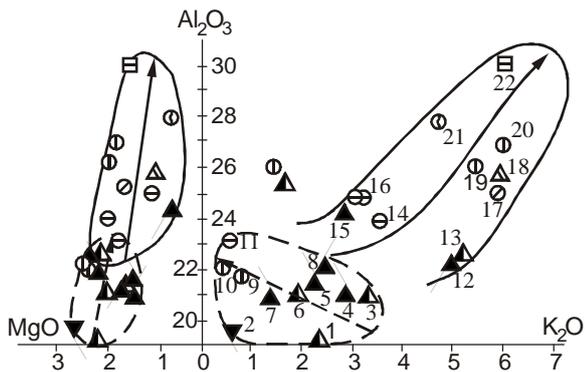
, 1,5-2 . . ,
 , 6-7 . . ,
 (A₃) - 1.
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 , 1972].
 (. 2),
 [. . , 1962, 1966, 1992;
 ., 2002].
 o
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 , 4
 I
 2 : 1
 ,
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 6-7 . . .
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 3*



. 3. ; 1 - ; 2 - ; 3 - ; 4 - ; 5 - ; 6 - I - . 2.

Al₂O₃, SiO₂, K₂O, MgO, Na₂O, CaO, Fe₂O₃, TiO₂, 2,0 (. 2).

Al₂O₃, K₂O, MgO, Na₂O, CaO, TiO₂, 2 : 1



- ▼ 1 ○ 2 ○ 3 ⊖ 4 ▲ 5 ▲ 6 ▲ 7 ○ 8 ⊖ 9 / 10 / 11 - - 12 - - 13

. 4.

: 1 - ; 2 - ; 3 - -

, 4 - ; 5 - ; 6 - -

, 7-9 - ; 7 - -

, 8 - 9 - ; 10-11 -

: 10 - I- , 11 - II- ; 12-13 -

: 12 - I- , 13 - II- . - . . 2.

(. 4, 5).

Fe₂O₃,

, I

, SiO₂ -

; SiO₂ Fe₂O₃

III

(. 2).

2 : 1

IV

(

MgO, Fe₂O₃, CaO,

Na₂O,

SiO₂, TiO₂ (. 6).

Al₂O₃,

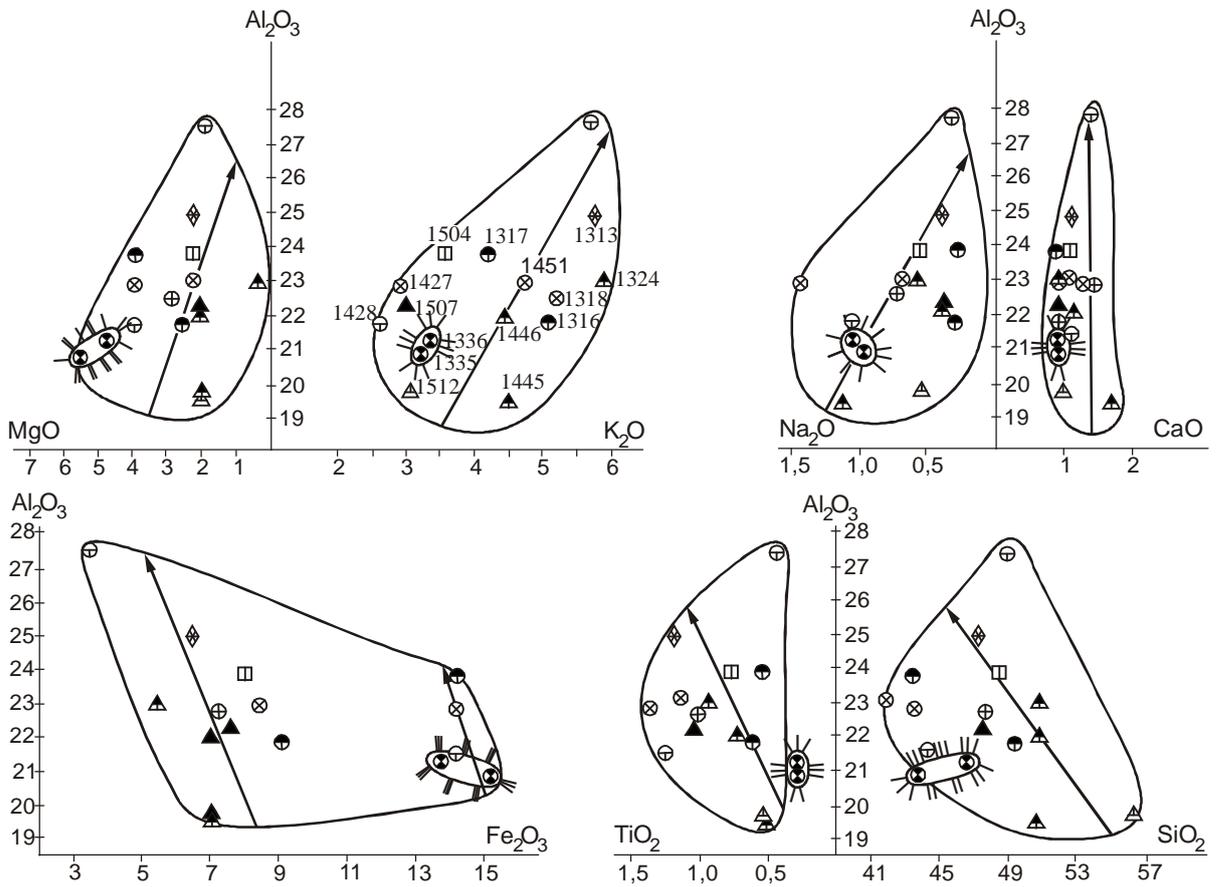
(0,1-0,05 , , 0,05-0,01).

I ,
K, Mg, Ca, Na.
Mg Fe, Al.
Si

I, II III

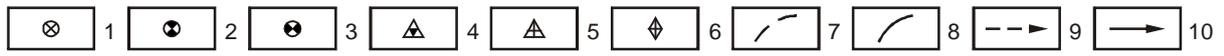
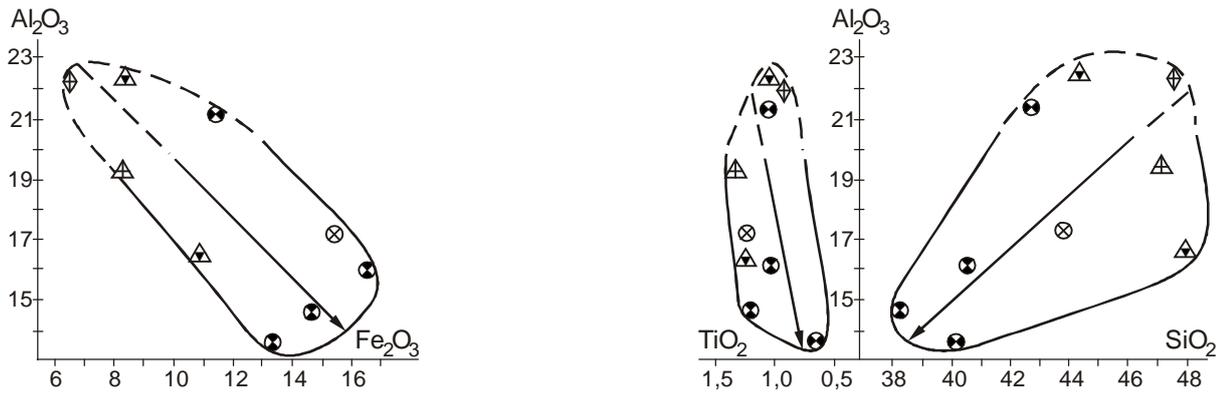
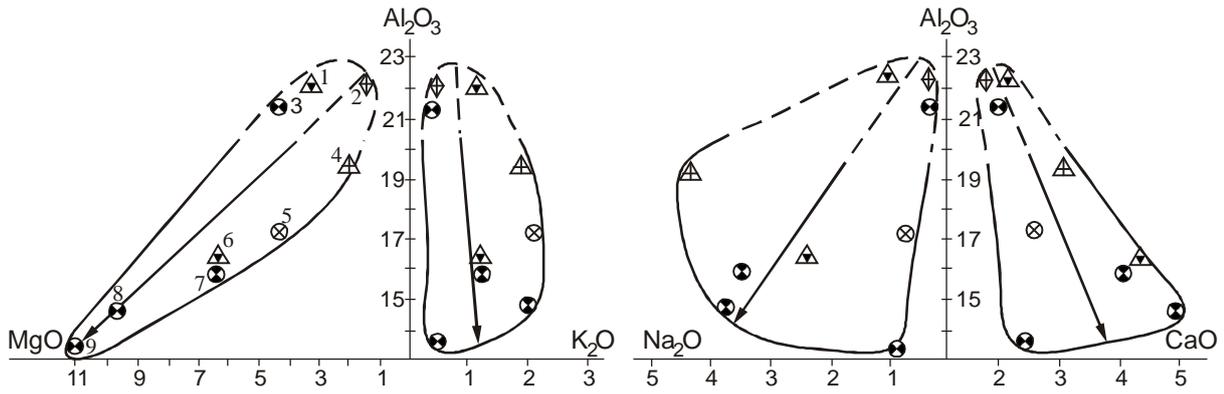
2 : 1

2 : 1



. 5.

: 1 - ; 2 - ; 3 -
; 4 - ; 5 -
; 6 - ; 9-10 - ; 9 - , 10 -
; 11-12 - ; 11 - II - , 12 - III - ; 13 -
II . - . 2.



. 6.

1-3 - ; 4, 5 - ; 6 - III- ; 7 - (; 8 - ; 9 - , 10 - . 2.

Na, Ca K Mg -
 SiO₂,
 / , Al - IV ,
 Si , Mg Si, Al, Ca, Na;
 Fe - . Na, Ca, Mg - Fe K.
 , - , -
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 (, Al) , -
 [Lindgren, 1991]. 2 : 1 - Si Al -
 , -
 , Al Mg Fe III -

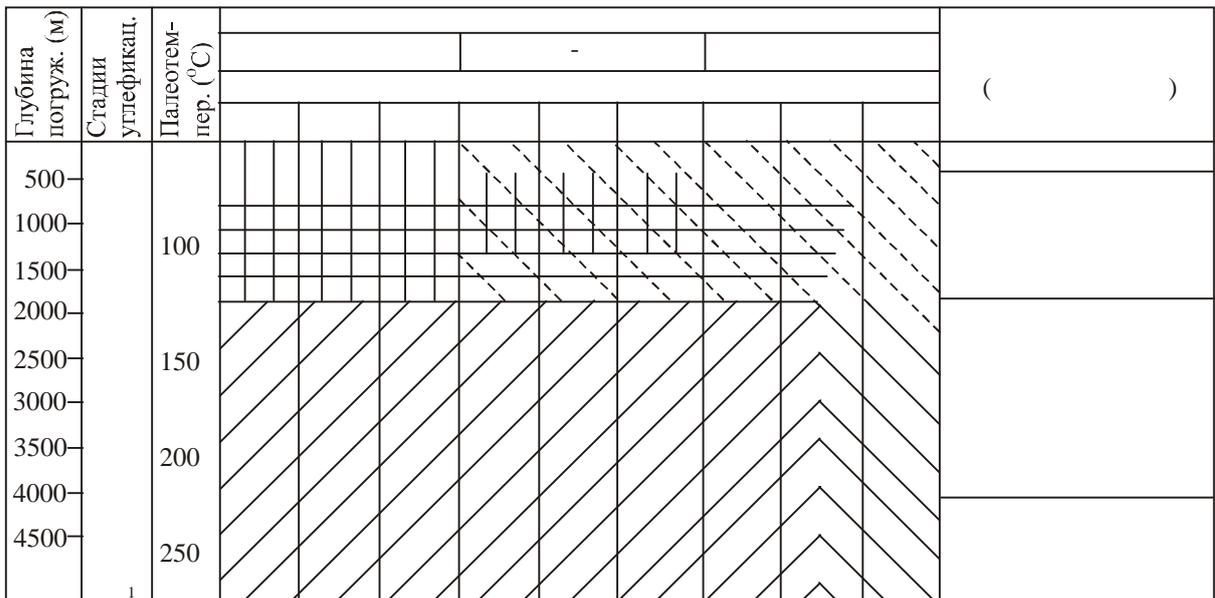
100-110°

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I (2:1)

1,5-2,0



. 7.

: 1 – I; 2 – II; 3 –

Mg ; 4 – III, 5 – IV

; - -

. 2.

Na Mg, -
 Si a, Fe -
 Ti -
 II III -
 Mg Fe, -
 II III [, 1992]. -
 Ca, Na, Mg, Fe , - Mg Fe, -
 Si, Al Ca Na. -
 Ca, Na, Mg, Al₂O₃, SiO₂ TiO₂. -
 II , - Mg, Ca, Na, K, Fe -
 Si Fe, -
 Al Mg K , -
 « » - [White, 1975; Drever, 1976]. Al, -
 Al [Lindgren, 1991]. -
 MgO, -
 + , -
 [1957], - IV -

Si, Al, Fe. Al, Si, Ca, Na, Mg, Fe, K. Mg Fe. [1990], 13 3 %.

2 : 1 () ()

Na, Ca, Si, Ti. Al, Fe, Mg, Al, K, Si, Mg, Ca, Al, - Na Ca.

[, 1968; , 1972; Baker, Golding, 1992], [Weaver, Beck, 1971; , 1972; , 1972; , 1972], [, 1962; , 1963; Iijima, 1980, Velde, Iijima, 1988].

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(Si, Al, Na, Ca, Mg, Fe, Ti).

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) : ,1968. 369 .
 // , 1972.
 . 285-322.
 Mg, Ca, Fe, Na Al, Si, .
 K, Ti. , , //
 V -
 , 1976. . 47-62.
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 175 . , 2002. 224 .
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 , 1983. 151 .
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 206 . // , 1972 . . 9-29.
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