No. 49
391

地質調査所化学分析法

ノルム計算の簡略法

地 質 調 査 所

昭和50年2月

543.6

地質調査所化学分析法

所長　小林　勇

ノルム計算の簡略法

大森貞子

目　　次

ノルム計算の簡略法

大森貞子*

1. まえがき

ノルム計算を簡単に行なう方法を考案した．本来の方法は，化学分析表の各酸化物の重量パーセントを分子比に換算し，ノルム鉱物を作り，再び各鉱物の分子比をそれぞれの標準鉱物重量パーセントに換算する方法である．この簡略法は，分析表の各酸化物の重量パーセントそのままから，表を利用して直ちに標準鉱物重量パーセントを求めるものである．

2. 適用範囲

SiO_2, TiO_2, Al_2O_3, Fe_2O_3, FeO(MnO), MgO, CaO, Na_2O, K_2O, P_2O_5 から構成されるノルム標準鉱物のうち，Table A の鉱物が計算できる．この表以外の白榴石 (lc)，カリオフィライト (kp)，錐輝石 (ac)，ソーダメタ珪酸塩 (ns)，カリメタ珪酸塩 (ks)，チタン石 (tn)，灰チタン石 (pf)，および金紅石 (ru) は一般に存在がまれなので省略した．

3. 表の説明

Table 1 から Table 12 までは，計算に使用する表である．表の計算と印刷は，電子計算機 (TOSBAC 3400/51) によった．したがって記号はすべて大文字となっている．

各表の左端，および右端の縦の列は，計算の基本となる成分の重量パーセントの小数点以下1けたまでを示し，最上部の横の行の 0～9 は，小数点以下2けた目の数を示す．

0～9 の各数の下方の左方第1列は，左端上部の成分から計算された鉱物の重量パーセント，第2列および第3列は，その鉱物を構成するために必要な成分の重量パーセントを示す．

この表の計算に使用した係数を Table B に示す．

表の引き方を Table C に示す．たとえば，K_2O が 1.42% のとき，正長石 (or) が 8.39% でき，そのためには Al_2O_3 1.54%, SiO_2 5.43% が必要である．

* 技術部化学課

Table A

ノルム標準鉱物

Norm Standard Minerals

鉱物名 minerals	記号 symbols	化学式 chemical formulas	式量 formula weight
サリック鉱物 Salic minerals			
石英 Quartz	Q	SiO_2	60.0848*
コランダム Corundum	C	Al_2O_3	101.9612
正長石 Orthoclase	or	$K_2O \cdot Al_2O_3 \cdot 6SiO_2$	556.6734
曹長石 Albite	ab	$Na_2O \cdot Al_2O_3 \cdot 6SiO_2$	524.4490
灰長石 Anorthite	an	$CaO \cdot Al_2O_3 \cdot 2SiO_2$	278.2102
カスミ石 Nephelite	ne	$Na_2O \cdot Al_2O_3 \cdot 2SiO_2$	284.1098
フェミック鉱物 Femic minerals			
珪灰石 Wollastonite**	wo	$CaO \cdot SiO_2$	116.1642
ガン火輝石 Enstatite**	en	$MgO \cdot SiO_2$	100.3892
鉄珪輝石 Ferrosilite**	fs	$FeO \cdot SiO_2$	131.9312
苦土カンラン石 Forsterite***	fo	$2MgO \cdot SiO_2$	140.6936
鉄カンラン石 Fayalite***	fa	$2FeO \cdot SiO_2$	203.7776
磁鉄鉱 Magnetite	mt	$FeO \cdot Fe_2O_3$	231.5386
赤鉄鉱 Hematite	hm	Fe_2O_3	159.6922
チタン鉄鉱 Ilmenite	il	$FeO \cdot TiO_2$	151.7452
リン灰石 Apatite	ap	$10/3CaO \cdot P_2O_5$	328.8759

* 国際原子量表 (1969) によって計算した式量.
The molecular weight based upon the International Atomic Weights 1969.

** 輝石は普通, 透輝石 (di) $CaO \cdot (Mg, Fe)O \cdot 2SiO_2$, 紫ソ輝石 (hy) $(Mg, Fe)O \cdot SiO_2$ として表わす.
Pyroxenes are commonly expressed as Diopside (di) $CaO \cdot (Mg, Fe)O \cdot 2SiO_2$ and Hypersthene (hy) $(Mg, Fe)O \cdot SiO_2$.

*** これらは普通, カンラン石 (ol) $2(Mg, Fe)O \cdot SiO_2$ として表わす.
Forsterite and Fayalite are commonly expressed as Olivine (ol) $2(Mg, Fe)O \cdot SiO_2$.

Table B

P_2O_5* $\times 2.31693 = ap$ $(10/3CaO \cdot P_2O_5)$**
$\times 1.31693 = CaO$

$TiO_2 \times 1.89922 = il$ $(TiO_2 \cdot FeO)$
$\times 0.89922 = FeO$

$Fe_2O_3 \times 1.44991 = mt$ $(FeO \cdot Fe_2O_3)$
$\times 0.44991 = FeO$

$FeO \times 3.22269 = mt$ $(FeO \cdot Fe_2O_3)$
$\times 2.22269 = Fe_2O_3$

$K_2O \times 5.90927 = or$ $(K_2O \cdot Al_2O_3 \cdot 6SiO_2)$
$\times 1.08235 = Al_2O_3$
$\times 3.82692 = SiO_2$

$Na_2O \times 8.46172 = ab$ $(Na_2O \cdot Al_2O_3 \cdot 6SiO_2)$
$\times 1.64509 = Al_2O_3$
$\times 5.81663 = SiO_2$

$CaO \times 4.96101 = an$ $(CaO \cdot Al_2O_3 \cdot 2SiO_2)$
$\times 1.81816 = Al_2O_3$
$\times 2.14285 = SiO_2$

$Al_2O_3 \times 2.72859 = an$ $(CaO \cdot Al_2O_3 \cdot 2SiO_2)$
$\times 0.55001 = CaO$
$\times 1.17858 = SiO_2$

$CaO \times 2.07142 = wo$ $(CaO \cdot SiO_2)$
$\times 1.07142 = SiO_2$

$SiO_2 \times 1.93334 = wo$ ($CaO \cdot SiO_2$)
$\times 0.93334 = CaO$
$MgO \times 2.49078 = en$ ($MgO \cdot SiO_2$)
$\times 1.49078 = SiO_2$
$SiO_2 \times 1.67079 = en$ ($MgO \cdot SiO_2$)
$\times 0.67079 = MgO$
$FeO \times 1.83630 = fs$ ($FeO \cdot SiO_2$)
$\times 0.83630 = SiO_2$
$SiO_2 \times 2.19575 = fs$ ($FeO \cdot SiO_2$)
$\times 1.19575 = FeO$
$SiO_2 \times 2.34158 = fo$ ($2MgO \cdot SiO_2$)
$\times 1.34158 = MgO$

$MgO \times 1.74539 = fo$ ($2MgO \cdot SiO_2$)
$\times 0.74539 = SiO_2$
$FeO \times 1.41815 = fa$ ($2FeO \cdot SiO_2$)
$\times 0.41815 = SiO_2$
$SiO_2 \times 3.39150 = fa$ ($2FeO \cdot SiO_2$)
$\times 2.39150 = FeO$
$SiO_2 \times 2.36424 = ne$ ($Na_2O \cdot Al_2O_3 \cdot 2SiO_2$)
$\times 0.51576 = Na_2O$
$\times 0.84848 = Al_2O_3$

* Weight percentages.
** Ditto.

Table C

表のひき方

How to find the amounts of standard minerals.

K_2O %	0			1			2			
	or	Al_2O_3	SiO_2	or	Al_2O_3	SiO_2	or	Al_2O_3	SiO_2	
0.0										
—										
—										
—										
—										
—										
—										
—										
1.0										
—										
—										
4	———			———		→	8.39	1.54	5.43	

Table 4 より抜粋

This table is extracted from the Table 4.

4. 謝　辞

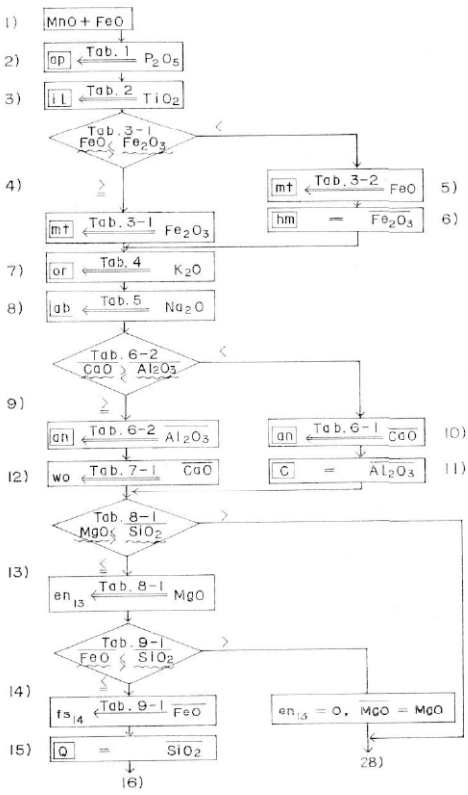
この研究に当たり，本所片田正人・小野晃司・太田良平・一色直記の各技官から，懇切な御助言と御教示をいただいた．電子計算機プログラムは，安藤直行技官にお願いした．以上の方々にここに深く感謝する次第である．

5. 計 算 方 法

化学分析によって得られた各酸化物の重量パーセントから，つぎの順序でノルム標準鉱物を作って行く．1)～12) まではすべての場合の計算である．

5. 1 SiO_2 が過剰な場合

1) MnO が少量ならば FeO に加える．
2) P_2O_5 から Table 1 により，リン灰石 (ap) 10/3 $CaO \cdot P_2O_5$ を作る．
3) TiO_2 から Table 2 により，チタン鉄鉱 (il) $FeO \cdot TiO_2$ を作る．
4) Fe_2O_3 から Table 3-1 により，磁鉄鉱 (mt) $FeO \cdot Fe_2O_3$ を作る．
   FeO が不足のときは，4) をやめ，5) および 6) の計算をする．
5) FeO から Table 3-2 により，磁鉄鉱 (mt) $FeO \cdot Fe_2O_3$ を作る．
6) 残りの Fe_2O_3 がそのまま，赤鉄鉱 (hm) Fe_2O_3 になる．
7) K_2O から Table 4 により，正長石 (or) $K_2O \cdot Al_2O_3 \cdot 6SiO_2$ を作る．
8) Na_2O から Table 5 により，曹長石 (ab) $Na_2O \cdot Al_2O_3 \cdot 6SiO_2$ を作る．
9) 残りの Al_2O_3 から Table 6-2 により，灰長石 (an) $CaO \cdot Al_2O_3 \cdot 2SiO_2$ を作る．
   CaO が不足のときは，9) をやめ，10) および 11) の計算をする．
10) CaO から Table 6-1 により，灰長石 (an) $CaO \cdot Al_2O_3 \cdot 2SiO_2$ を作る．
11) 残りの Al_2O_3 がそのまま，コランダム (C) Al_2O_3 になる．
12) 9) の残りの CaO から，Table 7-1 により，珪灰石 (wo) $CaO \cdot SiO_2$ を作る．
13) MgO から Table 8-1 により，ガン火輝石 (en) $MgO \cdot SiO_2$ を作る．
   SiO_2 が不足のときは，13) をやめ，28) 以降の計算をする．
14) 4) の残りの FeO から Table 9-1 により，鉄珪輝石 (fs) $FeO \cdot SiO_2$ を作る．
   SiO_2 が不足のときは，13) および 14) をやめ，28) 以降の計算をする．
15) 残りの SiO_2 がそのまま，石英 (Q) SiO_2 になる．
   この場合の計算は終りであるが，一般に輝石類 (wo)，(en)，(fs) は透輝石 (di)，紫ソ輝石 (hy) および珪灰石 (wo) の形式で表わすので，この計算を 16) 以降に示す．



(Value) 表中の組合わせの相当量
Equivalent amount in the specific table

$\overline{(Value)}$ 残量
Remnant

確定結果
Definite result

未確定結果
Indefinite result

⟸ 表ひき
Referring the table

Results:
ap, il, mt, or, ab, an, Q, ±hm, ±C

16) 11) (C) ができたときは，17) の計算をする．
12) (wo) ができたときは，13) (en) の SiO_2 と 14) (fs) の SiO_2 の合計を求め，12) (wo) の SiO_2 と比較する．
(wo) の SiO_2 が合計の SiO_2 より多いときは，18) 以降の計算をする．
(wo) の SiO_2 が合計の SiO_2 より少ないときは，21) 以降の計算をする．

紫ソ輝石 (hy) だけできる場合

17) 13) (en) と 14) (fs) の合計が，紫ソ輝石 (hy) $(Mg, Fe)O \cdot SiO_2$ である．
この場合の計算は終りである (計算例を Table D に示す)．

透輝石 (di) と珪灰石 (wo) ができる場合

18) 13) (en) の SiO_2 と 14) (fs) の SiO_2 の合計を求め，これと同量の SiO_2 から Table 7-2 により，(wo) を求める．

19) 13) (en), 14) (fs) および 18) (wo) の合計が，透輝石 (di) $CaO \cdot (Mg, Fe)O \cdot 2SiO_2$ である．

20) 12) (wo) から 18) (wo) を差し引いたものが，珪灰石 (wo) $CaO \cdot SiO_2$ である．12) (wo) を取り消す．
この場合の計算は終りである．

透輝石 (di) と紫ソ輝石 (hy) ができる場合

21) 12) (wo) の SiO_2 と同量の SiO_2 を，13) (en) の SiO_2 と 14) (fs) の SiO_2 の比に分ける．

22) (en) に配分された SiO_2 から Table 8-2 により，(di) 用ガン火輝石 (en) $MgO \cdot SiO_2$ を作る．

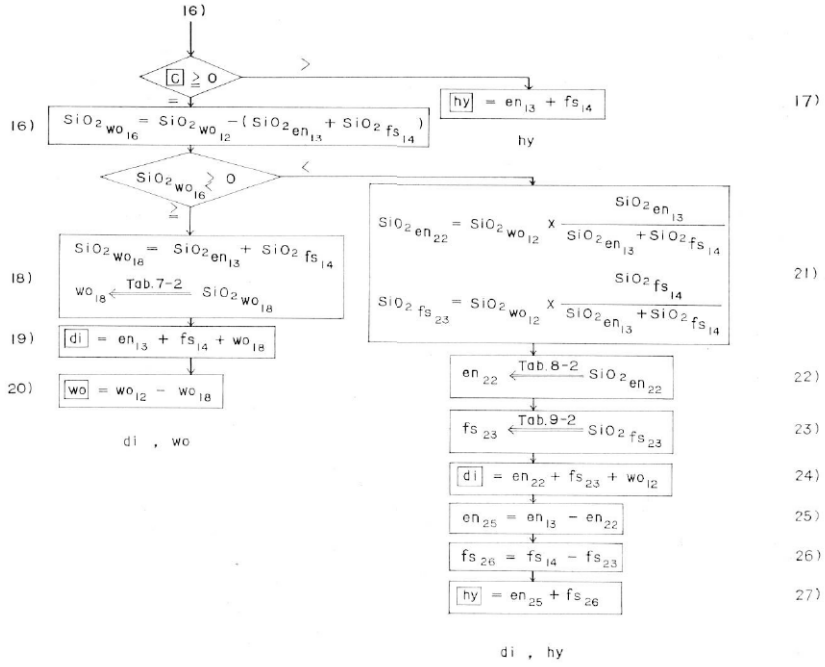
23) (fs) に配分された SiO_2 から Table 9-2 により，(di) 用鉄珪輝石 (fs) $FeO \cdot SiO_2$ を作る．

24) 12) (wo), 22) (en) および 23) (fs) の合計が，透輝石 (di) $CaO \cdot (Mg, Fe)O \cdot 2SiO_2$ である．

25) 13) (en) から 22) (en) を差し引いたものが，(hy) 用ガン火輝石 (en) $MgO \cdot SiO_2$ である．13) (en) を取り消す．

26) 14) (fs) から 23) (fs) を差し引いたものが，(hy) 用鉄珪輝石 (fs) $FeO \cdot SiO_2$ である．14) (fs) を取り消す．

27) 25) (en) および 26) (fs) の合計が，紫ソ輝石 (hy) $(Mg, Fe)O \cdot SiO_2$ である．
この場合の計算は終りである．


16)
C ≧ 0
>
=
17)
hy = en13 + fs14
hy
16)
SiO2wo16 = SiO2wo12 − (SiO2en13 + SiO2fs14)
SiO2wo16 ≧ 0
<
≧
=
SiO2en22 = SiO2wo12 × SiO2en13 / (SiO2en13 + SiO2fs14)
21)
SiO2fs23 = SiO2wo12 × SiO2fs14 / (SiO2en13 + SiO2fs14)
18)
SiO2wo18 = SiO2en13 + SiO2fs14
wo18 ⟸ Tab.7-2 SiO2wo18
19)
di = en13 + fs14 + wo18
20)
wo = wo12 − wo18
di , wo
en22 ⟸ Tab.8-2 SiO2en22
22)
fs23 ⟸ Tab.9-2 SiO2fs23
23)
di = en22 + fs23 + wo12
24)
en25 = en13 − en22
25)
fs26 = fs14 − fs23
26)
hy = en25 + fs26
27)
di , hy

5. 2 SiO_2 が不足の場合

28) 11) (C) ができたときは，29) 以降の計算をする．
12) (wo) ができたときは，43) 以降の計算をする．

5. 2. 1 透輝石 (di) ができない場合

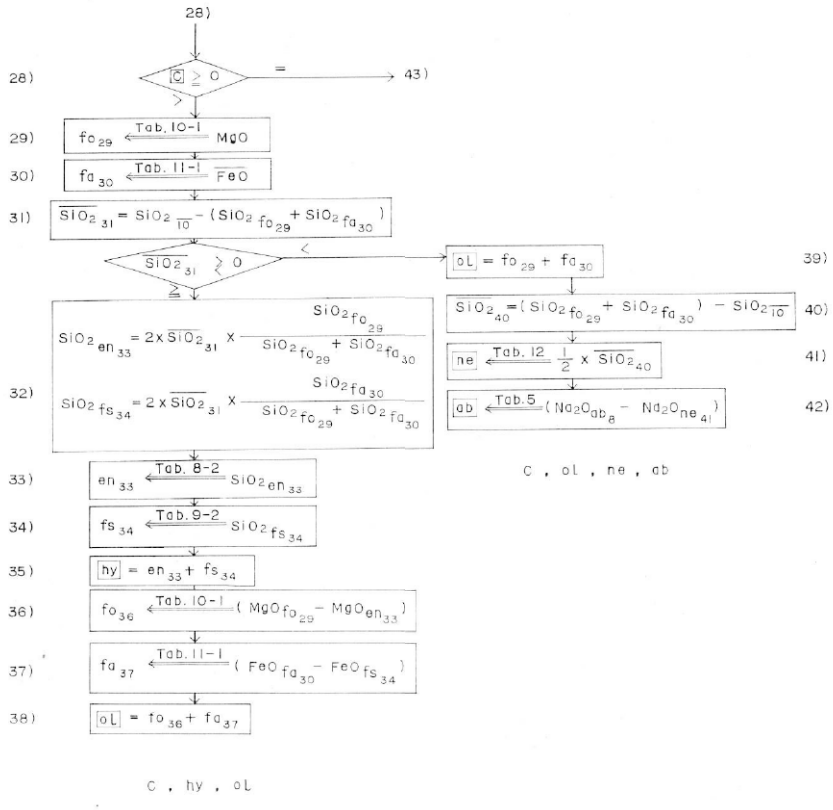
29) 13) の MgO から Table 10-1 により，苦土カンラン石 (fo) $2MgO \cdot SiO_2$ を作る．
30) 14) の FeO から Table 11-1 により，鉄カンラン石 (fa) $2FeO \cdot SiO_2$ を作る．
31) 10) (an) を作った残りの SiO_2 から，29) (fo) の SiO_2 と 30) (fa) の SiO_2 の合計を差し引く．
SiO_2 が不足のときは，39) 以降の計算をする．

紫ソ輝石 (hy) とカンラン石 (ol) ができる場合

32) 31) の残りの SiO_2 の2倍が (hy) 用 SiO_2 となる．これを 29) (fo) の SiO_2 と 30) (fa) の SiO_2 の比に分け，33) (en) 用 SiO_2 と 34) (fs) 用 SiO_2 とする．
33) 33) (en) 用 SiO_2 から Table 8-2 により，ガン火輝石 (en) $MgO \cdot SiO_2$ を作る．
34) 34) (fs) 用 SiO_2 から Table 9-2 により，鉄珪輝石 (fs) $FeO \cdot SiO_2$ を作る．
35) 33) (en) と 34) (fs) の合計が，紫ソ輝石 (hy) $(Mg, Fe)O \cdot SiO_2$ である．
36) 29) (fo) の MgO から 33) (en) の MgO を差し引く．この MgO から Table 10-1 により，苦土カンラン石 (fo) $2MgO \cdot SiO_2$ を作る．29) (fo) を取り消す．
37) 30) (fa) の FeO から 34) (fs) の FeO を差し引く．この FeO から Table 11-1 により，鉄カンラン石 (fa) $2FeO \cdot SiO_2$ を作る．30) (fa) を取り消す．
38) 36) (fo) と 37) (fa) の合計が，カンラン石 (ol) $2(Mg, Fe)O \cdot SiO_2$ である．
この場合の計算は終りである．

カンラン石 (ol) とカスミ石 (ne) ができる場合

39) 29) (fo) と 30) (fa) の合計が，カンラン石 (ol) $2(Mg, Fe)O \cdot SiO_2$ である．
40) 29) (fo) の SiO_2 と 30) (fa) の SiO_2 の合計から，10) (an) を作った残りの SiO_2 を差し引き，不足分を求める．
41) 40) 不足分 SiO_2 の 1/2 を求め，これから Table 12 により，カスミ石 (ne) $Na_2O \cdot Al_2O_3 \cdot 2SiO_2$ を作る．
42) 8) (ab) の Na_2O から，41) (ne) の Na_2O を差し引く．この Na_2O から Table 5 により，曹長石 (ab) $Na_2O \cdot Al_2O_3 \cdot 6SiO_2$ を作る．8) (ab) を取り消す．
この場合の計算は終りである．


28)
28) [C] ≧ 0
=
43)
>
29) fo29 ⟸ Tab. 10-1 MgO
30) fa30 ⟸ Tab. 11-1 FeO
31) SiO2 31 = SiO2 10 − (SiO2 fo29 + SiO2 fa30)
SiO2 31 ≧ 0
<
39) [oL] = fo29 + fa30
40) SiO2 40 = (SiO2 fo29 + SiO2 fa30) − SiO2 10
41) [ne] ⟸ Tab. 12 1/2 × SiO2 40
42) [ab] ⟸ Tab. 5 (Na2O ab8 − Na2O ne41)
32) SiO2 en33 = 2 × SiO2 31 × SiO2 fo29 / (SiO2 fo29 + SiO2 fa30)
SiO2 fs34 = 2 × SiO2 31 × SiO2 fa30 / (SiO2 fo29 + SiO2 fa30)
33) en33 ⟸ Tab. 8-2 SiO2 en33
34) fs34 ⟸ Tab. 9-2 SiO2 fs34
35) [hy] = en33 + fs34
36) fo36 ⟸ Tab. 10-1 (MgO fo29 − MgO en33)
37) fa37 ⟸ Tab. 11-1 (FeO fa30 − FeO fs34)
38) [ol] = fo36 + fa37
C , hy , ol
C , ol , ne , ab

5. 2. 2　透輝石 (di) ができる場合

43) 13) で SiO_2 が不足のときも，SiO_2 があるものとして MgO から Table 8-1 により，仮にガン火輝石 (en) $MgO \cdot SiO_2$ を作る．

44) 14) で SiO_2 が不足のときも，SiO_2 があるものとして FeO から Table 9-1 により，仮に鉄珪輝石 (fs) $FeO \cdot SiO_2$ を作る．

45) 43) (en) の SiO_2 と 44) (fs) の SiO_2 の合計を求め，12) (wo) の SiO_2 と比較する．
(wo) の SiO_2 が合計の SiO_2 より多いときは，46) 以降の計算をする．
(wo) の SiO_2 が合計の SiO_2 より少ないときは，52) 以降の計算をする．

珪灰石 (wo) とカスミ石 (ne) ができる場合

46) 43) (en) の SiO_2 と 44) (fs) の SiO_2 の合計を求める．これと同量の SiO_2 から Table 7-2 により，(di) 用珪灰石 (wo) $CaO \cdot SiO_2$ を作る．

47) 43) (en)，44) (fs) および 46) (wo) の合計が，透輝石 (di) $CaO \cdot (Mg, Fe)O \cdot 2SiO_2$ である．

48) 12) (wo) から 46) (wo) を差し引いたものが，珪灰石 (wo) $CaO \cdot SiO_2$ である．12) (wo) を取り消す．

49) 43) (en) の SiO_2 と 44) (fs) の SiO_2 の合計から，12) (wo) を作った残りの SiO_2 を差し引き，SiO_2 の不足分を求める．

50) 49) 不足分 SiO_2 の 1/2 を求め，これから Table 12 により，カスミ石 (ne) $Na_2O \cdot Al_2O_3 \cdot 2SiO_2$ を作る．

51) 8) (ab) の Na_2O から 50) (ne) の Na_2O を差し引く．この Na_2O から Table 5 により，曹長石 (ab) $Na_2O \cdot Al_2O_3 \cdot 6SiO_2$ を作る．8) (ab) を取り消す．
この場合の計算は終りである．

透輝石 (di) を作る計算

52) 12) (wo) の SiO_2 と同量の SiO_2 を，43) (en) の SiO_2 と 44) (fs) の SiO_2 の比に分ける．

53) (en) に配分された SiO_2 から Table 8-2 により，(di) 用ガン火輝石 (en) $MgO \cdot SiO_2$ を作る．

54) (fs) に配分された SiO_2 から Table 9-2 により，(di) 用鉄珪輝石 (fs) $FeO \cdot SiO_2$ を作る．

55) 12) (wo)，53) (en) および 54) (fs) の合計が，透輝石 (di) $CaO \cdot (Mg, Fe)O \cdot 2SiO_2$ である．

56) 12) (wo) を作った残りの SiO_2 から，53) (en) の SiO_2 と 54) (fs) の SiO_2 の合計を差し引く．
SiO_2 が不足のときは，68) 以降の計算をする．

57) 43) (en) から，53) (en) を差し引いたものを，仮に (hy) 用ガン火輝石 (en) $MgO \cdot SiO_2$ とする．
43) (en) の SiO_2 から，53) (en) の SiO_2 を差し引き，57) (en) の SiO_2 を求める．

58) 44) (fs) から，54) (fs) を差し引いたものを，仮に (hy) 用鉄珪輝石 (fs) $FeO \cdot SiO_2$

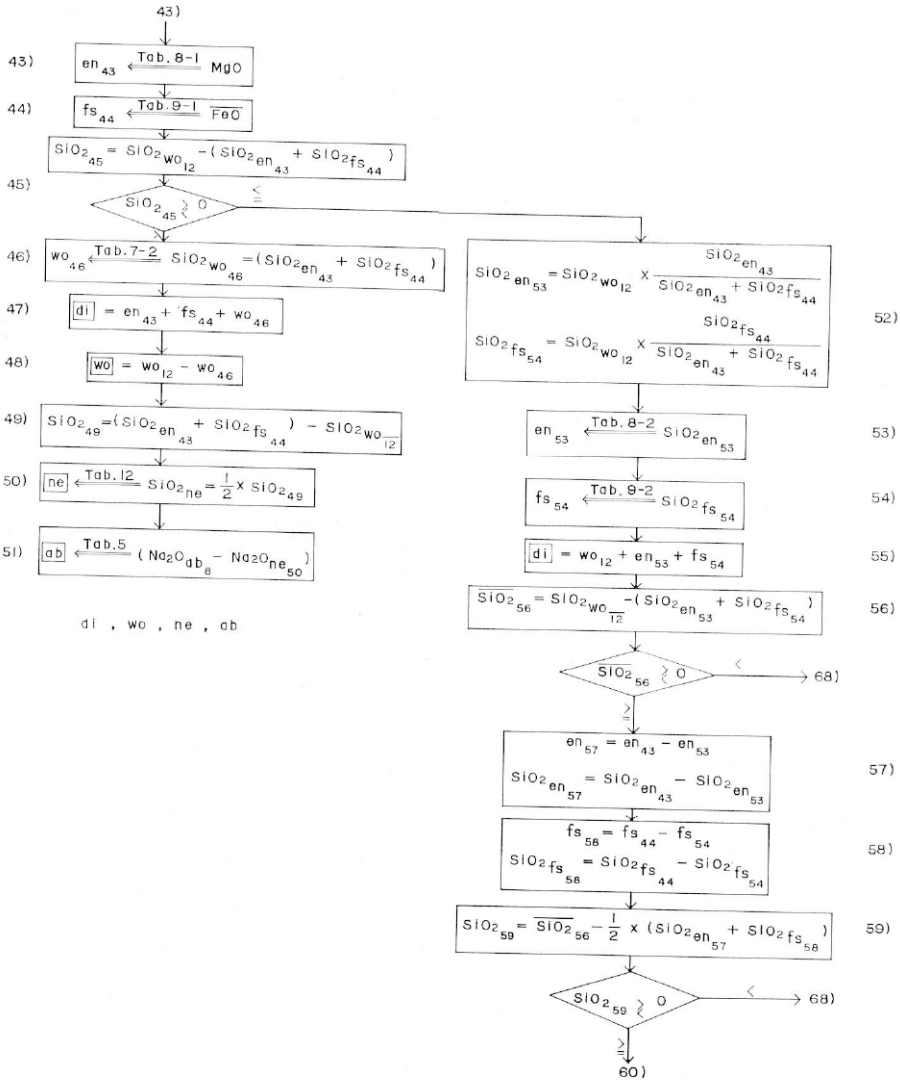
とする．

44) (fs) の SiO_2 から，54) (fs) の SiO_2 を差し引き，58) (fs) の SiO_2 を求める．

59) 57) (en) の SiO_2 と 58) (fs) の SiO_2 の合計の 1/2 を求め，56) の残りの SiO_2 と比較する．

56) 残りの SiO_2 が，1/2 SiO_2 より多いときは，60) 以降の計算をする．

56) 残りの SiO_2 が，1/2 SiO_2 より少ないときは，68) 以降の計算をする．



紫ソ輝石 (hy) とカンラン石 (ol) ができる場合

60) 57) (en) の SiO_2 と 58) (fs) の SiO_2 の合計から，56) の残りの SiO_2 を差し引き，SiO_2 の不足分を求める．これは (ol) 用 SiO_2 に相当する．

61) 60) の (ol) 用 SiO_2 を，57) (en) の SiO_2 と 58) (fs) の SiO_2 の比に分け，62) (fo) 用 SiO_2 と 63) (fa) 用 SiO_2 とする．

62) 62) (fo) 用 SiO_2 から Table 10-2 により，苦土カンラン石 (fo) $2MgO \cdot SiO_2$ を作る．

63) 63) (fa) 用 SiO_2 から Table 11-2 により，鉄カンラン石 (fa) $2FeO \cdot SiO_2$ を作る．

64) 62) (fo) と 63) (fa) の合計が，カンラン石 (ol) $2(Mg, Fe)O \cdot SiO_2$ である．

65) 57) (en) の MgO から 62) (fo) の MgO を差し引く．この MgO から Table 8-1 により，(hy) 用ガン火輝石 (en) $MgO \cdot SiO_2$ を作る．43) (en) および 57) (en) を取り消す．

66) 58) (fs) の FeO から 63) (fa) の FeO を差し引く．この FeO から Table 9-1 により，(hy) 用鉄珪輝石 (fs) $FeO \cdot SiO_2$ を作る．44) (fs) および 58) (fs) を取り消す．

67) 65) (en) と 66) (fs) の合計が，紫ソ輝石 (hy) $(Mg, Fe)O \cdot SiO_2$ である．
この場合の計算は終りである．

カンラン石 (ol) とカスミ石 (ne) ができる場合

68) 43) (en) の MgO から 53) (en) の MgO を差し引く．この MgO から Table 10-1 により，苦土カンラン石 (fo) $2MgO \cdot SiO_2$ を作る．

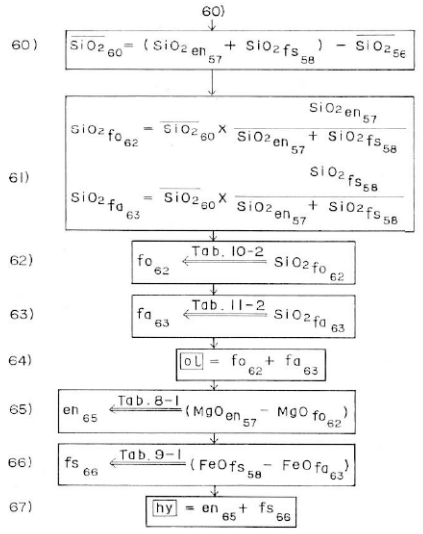
69) 44) (fs) の FeO から 54) (fs) の FeO を差し引く．この FeO から Table 11-1 により，鉄カンラン石 (fa) $2FeO \cdot SiO_2$ を作る．

70) 68) (fo) と 69) (fa) の合計が，カンラン石 (ol) $2(Mg, Fe)O \cdot SiO_2$ である．

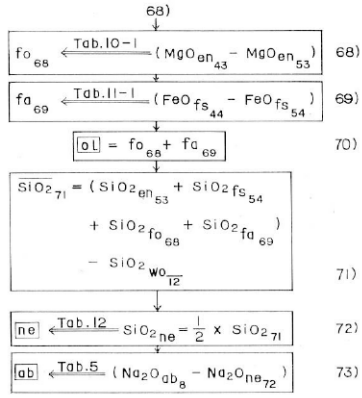
71) 53) (en) の SiO_2, 54) (fs) の SiO_2, 68) (fo) の SiO_2 および 69) (fa) の SiO_2 の合計から，12) (wo) を作った残りの SiO_2 を差し引き，SiO_2 の不足分を求める．

72) 71) の不足分 SiO_2 の 1/2 を求め，これから Table 12 により，カスミ石 (ne) $Na_2O \cdot Al_2O_3 \cdot 2SiO_2$ を作る．

73) 8) (ab) の Na_2O から，72) (ne) の Na_2O を差し引く．この Na_2O から Table 5 により，曹長石 (ab) $Na_2O \cdot Al_2O_3 \cdot 6SiO_2$ を作る．8) (ab) を取り消す．
57) および 58) の計算をした場合は，57) (en) および 58) (fs) を取り消す．
この場合の計算は終りである (計算例を Table E に示す)．



di , hy , ol



di , ol , ne , ab

Table D

花崗閃緑岩 Granodiorite (JG-1)　　群馬県勢多郡東村沢入産 Sōri, Gumma Prefecture

Elements	wt. %	ap	il	mt	hm	or	ab	an	C	wo	en	fs	Q
SiO_2	72.24					15.15	19.72	4.39			1.09	1.11	30.78
TiO_2	0.26		0.26										
Al_2O_3	14.21					4.29	5.58	3.73	0.61				
Fe_2O_3	0.36			0.36									
FeO	1.66		0.23	0.16								1.33	
MnO	0.06												
MgO	0.73										0.73		
CaO	2.18	0.13						2.05					
Na_2O	3.39						3.39						
K_2O	3.96					3.96							
P_2O_5	0.10	0.10											
H_2O+	0.53												
H_2O-	0.09												
Total	99.77												
$(-H_2O\pm$	99.15)	ap	il	mt	hm	or	ab	an	C	wo	en	fs	Q
	*	0.23	0.49	0.52		23.40	28.69	10.17	0.61		1.82	2.44	30.78
	**	0.23	0.49	0.52		23.40	28.69	10.16	0.62		1.82	2.43	30.78

		SiO_2	Al_2O_3	FeO	CaO
Q	30.78				
C	0.61				
or	23.40	72.24	14.21	1.66	2.18
ab	28.69	7) −15.15	7) − 4.29	1) + 0.06	2) − 0.13
an	10.17	57.09	9.92	1.72	2.05
en, fs } hy	1.82, 2.44	8) −19.72	8) − 5.58	3) − 0.23	
mt	0.52	37.37	4.34	1.49	
il	0.49	10) − 4.39	10) − 3.73	4) − 0.16	
ap	0.23	32.98	0.61	1.33	
Total	99.15	13) − 1.09			
		31.89			
		14) − 1.11			
		30.78			

* 簡略法 Simplified method.
** 本来の方法 Conventional method.

Table E

はんれい岩 Gabbro　　岩手県九戸郡軽米町産 Karumai, Iwate Prefecture

Elements	wt. %	ap	il	mt	hm	or	ab	an	C	wo	en	fs	Q	fo	fa	ne
SiO_2	46.75					5.05	9.95	13.88		4.89	3.65	1.24		5.12	1.75	1.25
TiO_2	0.78		0.78													
Al_2O_3	17.08					1.43	2.81	11.78								1.06
Fe_2O_3	2.28			2.28												
FeO	7.22		0.70	1.03								1.48			4.18	
MnO	0.17															
MgO	9.32										2.45			6.87		
CaO	11.51	0.47						6.48		4.56						
Na_2O	2.35						1.71									0.64
K_2O	1.32					1.32										
P_2O_5	0.36	0.36														
H_2O+	0.62															
H_2O-	0.22															
Total	99.98															
$(-H_2O\pm$	99.14)	ap	il	mt	hm	or	ab	an	C	wo	en	fs	Q	fo	fa	ne
	*	0.83	1.48	3.31		7.80	14.47	32.14		9.45	6.10	2.72		11.99	5.93	2.95
	**	0.83	1.48	3.31		7.80	14.44	32.16		9.43	6.08	2.72		12.01	5.93	2.95

Q	
C	
or	7.80
ab	14.47
an	32.14
ne	2.95
wo } di	9.45
en } di	6.10
fs } di	2.72
fo } ol	11.99
fa } ol	5.93
mt	3.31
il	1.48
ap	0.83
Total	99.17

SiO_2: 46.75 − 5.05 = 41.70; 41.70 − 13.67 = 28.03; 28.03 − 13.88 = 14.15; 14.15 − 4.89 = 9.26; 9.26 − 4.89 = 4.37

SiO_2: 3.65 − 1.24 = 5.12; 5.12 + 1.75 = 11.76; 11.76 − 9.26 = 2.50

Al_2O_3: 17.08 − 1.43 = 15.65; 15.65 − 3.87 = 11.78

FeO: 7.22 + 0.17 = 7.39; 7.39 − 0.70 = 6.69; 6.69 − 1.03 = 5.66

CaO: 11.51 − 0.47 = 11.04; 11.04 − 6.48 = 4.56

$2.50 \times \frac{1}{2} = 1.25$

en: 23.21 − 6.10 = 17.11; 17.11 + 3.49 = 13.73

SiO_2: 13.89 − 3.65 = 10.24

MgO: 9.32 − 2.45 = 6.87

$13.73 \times \frac{1}{2} = 6.865$

$4.37 < 6.865$

fs: 10.39 − 2.70 = 7.69

SiO_2: 4.73 − 1.24 = 3.49

FeO: 5.66 − 1.48 = 4.18

Na_2O: 2.35 − 0.64 = 1.71

* 簡略法 Simplified method.

** 本来の方法 Conventional method.

en 23.21 MgO 9.32 SiO_2 13.89

fs 10.39 FeO 5.66 〃 + 4.73

18.62

$4.89 < 18.62$

$4.89 \times \frac{13.89}{18.62} = 3.65$ —di-en SiO_2

$4.89 \times \frac{4.73}{18.62} = 1.24$ —di-fs SiO_2

SIMPLIFIED METHOD OF THE NORM CALCULATION

Teiko OHMORI*

1. Introduction

A simplified method of the norm calculation is proposed. In the conventional method, weight percentages of oxides in a chemical analysis are converted into molecular numbers to form the norm standard minerals, weight percentages of which are calculated from their molecular numbers respectively. While in the new method, the weight percentages of the norm standard minerals are calculated directly from the weight percentages of oxides in a chemical analysis by reference to the accompanying tables.

2. Applicable range

Among the norm standard minerals composed of one or some of SiO_2, TiO_2, Al_2O_3, Fe_2O_3, FeO(MnO), MgO, CaO, Na_2O, K_2O and P_2O_5, the ones shown in Table A can be calculated. The minerals not shown in the mentioned table, e. g., leucite (*lc*), kaliophilite (*kp*), acmite (*ac*), sodium metasilicate (*ns*), potassium metasilicate (*ks*), titanite (*tn*), perovskite (*pf*), rutile (*ru*), etc. are omitted in this method, because they seldom appear in rocks.

3. Explanation of the tables

Tables 1 to 12 are used for the norm calculation. In every table, figures to one place of decimals of the weight percentages of oxides are shown in the right and left marginal columns. Figures 0 to 9 shown in the uppermost line are of the second place of decimals. Every first column of the two or three below the mentioned figures 0 to 9 shows weight percentages of a norm standard mineral, calculated from weight percentages of component shown at the uppermost parts of the right and left marginal columns. The other one or two columns show weight percentages of the components which are needed to form the norm standard mineral in question.

Coefficients to form the norm standard minerals from the weight percentages of the components are listed in Table B.

An example how to use the tables is shown in Table C. In case that K_2O is 1.42 percent, *or* is 8.39 percent and it needs Al_2O_3 of 1.54 percent and SiO_2 of 5.43 percent.

* Geochemistry & Technical Service Department. Chemistry Section.

4. Calculation

The norm standard minerals are calculated one by one in accordance with the following rules from the weight percentages of oxides obtained through chemical analyses. Calculations of rules 1) to 12) are practiced in all cases.

4.1 The case of excess SiO_2 (oversaturated)

1) An amount of MnO, as it is usually small, is added to that of FeO.
2) An amount of P_2O_5 is allotted for *ap*, 10/3 $CaO \cdot P_2O_5$ by reference to Table 1.
3) An amount of TiO_2 is allotted for *il*, $FeO \cdot TiO_2$ by reference to Table 2.
4) An amount of Fe_2O_3 is allotted for *mt*, $FeO \cdot Fe_2O_3$ by reference to Table 3-1. If there is a deficiency of FeO in the allotment, Rules 5 and 6 are applied instead of Rule 4.
5) An amount of FeO is newly allotted for *mt* by reference to Table 3-2.
6) A remaining amount of Fe_2O_3 after allotment in Rule 5 forms *hm*, Fe_2O_3.
7) An amount of K_2O is allotted for *or*, $K_2O \cdot Al_2O_3 \cdot 6SiO_2$ by reference to Table 4.
8) An amount of Na_2O is allotted for *ab*, $Na_2O \cdot Al_2O_3 \cdot 6SiO_2$ by reference to Table 5.
9) A remaining amount of Al_2O_3 after allotment in Rules 7 and 8 is allotted for *an*, $CaO \cdot Al_2O_3 \cdot 2SiO_2$ by reference to Table 6-2. If there is a deficiency of CaO in the allotment, Rules 10 and 11 are applied instead of Rule 9.
10) An amount of CaO is newly allotted for *an* by reference to Table 6-1.
11) A remaining amount of Al_2O_3 after allotment in Rule 10 forms *C*, Al_2O_3.
12) A remaining amount of CaO after allotment in Rule 9 is allotted for *wo*, $CaO \cdot SiO_2$ by reference to Table 7-1.
13) An amount of MgO is allotted for *en*, $MgO \cdot SiO_2$ by reference to Table 8-1. If there is a deficiency of SiO_2 in the allotment, Rule 28 and the followings are applied instead of Rule 13.
14) An excess of FeO over Fe_2O_3 in Rule 4 is allotted for *fs*, $FeO \cdot SiO_2$ by reference to Table 9-1. If there is a deficiency of SiO_2 in the allotment, Rule 28 and the followings are applied instead of Rules 13 and 14.
15) A remaining amount of SiO_2 after allotment forms *Q*, SiO_2.

The calculation in case that *Q* is formed is over.

Calculation of pyroxenes—how *di*, *hy* and *wo* are formed by the use of *wo*, *en* and *fs* already calculated is shown in Rule 16 and the followings.

16) If *C* is formed in Rule 11, Rule 17 is applied. If *wo* is formed in Rule 12, a total of SiO_2 in *en* (Rule 13) and that in *fs* (Rule 14) are compared with SiO_2 in *wo* (Rule 12). If the former is smaller than the latter, Rule 18 and the followings are applied. If the former is larger than the latter, Rule 21 and the followings are applied.

The case that only *hy*, $(Mg, Fe)O \cdot SiO_2$, is formed

17) A total of *en* (Rule 13) and *fs* (Rule 14) forms *hy*.

The calculation in this case is over. (A calculation example: see Table D)

The case that both *di*, $CaO \cdot (Mg, Fe)O \cdot 2SiO_2$ and *wo* are formed

18) An equal amount of SiO_2 to a total of SiO_2, in *en* (Rule 13) and that in *fs* (Rule

14) is allotted for *wo* in *di* by reference to Table 7-2.
19) A total of *en* (Rule 13), *fs* (Rule 14) and *wo* (Rule 18) forms *di*.
20) A remaining amount of *wo* in Rule 12 subtracted by an amount of that in Rule 18 is allotted for new *wo*, $CaO \cdot SiO_2$. The *wo* in Rule 12 is cancelled.

The calculation in this case is over.

The case that both *di* and *hy* are formed

21) An equal amount of SiO_2 to an amount of that in *wo* (Rule 12) is proportionally allotted for the amounts of SiO_2 in *en* (Rule 13) and that in *fs* (Rule 14).
22) The amount of SiO_2 assigned to the former is allotted for *en* in *di* by reference to Table 8-2.
23) The amount of SiO_2 assigned to the latter is allotted for *fs* in *di* by reference to Table 9-2.
24) A total of *wo* (Rule 12), *en* (Rule 22) and *fs* (Rule 23) forms *di*.
25) A remaining amount of *en* in Rule 13 subtracted by an amount of that in Rule 22 is allotted for *en* in *hy*. The *en* in Rule 13 is cancelled.
26) A remaining amount of *fs* in Rule 14 subtracted by an amount of that in Rule 23 is allotted for *fs* in *hy*. The *fs* in Rule 14 is cancelled.
27) A total of *en* (Rule 25) and *fs* (Rule 26) forms *hy*.

The calculation in this case is over.

4.2 The case that SiO_2 is insufficient (undersaturated)

28) If *C* is formed in Rule 11, Rule 29 and the followings are applied. If *wo* is formed in Rule 12, Rule 43 and the followings are applied.

4.2.1 The case that *di* is not formed

29) An amount of MgO (Rule 13) is allotted for *fo*, $2MgO \cdot SiO_2$ by reference to Table 10-1.
30) An amount of FeO (Rule 14) is allotted for *fa*, $2FeO \cdot SiO_2$ by reference to Table 11-1.
31) A total of SiO_2 in *fo* (Rule 29) and that in *fa* (Rule 30) is subtracted from the remaining SiO_2 in Rule 10. If there is a deficiency of SiO_2, Rule 39 and the followings are applied.

The case that *hy* and *ol* are formed

32) Twice amounts of SiO_2 remaining in Rule 31 are proportionally allotted for the amounts of SiO_2 in *fo* (Rule 29) and that in *fa* (Rule 30).
33) The amount of SiO_2 assigned to the former is allotted for *en* by reference to Table 8-2.
34) The amount of SiO_2 assigned to the latter is allotted for *fs* by reference to Table 9-2.
35) A total of *en* (Rule 33) and *fs* (Rule 34) forms *hy*.
36) A remaining amount of MgO in *fo* (Rule 29) subtracted by an amount of that in *en* (Rule 33) is allotted for *fo* by reference to Table 10-1. The *fo* in Rule 29 is cancelled.
37) A remaining amount of FeO in *fa* (Rule 30) subtracted by an amount of that in *fs* (Rule 34) is allotted for *fa* by reference to Table 11-1. The *fa* in Rule 30 is cancelled.

38) A total of *fo* (Rule 36) and *fa* (Rule 37) forms *ol*, $2(Mg, Fe)O \cdot SiO_2$.

The calculation in this case is over.

The case that *ol* and *ne* are formed

39) A total of *fo* (Rule 29) and *fa* (Rule 30) forms *ol*.

40) A remaining amount of SiO_2 in Rule 10 is subtracted from a total of SiO_2 in *fo* (Rule 29) and that in *fa* (Rule 30).

41) Half a deficiency of SiO_2 in Rule 40 is allotted for *ne*, $Na_2O \cdot Al_2O_3 \cdot 2SiO_2$ by reference to Table 12.

42) A remaining amount of Na_2O in *ab* (Rule 8) subtracted by an amount of that in *ne* (Rule 41) is allotted for *ab* by reference to Table 5. The *ab* in Rule 8 is cancelled.

The calculation in this case is over.

4.2.2 The case that *di* is formed

43) Even if there is a deficiency of SiO_2 in the allotment in Rule 13, an amount of MgO is allotted for provisional *en* by the use of assumptive SiO_2, by reference to Table 8-1.

44) Even if there is a deficiency of SiO_2 in the allotment in Rule 14, an amount of FeO is allotted for provisional *fs* by the use of assumptive SiO_2, by reference to Table 9-1.

45) A total of SiO_2 in *en* (Rule 43) and that in *fs* (Rule 44) is compared with an amount of SiO_2 in *wo* (Rule 12). If the former is smaller than the latter, Rule 46 and the followings are applied. If the former is larger than the latter, Rule 52 and the followings are applied.

The case that *wo* and *ne* are formed

46) An equal amount of SiO_2 to a total of SiO_2 in *en* (Rule 43) and that in *fs* (Rule 44) is allotted for *wo* in *di* by reference to Table 7-2.

47) A total of *en* (Rule 43), *fs* (Rule 44) and *wo* (Rule 46) forms *di*.

48) A remaining amount of *wo* in Rule 12 subtracted by an amount of that in Rule 46 forms *wo*. The *wo* in Rule 12 is cancelled.

49) A remaining amount of SiO_2 in Rule 12 is subtracted from a total of SiO_2 in *en* (Rule 43) and that in *fs* (Rule 44).

50) Half a deficiency of SiO_2 in Rule 49 is allotted for *ne* by reference to Table 12.

51) A remaining amount of Na_2O in *ab* (Rule 8) subtracted by an amount of that in *ne* (Rule 50) is allotted for *ab* by reference to Table 5. The *ab* in Rule 8 is cancelled.

The calculation in this case is over.

Calculation in which *di* is formed

52) An equal amount of SiO_2 to an amount of that in *wo* (Rule 12) is proportionally allotted for amounts of SiO_2 in *en* (Rule 43) and that in *fs* (Rule 44).

53) The amount of SiO_2 assigned to the former is allotted for *en* in *di* by reference to Table 8-2.

54) The amount of SiO_2 assigned to the latter is allotted for *fs* in *di* by reference to Table 9-2.

55) A total of *wo* (Rule 12), *en* (Rule 53) and *fs* (Rule 54) forms *di*.

56) A total of SiO_2 in *en* (Rule 53) and that in *fs* (Rule 54) is subtracted from the remaining SiO_2 in the allotment in Rule 12. If there is a deficiency of SiO_2, Rule 68 and the followings are applied.
57) A remaining amount of *en* in Rule 43 subtracted by *en* in Rule 53 forms provisional *en* in *hy*. The amount of SiO_2 in *en* (Rule 53) is subtracted from the amount of that in *en* (Rule 43).
58) A remaining amount of *fs* in Rule 44 subtracted by *fs* in Rule 54 forms provisional *fs* in *hy*. The amount of SiO_2 in *fs* (Rule 54) is subtracted from the amount of that in *fs* (Rule 44).
59) Half a total of the remaining amount of SiO_2 in *en* (Rule 57) and that in *fs* (Rule 58) is compared with the remaining amount of SiO_2 in Rule 56. If the former is smaller than the latter, Rule 60 and the followings are applied. If the former is larger than the latter, Rule 68 and the followings are applied.

The case that *hy* and *ol* are formed
60) A remaining amount of SiO_2 in Rule 56 is subtracted from a total of SiO_2 in *en* (Rule 57) and that in *fs* (Rule 58).
61) A deficiency of SiO_2 (Rule 60) is proportionally allotted for the amounts of SiO_2 in *en* (Rule 57) and that in *fs* (Rule 58).
62) The amount of SiO_2 assigned to the former is allotted for *fo* by reference to Table 10-2.
63) The amount of SiO_2 assigned to the latter is allotted for *fa* by reference to Table 11-2.
64) A total of *fo* (Rule 62) and *fa* (Rule 63) forms *ol*.
65) A remaining amount of MgO in *en* (Rule 57) subtracted by an amount of that in *fo* (Rule 62) is allotted for *en* in *hy* by reference to Rule 8-1. The *en* in Rules 43 and 57 are cancelled.
66) A remaining amount of FeO in *fs* (Rule 58) subtracted by an amount of that in *fa* (Rule 63) is allotted for *fs* in *hy* by reference to Rule 9-1. The *fs* in Rules 44 and 58 are cancelled.
67) A total of *en* (Rule 65) and *fs* (Rule 66) forms *hy*.
The calculation in this case is over.

The case that *ol* and *ne* are formed
68) A remaining amount of MgO in *en* (Rule 43) subtracted by an amount of that in *en* (Rule 53) is allotted for *fo* by reference to Table 10-1.
69) A remaining amount of FeO in *fs* (Rule 44) subtracted by an amount of that in *fs* (Rule 54) is allotted for *fa* by reference to Table 10-1.
70) A total of *fo* (Rule 68) and *fa* (Rule 69) forms *ol*.
71) A remaining amount of SiO_2 in Rule 12 is subtracted from a total of every SiO_2 in *en* (Rule 53), *fs* (Rule 54), *fo* (Rule 68) and *fa* (Rule 69).
72) Half a deficient amount of SiO_2 (Rule 71) is allotted for *ne* by reference to Table 12.
73) A remaining amount of Na_2O in *ab* (Rule 8) subtracted by an amount of that in *ne* (Rule 72) is allotted for *ab* by reference to Table 5. The *ab* in Rule 8 is cancelled. If the calculations in Rules 57 and 58 have been done, the *en* (Rule 57) and the *fs* (Rule 58) are cancelled.
The calculation in this case is over. (A calculation example : see Table E).

Tables 1～12

ap
P_2O_5% 0.01～3.00

Table 1

P205	0		1		2		3		4	
%	AP	CAO	AP	CAO	AP	CAO	AP	CAO	AP	CAO
0.	0.	0.	0.02	0.01	0.05	0.03	0.07	0.04	0.09	0.05
0.1	0.23	0.13	0.25	0.14	0.28	0.16	0.30	0.17	0.32	0.18
0.2	0.46	0.26	0.49	0.28	0.51	0.29	0.53	0.30	0.56	0.32
0.3	0.70	0.40	0.72	0.41	0.74	0.42	0.76	0.43	0.79	0.45
0.4	0.93	0.53	0.95	0.54	0.97	0.55	1.00	0.57	1.02	0.58
0.5	1.16	0.66	1.18	0.67	1.20	0.68	1.23	0.70	1.25	0.71
0.6	1.39	0.79	1.41	0.80	1.44	0.82	1.46	0.83	1.48	0.84
0.7	1.62	0.92	1.65	0.94	1.67	0.95	1.69	0.96	1.71	0.97
0.8	1.85	1.05	1.88	1.07	1.90	1.08	1.92	1.09	1.95	1.11
0.9	2.09	1.19	2.11	1.20	2.13	1.21	2.15	1.22	2.18	1.24
1.0	2.32	1.32	2.34	1.33	2.36	1.34	2.39	1.36	2.41	1.37
1.1	2.55	1.45	2.57	1.46	2.59	1.47	2.62	1.49	2.64	1.50
1.2	2.78	1.58	2.80	1.59	2.83	1.61	2.85	1.62	2.87	1.63
1.3	3.01	1.71	3.04	1.73	3.06	1.74	3.08	1.75	3.10	1.76
1.4	3.24	1.84	3.27	1.86	3.29	1.87	3.31	1.88	3.34	1.90
1.5	3.48	1.98	3.50	1.99	3.52	2.00	3.54	2.01	3.57	2.03
1.6	3.71	2.11	3.73	2.12	3.75	2.13	3.78	2.15	3.80	2.16
1.7	3.94	2.24	3.96	2.25	3.99	2.27	4.01	2.28	4.03	2.29
1.8	4.17	2.37	4.19	2.38	4.22	2.40	4.24	2.41	4.26	2.42
1.9	4.40	2.50	4.43	2.52	4.45	2.53	4.47	2.54	4.49	2.55
2.0	4.63	2.63	4.66	2.65	4.68	2.66	4.70	2.67	4.73	2.69
2.1	4.87	2.77	4.89	2.78	4.91	2.79	4.94	2.81	4.96	2.82
2.2	5.10	2.90	5.12	2.91	5.14	2.92	5.17	2.94	5.19	2.95
2.3	5.33	3.03	5.35	3.04	5.38	3.06	5.40	3.07	5.42	3.08
2.4	5.56	3.16	5.58	3.17	5.61	3.19	5.63	3.20	5.65	3.21
2.5	5.79	3.29	5.82	3.31	5.84	3.32	5.86	3.33	5.89	3.35
2.6	6.02	3.42	6.05	3.44	6.07	3.45	6.09	3.46	6.12	3.48
2.7	6.26	3.56	6.28	3.57	6.30	3.58	6.33	3.60	6.35	3.61
2.8	6.49	3.69	6.51	3.70	6.53	3.71	6.56	3.73	6.58	3.74
2.9	6.72	3.82	6.74	3.83	6.77	3.85	6.79	3.86	6.81	3.87
3.0	6.95	3.95								

5		6		7		8		9		P205
AP	CAO	AP	CAO	AP	CAO	AP	CAO	AP	CAO	%
0.12	0.07	0.14	0.08	0.16	0.09	0.19	0.11	0.21	0.12	0.
0.35	0.20	0.37	0.21	0.39	0.22	0.42	0.24	0.44	0.25	0.1
0.58	0.33	0.60	0.34	0.63	0.36	0.65	0.37	0.67	0.38	0.2
0.81	0.46	0.83	0.47	0.86	0.49	0.88	0.50	0.90	0.51	0.3
1.04	0.59	1.07	0.61	1.09	0.62	1.11	0.63	1.14	0.65	0.4
1.27	0.72	1.30	0.74	1.32	0.75	1.34	0.76	1.37	0.78	0.5
1.51	0.86	1.53	0.87	1.55	0.88	1.58	0.90	1.60	0.91	0.6
1.74	0.99	1.76	1.00	1.78	1.01	1.81	1.03	1.83	1.04	0.7
1.97	1.12	1.99	1.13	2.02	1.15	2.04	1.16	2.06	1.17	0.8
2.20	1.25	2.22	1.26	2.25	1.28	2.27	1.29	2.29	1.30	0.9
2.43	1.38	2.46	1.40	2.48	1.41	2.50	1.42	2.53	1.44	1.0
2.66	1.51	2.69	1.53	2.71	1.54	2.73	1.55	2.76	1.57	1.1
2.90	1.65	2.92	1.66	2.94	1.67	2.97	1.69	2.99	1.70	1.2
3.13	1.78	3.15	1.79	3.17	1.80	3.20	1.82	3.22	1.83	1.3
3.36	1.91	3.38	1.92	3.41	1.94	3.43	1.95	3.45	1.96	1.4
3.59	2.04	3.61	2.05	3.64	2.07	3.66	2.08	3.68	2.09	1.5
3.82	2.17	3.85	2.19	3.87	2.20	3.89	2.21	3.92	2.23	1.6
4.05	2.30	4.08	2.32	4.10	2.33	4.12	2.34	4.15	2.36	1.7
4.29	2.44	4.31	2.45	4.33	2.46	4.36	2.48	4.38	2.49	1.8
4.52	2.57	4.54	2.58	4.56	2.59	4.59	2.61	4.61	2.62	1.9
4.75	2.70	4.77	2.71	4.80	2.73	4.82	2.74	4.84	2.75	2.0
4.98	2.83	5.00	2.84	5.03	2.86	5.05	2.87	5.07	2.88	2.1
5.21	2.96	5.24	2.98	5.26	2.99	5.28	3.00	5.31	3.02	2.2
5.44	3.09	5.47	3.11	5.49	3.12	5.51	3.13	5.54	3.15	2.3
5.68	3.23	5.70	3.24	5.72	3.25	5.75	3.27	5.77	3.28	2.4
5.91	3.36	5.93	3.37	5.95	3.38	5.98	3.40	6.00	3.41	2.5
6.14	3.49	6.16	3.50	6.19	3.52	6.21	3.53	6.23	3.54	2.6
6.37	3.62	6.39	3.63	6.42	3.65	6.44	3.66	6.46	3.67	2.7
6.60	3.75	6.63	3.77	6.65	3.78	6.67	3.79	6.70	3.81	2.8
6.83	3.88	6.86	3.90	6.88	3.91	6.90	3.92	6.93	3.94	2.9
										3.0

il
TiO_2% 0.01～3.00

Table 2

TI02	0		1		2		3		4	
%	IL	FEO	IL	FEO	IL	FEO	IL	FEO	IL	FEO
0.	0.	0.	0.02	0.01	0.04	0.02	0.06	0.03	0.08	0.04
0.1	0.19	0.09	0.21	0.10	0.23	0.11	0.25	0.12	0.27	0.13
0.2	0.38	0.18	0.40	0.19	0.42	0.20	0.44	0.21	0.46	0.22
0.3	0.57	0.27	0.59	0.28	0.61	0.29	0.63	0.30	0.65	0.31
0.4	0.76	0.36	0.78	0.37	0.80	0.38	0.82	0.39	0.84	0.40
0.5	0.95	0.45	0.97	0.46	0.99	0.47	1.01	0.48	1.03	0.49
0.6	1.14	0.54	1.16	0.55	1.18	0.56	1.20	0.57	1.22	0.58
0.7	1.33	0.63	1.35	0.64	1.37	0.65	1.39	0.66	1.41	0.67
0.8	1.52	0.72	1.54	0.73	1.56	0.74	1.58	0.75	1.60	0.76
0.9	1.71	0.81	1.73	0.82	1.75	0.83	1.77	0.84	1.79	0.85
1.0	1.90	0.90	1.92	0.91	1.94	0.92	1.96	0.93	1.98	0.94
1.1	2.09	0.99	2.11	1.00	2.13	1.01	2.15	1.02	2.17	1.03
1.2	2.28	1.08	2.30	1.09	2.32	1.10	2.34	1.11	2.36	1.12
1.3	2.47	1.17	2.49	1.18	2.51	1.19	2.53	1.20	2.54	1.20
1.4	2.66	1.26	2.68	1.27	2.70	1.28	2.72	1.29	2.73	1.29
1.5	2.85	1.35	2.87	1.36	2.89	1.37	2.91	1.38	2.92	1.38
1.6	3.04	1.44	3.06	1.45	3.08	1.46	3.10	1.47	3.11	1.47
1.7	3.23	1.53	3.25	1.54	3.27	1.55	3.29	1.56	3.30	1.56
1.8	3.42	1.62	3.44	1.63	3.46	1.64	3.48	1.65	3.49	1.65
1.9	3.61	1.71	3.63	1.72	3.65	1.73	3.67	1.74	3.68	1.74
2.0	3.80	1.80	3.82	1.81	3.84	1.82	3.86	1.83	3.87	1.83
2.1	3.99	1.89	4.01	1.90	4.03	1.91	4.05	1.92	4.06	1.92
2.2	4.18	1.98	4.20	1.99	4.22	2.00	4.24	2.01	4.25	2.01
2.3	4.37	2.07	4.39	2.08	4.41	2.09	4.43	2.10	4.44	2.10
2.4	4.56	2.16	4.58	2.17	4.60	2.18	4.62	2.19	4.63	2.19
2.5	4.75	2.25	4.77	2.26	4.79	2.27	4.81	2.28	4.82	2.28
2.6	4.94	2.34	4.96	2.35	4.98	2.36	4.99	2.36	5.01	2.37
2.7	5.13	2.43	5.15	2.44	5.17	2.45	5.18	2.45	5.20	2.46
2.8	5.32	2.52	5.34	2.53	5.36	2.54	5.37	2.54	5.39	2.55
2.9	5.51	2.61	5.53	2.62	5.55	2.63	5.56	2.63	5.58	2.64
3.0	5.70	2.70								

5		6		7		8		9		TIO2
IL	FEO	IL	FEO	IL	FEO	IL	FEO	IL	FEO	%
0.09	0.04	0.11	0.05	0.13	0.06	0.15	0.07	0.17	0.08	0.
0.28	0.13	0.30	0.14	0.32	0.15	0.34	0.16	0.36	0.17	0.1
0.47	0.22	0.49	0.23	0.51	0.24	0.53	0.25	0.55	0.26	0.2
0.66	0.31	0.68	0.32	0.70	0.33	0.72	0.34	0.74	0.35	0.3
0.85	0.40	0.87	0.41	0.89	0.42	0.91	0.43	0.93	0.44	0.4
1.04	0.49	1.06	0.50	1.08	0.51	1.10	0.52	1.12	0.53	0.5
1.23	0.58	1.25	0.59	1.27	0.60	1.29	0.61	1.31	0.62	0.6
1.42	0.67	1.44	0.68	1.46	0.69	1.48	0.70	1.50	0.71	0.7
1.61	0.76	1.63	0.77	1.65	0.78	1.67	0.79	1.69	0.80	0.8
1.80	0.85	1.82	0.86	1.84	0.87	1.86	0.88	1.88	0.89	0.9
1.99	0.94	2.01	0.95	2.03	0.96	2.05	0.97	2.07	0.98	1.0
2.18	1.03	2.20	1.04	2.22	1.05	2.24	1.06	2.26	1.07	1.1
2.37	1.12	2.39	1.13	2.41	1.14	2.43	1.15	2.45	1.16	1.2
2.56	1.21	2.58	1.22	2.60	1.23	2.62	1.24	2.64	1.25	1.3
2.75	1.30	2.77	1.31	2.79	1.32	2.81	1.33	2.83	1.34	1.4
2.94	1.39	2.96	1.40	2.98	1.41	3.00	1.42	3.02	1.43	1.5
3.13	1.48	3.15	1.49	3.17	1.50	3.19	1.51	3.21	1.52	1.6
3.32	1.57	3.34	1.58	3.36	1.59	3.38	1.60	3.40	1.61	1.7
3.51	1.66	3.53	1.67	3.55	1.68	3.57	1.69	3.59	1.70	1.8
3.70	1.75	3.72	1.76	3.74	1.77	3.76	1.78	3.78	1.79	1.9
3.89	1.84	3.91	1.85	3.93	1.86	3.95	1.87	3.97	1.88	2.0
4.08	1.93	4.10	1.94	4.12	1.95	4.14	1.96	4.16	1.97	2.1
4.27	2.02	4.29	2.03	4.31	2.04	4.33	2.05	4.35	2.06	2.2
4.46	2.11	4.48	2.12	4.50	2.13	4.52	2.14	4.54	2.15	2.3
4.65	2.20	4.67	2.21	4.69	2.22	4.71	2.23	4.73	2.24	2.4
4.84	2.29	4.86	2.30	4.88	2.31	4.90	2.32	4.92	2.33	2.5
5.03	2.38	5.05	2.39	5.07	2.40	5.09	2.41	5.11	2.42	2.6
5.22	2.47	5.24	2.48	5.26	2.49	5.28	2.50	5.30	2.51	2.7
5.41	2.56	5.43	2.57	5.45	2.58	5.47	2.59	5.49	2.60	2.8
5.60	2.65	5.62	2.66	5.64	2.67	5.66	2.68	5.68	2.69	2.9
										3.0

mt
Fe_2O_3% 0.01～4.99

Table 3-1

FE203	0		1		2		3		4	
%	MT	FEO	MT	FEO	MT	FEO	MT	FEO	MT	FEO
0.	0.	0.	0.01	0.	0.03	0.01	0.04	0.01	0.06	0.02
0.1	0.14	0.04	0.16	0.05	0.17	0.05	0.19	0.06	0.20	0.06
0.2	0.29	0.09	0.30	0.09	0.32	0.10	0.33	0.10	0.35	0.11
0.3	0.43	0.13	0.45	0.14	0.46	0.14	0.48	0.15	0.49	0.15
0.4	0.58	0.18	0.59	0.18	0.61	0.19	0.62	0.19	0.64	0.20
0.5	0.72	0.22	0.74	0.23	0.75	0.23	0.77	0.24	0.78	0.24
0.6	0.87	0.27	0.88	0.27	0.90	0.28	0.91	0.28	0.93	0.29
0.7	1.01	0.31	1.03	0.32	1.04	0.32	1.06	0.33	1.07	0.33
0.8	1.16	0.36	1.17	0.36	1.19	0.37	1.20	0.37	1.22	0.38
0.9	1.30	0.40	1.32	0.41	1.33	0.41	1.35	0.42	1.36	0.42
1.0	1.45	0.45	1.46	0.45	1.48	0.46	1.49	0.46	1.51	0.47
1.1	1.59	0.49	1.61	0.50	1.62	0.50	1.64	0.51	1.65	0.51
1.2	1.74	0.54	1.75	0.54	1.77	0.55	1.78	0.55	1.80	0.56
1.3	1.88	0.58	1.90	0.59	1.91	0.59	1.93	0.60	1.94	0.60
1.4	2.03	0.63	2.04	0.63	2.06	0.64	2.07	0.64	2.09	0.65
1.5	2.17	0.67	2.19	0.68	2.20	0.68	2.22	0.69	2.23	0.69
1.6	2.32	0.72	2.33	0.72	2.35	0.73	2.36	0.73	2.38	0.74
1.7	2.46	0.76	2.48	0.77	2.49	0.77	2.51	0.78	2.52	0.78
1.8	2.61	0.81	2.62	0.81	2.64	0.82	2.65	0.82	2.67	0.83
1.9	2.75	0.85	2.77	0.86	2.78	0.86	2.80	0.87	2.81	0.87
2.0	2.90	0.90	2.91	0.90	2.93	0.91	2.94	0.91	2.96	0.92
2.1	3.04	0.94	3.06	0.95	3.07	0.95	3.09	0.96	3.10	0.96
2.2	3.19	0.99	3.20	0.99	3.22	1.00	3.23	1.00	3.25	1.01
2.3	3.33	1.03	3.35	1.04	3.36	1.04	3.38	1.05	3.39	1.05
2.4	3.48	1.08	3.49	1.08	3.51	1.09	3.52	1.09	3.54	1.10
2.5	3.62	1.12	3.64	1.13	3.65	1.13	3.67	1.14	3.68	1.14
2.6	3.77	1.17	3.78	1.17	3.80	1.18	3.81	1.18	3.83	1.19
2.7	3.91	1.21	3.93	1.22	3.94	1.22	3.96	1.23	3.97	1.23
2.8	4.06	1.26	4.07	1.26	4.09	1.27	4.10	1.27	4.12	1.28
2.9	4.20	1.30	4.22	1.31	4.23	1.31	4.25	1.32	4.26	1.32
3.0	4.35	1.35	4.36	1.35	4.38	1.36	4.39	1.36	4.41	1.37
3.1	4.49	1.39	4.51	1.40	4.52	1.40	4.54	1.41	4.55	1.41
3.2	4.64	1.44	4.65	1.44	4.67	1.45	4.68	1.45	4.70	1.46
3.3	4.78	1.48	4.80	1.49	4.81	1.49	4.83	1.50	4.84	1.50
3.4	4.93	1.53	4.94	1.53	4.96	1.54	4.97	1.54	4.99	1.55
3.5	5.07	1.57	5.09	1.58	5.10	1.58	5.12	1.59	5.13	1.59
3.6	5.22	1.62	5.23	1.62	5.25	1.63	5.26	1.63	5.28	1.64
3.7	5.36	1.66	5.38	1.67	5.39	1.67	5.41	1.68	5.42	1.68
3.8	5.51	1.71	5.52	1.71	5.54	1.72	5.55	1.72	5.57	1.73
3.9	5.65	1.75	5.67	1.76	5.68	1.76	5.70	1.77	5.71	1.77
4.0	5.80	1.80	5.81	1.80	5.83	1.81	5.84	1.81	5.86	1.82
4.1	5.94	1.84	5.96	1.85	5.97	1.85	5.99	1.86	6.00	1.86
4.2	6.09	1.89	6.10	1.89	6.12	1.90	6.13	1.90	6.15	1.91
4.3	6.23	1.93	6.25	1.94	6.26	1.94	6.28	1.95	6.29	1.95
4.4	6.38	1.98	6.39	1.98	6.41	1.99	6.42	1.99	6.44	2.00
4.5	6.52	2.02	6.54	2.03	6.55	2.03	6.57	2.04	6.58	2.04
4.6	6.67	2.07	6.68	2.07	6.70	2.08	6.71	2.08	6.73	2.09
4.7	6.81	2.11	6.83	2.12	6.84	2.12	6.86	2.13	6.87	2.13
4.8	6.96	2.16	6.97	2.16	6.99	2.17	7.00	2.17	7.02	2.18
4.9	7.10	2.20	7.12	2.21	7.13	2.21	7.15	2.22	7.16	2.22

5		6		7		8		9		FE203
MT	FEO	MT	FEO	MT	FEO	MT	FEO	MT	FEO	%
0.07	0.02	0.09	0.03	0.10	0.03	0.12	0.04	0.13	0.04	0.
0.22	0.07	0.23	0.07	0.25	0.08	0.26	0.08	0.28	0.09	0.1
0.36	0.11	0.38	0.12	0.39	0.12	0.41	0.13	0.42	0.13	0.2
0.51	0.16	0.52	0.16	0.54	0.17	0.55	0.17	0.57	0.18	0.3
0.65	0.20	0.67	0.21	0.68	0.21	0.70	0.22	0.71	0.22	0.4
0.80	0.25	0.81	0.25	0.83	0.26	0.84	0.26	0.86	0.27	0.5
0.94	0.29	0.96	0.30	0.97	0.30	0.99	0.31	1.00	0.31	0.6
1.09	0.34	1.10	0.34	1.12	0.35	1.13	0.35	1.15	0.36	0.7
1.23	0.38	1.25	0.39	1.26	0.39	1.28	0.40	1.29	0.40	0.8
1.38	0.43	1.39	0.43	1.41	0.44	1.42	0.44	1.44	0.45	0.9
1.52	0.47	1.54	0.48	1.55	0.48	1.57	0.49	1.58	0.49	1.0
1.67	0.52	1.68	0.52	1.70	0.53	1.71	0.53	1.73	0.54	1.1
1.81	0.56	1.83	0.57	1.84	0.57	1.86	0.58	1.87	0.58	1.2
1.96	0.61	1.97	0.61	1.99	0.62	2.00	0.62	2.02	0.63	1.3
2.10	0.65	2.12	0.66	2.13	0.66	2.15	0.67	2.16	0.67	1.4
2.25	0.70	2.26	0.70	2.28	0.71	2.29	0.71	2.31	0.72	1.5
2.39	0.74	2.41	0.75	2.42	0.75	2.44	0.76	2.45	0.76	1.6
2.54	0.79	2.55	0.79	2.57	0.80	2.58	0.80	2.60	0.81	1.7
2.68	0.83	2.70	0.84	2.71	0.84	2.73	0.85	2.74	0.85	1.8
2.83	0.88	2.84	0.88	2.86	0.89	2.87	0.89	2.89	0.90	1.9
2.97	0.92	2.99	0.93	3.00	0.93	3.02	0.94	3.03	0.94	2.0
3.12	0.97	3.13	0.97	3.15	0.98	3.16	0.98	3.18	0.99	2.1
3.26	1.01	3.28	1.02	3.29	1.02	3.31	1.03	3.32	1.03	2.2
3.41	1.06	3.42	1.06	3.44	1.07	3.45	1.07	3.47	1.08	2.3
3.55	1.10	3.57	1.11	3.58	1.11	3.60	1.12	3.61	1.12	2.4
3.70	1.15	3.71	1.15	3.73	1.16	3.74	1.16	3.76	1.17	2.5
3.84	1.19	3.86	1.20	3.87	1.20	3.89	1.21	3.90	1.21	2.6
3.99	1.24	4.00	1.24	4.02	1.25	4.03	1.25	4.05	1.26	2.7
4.13	1.28	4.15	1.29	4.16	1.29	4.18	1.30	4.19	1.30	2.8
4.28	1.33	4.29	1.33	4.31	1.34	4.32	1.34	4.34	1.35	2.9
4.42	1.37	4.44	1.38	4.45	1.38	4.47	1.39	4.48	1.39	3.0
4.57	1.42	4.58	1.42	4.60	1.43	4.61	1.43	4.63	1.44	3.1
4.71	1.46	4.73	1.47	4.74	1.47	4.76	1.48	4.77	1.48	3.2
4.86	1.51	4.87	1.51	4.89	1.52	4.90	1.52	4.92	1.53	3.3
5.00	1.55	5.02	1.56	5.03	1.56	5.05	1.57	5.06	1.57	3.4
5.15	1.60	5.16	1.60	5.18	1.61	5.19	1.61	5.21	1.62	3.5
5.29	1.64	5.31	1.65	5.32	1.65	5.34	1.66	5.35	1.66	3.6
5.44	1.69	5.45	1.69	5.47	1.70	5.48	1.70	5.50	1.71	3.7
5.58	1.73	5.60	1.74	5.61	1.74	5.63	1.75	5.64	1.75	3.8
5.73	1.78	5.74	1.78	5.76	1.79	5.77	1.79	5.79	1.80	3.9
5.87	1.82	5.89	1.83	5.90	1.83	5.92	1.84	5.93	1.84	4.0
6.02	1.87	6.03	1.87	6.05	1.88	6.06	1.88	6.08	1.89	4.1
6.16	1.91	6.18	1.92	6.19	1.92	6.21	1.93	6.22	1.93	4.2
6.31	1.96	6.32	1.96	6.34	1.97	6.35	1.97	6.37	1.98	4.3
6.45	2.00	6.47	2.01	6.48	2.01	6.50	2.02	6.51	2.02	4.4
6.60	2.05	6.61	2.05	6.63	2.06	6.64	2.06	6.66	2.07	4.5
6.74	2.09	6.76	2.10	6.77	2.10	6.79	2.11	6.80	2.11	4.6
6.89	2.14	6.90	2.14	6.92	2.15	6.93	2.15	6.95	2.16	4.7
7.03	2.18	7.05	2.19	7.06	2.19	7.08	2.20	7.09	2.20	4.8
7.18	2.23	7.19	2.23	7.21	2.24	7.22	2.24	7.24	2.25	4.9

mt
Fe_2O_3% 5.00～10.00

Table 3-1

FE203	0		1		2		3		4	
%	MT	FEO	MT	FEO	MT	FEO	MT	FEO	MT	FEO
5.0	7.25	2.25	7.26	2.25	7.28	2.26	7.29	2.26	7.31	2.27
5.1	7.39	2.29	7.41	2.30	7.42	2.30	7.44	2.31	7.45	2.31
5.2	7.54	2.34	7.55	2.34	7.57	2.35	7.58	2.35	7.60	2.36
5.3	7.68	2.38	7.70	2.39	7.71	2.39	7.73	2.40	7.74	2.40
5.4	7.83	2.43	7.84	2.43	7.86	2.44	7.87	2.44	7.89	2.45
5.5	7.97	2.47	7.99	2.48	8.00	2.48	8.02	2.49	8.03	2.49
5.6	8.12	2.52	8.13	2.52	8.15	2.53	8.16	2.53	8.18	2.54
5.7	8.26	2.56	8.28	2.57	8.29	2.57	8.31	2.58	8.32	2.58
5.8	8.41	2.61	8.42	2.61	8.44	2.62	8.45	2.62	8.47	2.63
5.9	8.55	2.65	8.57	2.66	8.58	2.66	8.60	2.67	8.61	2.67
6.0	8.70	2.70	8.71	2.70	8.73	2.71	8.74	2.71	8.76	2.72
6.1	8.84	2.74	8.86	2.75	8.87	2.75	8.89	2.76	8.90	2.76
6.2	8.99	2.79	9.00	2.79	9.02	2.80	9.03	2.80	9.05	2.81
6.3	9.13	2.83	9.15	2.84	9.16	2.84	9.18	2.85	9.19	2.85
6.4	9.28	2.88	9.29	2.88	9.31	2.89	9.32	2.89	9.34	2.90
6.5	9.42	2.92	9.44	2.93	9.45	2.93	9.47	2.94	9.48	2.94
6.6	9.57	2.97	9.58	2.97	9.60	2.98	9.61	2.98	9.63	2.99
6.7	9.71	3.01	9.73	3.02	9.74	3.02	9.76	3.03	9.77	3.03
6.8	9.86	3.06	9.87	3.06	9.89	3.07	9.90	3.07	9.92	3.08
6.9	10.00	3.10	10.02	3.11	10.03	3.11	10.05	3.12	10.06	3.12
7.0	10.15	3.15	10.16	3.15	10.18	3.16	10.19	3.16	10.21	3.17
7.1	10.29	3.19	10.31	3.20	10.32	3.20	10.34	3.21	10.35	3.21
7.2	10.44	3.24	10.45	3.24	10.47	3.25	10.48	3.25	10.50	3.26
7.3	10.58	3.28	10.60	3.29	10.61	3.29	10.63	3.30	10.64	3.30
7.4	10.73	3.33	10.74	3.33	10.76	3.34	10.77	3.34	10.79	3.35
7.5	10.87	3.37	10.89	3.38	10.90	3.38	10.92	3.39	10.93	3.39
7.6	11.02	3.42	11.03	3.42	11.05	3.43	11.06	3.43	11.08	3.44
7.7	11.16	3.46	11.18	3.47	11.19	3.47	11.21	3.48	11.22	3.48
7.8	11.31	3.51	11.32	3.51	11.34	3.52	11.35	3.52	11.37	3.53
7.9	11.45	3.55	11.47	3.56	11.48	3.56	11.50	3.57	11.51	3.57
8.0	11.60	3.60	11.61	3.60	11.63	3.61	11.64	3.61	11.66	3.62
8.1	11.74	3.64	11.76	3.65	11.77	3.65	11.79	3.66	11.80	3.66
8.2	11.89	3.69	11.90	3.69	11.92	3.70	11.93	3.70	11.95	3.71
8.3	12.03	3.73	12.05	3.74	12.06	3.74	12.08	3.75	12.09	3.75
8.4	12.18	3.78	12.19	3.78	12.21	3.79	12.22	3.79	12.24	3.80
8.5	12.32	3.82	12.34	3.83	12.35	3.83	12.37	3.84	12.38	3.84
8.6	12.47	3.87	12.48	3.87	12.50	3.88	12.51	3.88	12.53	3.89
8.7	12.61	3.91	12.63	3.92	12.64	3.92	12.66	3.93	12.67	3.93
8.8	12.76	3.96	12.77	3.96	12.79	3.97	12.80	3.97	12.82	3.98
8.9	12.90	4.00	12.92	4.01	12.93	4.01	12.95	4.02	12.96	4.02
9.0	13.05	4.05	13.06	4.05	13.08	4.06	13.09	4.06	13.11	4.07
9.1	13.19	4.09	13.21	4.10	13.22	4.10	13.24	4.11	13.25	4.11
9.2	13.34	4.14	13.35	4.14	13.37	4.15	13.38	4.15	13.40	4.16
9.3	13.48	4.18	13.50	4.19	13.51	4.19	13.53	4.20	13.54	4.20
9.4	13.63	4.23	13.64	4.23	13.66	4.24	13.67	4.24	13.69	4.25
9.5	13.77	4.27	13.79	4.28	13.80	4.28	13.82	4.29	13.83	4.29
9.6	13.92	4.32	13.93	4.32	13.95	4.33	13.96	4.33	13.98	4.34
9.7	14.06	4.36	14.08	4.37	14.09	4.37	14.11	4.38	14.12	4.38
9.8	14.21	4.41	14.22	4.41	14.24	4.42	14.25	4.42	14.27	4.43
9.9	14.35	4.45	14.37	4.46	14.38	4.46	14.40	4.47	14.41	4.47
10.0	14.50	4.50								

(continued)

5		6		7		8		9		FE203
MT	FEO	MT	FEO	MT	FEO	MT	FEO	MT	FEO	%
7.32	2.27	7.34	2.28	7.35	2.28	7.37	2.29	7.38	2.29	5.0
7.47	2.32	7.48	2.32	7.50	2.33	7.51	2.33	7.53	2.34	5.1
7.61	2.36	7.63	2.37	7.64	2.37	7.66	2.38	7.67	2.38	5.2
7.76	2.41	7.77	2.41	7.79	2.42	7.80	2.42	7.82	2.43	5.3
7.90	2.45	7.92	2.46	7.93	2.46	7.95	2.47	7.96	2.47	5.4
8.05	2.50	8.06	2.50	8.08	2.51	8.09	2.51	8.10	2.51	5.5
8.19	2.54	8.21	2.55	8.22	2.55	8.24	2.56	8.25	2.56	5.6
8.34	2.59	8.35	2.59	8.37	2.60	8.38	2.60	8.39	2.60	5.7
8.48	2.63	8.50	2.64	8.51	2.64	8.53	2.65	8.54	2.65	5.8
8.63	2.68	8.64	2.68	8.66	2.69	8.67	2.69	8.68	2.69	5.9
8.77	2.72	8.79	2.73	8.80	2.73	8.82	2.74	8.83	2.74	6.0
8.92	2.77	8.93	2.77	8.95	2.78	8.96	2.78	8.97	2.78	6.1
9.06	2.81	9.08	2.82	9.09	2.82	9.11	2.83	9.12	2.83	6.2
9.21	2.86	9.22	2.86	9.24	2.87	9.25	2.87	9.26	2.87	6.3
9.35	2.90	9.37	2.91	9.38	2.91	9.40	2.92	9.41	2.92	6.4
9.50	2.95	9.51	2.95	9.53	2.96	9.54	2.96	9.55	2.96	6.5
9.64	2.99	9.66	3.00	9.67	3.00	9.69	3.01	9.70	3.01	6.6
9.79	3.04	9.80	3.04	9.82	3.05	9.83	3.05	9.84	3.05	6.7
9.93	3.08	9.95	3.09	9.96	3.09	9.98	3.10	9.99	3.10	6.8
10.08	3.13	10.09	3.13	10.11	3.14	10.12	3.14	10.13	3.14	6.9
10.22	3.17	10.24	3.18	10.25	3.18	10.27	3.19	10.28	3.19	7.0
10.37	3.22	10.38	3.22	10.40	3.23	10.41	3.23	10.42	3.23	7.1
10.51	3.26	10.53	3.27	10.54	3.27	10.56	3.28	10.57	3.28	7.2
10.66	3.31	10.67	3.31	10.69	3.32	10.70	3.32	10.71	3.32	7.3
10.80	3.35	10.82	3.36	10.83	3.36	10.85	3.37	10.86	3.37	7.4
10.95	3.40	10.96	3.40	10.98	3.41	10.99	3.41	11.00	3.41	7.5
11.09	3.44	11.11	3.45	11.12	3.45	11.14	3.46	11.15	3.46	7.6
11.24	3.49	11.25	3.49	11.27	3.50	11.28	3.50	11.29	3.50	7.7
11.38	3.53	11.40	3.54	11.41	3.54	11.43	3.55	11.44	3.55	7.8
11.53	3.58	11.54	3.58	11.56	3.59	11.57	3.59	11.58	3.59	7.9
11.67	3.62	11.69	3.63	11.70	3.63	11.72	3.64	11.73	3.64	8.0
11.82	3.67	11.83	3.67	11.85	3.68	11.86	3.68	11.87	3.68	8.1
11.96	3.71	11.98	3.72	11.99	3.72	12.01	3.73	12.02	3.73	8.2
12.11	3.76	12.12	3.76	12.14	3.77	12.15	3.77	12.16	3.77	8.3
12.25	3.80	12.27	3.81	12.28	3.81	12.30	3.82	12.31	3.82	8.4
12.40	3.85	12.41	3.85	12.43	3.86	12.44	3.86	12.45	3.86	8.5
12.54	3.89	12.56	3.90	12.57	3.90	12.59	3.91	12.60	3.91	8.6
12.69	3.94	12.70	3.94	12.72	3.95	12.73	3.95	12.74	3.95	8.7
12.83	3.98	12.85	3.99	12.86	3.99	12.88	4.00	12.89	4.00	8.8
12.98	4.03	12.99	4.03	13.01	4.04	13.02	4.04	13.03	4.04	8.9
13.12	4.07	13.14	4.08	13.15	4.08	13.17	4.09	13.18	4.09	9.0
13.27	4.12	13.28	4.12	13.30	4.13	13.31	4.13	13.32	4.13	9.1
13.41	4.16	13.43	4.17	13.44	4.17	13.46	4.18	13.47	4.18	9.2
13.56	4.21	13.57	4.21	13.59	4.22	13.60	4.22	13.61	4.22	9.3
13.70	4.25	13.72	4.26	13.73	4.26	13.75	4.27	13.76	4.27	9.4
13.85	4.30	13.86	4.30	13.88	4.31	13.89	4.31	13.90	4.31	9.5
13.99	4.34	14.01	4.35	14.02	4.35	14.04	4.36	14.05	4.36	9.6
14.14	4.39	14.15	4.39	14.17	4.40	14.18	4.40	14.19	4.40	9.7
14.28	4.43	14.30	4.44	14.31	4.44	14.33	4.45	14.34	4.45	9.8
14.43	4.48	14.44	4.48	14.46	4.49	14.47	4.49	14.48	4.49	9.9
										10.0

mt
FeO% 0.01～3.00

Table 3-2

FEO	0		1		2		3		4	
%	MT	FE203	MT	FE203	MT	FE203	MT	FE203	MT	FE203
0.	0.	0.	0.03	0.02	0.06	0.04	0.10	0.07	0.13	0.09
0.1	0.32	0.22	0.35	0.24	0.39	0.27	0.42	0.29	0.45	0.31
0.2	0.64	0.44	0.68	0.47	0.71	0.49	0.74	0.51	0.77	0.53
0.3	0.97	0.67	1.00	0.69	1.03	0.71	1.06	0.73	1.10	0.76
0.4	1.29	0.89	1.32	0.91	1.35	0.93	1.39	0.96	1.42	0.98
0.5	1.61	1.11	1.64	1.13	1.68	1.16	1.71	1.18	1.74	1.20
0.6	1.93	1.33	1.97	1.36	2.00	1.38	2.03	1.40	2.06	1.42
0.7	2.26	1.56	2.29	1.58	2.32	1.60	2.35	1.62	2.38	1.64
0.8	2.58	1.78	2.61	1.80	2.64	1.82	2.67	1.84	2.71	1.87
0.9	2.90	2.00	2.93	2.02	2.96	2.04	3.00	2.07	3.03	2.09
1.0	3.22	2.22	3.25	2.24	3.29	2.27	3.32	2.29	3.35	2.31
1.1	3.54	2.44	3.58	2.47	3.61	2.49	3.64	2.51	3.67	2.53
1.2	3.87	2.67	3.90	2.69	3.93	2.71	3.96	2.73	4.00	2.76
1.3	4.19	2.89	4.22	2.91	4.25	2.93	4.29	2.96	4.32	2.98
1.4	4.51	3.11	4.54	3.13	4.58	3.16	4.61	3.18	4.64	3.20
1.5	4.83	3.33	4.87	3.36	4.90	3.38	4.93	3.40	4.96	3.42
1.6	5.16	3.56	5.19	3.58	5.22	3.60	5.25	3.62	5.29	3.65
1.7	5.48	3.78	5.51	3.80	5.54	3.82	5.58	3.85	5.61	3.87
1.8	5.80	4.00	5.83	4.02	5.87	4.05	5.90	4.07	5.93	4.09
1.9	6.12	4.22	6.16	4.25	6.19	4.27	6.22	4.29	6.25	4.31
2.0	6.45	4.45	6.48	4.47	6.51	4.49	6.54	4.51	6.57	4.53
2.1	6.77	4.67	6.80	4.69	6.83	4.71	6.86	4.73	6.90	4.76
2.2	7.09	4.89	7.12	4.91	7.15	4.93	7.19	4.96	7.22	4.98
2.3	7.41	5.11	7.44	5.13	7.48	5.16	7.51	5.18	7.54	5.20
2.4	7.73	5.33	7.77	5.36	7.80	5.38	7.83	5.40	7.86	5.42
2.5	8.06	5.56	8.09	5.58	8.12	5.60	8.15	5.62	8.19	5.65
2.6	8.38	5.78	8.41	5.80	8.44	5.82	8.48	5.85	8.51	5.87
2.7	8.70	6.00	8.73	6.02	8.77	6.05	8.80	6.07	8.83	6.09
2.8	9.02	6.22	9.06	6.25	9.09	6.27	9.12	6.29	9.15	6.31
2.9	9.35	6.45	9.38	6.47	9.41	6.49	9.44	6.51	9.47	6.53
3.0	9.67	6.67								

5		6		7		8		9		FEO
MT	FE203	MT	FE203	MT	FE203	MT	FE203	MT	FE203	%
0.16	0.11	0.19	0.13	0.23	0.16	0.26	0.18	0.29	0.20	0.
0.48	0.33	0.52	0.36	0.55	0.38	0.58	0.40	0.61	0.42	0.1
0.81	0.56	0.84	0.58	0.87	0.60	0.90	0.62	0.93	0.64	0.2
1.13	0.78	1.16	0.80	1.19	0.82	1.22	0.84	1.26	0.87	0.3
1.45	1.00	1.48	1.02	1.51	1.04	1.55	1.07	1.58	1.09	0.4
1.77	1.22	1.80	1.24	1.84	1.27	1.87	1.29	1.90	1.31	0.5
2.09	1.44	2.13	1.47	2.16	1.49	2.19	1.51	2.22	1.53	0.6
2.42	1.67	2.45	1.69	2.48	1.71	2.51	1.73	2.55	1.76	0.7
2.74	1.89	2.77	1.91	2.80	1.93	2.84	1.96	2.87	1.98	0.8
3.06	2.11	3.09	2.13	3.13	2.16	3.16	2.18	3.19	2.20	0.9
3.38	2.33	3.42	2.36	3.45	2.38	3.48	2.40	3.51	2.42	1.0
3.71	2.56	3.74	2.58	3.77	2.60	3.80	2.62	3.84	2.65	1.1
4.03	2.78	4.06	2.80	4.09	2.82	4.13	2.85	4.16	2.87	1.2
4.35	3.00	4.38	3.02	4.42	3.05	4.45	3.07	4.48	3.09	1.3
4.67	3.22	4.71	3.25	4.74	3.27	4.77	3.29	4.80	3.31	1.4
5.00	3.45	5.03	3.47	5.06	3.49	5.09	3.51	5.12	3.53	1.5
5.32	3.67	5.35	3.69	5.38	3.71	5.41	3.73	5.45	3.76	1.6
5.64	3.89	5.67	3.91	5.70	3.93	5.74	3.96	5.77	3.98	1.7
5.96	4.11	5.99	4.13	6.03	4.16	6.06	4.18	6.09	4.20	1.8
6.28	4.33	6.32	4.36	6.35	4.38	6.38	4.40	6.41	4.42	1.9
6.61	4.56	6.64	4.58	6.67	4.60	6.70	4.62	6.74	4.65	2.0
6.93	4.78	6.96	4.80	6.99	4.82	7.03	4.85	7.06	4.87	2.1
7.25	5.00	7.28	5.02	7.32	5.05	7.35	5.07	7.38	5.09	2.2
7.57	5.22	7.61	5.25	7.64	5.27	7.67	5.29	7.70	5.31	2.3
7.90	5.45	7.93	5.47	7.96	5.49	7.99	5.51	8.02	5.53	2.4
8.22	5.67	8.25	5.69	8.28	5.71	8.31	5.73	8.35	5.76	2.5
8.54	5.89	8.57	5.91	8.60	5.93	8.64	5.96	8.67	5.98	2.6
8.86	6.11	8.89	6.13	8.93	6.16	8.96	6.18	8.99	6.20	2.7
9.18	6.33	9.22	6.36	9.25	6.38	9.28	6.40	9.31	6.42	2.8
9.51	6.56	9.54	6.58	9.57	6.60	9.60	6.62	9.64	6.65	2.9
										3.0

or
K_2O% 0.01～4.99

Table 4

K20	0			1			2			3			4		
%	OR	AL203	SI02	OR	AL203	SI02	OR	AL203	SI02	OR	AL203	SI02	OR	AL203	SI02
0.	0.	0.	0.	0.06	0.01	0.04	0.12	0.02	0.08	0.17	0.03	0.11	0.23	0.04	0.15
0.1	0.59	0.11	0.38	0.65	0.12	0.42	0.71	0.13	0.46	0.77	0.14	0.50	0.83	0.15	0.54
0.2	1.19	0.22	0.77	1.24	0.23	0.80	1.30	0.24	0.84	1.36	0.25	0.88	1.42	0.26	0.92
0.3	1.77	0.32	1.15	1.84	0.34	1.19	1.89	0.35	1.22	1.95	0.36	1.26	2.01	0.37	1.30
0.4	2.36	0.43	1.53	2.42	0.44	1.57	2.48	0.45	1.61	2.55	0.47	1.65	2.60	0.48	1.68
0.5	2.95	0.54	1.91	3.01	0.55	1.95	3.07	0.56	1.99	3.13	0.57	2.03	3.19	0.58	2.07
0.6	3.55	0.65	2.30	3.60	0.66	2.33	3.66	0.67	2.37	3.72	0.68	2.41	3.78	0.69	2.45
0.7	4.14	0.76	2.68	4.20	0.77	2.72	4.26	0.78	2.76	4.31	0.79	2.79	4.37	0.80	2.83
0.8	4.73	0.87	3.06	4.79	0.88	3.10	4.85	0.89	3.14	4.91	0.90	3.18	4.96	0.91	3.21
0.9	5.31	0.97	3.44	5.37	0.98	3.48	5.44	1.00	3.52	5.50	1.01	3.56	5.56	1.02	3.60
1.0	5.91	1.08	3.83	5.97	1.09	3.87	6.02	1.10	3.90	6.08	1.11	3.94	6.15	1.13	3.98
1.1	6.50	1.19	4.21	6.56	1.20	4.25	6.62	1.21	4.29	6.67	1.22	4.32	6.73	1.23	4.36
1.2	7.09	1.30	4.59	7.15	1.31	4.63	7.21	1.32	4.67	7.27	1.33	4.71	7.33	1.34	4.75
1.3	7.68	1.41	4.97	7.74	1.42	5.01	7.80	1.43	5.05	7.86	1.44	5.09	7.92	1.45	5.13
1.4	8.28	1.52	5.36	8.34	1.53	5.40	8.39	1.54	5.43	8.45	1.55	5.47	8.51	1.56	5.51
1.5	8.86	1.62	5.74	8.92	1.63	5.78	8.99	1.65	5.82	9.05	1.66	5.86	9.10	1.67	5.89
1.6	9.45	1.73	6.12	9.51	1.74	6.16	9.57	1.75	6.20	9.63	1.76	6.24	9.70	1.78	6.28
1.7	10.05	1.84	6.51	10.10	1.85	6.54	10.16	1.86	6.58	10.22	1.87	6.62	10.28	1.88	6.66
1.8	10.64	1.95	6.89	10.70	1.96	6.93	10.75	1.97	6.96	10.81	1.98	7.00	10.87	1.99	7.04
1.9	11.23	2.06	7.27	11.29	2.07	7.31	11.35	2.08	7.35	11.41	2.09	7.39	11.46	2.10	7.42
2.0	11.81	2.16	7.65	11.88	2.18	7.69	11.94	2.19	7.73	12.00	2.20	7.77	12.06	2.21	7.81
2.1	12.41	2.27	8.04	12.46	2.28	8.07	12.52	2.29	8.11	12.59	2.31	8.15	12.65	2.32	8.19
2.2	13.00	2.38	8.42	13.06	2.39	8.46	13.12	2.40	8.50	13.17	2.41	8.53	13.23	2.42	8.57
2.3	13.59	2.49	8.80	13.65	2.50	8.84	13.71	2.51	8.88	13.77	2.52	8.92	13.82	2.53	8.95
2.4	14.18	2.60	9.18	14.24	2.61	9.22	14.30	2.62	9.26	14.36	2.63	9.30	14.42	2.64	9.34
2.5	14.78	2.71	9.57	14.84	2.72	9.61	14.89	2.73	9.64	14.95	2.74	9.68	15.01	2.75	9.72
2.6	15.36	2.81	9.95	15.42	2.82	9.99	15.49	2.84	10.03	15.54	2.85	10.06	15.60	2.86	10.10
2.7	15.95	2.92	10.33	16.01	2.93	10.37	16.07	2.94	10.41	16.13	2.95	10.45	16.20	2.97	10.49
2.8	16.55	3.03	10.72	16.60	3.04	10.75	16.66	3.05	10.79	16.72	3.06	10.83	16.78	3.07	10.87
2.9	17.14	3.14	11.10	17.20	3.15	11.14	17.25	3.16	11.17	17.31	3.17	11.21	17.37	3.18	11.25
3.0	17.73	3.25	11.48	17.79	3.26	11.52	17.85	3.27	11.56	17.91	3.28	11.60	17.96	3.29	11.63
3.1	18.32	3.36	11.86	18.38	3.37	11.90	18.44	3.38	11.94	18.50	3.39	11.98	18.56	3.40	12.02
3.2	18.91	3.46	12.25	18.96	3.47	12.28	19.03	3.49	12.32	19.09	3.50	12.36	19.15	3.51	12.40
3.3	19.50	3.57	12.63	19.56	3.58	12.67	19.62	3.59	12.71	19.67	3.60	12.74	19.74	3.62	12.78
3.4	20.09	3.68	13.01	20.15	3.69	13.05	20.21	3.70	13.09	20.27	3.71	13.13	20.32	3.72	13.16
3.5	20.68	3.79	13.39	20.74	3.80	13.43	20.80	3.81	13.47	20.86	3.82	13.51	20.92	3.83	13.55
3.6	21.28	3.90	13.78	21.34	3.91	13.82	21.39	3.92	13.85	21.45	3.93	13.89	21.51	3.94	13.93
3.7	21.86	4.00	14.16	21.93	4.02	14.20	21.99	4.03	14.24	22.04	4.04	14.27	22.10	4.05	14.31
3.8	22.45	4.11	14.54	22.51	4.12	14.58	22.57	4.13	14.62	22.64	4.15	14.66	22.70	4.16	14.70
3.9	23.04	4.22	14.92	23.10	4.23	14.96	23.16	4.24	15.00	23.22	4.25	15.04	23.28	4.26	15.08
4.0	23.64	4.33	15.31	23.70	4.34	15.35	23.75	4.35	15.38	23.81	4.36	15.42	23.87	4.37	15.46
4.1	24.23	4.44	15.69	24.29	4.45	15.73	24.35	4.46	15.77	24.41	4.47	15.81	24.46	4.48	15.84
4.2	24.82	4.55	16.07	24.88	4.56	16.11	24.94	4.57	16.15	25.00	4.58	16.19	25.06	4.59	16.23
4.3	25.41	4.65	16.46	25.46	4.66	16.49	25.53	4.68	16.53	25.59	4.69	16.57	25.65	4.70	16.61
4.4	26.00	4.76	16.84	26.06	4.77	16.88	26.11	4.78	16.91	26.17	4.79	16.95	26.24	4.81	16.99
4.5	26.59	4.87	17.22	26.65	4.88	17.26	26.71	4.89	17.30	26.77	4.90	17.34	26.82	4.91	17.37
4.6	27.18	4.98	17.60	27.24	4.99	17.64	27.30	5.00	17.68	27.36	5.01	17.72	27.42	5.02	17.76
4.7	27.78	5.09	17.99	27.83	5.10	18.02	27.89	5.11	18.06	27.95	5.12	18.10	28.01	5.13	18.14
4.8	28.37	5.20	18.37	28.43	5.21	18.41	28.49	5.22	18.45	28.54	5.23	18.48	28.60	5.24	18.52
4.9	28.95	5.30	18.75	29.01	5.31	18.79	29.08	5.33	18.83	29.14	5.34	18.87	29.19	5.35	18.90

5			6			7			8			9			K20
OR	AL203	SI02	OR	AL203	SI02	OR	AL203	SI02	OR	AL203	SI02	OR	AL203	SI02	%
0.29	0.05	0.19	0.35	0.06	0.23	0.42	0.08	0.27	0.48	0.09	0.31	0.53	0.10	0.34	0.
0.88	0.16	0.57	0.94	0.17	0.61	1.00	0.18	0.65	1.06	0.19	0.69	1.13	0.21	0.73	0.1
1.48	0.27	0.96	1.53	0.28	0.99	1.59	0.29	1.03	1.65	0.30	1.07	1.71	0.31	1.11	0.2
2.07	0.38	1.34	2.13	0.39	1.38	2.19	0.40	1.42	2.24	0.41	1.45	2.30	0.42	1.49	0.3
2.66	0.49	1.72	2.72	0.50	1.76	2.78	0.51	1.80	2.84	0.52	1.84	2.90	0.53	1.88	0.4
3.25	0.60	2.10	3.31	0.61	2.14	3.37	0.62	2.18	3.43	0.63	2.22	3.49	0.64	2.26	0.5
3.84	0.70	2.49	3.90	0.71	2.53	3.96	0.73	2.56	4.02	0.74	2.60	4.08	0.75	2.64	0.6
4.43	0.81	2.87	4.49	0.82	2.91	4.55	0.83	2.95	4.60	0.84	2.98	4.67	0.86	3.02	0.7
5.02	0.92	3.25	5.08	0.93	3.29	5.14	0.94	3.33	5.20	0.95	3.37	5.26	0.96	3.41	0.8
5.62	1.03	3.64	5.67	1.04	3.67	5.73	1.05	3.71	5.79	1.06	3.75	5.85	1.07	3.79	0.9
6.21	1.14	4.02	6.27	1.15	4.06	6.32	1.16	4.09	6.38	1.17	4.13	6.44	1.18	4.17	1.0
6.79	1.24	4.40	6.86	1.26	4.44	6.92	1.27	4.48	6.98	1.28	4.52	7.03	1.29	4.55	1.1
7.38	1.35	4.78	7.44	1.36	4.82	7.50	1.37	4.86	7.57	1.39	4.90	7.63	1.40	4.94	1.2
7.98	1.46	5.17	8.03	1.47	5.20	8.09	1.48	5.24	8.15	1.49	5.28	8.21	1.50	5.32	1.3
8.57	1.57	5.55	8.63	1.58	5.59	8.69	1.59	5.63	8.74	1.60	5.66	8.80	1.61	5.70	1.4
9.16	1.68	5.93	9.22	1.69	5.97	9.28	1.70	6.01	9.34	1.71	6.05	9.39	1.72	6.08	1.5
9.75	1.79	6.31	9.81	1.80	6.35	9.87	1.81	6.39	9.93	1.82	6.43	9.99	1.83	6.47	1.6
10.34	1.89	6.70	10.40	1.90	6.74	10.46	1.92	6.77	10.52	1.93	6.81	10.58	1.94	6.85	1.7
10.93	2.00	7.08	10.99	2.01	7.12	11.05	2.02	7.16	11.10	2.03	7.19	11.17	2.05	7.23	1.8
11.52	2.11	7.46	11.58	2.12	7.50	11.64	2.13	7.54	11.70	2.14	7.58	11.76	2.15	7.62	1.9
12.12	2.22	7.85	12.17	2.23	7.88	12.23	2.24	7.92	12.29	2.25	7.96	12.35	2.26	8.00	2.0
12.71	2.33	8.23	12.77	2.34	8.27	12.82	2.35	8.30	12.88	2.36	8.34	12.94	2.37	8.38	2.1
13.30	2.44	8.61	13.36	2.45	8.65	13.42	2.46	8.69	13.48	2.47	8.73	13.53	2.48	8.76	2.2
13.88	2.54	8.99	13.94	2.55	9.03	14.01	2.57	9.07	14.07	2.58	9.11	14.13	2.59	9.15	2.3
14.48	2.65	9.38	14.53	2.66	9.41	14.59	2.67	9.45	14.65	2.68	9.49	14.72	2.70	9.53	2.4
15.07	2.76	9.76	15.13	2.77	9.80	15.19	2.78	9.84	15.24	2.79	9.87	15.30	2.80	9.91	2.5
15.66	2.87	10.14	15.72	2.88	10.18	15.78	2.89	10.22	15.84	2.90	10.26	15.89	2.91	10.29	2.6
16.25	2.98	10.52	16.31	2.99	10.56	16.37	3.00	10.60	16.43	3.01	10.64	16.49	3.02	10.68	2.7
16.84	3.08	10.91	16.90	3.10	10.94	16.96	3.11	10.98	17.02	3.12	11.02	17.08	3.13	11.06	2.8
17.43	3.19	11.29	17.49	3.20	11.33	17.55	3.21	11.37	17.61	3.23	11.40	17.67	3.24	11.44	2.9
18.02	3.30	11.67	18.08	3.31	11.71	18.14	3.32	11.75	18.20	3.33	11.79	18.26	3.34	11.83	3.0
18.61	3.41	12.05	18.67	3.42	12.09	18.73	3.43	12.13	18.79	3.44	12.17	18.85	3.45	12.21	3.1
19.21	3.52	12.44	19.27	3.53	12.48	19.32	3.54	12.51	19.38	3.55	12.55	19.44	3.56	12.59	3.2
19.80	3.63	12.82	19.86	3.64	12.86	19.92	3.65	12.90	19.97	3.66	12.93	20.03	3.67	12.97	3.3
20.38	3.73	13.20	20.44	3.74	13.24	20.51	3.76	13.28	20.57	3.77	13.32	20.63	3.78	13.36	3.4
20.98	3.84	13.59	21.03	3.85	13.62	21.09	3.86	13.66	21.15	3.87	13.70	21.22	3.89	13.74	3.5
21.57	3.95	13.97	21.63	3.96	14.01	21.68	3.97	14.04	21.74	3.98	14.08	21.80	3.99	14.12	3.6
22.16	4.06	14.35	22.22	4.07	14.39	22.28	4.08	14.43	22.34	4.09	14.47	22.39	4.10	14.50	3.7
22.75	4.17	14.73	22.81	4.18	14.77	22.87	4.19	14.81	22.93	4.20	14.85	22.99	4.21	14.89	3.8
23.35	4.28	15.12	23.40	4.29	15.15	23.46	4.30	15.19	23.52	4.31	15.23	23.58	4.32	15.27	3.9
23.93	4.38	15.50	23.99	4.39	15.54	24.06	4.41	15.58	24.11	4.42	15.61	24.17	4.43	15.65	4.0
24.52	4.49	15.88	24.58	4.50	15.92	24.64	4.51	15.96	24.70	4.52	16.00	24.76	4.54	16.03	4.1
25.11	4.60	16.26	25.17	4.61	16.30	25.23	4.62	16.34	25.29	4.63	16.38	25.35	4.64	16.42	4.2
25.71	4.71	16.65	25.77	4.72	16.69	25.82	4.73	16.72	25.88	4.74	16.76	25.94	4.75	16.80	4.3
26.30	4.82	17.03	26.36	4.83	17.07	26.42	4.84	17.11	26.47	4.85	17.14	26.53	4.86	17.18	4.4
26.88	4.92	17.41	26.95	4.94	17.45	27.01	4.95	17.49	27.07	4.96	17.53	27.13	4.97	17.57	4.5
27.48	5.03	17.80	27.53	5.04	17.83	27.59	5.05	17.87	27.66	5.07	17.91	27.72	5.08	17.95	4.6
28.07	5.14	18.18	28.13	5.15	18.22	28.18	5.16	18.25	28.24	5.17	18.29	28.30	5.18	18.33	4.7
28.66	5.25	18.56	28.72	5.26	18.60	28.78	5.27	18.64	28.84	5.28	18.68	28.89	5.29	18.71	4.8
29.25	5.36	18.94	29.31	5.37	18.98	29.37	5.38	19.02	29.43	5.39	19.06	29.49	5.40	19.10	4.9

or
K_2O% 5.00～10.00

Table 4

K20	0			1			2			3			4		
%	OR	AL203	SI02	OR	AL203	SI02	OR	AL203	SI02	OR	AL203	SI02	OR	AL203	SI02
5.0	29.54	5.41	19.13	29.60	5.42	19.17	29.66	5.43	19.21	29.72	5.44	19.25	29.79	5.46	19.29
5.1	30.14	5.52	19.52	30.20	5.53	19.56	30.25	5.54	19.59	30.31	5.55	19.63	30.37	5.56	19.67
5.2	30.73	5.63	19.90	30.79	5.64	19.94	30.85	5.65	19.98	30.90	5.66	20.01	30.96	5.67	20.05
5.3	31.32	5.74	20.28	31.38	5.75	20.32	31.44	5.76	20.36	31.50	5.77	20.40	31.56	5.78	20.44
5.4	31.91	5.84	20.67	31.97	5.86	20.70	32.03	5.87	20.74	32.09	5.88	20.78	32.15	5.89	20.82
5.5	32.50	5.95	21.05	32.56	5.96	21.09	32.61	5.97	21.12	32.68	5.99	21.16	32.74	6.00	21.20
5.6	33.09	6.06	21.43	33.15	6.07	21.47	33.21	6.08	21.51	33.27	6.09	21.55	33.32	6.10	21.58
5.7	33.68	6.17	21.81	33.74	6.18	21.85	33.80	6.19	21.89	33.86	6.20	21.93	33.92	6.21	21.97
5.8	34.28	6.28	22.20	34.33	6.29	22.23	34.39	6.30	22.27	34.45	6.31	22.31	34.51	6.32	22.35
5.9	34.87	6.39	22.58	34.93	6.40	22.62	34.99	6.41	22.66	35.04	6.42	22.69	35.10	6.43	22.73
6.0	35.45	6.49	22.96	35.51	6.50	23.00	35.58	6.52	23.04	35.64	6.53	23.08	35.69	6.54	23.11
6.1	36.04	6.60	23.34	36.10	6.61	23.38	36.16	6.62	23.42	36.22	6.63	23.46	36.29	6.65	23.50
6.2	36.64	6.71	23.73	36.70	6.72	23.77	36.75	6.73	23.80	36.81	6.74	23.84	36.87	6.75	23.88
6.3	37.23	6.82	24.11	37.29	6.83	24.15	37.35	6.84	24.19	37.40	6.85	24.22	37.46	6.86	24.26
6.4	37.82	6.93	24.49	37.88	6.94	24.53	37.94	6.95	24.57	38.00	6.96	24.61	38.06	6.97	24.65
6.5	38.41	7.04	24.87	38.47	7.05	24.91	38.53	7.06	24.95	38.59	7.07	24.99	38.65	7.08	25.03
6.6	39.00	7.14	25.26	39.06	7.15	25.30	39.12	7.17	25.33	39.18	7.18	25.37	39.24	7.19	25.41
6.7	39.59	7.25	25.64	39.65	7.26	25.68	39.71	7.27	25.72	39.77	7.28	25.76	39.83	7.30	25.79
6.8	40.18	7.36	26.02	40.24	7.37	26.06	40.30	7.38	26.10	40.36	7.39	26.14	40.42	7.40	26.18
6.9	40.78	7.47	26.41	40.83	7.48	26.44	40.89	7.49	26.48	40.95	7.50	26.52	41.01	7.51	26.56
7.0	41.37	7.58	26.79	41.43	7.59	26.83	41.48	7.60	26.86	41.54	7.61	26.90	41.60	7.62	26.94
7.1	41.95	7.68	27.17	42.02	7.70	27.21	42.08	7.71	27.25	42.14	7.72	27.29	42.19	7.73	27.32
7.2	42.54	7.79	27.55	42.60	7.80	27.59	42.66	7.81	27.63	42.73	7.83	27.67	42.79	7.84	27.71
7.3	43.14	7.90	27.94	43.19	7.91	27.97	43.25	7.92	28.01	43.31	7.93	28.05	43.37	7.94	28.09
7.4	43.73	8.01	28.32	43.79	8.02	28.36	43.85	8.03	28.40	43.90	8.04	28.43	43.96	8.05	28.47
7.5	44.32	8.12	28.70	44.38	8.13	28.74	44.44	8.14	28.78	44.50	8.15	28.82	44.55	8.16	28.85
7.6	44.91	8.23	29.08	44.97	8.24	29.12	45.03	8.25	29.16	45.09	8.26	29.20	45.15	8.27	29.24
7.7	45.50	8.33	29.47	45.56	8.34	29.51	45.62	8.36	29.54	45.68	8.37	29.58	45.74	8.38	29.62
7.8	46.09	8.44	29.85	46.15	8.45	29.89	46.21	8.46	29.93	46.26	8.47	29.96	46.33	8.49	30.00
7.9	46.68	8.55	30.23	46.74	8.56	30.27	46.80	8.57	30.31	46.86	8.58	30.35	46.92	8.59	30.39
8.0	47.28	8.66	30.62	47.33	8.67	30.65	47.39	8.68	30.69	47.45	8.69	30.73	47.51	8.70	30.77
8.1	47.87	8.77	31.00	47.93	8.78	31.04	47.98	8.79	31.07	48.04	8.80	31.11	48.10	8.81	31.15
8.2	48.46	8.88	31.38	48.52	8.89	31.42	48.58	8.90	31.46	48.64	8.91	31.50	48.69	8.92	31.53
8.3	49.04	8.98	31.76	49.10	8.99	31.80	49.17	9.01	31.84	49.23	9.02	31.88	49.29	9.03	31.92
8.4	49.64	9.09	32.15	49.69	9.10	32.18	49.75	9.11	32.22	49.81	9.12	32.26	49.88	9.14	32.30
8.5	50.23	9.20	32.53	50.29	9.21	32.57	50.35	9.22	32.61	50.40	9.23	32.64	50.46	9.24	32.68
8.6	50.82	9.31	32.91	50.88	9.32	32.95	50.94	9.33	32.99	51.00	9.34	33.03	51.05	9.35	33.06
8.7	51.41	9.42	33.29	51.47	9.43	33.33	51.53	9.44	33.37	51.59	9.45	33.41	51.65	9.46	33.45
8.8	52.00	9.52	33.68	52.07	9.54	33.72	52.12	9.55	33.75	52.18	9.56	33.79	52.24	9.57	33.83
8.9	52.59	9.63	34.06	52.65	9.64	34.10	52.71	9.65	34.14	52.77	9.67	34.17	52.83	9.68	34.21
9.0	53.18	9.74	34.44	53.24	9.75	34.48	53.30	9.76	34.52	53.36	9.77	34.56	53.42	9.78	34.60
9.1	53.77	9.85	34.82	53.83	9.86	34.86	53.89	9.87	34.90	53.95	9.88	34.94	54.01	9.89	34.98
9.2	54.37	9.96	35.21	54.43	9.97	35.25	54.48	9.98	35.28	54.54	9.99	35.32	54.60	10.00	35.36
9.3	54.96	10.07	35.59	55.02	10.08	35.63	55.08	10.09	35.67	55.14	10.10	35.71	55.19	10.11	35.74
9.4	55.54	10.17	35.97	55.60	10.18	36.01	55.67	10.20	36.05	55.73	10.21	36.09	55.79	10.22	36.13
9.5	56.14	10.28	36.36	56.19	10.29	36.39	56.25	10.30	36.43	56.31	10.31	36.47	56.38	10.33	36.51
9.6	56.73	10.39	36.74	56.79	10.40	36.78	56.84	10.41	36.81	56.90	10.42	36.85	56.96	10.43	36.89
9.7	57.32	10.50	37.12	57.38	10.51	37.16	57.44	10.52	37.20	57.50	10.53	37.24	57.55	10.54	37.27
9.8	57.91	10.61	37.50	57.97	10.62	37.54	58.03	10.63	37.58	58.09	10.64	37.62	58.15	10.65	37.66
9.9	58.51	10.72	37.89	58.56	10.73	37.92	58.62	10.74	37.96	58.68	10.75	38.00	58.74	10.76	38.04
10.0	59.09	10.82	38.27												

(continued)

5			6			7			8			9			K20
OR	AL203	SIO2	OR	AL203	SIO2	OR	AL203	SIO2	OR	AL203	SIO2	OR	AL203	SIO2	%
29.85	5.47	19.33	29.90	5.48	19.36	29.96	5.49	19.40	30.02	5.50	19.44	30.08	5.51	19.48	5.0
30.43	5.57	19.71	30.49	5.58	19.75	30.56	5.60	19.79	30.61	5.61	19.82	30.67	5.62	19.86	5.1
31.02	5.68	20.09	31.08	5.69	20.13	31.14	5.70	20.17	31.20	5.71	20.21	31.26	5.73	20.24	5.2
31.61	5.79	20.47	31.67	5.80	20.51	31.73	5.81	20.55	31.79	5.82	20.59	31.85	5.83	20.63	5.3
32.21	5.90	20.86	32.26	5.91	20.89	32.32	5.92	20.93	32.38	5.93	20.97	32.44	5.94	21.01	5.4
32.80	6.01	21.24	32.86	6.02	21.28	32.92	6.03	21.32	32.97	6.04	21.35	33.03	6.05	21.39	5.5
33.39	6.12	21.62	33.45	6.13	21.66	33.51	6.14	21.70	33.57	6.15	21.74	33.63	6.16	21.78	5.6
33.97	6.22	22.00	34.03	6.23	22.04	34.10	6.25	22.08	34.16	6.26	22.12	34.22	6.27	22.16	5.7
34.57	6.33	22.39	34.63	6.34	22.43	34.68	6.35	22.46	34.74	6.36	22.50	34.81	6.38	22.54	5.8
35.16	6.44	22.77	35.22	6.45	22.81	35.28	6.46	22.85	35.33	6.47	22.88	35.39	6.48	22.92	5.9
35.75	6.55	23.15	35.81	6.56	23.19	35.87	6.57	23.23	35.93	6.58	23.27	35.99	6.59	23.31	6.0
36.35	6.66	23.54	36.40	6.67	23.57	36.46	6.68	23.61	36.52	6.69	23.65	36.58	6.70	23.69	6.1
36.93	6.76	23.92	37.00	6.78	23.96	37.05	6.79	23.99	37.11	6.80	24.03	37.17	6.81	24.07	6.2
37.52	6.87	24.30	37.58	6.88	24.34	37.64	6.89	24.38	37.71	6.91	24.42	37.76	6.92	24.45	6.3
38.11	6.98	24.68	38.17	6.99	24.72	38.23	7.00	24.76	38.29	7.01	24.80	38.35	7.02	24.84	6.4
38.71	7.09	25.07	38.76	7.10	25.10	38.82	7.11	25.14	38.88	7.12	25.18	38.94	7.13	25.22	6.5
39.30	7.20	25.45	39.36	7.21	25.49	39.42	7.22	25.53	39.47	7.23	25.56	39.53	7.24	25.60	6.6
39.89	7.31	25.83	39.95	7.32	25.87	40.01	7.33	25.91	40.07	7.34	25.95	40.12	7.35	25.98	6.7
40.47	7.41	26.21	40.53	7.42	26.25	40.60	7.44	26.29	40.66	7.45	26.33	40.72	7.46	26.37	6.8
41.07	7.52	26.60	41.13	7.53	26.64	41.18	7.54	26.67	41.24	7.55	26.71	41.31	7.57	26.75	6.9
41.66	7.63	26.98	41.72	7.64	27.02	41.78	7.65	27.06	41.83	7.66	27.09	41.89	7.67	27.13	7.0
42.25	7.74	27.36	42.31	7.75	27.40	42.37	7.76	27.44	42.43	7.77	27.48	42.49	7.78	27.52	7.1
42.85	7.85	27.75	42.90	7.86	27.78	42.96	7.87	27.82	43.02	7.88	27.86	43.08	7.89	27.90	7.2
43.44	7.96	28.13	43.50	7.97	28.17	43.55	7.98	28.20	43.61	7.99	28.24	43.67	8.00	28.28	7.3
44.02	8.06	28.51	44.08	8.07	28.55	44.15	8.09	28.59	44.21	8.10	28.63	44.26	8.11	28.66	7.4
44.61	8.17	28.89	44.67	8.18	28.93	44.73	8.19	28.97	44.79	8.20	29.01	44.86	8.22	29.05	7.5
45.21	8.28	29.28	45.26	8.29	29.31	45.32	8.30	29.35	45.38	8.31	29.39	45.44	8.32	29.43	7.6
45.80	8.39	29.66	45.86	8.40	29.70	45.92	8.41	29.74	45.97	8.42	29.77	46.03	8.43	29.81	7.7
46.39	8.50	30.04	46.45	8.51	30.08	46.51	8.52	30.12	46.57	8.53	30.16	46.62	8.54	30.19	7.8
46.97	8.60	30.42	47.04	8.62	30.46	47.10	8.63	30.50	47.16	8.64	30.54	47.22	8.65	30.58	7.9
47.57	8.71	30.81	47.62	8.72	30.84	47.68	8.73	30.88	47.75	8.75	30.92	47.81	8.76	30.96	8.0
48.16	8.82	31.19	48.22	8.83	31.23	48.28	8.84	31.27	48.33	8.85	31.30	48.39	8.86	31.34	8.1
48.75	8.93	31.57	48.81	8.94	31.61	48.87	8.95	31.65	48.93	8.96	31.69	48.99	8.97	31.73	8.2
49.34	9.04	31.95	49.40	9.05	31.99	49.46	9.06	32.03	49.52	9.07	32.07	49.58	9.08	32.11	8.3
49.94	9.15	32.34	50.00	9.16	32.38	50.05	9.17	32.41	50.11	9.18	32.45	50.17	9.19	32.49	8.4
50.52	9.25	32.72	50.58	9.26	32.76	50.65	9.28	32.80	50.70	9.29	32.83	50.76	9.30	32.87	8.5
51.11	9.36	33.10	51.17	9.37	33.14	51.23	9.38	33.18	51.29	9.39	33.22	51.36	9.41	33.26	8.6
51.71	9.47	33.49	51.76	9.48	33.52	51.82	9.49	33.56	51.88	9.50	33.60	51.94	9.51	33.64	8.7
52.30	9.58	33.87	52.36	9.59	33.91	52.41	9.60	33.94	52.47	9.61	33.98	52.53	9.62	34.02	8.8
52.89	9.69	34.25	52.95	9.70	34.29	53.01	9.71	34.33	53.07	9.72	34.37	53.12	9.73	34.40	8.9
53.48	9.80	34.63	53.54	9.81	34.67	53.60	9.82	34.71	53.66	9.83	34.75	53.72	9.84	34.79	9.0
54.07	9.90	35.02	54.12	9.91	35.05	54.19	9.93	35.09	54.25	9.94	35.13	54.31	9.95	35.17	9.1
54.66	10.01	35.40	54.72	10.02	35.44	54.78	10.03	35.48	54.83	10.04	35.51	54.90	10.06	35.55	9.2
55.25	10.12	35.78	55.31	10.13	35.82	55.37	10.14	35.86	55.43	10.15	35.90	55.48	10.16	35.93	9.3
55.84	10.23	36.16	55.90	10.24	36.20	55.96	10.25	36.24	56.02	10.26	36.28	56.08	10.27	36.32	9.4
56.44	10.34	36.55	56.50	10.35	36.59	56.55	10.36	36.62	56.61	10.37	36.66	56.67	10.38	36.70	9.5
57.02	10.44	36.93	57.09	10.46	36.97	57.15	10.47	37.01	57.20	10.48	37.04	57.26	10.49	37.08	9.6
57.61	10.55	37.31	57.67	10.56	37.35	57.73	10.57	37.39	57.80	10.59	37.43	57.86	10.60	37.47	9.7
58.21	10.66	37.70	58.26	10.67	37.73	58.32	10.68	37.77	58.38	10.69	37.81	58.44	10.70	37.85	9.8
58.80	10.77	38.08	58.86	10.78	38.12	58.91	10.79	38.15	58.97	10.80	38.19	59.03	10.81	38.23	9.9
															10.0

ab

Na_2O% 0.01～4.99

Table 5

NA20	0			1			2			3			4		
%	AB	AL203	SIO2	AB	AL203	SIO2	AB	AL203	SIO2	AB	AL203	SIO2	AB	AL203	SIO2
0.	0.	0.	0.	0.09	0.02	0.06	0.17	0.03	0.12	0.25	0.05	0.17	0.34	0.07	0.23
0.1	0.84	0.16	0.58	0.93	0.18	0.64	1.02	0.20	0.70	1.10	0.21	0.76	1.18	0.23	0.81
0.2	1.69	0.33	1.16	1.78	0.35	1.22	1.86	0.36	1.28	1.95	0.38	1.34	2.03	0.39	1.40
0.3	2.53	0.49	1.74	2.62	0.51	1.80	2.71	0.53	1.86	2.79	0.54	1.92	2.88	0.56	1.98
0.4	3.39	0.66	2.33	3.46	0.67	2.38	3.55	0.69	2.44	3.64	0.71	2.50	3.72	0.72	2.56
0.5	4.23	0.82	2.91	4.32	0.84	2.97	4.40	0.86	3.02	4.48	0.87	3.08	4.57	0.89	3.14
0.6	5.08	0.99	3.49	5.16	1.00	3.55	5.25	1.02	3.61	5.33	1.04	3.66	5.41	1.05	3.72
0.7	5.92	1.15	4.07	6.01	1.17	4.13	6.09	1.18	4.19	6.18	1.20	4.25	6.26	1.22	4.30
0.8	6.77	1.32	4.65	6.85	1.33	4.71	6.94	1.35	4.77	7.03	1.37	4.83	7.11	1.38	4.89
0.9	7.61	1.48	5.23	7.70	1.50	5.29	7.78	1.51	5.35	7.87	1.53	5.41	7.96	1.55	5.47
1.0	8.47	1.65	5.82	8.54	1.66	5.87	8.63	1.68	5.93	8.71	1.69	5.99	8.80	1.71	6.05
1.1	9.31	1.81	6.40	9.40	1.83	6.46	9.47	1.84	6.51	9.56	1.86	6.57	9.65	1.88	6.63
1.2	10.15	1.97	6.98	10.24	1.99	7.04	10.33	2.01	7.10	10.40	2.02	7.15	10.49	2.04	7.21
1.3	11.00	2.14	7.56	11.09	2.16	7.62	11.17	2.17	7.68	11.26	2.19	7.74	11.33	2.20	7.79
1.4	11.84	2.30	8.14	11.93	2.32	8.20	12.02	2.34	8.26	12.10	2.35	8.32	12.19	2.37	8.38
1.5	12.69	2.47	8.72	12.77	2.48	8.78	12.86	2.50	8.84	12.95	2.52	8.90	13.03	2.53	8.96
1.6	13.54	2.63	9.31	13.62	2.65	9.36	13.71	2.67	9.42	13.79	2.68	9.48	13.88	2.70	9.54
1.7	14.39	2.80	9.89	14.47	2.81	9.95	14.55	2.83	10.00	14.64	2.85	10.06	14.72	2.86	10.12
1.8	15.23	2.96	10.47	15.32	2.98	10.53	15.40	2.99	10.59	15.48	3.01	10.64	15.57	3.03	10.70
1.9	16.08	3.13	11.05	16.16	3.14	11.11	16.25	3.16	11.17	16.34	3.18	11.23	16.41	3.19	11.28
2.0	16.92	3.29	11.63	17.01	3.31	11.69	17.09	3.32	11.75	17.18	3.34	11.81	17.27	3.36	11.87
2.1	17.76	3.45	12.21	17.85	3.47	12.27	17.94	3.49	12.33	18.02	3.50	12.39	18.11	3.52	12.45
2.2	18.62	3.62	12.80	18.70	3.64	12.85	18.78	3.65	12.91	18.87	3.67	12.97	18.96	3.69	13.03
2.3	19.46	3.78	13.38	19.55	3.80	13.44	19.63	3.82	13.49	19.71	3.83	13.55	19.80	3.85	13.61
2.4	20.31	3.95	13.96	20.39	3.96	14.02	20.48	3.98	14.08	20.56	4.00	14.13	20.64	4.01	14.19
2.5	21.15	4.11	14.54	21.24	4.13	14.60	21.33	4.15	14.66	21.41	4.16	14.72	21.49	4.18	14.77
2.6	22.00	4.28	15.12	22.08	4.29	15.18	22.17	4.31	15.24	22.26	4.33	15.30	22.34	4.34	15.36
2.7	22.84	4.44	15.70	22.93	4.46	15.76	23.01	4.47	15.82	23.10	4.49	15.88	23.19	4.51	15.94
2.8	23.70	4.61	16.29	23.77	4.62	16.34	23.86	4.64	16.40	23.95	4.66	16.46	24.03	4.67	16.52
2.9	24.54	4.77	16.87	24.63	4.79	16.93	24.70	4.80	16.98	24.79	4.82	17.04	24.88	4.84	17.10
3.0	25.39	4.94	17.45	25.47	4.95	17.51	25.56	4.97	17.57	25.63	4.98	17.62	25.72	5.00	17.68
3.1	26.23	5.10	18.03	26.32	5.12	18.09	26.40	5.13	18.15	26.49	5.15	18.21	26.57	5.17	18.26
3.2	27.07	5.26	18.61	27.16	5.28	18.67	27.25	5.30	18.73	27.33	5.31	18.79	27.42	5.33	18.85
3.3	27.92	5.43	19.19	28.01	5.45	19.25	28.09	5.46	19.31	28.18	5.48	19.37	28.26	5.49	19.43
3.4	28.77	5.59	19.78	28.85	5.61	19.83	28.94	5.63	19.89	29.02	5.64	19.95	29.11	5.66	20.01
3.5	29.62	5.76	20.36	29.70	5.77	20.42	29.78	5.79	20.47	29.87	5.81	20.53	29.95	5.82	20.59
3.6	30.46	5.92	20.94	30.55	5.94	21.00	30.64	5.96	21.06	30.71	5.97	21.11	30.80	5.99	21.17
3.7	31.31	6.09	21.52	31.39	6.10	21.58	31.48	6.12	21.64	31.57	6.14	21.70	31.64	6.15	21.75
3.8	32.15	6.25	22.10	32.24	6.27	22.16	32.32	6.28	22.22	32.41	6.30	22.28	32.50	6.32	22.34
3.9	33.00	6.42	22.68	33.08	6.43	22.74	33.17	6.45	22.80	33.26	6.47	22.86	33.34	6.48	22.92
4.0	33.85	6.58	23.27	33.93	6.60	23.32	34.01	6.61	23.38	34.10	6.63	23.44	34.19	6.65	23.50
4.1	34.69	6.74	23.85	34.78	6.76	23.91	34.86	6.78	23.96	34.94	6.79	24.02	35.03	6.81	24.08
4.2	35.54	6.91	24.43	35.63	6.93	24.49	35.71	6.94	24.55	35.79	6.96	24.60	35.88	6.98	24.66
4.3	36.38	7.07	25.01	36.47	7.09	25.07	36.56	7.11	25.13	36.64	7.12	25.19	36.72	7.14	25.24
4.4	37.23	7.24	25.59	37.31	7.25	25.65	37.40	7.27	25.71	37.49	7.29	25.77	37.57	7.30	25.83
4.5	38.07	7.40	26.17	38.16	7.42	26.23	38.25	7.44	26.29	38.33	7.45	26.35	38.42	7.47	26.41
4.6	38.93	7.57	26.76	39.00	7.58	26.81	39.09	7.60	26.87	39.18	7.62	26.93	39.26	7.63	26.99
4.7	39.77	7.73	27.34	39.86	7.75	27.40	39.93	7.76	27.45	40.02	7.78	27.51	40.11	7.80	27.57
4.8	40.62	7.90	27.92	40.70	7.91	27.98	40.79	7.93	28.04	40.87	7.95	28.09	40.95	7.96	28.15
4.9	41.46	8.06	28.50	41.55	8.08	28.56	41.63	8.09	28.62	41.72	8.11	28.68	41.80	8.13	28.73

5			6			7			8			9			NA20
AB	AL203	SI02	AB	AL203	SI02	AB	AL203	SI02	AB	AL203	SI02	AB	AL203	SI02	%
0.42	0.08	0.29	0.51	0.10	0.35	0.60	0.12	0.41	0.68	0.13	0.47	0.76	0.15	0.52	0.
1.27	0.25	0.87	1.35	0.26	0.93	1.44	0.28	0.99	1.53	0.30	1.05	1.61	0.31	1.11	0.1
2.11	0.41	1.45	2.20	0.43	1.51	2.28	0.44	1.57	2.37	0.46	1.63	2.46	0.48	1.69	0.2
2.97	0.58	2.04	3.04	0.59	2.09	3.13	0.61	2.15	3.22	0.63	2.21	3.30	0.64	2.27	0.3
3.81	0.74	2.62	3.90	0.76	2.68	3.97	0.77	2.73	4.06	0.79	2.79	4.15	0.81	2.85	0.4
4.65	0.90	3.20	4.74	0.92	3.26	4.83	0.94	3.32	4.90	0.95	3.37	4.99	0.97	3.43	0.5
5.50	1.07	3.78	5.59	1.09	3.84	5.67	1.10	3.90	5.76	1.12	3.96	5.84	1.14	4.01	0.6
6.34	1.23	4.36	6.43	1.25	4.42	6.52	1.27	4.48	6.60	1.28	4.54	6.69	1.30	4.60	0.7
7.19	1.40	4.94	7.27	1.41	5.00	7.36	1.43	5.06	7.45	1.45	5.12	7.53	1.46	5.18	0.8
8.04	1.56	5.53	8.12	1.58	5.58	8.21	1.60	5.64	8.29	1.61	5.70	8.38	1.63	5.76	0.9
8.89	1.73	6.11	8.97	1.74	6.17	9.05	1.76	6.22	9.14	1.78	6.28	9.22	1.79	6.34	1.0
9.73	1.89	6.69	9.82	1.91	6.75	9.90	1.92	6.81	9.98	1.94	6.86	10.07	1.96	6.92	1.1
10.58	2.06	7.27	10.66	2.07	7.33	10.75	2.09	7.39	10.84	2.11	7.45	10.91	2.12	7.50	1.2
11.42	2.22	7.85	11.51	2.24	7.91	11.59	2.25	7.97	11.68	2.27	8.03	11.77	2.29	8.09	1.3
12.27	2.39	8.43	12.35	2.40	8.49	12.44	2.42	8.55	12.52	2.43	8.61	12.61	2.45	8.67	1.4
13.12	2.55	9.02	13.20	2.57	9.07	13.28	2.58	9.13	13.37	2.60	9.19	13.46	2.62	9.25	1.5
13.96	2.71	9.60	14.05	2.73	9.66	14.13	2.75	9.71	14.21	2.76	9.77	14.30	2.78	9.83	1.6
14.81	2.88	10.18	14.90	2.90	10.24	14.98	2.91	10.30	15.06	2.93	10.35	15.14	2.94	10.41	1.7
15.65	3.04	10.76	15.74	3.06	10.82	15.83	3.08	10.88	15.91	3.09	10.94	15.99	3.11	10.99	1.8
16.50	3.21	11.34	16.58	3.22	11.40	16.67	3.24	11.46	16.76	3.26	11.52	16.84	3.27	11.58	1.9
17.34	3.37	11.92	17.43	3.39	11.98	17.52	3.41	12.04	17.60	3.42	12.10	17.69	3.44	12.16	2.0
18.20	3.54	12.51	18.27	3.55	12.56	18.36	3.57	12.62	18.45	3.59	12.68	18.53	3.60	12.74	2.1
19.04	3.70	13.09	19.13	3.72	13.15	19.20	3.73	13.20	19.29	3.75	13.26	19.38	3.77	13.32	2.2
19.89	3.87	13.67	19.97	3.88	13.73	20.06	3.90	13.79	20.14	3.92	13.84	20.22	3.93	13.90	2.3
20.73	4.03	14.25	20.82	4.05	14.31	20.90	4.06	14.37	20.99	4.08	14.43	21.07	4.10	14.48	2.4
21.57	4.19	14.83	21.66	4.21	14.89	21.75	4.23	14.95	21.83	4.24	15.01	21.92	4.26	15.07	2.5
22.42	4.36	15.41	22.51	4.38	15.47	22.59	4.39	15.53	22.68	4.41	15.59	22.77	4.43	15.65	2.6
23.27	4.52	16.00	23.35	4.54	16.05	23.44	4.56	16.11	23.52	4.57	16.17	23.61	4.59	16.23	2.7
24.12	4.69	16.58	24.20	4.70	16.64	24.28	4.72	16.69	24.37	4.74	16.75	24.45	4.75	16.81	2.8
24.96	4.85	17.16	25.05	4.87	17.22	25.14	4.89	17.28	25.21	4.90	17.33	25.30	4.92	17.39	2.9
25.81	5.02	17.74	25.89	5.03	17.80	25.98	5.05	17.86	26.07	5.07	17.92	26.14	5.08	17.97	3.0
26.65	5.18	18.32	26.74	5.20	18.38	26.82	5.21	18.44	26.91	5.23	18.50	27.00	5.25	18.56	3.1
27.50	5.35	18.90	27.58	5.36	18.96	27.67	5.38	19.02	27.76	5.40	19.08	27.84	5.41	19.14	3.2
28.35	5.51	19.49	28.43	5.53	19.54	28.51	5.54	19.60	28.60	5.56	19.66	28.69	5.58	19.72	3.3
29.20	5.68	20.07	29.28	5.69	20.13	29.36	5.71	20.18	29.44	5.72	20.24	29.53	5.74	20.30	3.4
30.04	5.84	20.65	30.13	5.86	20.71	30.21	5.87	20.77	30.29	5.89	20.82	30.38	5.91	20.88	3.5
30.88	6.00	21.23	30.97	6.02	21.29	31.06	6.04	21.35	31.14	6.05	21.41	31.22	6.07	21.46	3.6
31.73	6.17	21.81	31.82	6.19	21.87	31.90	6.20	21.93	31.99	6.22	21.99	32.07	6.23	22.05	3.7
32.57	6.33	22.39	32.66	6.35	22.45	32.75	6.37	22.51	32.83	6.38	22.57	32.92	6.40	22.63	3.8
33.43	6.50	22.98	33.50	6.51	23.03	33.59	6.53	23.09	33.68	6.55	23.15	33.76	6.56	23.21	3.9
34.27	6.66	23.56	34.36	6.68	23.62	34.44	6.70	23.67	34.52	6.71	23.73	34.61	6.73	23.79	4.0
35.12	6.83	24.14	35.20	6.84	24.20	35.29	6.86	24.26	35.37	6.88	24.31	35.45	6.89	24.37	4.1
35.96	6.99	24.72	36.05	7.01	24.78	36.13	7.02	24.84	36.22	7.04	24.90	36.30	7.06	24.95	4.2
36.81	7.16	25.30	36.89	7.17	25.36	36.98	7.19	25.42	37.07	7.21	25.48	37.15	7.22	25.54	4.3
37.65	7.32	25.88	37.74	7.34	25.94	37.82	7.35	26.00	37.91	7.37	26.06	38.00	7.39	26.12	4.4
38.51	7.49	26.47	38.58	7.50	26.52	38.67	7.52	26.58	38.75	7.53	26.64	38.84	7.55	26.70	4.5
39.35	7.65	27.05	39.44	7.67	27.11	39.51	7.68	27.16	39.60	7.70	27.22	39.69	7.72	27.28	4.6
40.19	7.81	27.63	40.28	7.83	27.69	40.37	7.85	27.75	40.44	7.86	27.80	40.53	7.88	27.86	4.7
41.04	7.98	28.21	41.13	8.00	28.27	41.21	8.01	28.33	41.30	8.03	28.39	41.37	8.04	28.44	4.8
41.88	8.14	28.79	41.97	8.16	28.85	42.06	8.18	28.91	42.14	8.19	28.97	42.22	8.21	29.02	4.9

ab

Na_2O% 5.00～10.00

Table 5

NA20	0			1			2			3			4		
%	AB	AL203	SIO2	AB	AL203	SIO2	AB	AL203	SIO2	AB	AL203	SIO2	AB	AL203	SIO2
5.0	42.31	8.23	29.08	42.39	8.24	29.14	42.48	8.26	29.20	42.56	8.27	29.26	42.65	8.29	29.32
5.1	43.15	8.39	29.66	43.24	8.41	29.72	43.32	8.42	29.78	43.41	8.44	29.84	43.50	8.46	29.90
5.2	44.00	8.55	30.25	44.08	8.57	30.30	44.17	8.59	30.36	44.25	8.60	30.42	44.34	8.62	30.48
5.3	44.85	8.72	30.83	44.94	8.74	30.89	45.01	8.75	30.94	45.10	8.77	31.00	45.18	8.78	31.06
5.4	45.69	8.88	31.41	45.78	8.90	31.47	45.87	8.92	31.53	45.94	8.93	31.58	46.03	8.95	31.64
5.5	46.54	9.05	31.99	46.62	9.06	32.05	46.71	9.08	32.11	46.80	9.10	32.17	46.87	9.11	32.22
5.6	47.38	9.21	32.57	47.47	9.23	32.63	47.56	9.25	32.69	47.64	9.26	32.75	47.73	9.28	32.81
5.7	48.23	9.38	33.15	48.31	9.39	33.21	48.40	9.41	33.27	48.49	9.43	33.33	48.57	9.44	33.39
5.8	49.08	9.54	33.74	49.16	9.56	33.79	49.24	9.57	33.85	49.33	9.59	33.91	49.42	9.61	33.97
5.9	49.93	9.71	34.32	50.01	9.72	34.38	50.09	9.74	34.43	50.18	9.76	34.49	50.26	9.77	34.55
6.0	50.77	9.87	34.90	50.86	9.89	34.96	50.94	9.90	35.02	51.02	9.92	35.07	51.11	9.94	35.13
6.1	51.62	10.04	35.48	51.70	10.05	35.54	51.79	10.07	35.60	51.87	10.08	35.66	51.95	10.10	35.71
6.2	52.46	10.20	36.06	52.55	10.22	36.12	52.63	10.23	36.18	52.72	10.25	36.24	52.81	10.27	36.30
6.3	53.30	10.36	36.64	53.39	10.38	36.70	53.48	10.40	36.76	53.56	10.41	36.82	53.65	10.43	36.88
6.4	54.16	10.53	37.23	54.24	10.55	37.28	54.32	10.56	37.34	54.41	10.58	37.40	54.49	10.59	37.46
6.5	55.00	10.69	37.81	55.09	10.71	37.87	55.17	10.73	37.92	55.25	10.74	37.98	55.34	10.76	38.04
6.6	55.85	10.86	38.39	55.93	10.87	38.45	56.02	10.89	38.51	56.10	10.91	38.56	56.18	10.92	38.62
6.7	56.69	11.02	38.97	56.78	11.04	39.03	56.87	11.06	39.09	56.95	11.07	39.15	57.03	11.09	39.20
6.8	57.54	11.19	39.55	57.62	11.20	39.61	57.71	11.22	39.67	57.80	11.24	39.73	57.88	11.25	39.79
6.9	58.38	11.35	40.13	58.47	11.37	40.19	58.55	11.38	40.25	58.64	11.40	40.31	58.73	11.42	40.37
7.0	59.24	11.52	40.72	59.31	11.53	40.77	59.40	11.55	40.83	59.48	11.56	40.89	59.57	11.58	40.95
7.1	60.08	11.68	41.30	60.17	11.70	41.36	60.24	11.71	41.41	60.33	11.73	41.47	60.42	11.75	41.53
7.2	60.92	11.84	41.88	61.01	11.86	41.94	61.10	11.88	42.00	61.17	11.89	42.05	61.26	11.91	42.11
7.3	61.77	12.01	42.46	61.86	12.03	42.52	61.94	12.04	42.58	62.03	12.06	42.64	62.10	12.07	42.69
7.4	62.61	12.17	43.04	62.70	12.19	43.10	62.79	12.21	43.16	62.87	12.22	43.22	62.96	12.24	43.28
7.5	63.46	12.34	43.62	63.54	12.35	43.68	63.63	12.37	43.74	63.72	12.39	43.80	63.80	12.40	43.86
7.6	64.31	12.50	44.21	64.39	12.52	44.26	64.48	12.54	44.32	64.56	12.55	44.38	64.65	12.57	44.44
7.7	65.16	12.67	44.79	65.24	12.68	44.85	65.32	12.70	44.90	65.41	12.72	44.96	65.49	12.73	45.02
7.8	66.00	12.83	45.37	66.09	12.85	45.43	66.17	12.86	45.49	66.25	12.88	45.54	66.34	12.90	45.60
7.9	66.85	13.00	45.95	66.93	13.01	46.01	67.02	13.03	46.07	67.11	13.05	46.13	67.18	13.06	46.18
8.0	67.69	13.16	46.53	67.78	13.18	46.59	67.86	13.19	46.65	67.95	13.21	46.71	68.04	13.23	46.77
8.1	68.54	13.33	47.11	68.62	13.34	47.17	68.71	13.36	47.23	68.79	13.37	47.29	68.88	13.39	47.35
8.2	69.39	13.49	47.70	69.47	13.51	47.75	69.55	13.52	47.81	69.64	13.54	47.87	69.73	13.56	47.93
8.3	70.23	13.65	48.28	70.32	13.67	48.34	70.40	13.69	48.39	70.48	13.70	48.45	70.57	13.72	48.51
8.4	71.08	13.82	48.86	71.17	13.84	48.92	71.25	13.85	48.98	71.33	13.87	49.03	71.41	13.88	49.09
8.5	71.92	13.98	49.44	72.01	14.00	49.50	72.10	14.02	49.56	72.18	14.03	49.62	72.26	14.05	49.67
8.6	72.77	14.15	50.02	72.85	14.16	50.08	72.94	14.18	50.14	73.03	14.20	50.20	73.11	14.21	50.26
8.7	73.61	14.31	50.60	73.70	14.33	50.66	73.79	14.35	50.72	73.87	14.36	50.78	73.96	14.38	50.84
8.8	74.47	14.48	51.19	74.54	14.49	51.24	74.63	14.51	51.30	74.72	14.53	51.36	74.80	14.54	51.42
8.9	75.31	14.64	51.77	75.40	14.66	51.83	75.47	14.67	51.88	75.56	14.69	51.94	75.65	14.71	52.00
9.0	76.16	14.81	52.35	76.24	14.82	52.41	76.33	14.84	52.47	76.41	14.86	52.52	76.49	14.87	52.58
9.1	77.00	14.97	52.93	77.09	14.99	52.99	77.17	15.00	53.05	77.26	15.02	53.11	77.34	15.04	53.16
9.2	77.84	15.13	53.51	77.93	15.15	53.57	78.02	15.17	53.63	78.10	15.18	53.69	78.19	15.20	53.75
9.3	78.69	15.30	54.09	78.78	15.32	54.15	78.86	15.33	54.21	78.95	15.35	54.27	79.04	15.37	54.33
9.4	79.54	15.46	54.68	79.62	15.48	54.73	79.71	15.50	54.79	79.79	15.51	54.85	79.88	15.53	54.91
9.5	80.39	15.63	55.26	80.47	15.64	55.32	80.55	15.66	55.37	80.64	15.68	55.43	80.72	15.69	55.49
9.6	81.23	15.79	55.84	81.32	15.81	55.90	81.41	15.83	55.96	81.48	15.84	56.01	81.57	15.86	56.07
9.7	82.08	15.96	56.42	82.16	15.97	56.48	82.25	15.99	56.54	82.34	16.01	56.60	82.41	16.02	56.65
9.8	82.92	16.12	57.00	83.01	16.14	57.06	83.09	16.15	57.12	83.18	16.17	57.18	83.27	16.19	57.24
9.9	83.77	16.29	57.58	83.85	16.30	57.64	83.94	16.32	57.70	84.03	16.34	57.76	84.11	16.35	57.82
10.0	84.62	16.45	58.17												

(continued)

5			6			7			8			9			NA20
AB	AL203	SI02	AB	AL203	SI02	AB	AL203	SI02	AB	AL203	SI02	AB	AL203	SI02	%
42.73	8.31	29.37	42.81	8.32	29.43	42.90	8.34	29.49	42.99	8.36	29.55	43.07	8.37	29.61	5.0
43.58	8.47	29.96	43.66	8.49	30.01	43.75	8.51	30.07	43.83	8.52	30.13	43.92	8.54	30.19	5.1
44.43	8.64	30.54	44.51	8.65	30.60	44.59	8.67	30.65	44.68	8.69	30.71	44.76	8.70	30.77	5.2
45.27	8.80	31.12	45.36	8.82	31.18	45.44	8.83	31.24	45.52	8.85	31.29	45.61	8.87	31.35	5.3
46.12	8.97	31.70	46.20	8.98	31.76	46.29	9.00	31.82	46.38	9.02	31.88	46.45	9.03	31.93	5.4
46.96	9.13	32.28	47.05	9.15	32.34	47.13	9.16	32.40	47.22	9.18	32.46	47.30	9.20	32.51	5.5
47.80	9.29	32.86	47.89	9.31	32.92	47.98	9.33	32.98	48.06	9.34	33.04	48.15	9.36	33.10	5.6
48.66	9.46	33.45	48.74	9.48	33.50	48.82	9.49	33.56	48.91	9.51	33.62	49.00	9.53	33.68	5.7
49.50	9.62	34.03	49.59	9.64	34.09	49.67	9.66	34.14	49.75	9.67	34.20	49.84	9.69	34.26	5.8
50.35	9.79	34.61	50.43	9.80	34.67	50.52	9.82	34.73	50.60	9.84	34.78	50.68	9.85	34.84	5.9
51.19	9.95	35.19	51.28	9.97	35.25	51.37	9.99	35.31	51.45	10.00	35.37	51.53	10.02	35.42	6.0
52.04	10.12	35.77	52.12	10.13	35.83	52.21	10.15	35.89	52.30	10.17	35.95	52.37	10.18	36.00	6.1
52.88	10.28	36.35	52.97	10.30	36.41	53.05	10.31	36.47	53.14	10.33	36.53	53.23	10.35	36.59	6.2
53.74	10.45	36.94	53.81	10.46	36.99	53.90	10.48	37.05	53.99	10.50	37.11	54.07	10.51	37.17	6.3
54.58	10.61	37.52	54.67	10.63	37.58	54.74	10.64	37.63	54.83	10.66	37.69	54.92	10.68	37.75	6.4
55.43	10.78	38.10	55.51	10.79	38.16	55.60	10.81	38.22	55.67	10.82	38.27	55.76	10.84	38.33	6.5
56.27	10.94	38.68	56.36	10.96	38.74	56.44	10.97	38.80	56.53	10.99	38.86	56.61	11.01	38.91	6.6
57.11	11.10	39.26	57.20	11.12	39.32	57.29	11.14	39.38	57.37	11.15	39.44	57.45	11.17	39.49	6.7
57.96	11.27	39.84	58.05	11.29	39.90	58.13	11.30	39.96	58.22	11.32	40.02	58.30	11.33	40.08	6.8
58.81	11.43	40.43	58.89	11.45	40.48	58.98	11.47	40.54	59.06	11.48	40.60	59.15	11.50	40.66	6.9
59.66	11.60	41.01	59.74	11.61	41.07	59.82	11.63	41.12	59.91	11.65	41.18	59.99	11.66	41.24	7.0
60.50	11.76	41.59	60.59	11.78	41.65	60.68	11.80	41.71	60.75	11.81	41.76	60.84	11.83	41.82	7.1
61.35	11.93	42.17	61.43	11.94	42.23	61.52	11.96	42.29	61.61	11.98	42.35	61.68	11.99	42.40	7.2
62.19	12.09	42.75	62.28	12.11	42.81	62.36	12.12	42.87	62.45	12.14	42.93	62.53	12.16	42.98	7.3
63.04	12.26	43.33	63.12	12.27	43.39	63.21	12.29	43.45	63.30	12.31	43.51	63.38	12.32	43.57	7.4
63.89	12.42	43.92	63.97	12.44	43.97	64.05	12.45	44.03	64.14	12.47	44.09	64.23	12.49	44.15	7.5
64.73	12.58	44.50	64.82	12.60	44.56	64.90	12.62	44.61	64.98	12.63	44.67	65.07	12.65	44.73	7.6
65.58	12.75	45.08	65.67	12.77	45.14	65.75	12.78	45.20	65.83	12.80	45.25	65.92	12.82	45.31	7.7
66.42	12.91	45.66	66.51	12.93	45.72	66.60	12.95	45.78	66.68	12.96	45.84	66.76	12.98	45.89	7.8
67.27	13.08	46.24	67.35	13.09	46.30	67.44	13.11	46.36	67.53	13.13	46.42	67.60	13.14	46.47	7.9
68.11	13.24	46.82	68.20	13.26	46.88	68.29	13.28	46.94	68.37	13.29	47.00	68.46	13.31	47.06	8.0
68.97	13.41	47.41	69.04	13.42	47.46	69.13	13.44	47.52	69.22	13.46	47.58	69.30	13.47	47.64	8.1
69.81	13.57	47.99	69.90	13.59	48.05	69.97	13.60	48.10	70.06	13.62	48.16	70.15	13.64	48.22	8.2
70.66	13.74	48.57	70.74	13.75	48.63	70.83	13.77	48.69	70.91	13.79	48.74	70.99	13.80	48.80	8.3
71.50	13.90	49.15	71.59	13.92	49.21	71.67	13.93	49.27	71.76	13.95	49.33	71.84	13.97	49.38	8.4
72.35	14.07	49.73	72.43	14.08	49.79	72.52	14.10	49.85	72.60	14.11	49.91	72.68	14.13	49.96	8.5
73.19	14.23	50.31	73.28	14.25	50.37	73.36	14.26	50.43	73.45	14.28	50.49	73.54	14.30	50.55	8.6
74.04	14.39	50.90	74.12	14.41	50.95	74.21	14.43	51.01	74.29	14.44	51.07	74.38	14.46	51.13	8.7
74.89	14.56	51.48	74.98	14.58	51.54	75.05	14.59	51.59	75.14	14.61	51.65	75.22	14.62	51.71	8.8
75.73	14.72	52.06	75.82	14.74	52.12	75.91	14.76	52.18	75.98	14.77	52.23	76.07	14.79	52.29	8.9
76.58	14.89	52.64	76.66	14.90	52.70	76.75	14.92	52.76	76.84	14.94	52.82	76.91	14.95	52.87	9.0
77.42	15.05	53.22	77.51	15.07	53.28	77.60	15.09	53.34	77.68	15.10	53.40	77.76	15.12	53.45	9.1
78.27	15.22	53.80	78.35	15.23	53.86	78.44	15.25	53.92	78.53	15.27	53.98	78.61	15.28	54.04	9.2
79.12	15.38	54.39	79.20	15.40	54.44	79.28	15.41	54.50	79.37	15.43	54.56	79.46	15.45	54.62	9.3
79.97	15.55	54.97	80.05	15.56	55.03	80.13	15.58	55.08	80.22	15.60	55.14	80.30	15.61	55.20	9.4
80.81	15.71	55.55	80.90	15.73	55.61	80.98	15.74	55.67	81.06	15.76	55.72	81.15	15.78	55.78	9.5
81.66	15.88	56.13	81.74	15.89	56.19	81.83	15.91	56.25	81.90	15.92	56.30	81.99	15.94	56.36	9.6
82.50	16.04	56.71	82.59	16.06	56.77	82.67	16.07	56.83	82.76	16.09	56.89	82.84	16.11	56.94	9.7
83.34	16.20	57.29	83.43	16.22	57.35	83.52	16.24	57.41	83.60	16.25	57.47	83.69	16.27	57.53	9.8
84.20	16.37	57.88	84.28	16.39	57.93	84.36	16.40	57.99	84.45	16.42	58.05	84.53	16.43	58.11	9.9
															10.0

an
CaO% 0.01～4.99

Table 6-1

CAO	0			1			2			3			4		
%	AN	AL203	SI02	AN	AL203	SI02	AN	AL203	SI02	AN	AL203	SI02	AN	AL203	SI02
0.	0.	0.	0.	0.05	0.02	0.02	0.10	0.04	0.04	0.14	0.05	0.06	0.20	0.07	0.09
0.1	0.49	0.18	0.21	0.55	0.20	0.24	0.60	0.22	0.26	0.65	0.24	0.28	0.69	0.25	0.30
0.2	0.99	0.36	0.43	1.04	0.38	0.45	1.09	0.40	0.47	1.14	0.42	0.49	1.19	0.44	0.51
0.3	1.49	0.55	0.64	1.53	0.56	0.66	1.59	0.58	0.69	1.64	0.60	0.71	1.69	0.62	0.73
0.4	1.99	0.73	0.86	2.04	0.75	0.88	2.08	0.76	0.90	2.13	0.78	0.92	2.18	0.80	0.94
0.5	2.48	0.91	1.07	2.53	0.93	1.09	2.58	0.95	1.11	2.63	0.96	1.14	2.68	0.98	1.16
0.6	2.98	1.09	1.29	3.03	1.11	1.31	3.08	1.13	1.33	3.13	1.15	1.35	3.17	1.16	1.37
0.7	3.47	1.27	1.50	3.52	1.29	1.52	3.57	1.31	1.54	3.62	1.33	1.56	3.68	1.35	1.59
0.8	3.96	1.45	1.71	4.02	1.47	1.74	4.07	1.49	1.76	4.12	1.51	1.78	4.17	1.53	1.80
0.9	4.47	1.64	1.93	4.51	1.65	1.95	4.56	1.67	1.97	4.61	1.69	1.99	4.66	1.71	2.01
1.0	4.96	1.82	2.14	5.01	1.84	2.16	5.06	1.85	2.19	5.11	1.87	2.21	5.16	1.89	2.23
1.1	5.46	2.00	2.36	5.51	2.02	2.38	5.56	2.04	2.40	5.60	2.05	2.42	5.65	2.07	2.44
1.2	5.95	2.18	2.57	6.00	2.20	2.59	6.05	2.22	2.61	6.11	2.24	2.64	6.15	2.25	2.66
1.3	6.45	2.36	2.79	6.50	2.38	2.81	6.55	2.40	2.83	6.60	2.42	2.85	6.65	2.44	2.87
1.4	6.95	2.55	3.00	6.99	2.56	3.02	7.04	2.58	3.04	7.09	2.60	3.06	7.15	2.62	3.09
1.5	7.44	2.73	3.21	7.50	2.75	3.24	7.54	2.76	3.26	7.59	2.78	3.28	7.64	2.80	3.30
1.6	7.94	2.91	3.43	7.99	2.93	3.45	8.04	2.95	3.47	8.08	2.96	3.49	8.13	2.98	3.51
1.7	8.43	3.09	3.64	8.48	3.11	3.66	8.54	3.13	3.69	8.59	3.15	3.71	8.63	3.16	3.73
1.8	8.93	3.27	3.86	8.98	3.29	3.88	9.03	3.31	3.90	9.08	3.33	3.92	9.13	3.35	3.94
1.9	9.42	3.45	4.07	9.47	3.47	4.09	9.52	3.49	4.11	9.58	3.51	4.14	9.63	3.53	4.16
2.0	9.93	3.64	4.29	9.97	3.65	4.31	10.02	3.67	4.33	10.07	3.69	4.35	10.12	3.71	4.37
2.1	10.42	3.82	4.50	10.47	3.84	4.52	10.51	3.85	4.54	10.56	3.87	4.56	10.62	3.89	4.59
2.2	10.91	4.00	4.71	10.97	4.02	4.74	11.02	4.04	4.76	11.06	4.05	4.78	11.11	4.07	4.80
2.3	11.41	4.18	4.93	11.46	4.20	4.95	11.51	4.22	4.97	11.56	4.24	4.99	11.60	4.25	5.01
2.4	11.90	4.36	5.14	11.95	4.38	5.16	12.01	4.40	5.19	12.06	4.42	5.21	12.11	4.44	5.23
2.5	12.41	4.55	5.36	12.45	4.56	5.38	12.50	4.58	5.40	12.55	4.60	5.42	12.60	4.62	5.44
2.6	12.90	4.73	5.57	12.95	4.75	5.59	12.99	4.76	5.61	13.05	4.78	5.64	13.10	4.80	5.66
2.7	13.40	4.91	5.79	13.45	4.93	5.81	13.50	4.95	5.83	13.54	4.96	5.85	13.59	4.98	5.87
2.8	13.89	5.09	6.00	13.94	5.11	6.02	13.99	5.13	6.04	14.04	5.15	6.06	14.09	5.16	6.09
2.9	14.38	5.27	6.21	14.44	5.29	6.24	14.49	5.31	6.26	14.54	5.33	6.28	14.59	5.35	6.30
3.0	14.88	5.45	6.43	14.93	5.47	6.45	14.98	5.49	6.47	15.03	5.51	6.49	15.08	5.53	6.51
3.1	15.38	5.64	6.64	15.42	5.65	6.66	15.48	5.67	6.69	15.53	5.69	6.71	15.58	5.71	6.73
3.2	15.88	5.82	6.86	15.93	5.84	6.88	15.97	5.85	6.90	16.02	5.87	6.92	16.07	5.89	6.94
3.3	16.37	6.00	7.07	16.42	6.02	7.09	16.47	6.04	7.11	16.52	6.05	7.14	16.57	6.07	7.16
3.4	16.87	6.18	7.29	16.92	6.20	7.31	16.97	6.22	7.33	17.02	6.24	7.35	17.06	6.25	7.37
3.5	17.36	6.36	7.50	17.41	6.38	7.52	17.46	6.40	7.54	17.51	6.42	7.56	17.57	6.44	7.59
3.6	17.86	6.55	7.71	17.91	6.56	7.74	17.96	6.58	7.76	18.01	6.60	7.78	18.06	6.62	7.80
3.7	18.36	6.73	7.93	18.41	6.75	7.95	18.45	6.76	7.97	18.50	6.78	7.99	18.55	6.80	8.01
3.8	18.85	6.91	8.14	18.90	6.93	8.16	18.96	6.95	8.19	19.00	6.96	8.21	19.05	6.98	8.23
3.9	19.35	7.09	8.36	19.40	7.11	8.38	19.45	7.13	8.40	19.50	7.15	8.42	19.54	7.16	8.44
4.0	19.84	7.27	8.57	19.89	7.29	8.59	19.94	7.31	8.61	20.00	7.33	8.64	20.05	7.35	8.66
4.1	20.34	7.45	8.79	20.39	7.47	8.81	20.44	7.49	8.83	20.49	7.51	8.85	20.54	7.53	8.87
4.2	20.84	7.64	9.00	20.88	7.65	9.02	20.93	7.67	9.04	20.98	7.69	9.06	21.04	7.71	9.09
4.3	21.33	7.82	9.21	21.39	7.84	9.24	21.43	7.85	9.26	21.48	7.87	9.28	21.53	7.89	9.30
4.4	21.83	8.00	9.43	21.88	8.02	9.45	21.93	8.04	9.47	21.97	8.05	9.49	22.02	8.07	9.51
4.5	22.32	8.18	9.64	22.37	8.20	9.66	22.43	8.22	9.69	22.48	8.24	9.71	22.52	8.25	9.73
4.6	22.82	8.36	9.86	22.87	8.38	9.88	22.92	8.40	9.90	22.97	8.42	9.92	23.02	8.44	9.94
4.7	23.32	8.55	10.07	23.36	8.56	10.09	23.41	8.58	10.11	23.47	8.60	10.14	23.52	8.62	10.16
4.8	23.82	8.73	10.29	23.87	8.75	10.31	23.91	8.76	10.33	23.96	8.78	10.35	24.01	8.80	10.37
4.9	24.31	8.91	10.50	24.36	8.93	10.52	24.41	8.95	10.54	24.45	8.96	10.56	24.51	8.98	10.59

5			6			7			8			9			CAO
AN	AL203	SI02	AN	AL203	SI02	AN	AL203	SI02	AN	AL203	SI02	AN	AL203	SI02	%
0.25	0.09	0.11	0.30	0.11	0.13	0.35	0.13	0.15	0.40	0.15	0.17	0.44	0.16	0.19	0.
0.74	0.27	0.32	0.79	0.29	0.34	0.84	0.31	0.36	0.90	0.33	0.39	0.95	0.35	0.41	0.1
1.24	0.45	0.54	1.29	0.47	0.56	1.34	0.49	0.58	1.39	0.51	0.60	1.44	0.53	0.62	0.2
1.74	0.64	0.75	1.78	0.65	0.77	1.83	0.67	0.79	1.88	0.69	0.81	1.94	0.71	0.84	0.3
2.23	0.82	0.96	2.29	0.84	0.99	2.33	0.85	1.01	2.38	0.87	1.03	2.43	0.89	1.05	0.4
2.73	1.00	1.18	2.78	1.02	1.20	2.83	1.04	1.22	2.87	1.05	1.24	2.92	1.07	1.26	0.5
3.22	1.18	1.39	3.27	1.20	1.41	3.33	1.22	1.44	3.38	1.24	1.46	3.42	1.25	1.48	0.6
3.72	1.36	1.61	3.77	1.38	1.63	3.82	1.40	1.65	3.87	1.42	1.67	3.92	1.44	1.69	0.7
4.22	1.55	1.82	4.26	1.56	1.84	4.31	1.58	1.86	4.37	1.60	1.89	4.42	1.62	1.91	0.8
4.72	1.73	2.04	4.77	1.75	2.06	4.81	1.76	2.08	4.86	1.78	2.10	4.91	1.80	2.12	0.9
5.21	1.91	2.25	5.26	1.93	2.27	5.31	1.95	2.29	5.35	1.96	2.31	5.41	1.98	2.34	1.0
5.70	2.09	2.46	5.76	2.11	2.49	5.81	2.13	2.51	5.86	2.15	2.53	5.90	2.16	2.55	1.1
6.20	2.27	2.68	6.25	2.29	2.70	6.30	2.31	2.72	6.35	2.33	2.74	6.40	2.35	2.76	1.2
6.69	2.45	2.89	6.74	2.47	2.91	6.80	2.49	2.94	6.85	2.51	2.96	6.90	2.53	2.98	1.3
7.20	2.64	3.11	7.24	2.65	3.13	7.29	2.67	3.15	7.34	2.69	3.17	7.39	2.71	3.19	1.4
7.69	2.82	3.32	7.74	2.84	3.34	7.78	2.85	3.36	7.84	2.87	3.39	7.89	2.89	3.41	1.5
8.19	3.00	3.54	8.24	3.02	3.56	8.29	3.04	3.58	8.33	3.05	3.60	8.38	3.07	3.62	1.6
8.68	3.18	3.75	8.73	3.20	3.77	8.78	3.22	3.79	8.83	3.24	3.81	8.88	3.25	3.84	1.7
9.17	3.36	3.96	9.23	3.38	3.99	9.28	3.40	4.01	9.33	3.42	4.03	9.38	3.44	4.05	1.8
9.68	3.55	4.18	9.72	3.56	4.20	9.77	3.58	4.22	9.82	3.60	4.24	9.87	3.62	4.26	1.9
10.17	3.73	4.39	10.22	3.75	4.41	10.27	3.76	4.44	10.32	3.78	4.46	10.37	3.80	4.48	2.0
10.67	3.91	4.61	10.72	3.93	4.63	10.77	3.95	4.65	10.81	3.96	4.67	10.86	3.98	4.69	2.1
11.16	4.09	4.82	11.21	4.11	4.84	11.26	4.13	4.86	11.32	4.15	4.89	11.36	4.16	4.91	2.2
11.66	4.27	5.04	11.71	4.29	5.06	11.76	4.31	5.08	11.81	4.33	5.10	11.86	4.35	5.12	2.3
12.15	4.45	5.25	12.20	4.47	5.27	12.25	4.49	5.29	12.30	4.51	5.31	12.36	4.53	5.34	2.4
12.65	4.64	5.46	12.70	4.65	5.49	12.75	4.67	5.51	12.80	4.69	5.53	12.85	4.71	5.55	2.5
13.15	4.82	5.68	13.20	4.84	5.70	13.24	4.85	5.72	13.29	4.87	5.74	13.34	4.89	5.76	2.6
13.64	5.00	5.89	13.69	5.02	5.91	13.75	5.04	5.94	13.79	5.05	5.96	13.84	5.07	5.98	2.7
14.14	5.18	6.11	14.19	5.20	6.13	14.24	5.22	6.15	14.29	5.24	6.17	14.33	5.25	6.19	2.8
14.63	5.36	6.32	14.68	5.38	6.34	14.73	5.40	6.36	14.79	5.42	6.39	14.84	5.44	6.41	2.9
15.14	5.55	6.54	15.18	5.56	6.56	15.23	5.58	6.58	15.28	5.60	6.60	15.33	5.62	6.62	3.0
15.63	5.73	6.75	15.68	5.75	6.77	15.72	5.76	6.79	15.77	5.78	6.81	15.83	5.80	6.84	3.1
16.12	5.91	6.96	16.18	5.93	6.99	16.23	5.95	7.01	16.27	5.96	7.03	16.32	5.98	7.05	3.2
16.62	6.09	7.18	16.67	6.11	7.20	16.72	6.13	7.22	16.77	6.15	7.24	16.81	6.16	7.26	3.3
17.11	6.27	7.39	17.16	6.29	7.41	17.22	6.31	7.44	17.27	6.33	7.46	17.32	6.35	7.48	3.4
17.61	6.45	7.61	17.66	6.47	7.63	17.71	6.49	7.65	17.76	6.51	7.67	17.81	6.53	7.69	3.5
18.11	6.64	7.82	18.15	6.65	7.84	18.20	6.67	7.86	18.26	6.69	7.89	18.31	6.71	7.91	3.6
18.61	6.82	8.04	18.66	6.84	8.06	18.70	6.85	8.08	18.75	6.87	8.10	18.80	6.89	8.12	3.7
19.10	7.00	8.25	19.15	7.02	8.27	19.20	7.04	8.29	19.24	7.05	8.31	19.30	7.07	8.34	3.8
19.59	7.18	8.46	19.65	7.20	8.49	19.70	7.22	8.51	19.75	7.24	8.53	19.79	7.25	8.55	3.9
20.09	7.36	8.68	20.14	7.38	8.70	20.19	7.40	8.72	20.24	7.42	8.74	20.29	7.44	8.76	4.0
20.59	7.55	8.89	20.63	7.56	8.91	20.69	7.58	8.94	20.74	7.60	8.96	20.79	7.62	8.98	4.1
21.09	7.73	9.11	21.14	7.75	9.13	21.18	7.76	9.15	21.23	7.78	9.17	21.28	7.80	9.19	4.2
21.58	7.91	9.32	21.63	7.93	9.34	21.68	7.95	9.36	21.73	7.96	9.39	21.78	7.98	9.41	4.3
22.08	8.09	9.54	22.13	8.11	9.56	22.18	8.13	9.58	22.23	8.15	9.60	22.27	8.16	9.62	4.4
22.57	8.27	9.75	22.62	8.29	9.77	22.67	8.31	9.79	22.72	8.33	9.81	22.78	8.35	9.84	4.5
23.06	8.45	9.96	23.12	8.47	9.99	23.17	8.49	10.01	23.22	8.51	10.03	23.27	8.53	10.05	4.6
23.57	8.64	10.18	23.61	8.65	10.20	23.66	8.67	10.22	23.71	8.69	10.24	23.76	8.71	10.26	4.7
24.06	8.82	10.39	24.11	8.84	10.41	24.16	8.85	10.44	24.21	8.87	10.46	24.26	8.89	10.48	4.8
24.56	9.00	10.61	24.61	9.02	10.63	24.66	9.04	10.65	24.70	9.05	10.67	24.75	9.07	10.69	4.9

an
CaO% 5.00~9.99

Table 6-1

CAO	0			1			2			3			4		
%	AN	AL203	SI02	AN	AL203	SI02	AN	AL203	SI02	AN	AL203	SI02	AN	AL203	SI02
5.0	24.80	9.09	10.71	24.86	9.11	10.74	24.91	9.13	10.76	24.96	9.15	10.78	25.00	9.16	10.80
5.1	25.30	9.27	10.93	25.35	9.29	10.95	25.40	9.31	10.97	25.45	9.33	10.99	25.50	9.35	11.01
5.2	25.79	9.45	11.14	25.84	9.47	11.16	25.90	9.49	11.19	25.95	9.51	11.21	26.00	9.53	11.23
5.3	26.30	9.64	11.36	26.34	9.65	11.38	26.39	9.67	11.40	26.44	9.69	11.42	26.49	9.71	11.44
5.4	26.79	9.82	11.57	26.84	9.84	11.59	26.88	9.85	11.61	26.94	9.87	11.64	26.99	9.89	11.66
5.5	27.29	10.00	11.79	27.34	10.02	11.81	27.39	10.04	11.83	27.43	10.05	11.85	27.48	10.07	11.87
5.6	27.78	10.18	12.00	27.83	10.20	12.02	27.88	10.22	12.04	27.93	10.24	12.06	27.98	10.25	12.09
5.7	28.27	10.36	12.21	28.33	10.38	12.24	28.38	10.40	12.26	28.43	10.42	12.28	28.48	10.44	12.30
5.8	28.78	10.55	12.43	28.82	10.56	12.45	28.87	10.58	12.47	28.92	10.60	12.49	28.97	10.62	12.51
5.9	29.27	10.73	12.64	29.32	10.75	12.66	29.37	10.76	12.69	29.42	10.78	12.71	29.47	10.80	12.73
6.0	29.77	10.91	12.86	29.82	10.93	12.88	29.87	10.95	12.90	29.91	10.96	12.92	29.96	10.98	12.94
6.1	30.26	11.09	13.07	30.31	11.11	13.09	30.36	11.13	13.11	30.42	11.15	13.14	30.46	11.16	13.16
6.2	30.76	11.27	13.29	30.81	11.29	13.31	30.86	11.31	13.33	30.91	11.33	13.35	30.96	11.35	13.37
6.3	31.25	11.45	13.50	31.30	11.47	13.52	31.35	11.49	13.54	31.40	11.51	13.56	31.46	11.53	13.59
6.4	31.75	11.64	13.71	31.80	11.65	13.74	31.85	11.67	13.76	31.90	11.69	13.78	31.95	11.71	13.80
6.5	32.25	11.82	13.93	32.30	11.84	13.95	32.34	11.85	13.97	32.39	11.87	13.99	32.44	11.89	14.01
6.6	32.74	12.00	14.14	32.79	12.02	14.16	32.85	12.04	14.19	32.89	12.05	14.21	32.94	12.07	14.23
6.7	33.24	12.18	14.36	33.29	12.20	14.38	33.34	12.22	14.40	33.39	12.24	14.42	33.43	12.25	14.44
6.8	33.73	12.36	14.57	33.78	12.38	14.59	33.83	12.40	14.61	33.89	12.42	14.64	33.94	12.44	14.66
6.9	34.24	12.55	14.79	34.28	12.56	14.81	34.33	12.58	14.83	34.38	12.60	14.85	34.43	12.62	14.87
7.0	34.73	12.73	15.00	34.78	12.75	15.02	34.82	12.76	15.04	34.87	12.78	15.06	34.93	12.80	15.09
7.1	35.22	12.91	15.21	35.28	12.93	15.24	35.33	12.95	15.26	35.37	12.96	15.28	35.42	12.98	15.30
7.2	35.72	13.09	15.43	35.77	13.11	15.45	35.82	13.13	15.47	35.87	13.15	15.49	35.91	13.16	15.51
7.3	36.21	13.27	15.64	36.26	13.29	15.66	36.32	13.31	15.69	36.37	13.33	15.71	36.42	13.35	15.73
7.4	36.71	13.45	15.86	36.76	13.47	15.88	36.81	13.49	15.90	36.86	13.51	15.92	36.91	13.53	15.94
7.5	37.21	13.64	16.07	37.25	13.65	16.09	37.30	13.67	16.11	37.36	13.69	16.14	37.41	13.71	16.16
7.6	37.71	13.82	16.29	37.76	13.84	16.31	37.80	13.85	16.33	37.85	13.87	16.35	37.90	13.89	16.37
7.7	38.20	14.00	16.50	38.25	14.02	16.52	38.30	14.04	16.54	38.34	14.05	16.56	38.40	14.07	16.59
7.8	38.69	14.18	16.71	38.75	14.20	16.74	38.80	14.22	16.76	38.85	14.24	16.78	38.89	14.25	16.80
7.9	39.19	14.36	16.93	39.24	14.38	16.95	39.29	14.40	16.97	39.34	14.42	16.99	39.39	14.44	17.01
8.0	39.69	14.55	17.14	39.73	14.56	17.16	39.79	14.58	17.19	39.84	14.60	17.21	39.89	14.62	17.23
8.1	40.19	14.73	17.36	40.24	14.75	17.38	40.28	14.76	17.40	40.33	14.78	17.42	40.38	14.80	17.44
8.2	40.68	14.91	17.57	40.73	14.93	17.59	40.78	14.95	17.61	40.83	14.96	17.64	40.88	14.98	17.66
8.3	41.18	15.09	17.79	41.23	15.11	17.81	41.28	15.13	17.83	41.33	15.15	17.85	41.37	15.16	17.87
8.4	41.67	15.27	18.00	41.72	15.29	18.02	41.77	15.31	18.04	41.82	15.33	18.06	41.88	15.35	18.09
8.5	42.16	15.45	18.21	42.22	15.47	18.24	42.27	15.49	18.26	42.32	15.51	18.28	42.37	15.53	18.30
8.6	42.67	15.64	18.43	42.71	15.65	18.45	42.76	15.67	18.47	42.81	15.69	18.49	42.86	15.71	18.51
8.7	43.16	15.82	18.64	43.21	15.84	18.66	43.26	15.85	18.69	43.31	15.87	18.71	43.36	15.89	18.73
8.8	43.66	16.00	18.86	43.71	16.02	18.88	43.76	16.04	18.90	43.80	16.05	18.92	43.85	16.07	18.94
8.9	44.15	16.18	19.07	44.20	16.20	19.09	44.25	16.22	19.11	44.31	16.24	19.14	44.35	16.25	19.16
9.0	44.65	16.36	19.29	44.70	16.38	19.31	44.75	16.40	19.33	44.80	16.42	19.35	44.85	16.44	19.37
9.1	45.15	16.55	19.50	45.19	16.56	19.52	45.24	16.58	19.54	45.29	16.60	19.56	45.35	16.62	19.59
9.2	45.64	16.73	19.71	45.70	16.75	19.74	45.74	16.76	19.76	45.79	16.78	19.78	45.84	16.80	19.80
9.3	46.14	16.91	19.93	46.19	16.93	19.95	46.24	16.95	19.97	46.28	16.96	19.99	46.33	16.98	20.01
9.4	46.63	17.09	20.14	46.68	17.11	20.16	46.74	17.13	20.19	46.79	17.15	20.21	46.83	17.16	20.23
9.5	47.13	17.27	20.36	47.18	17.29	20.38	47.23	17.31	20.40	47.28	17.33	20.42	47.33	17.35	20.44
9.6	47.62	17.45	20.57	47.67	17.47	20.59	47.72	17.49	20.61	47.78	17.51	20.64	47.83	17.53	20.66
9.7	48.13	17.64	20.79	48.17	17.65	20.81	48.22	17.67	20.83	48.27	17.69	20.85	48.32	17.71	20.87
9.8	48.62	17.82	21.00	48.67	17.84	21.02	48.71	17.85	21.04	48.76	17.87	21.06	48.82	17.89	21.09
9.9	49.11	18.00	21.21	49.17	18.02	21.24	49.22	18.04	21.26	49.26	18.05	21.28	49.31	18.07	21.30

(continued 1)

5			6			7			8			9			CAO
AN	AL203	SIO2	AN	AL203	SIO2	AN	AL203	SIO2	AN	AL203	SIO2	AN	AL203	SIO2	%
25.05	9.18	10.82	25.10	9.20	10.84	25.15	9.22	10.86	25.21	9.24	10.89	25.25	9.25	10.91	5.0
25.55	9.36	11.04	25.60	9.38	11.06	25.65	9.40	11.08	25.70	9.42	11.10	25.75	9.44	11.12	5.1
26.05	9.55	11.25	26.09	9.56	11.27	26.14	9.58	11.29	26.19	9.60	11.31	26.25	9.62	11.34	5.2
26.54	9.73	11.46	26.60	9.75	11.49	26.64	9.76	11.51	26.69	9.78	11.53	26.74	9.80	11.55	5.3
27.04	9.91	11.68	27.09	9.93	11.70	27.14	9.95	11.72	27.18	9.96	11.74	27.23	9.98	11.76	5.4
27.53	10.09	11.89	27.58	10.11	11.91	27.64	10.13	11.94	27.69	10.15	11.96	27.73	10.16	11.98	5.5
28.03	10.27	12.11	28.08	10.29	12.13	28.13	10.31	12.15	28.18	10.33	12.17	28.23	10.35	12.19	5.6
28.52	10.45	12.32	28.57	10.47	12.34	28.62	10.49	12.36	28.68	10.51	12.39	28.73	10.53	12.41	5.7
29.03	10.64	12.54	29.07	10.65	12.56	29.12	10.67	12.58	29.17	10.69	12.60	29.22	10.71	12.62	5.8
29.52	10.82	12.75	29.57	10.84	12.77	29.61	10.85	12.79	29.66	10.87	12.81	29.72	10.89	12.84	5.9
30.01	11.00	12.96	30.07	11.02	12.99	30.12	11.04	13.01	30.16	11.05	13.03	30.21	11.07	13.05	6.0
30.51	11.18	13.18	30.56	11.20	13.20	30.61	11.22	13.22	30.66	11.24	13.24	30.70	11.25	13.26	6.1
31.00	11.36	13.39	31.05	11.38	13.41	31.11	11.40	13.44	31.16	11.42	13.46	31.21	11.44	13.48	6.2
31.51	11.55	13.61	31.55	11.56	13.63	31.60	11.58	13.65	31.65	11.60	13.67	31.70	11.62	13.69	6.3
32.00	11.73	13.82	32.05	11.75	13.84	32.09	11.76	13.86	32.15	11.78	13.89	32.20	11.80	13.91	6.4
32.50	11.91	14.04	32.55	11.93	14.06	32.60	11.95	14.08	32.64	11.96	14.10	32.69	11.98	14.12	6.5
32.99	12.09	14.25	33.04	12.11	14.27	33.09	12.13	14.29	33.14	12.15	14.31	33.19	12.16	14.34	6.6
33.48	12.27	14.46	33.54	12.29	14.49	33.59	12.31	14.51	33.64	12.33	14.53	33.69	12.35	14.55	6.7
33.98	12.45	14.68	34.03	12.47	14.70	34.08	12.49	14.72	34.13	12.51	14.74	34.18	12.53	14.76	6.8
34.48	12.64	14.89	34.52	12.65	14.91	34.58	12.67	14.94	34.63	12.69	14.96	34.68	12.71	14.98	6.9
34.98	12.82	15.11	35.03	12.84	15.13	35.07	12.85	15.15	35.12	12.87	15.17	35.17	12.89	15.19	7.0
35.47	13.00	15.32	35.52	13.02	15.34	35.57	13.04	15.36	35.62	13.05	15.39	35.67	13.07	15.41	7.1
35.97	13.18	15.54	36.02	13.20	15.56	36.07	13.22	15.58	36.12	13.24	15.60	36.16	13.25	15.62	7.2
36.46	13.36	15.75	36.51	13.38	15.77	36.56	13.40	15.79	36.61	13.42	15.81	36.67	13.44	15.84	7.3
36.96	13.55	15.96	37.01	13.56	15.99	37.06	13.58	16.01	37.11	13.60	16.03	37.16	13.62	16.05	7.4
37.46	13.73	16.18	37.51	13.75	16.20	37.55	13.76	16.22	37.60	13.78	16.24	37.65	13.80	16.26	7.5
37.95	13.91	16.39	38.00	13.93	16.41	38.06	13.95	16.44	38.10	13.96	16.46	38.15	13.98	16.48	7.6
38.45	14.09	16.61	38.50	14.11	16.63	38.55	14.13	16.65	38.60	14.15	16.67	38.64	14.16	16.69	7.7
38.94	14.27	16.82	38.99	14.29	16.84	39.04	14.31	16.86	39.10	14.33	16.89	39.15	14.35	16.91	7.8
39.44	14.45	17.04	39.49	14.47	17.06	39.54	14.49	17.08	39.59	14.51	17.10	39.64	14.53	17.12	7.9
39.94	14.64	17.25	39.98	14.65	17.27	40.03	14.67	17.29	40.08	14.69	17.31	40.14	14.71	17.34	8.0
40.43	14.82	17.46	40.49	14.84	17.49	40.53	14.85	17.51	40.58	14.87	17.53	40.63	14.89	17.55	8.1
40.93	15.00	17.68	40.98	15.02	17.70	41.03	15.04	17.72	41.07	15.05	17.74	41.12	15.07	17.76	8.2
41.42	15.18	17.89	41.47	15.20	17.91	41.53	15.22	17.94	41.58	15.24	17.96	41.62	15.25	17.98	8.3
41.92	15.36	18.11	41.97	15.38	18.13	42.02	15.40	18.15	42.07	15.42	18.17	42.12	15.44	18.19	8.4
42.42	15.55	18.32	42.46	15.56	18.34	42.51	15.58	18.36	42.57	15.60	18.39	42.62	15.62	18.41	8.5
42.92	15.73	18.54	42.97	15.75	18.56	43.01	15.76	18.58	43.06	15.78	18.60	43.11	15.80	18.62	8.6
43.41	15.91	18.75	43.46	15.93	18.77	43.51	15.95	18.79	43.55	15.96	18.81	43.61	15.98	18.84	8.7
43.90	16.09	18.96	43.96	16.11	18.99	44.01	16.13	19.01	44.06	16.15	19.03	44.10	16.16	19.05	8.8
44.40	16.27	19.18	44.45	16.29	19.20	44.50	16.31	19.22	44.55	16.33	19.24	44.60	16.35	19.26	8.9
44.89	16.45	19.39	44.94	16.47	19.41	45.00	16.49	19.44	45.05	16.51	19.46	45.10	16.53	19.48	9.0
45.40	16.64	19.61	45.44	16.65	19.63	45.49	16.67	19.65	45.54	16.69	19.67	45.59	16.71	19.69	9.1
45.89	16.82	19.82	45.94	16.84	19.84	45.98	16.85	19.86	46.04	16.87	19.89	46.09	16.89	19.91	9.2
46.39	17.00	20.04	46.44	17.02	20.06	46.49	17.04	20.08	46.53	17.05	20.10	46.58	17.07	20.12	9.3
46.88	17.18	20.25	46.93	17.20	20.27	46.98	17.22	20.29	47.03	17.24	20.31	47.08	17.25	20.34	9.4
47.37	17.36	20.46	47.43	17.38	20.49	47.48	17.40	20.51	47.53	17.42	20.53	47.58	17.44	20.55	9.5
47.88	17.55	20.68	47.92	17.56	20.70	47.97	17.58	20.72	48.02	17.60	20.74	48.07	17.62	20.76	9.6
48.37	17.73	20.89	48.42	17.75	20.91	48.47	17.76	20.94	48.52	17.78	20.96	48.57	17.80	20.98	9.7
48.87	17.91	21.11	48.92	17.93	21.13	48.97	17.95	21.15	49.01	17.96	21.17	49.06	17.98	21.19	9.8
49.36	18.09	21.32	49.41	18.11	21.34	49.46	18.13	21.36	49.52	18.15	21.39	49.56	18.16	21.41	9.9

an
CaO% 10.00～15.00

Table 6-1

CAO	0			1			2			3			4		
%	AN	AL203	SI02	AN	AL203	SI02	AN	AL203	SI02	AN	AL203	SI02	AN	AL203	SI02
10.0	49.61	18.18	21.43	49.66	18.20	21.45	49.71	18.22	21.47	49.76	18.24	21.49	49.80	18.25	21.51
10.1	50.10	18.36	21.64	50.15	18.38	21.66	50.21	18.40	21.69	50.26	18.42	21.71	50.31	18.44	21.73
10.2	50.61	18.55	21.86	50.65	18.56	21.88	50.70	18.58	21.90	50.75	18.60	21.92	50.80	18.62	21.94
10.3	51.10	18.73	22.07	51.15	18.75	22.09	51.19	18.76	22.11	51.25	18.78	22.14	51.30	18.80	22.16
10.4	51.60	18.91	22.29	51.65	18.93	22.31	51.70	18.95	22.33	51.74	18.96	22.35	51.79	18.98	22.37
10.5	52.09	19.09	22.50	52.14	19.11	22.52	52.19	19.13	22.54	52.24	19.15	22.56	52.29	19.16	22.59
10.6	52.58	19.27	22.71	52.64	19.29	22.74	52.69	19.31	22.76	52.74	19.33	22.78	52.79	19.35	22.80
10.7	53.08	19.45	22.93	53.13	19.47	22.95	53.18	19.49	22.97	53.23	19.51	22.99	53.28	19.53	23.01
10.8	53.58	19.64	23.14	53.62	19.65	23.16	53.68	19.67	23.19	53.73	19.69	23.21	53.78	19.71	23.23
10.9	54.08	19.82	23.36	54.13	19.84	23.38	54.17	19.85	23.40	54.22	19.87	23.42	54.27	19.89	23.44
11.0	54.57	20.00	23.57	54.62	20.02	23.59	54.67	20.04	23.61	54.72	20.05	23.64	54.77	20.07	23.66
11.1	55.07	20.18	23.79	55.12	20.20	23.81	55.17	20.22	23.83	55.22	20.24	23.85	55.26	20.25	23.87
11.2	55.56	20.36	24.00	55.61	20.38	24.02	55.66	20.40	24.04	55.71	20.42	24.06	55.77	20.44	24.09
11.3	56.06	20.55	24.21	56.11	20.56	24.24	56.16	20.58	24.26	56.21	20.60	24.28	56.26	20.62	24.30
11.4	56.56	20.73	24.43	56.61	20.75	24.45	56.65	20.76	24.47	56.70	20.78	24.49	56.75	20.80	24.51
11.5	57.05	20.91	24.64	57.10	20.93	24.66	57.16	20.95	24.69	57.20	20.96	24.71	57.25	20.98	24.73
11.6	57.55	21.09	24.86	57.60	21.11	24.88	57.65	21.13	24.90	57.70	21.15	24.92	57.74	21.16	24.94
11.7	58.04	21.27	25.07	58.09	21.29	25.09	58.14	21.31	25.11	58.20	21.33	25.14	58.25	21.35	25.16
11.8	58.54	21.45	25.29	58.59	21.47	25.31	58.64	21.49	25.33	58.69	21.51	25.35	58.74	21.53	25.37
11.9	59.04	21.64	25.50	59.08	21.65	25.52	59.13	21.67	25.54	59.18	21.69	25.56	59.24	21.71	25.59
12.0	59.53	21.82	25.71	59.59	21.84	25.74	59.63	21.85	25.76	59.68	21.87	25.78	59.73	21.89	25.80
12.1	60.03	22.00	25.93	60.08	22.02	25.95	60.13	22.04	25.97	60.17	22.05	25.99	60.22	22.07	26.01
12.2	60.52	22.18	26.14	60.57	22.20	26.16	60.63	22.22	26.19	60.68	22.24	26.21	60.72	22.25	26.23
12.3	61.02	22.36	26.36	61.07	22.38	26.38	61.12	22.40	26.40	61.17	22.42	26.42	61.22	22.44	26.44
12.4	61.52	22.55	26.57	61.56	22.56	26.59	61.61	22.58	26.61	61.67	22.60	26.64	61.72	22.62	26.66
12.5	62.02	22.73	26.79	62.07	22.75	26.81	62.11	22.76	26.83	62.16	22.78	26.85	62.21	22.80	26.87
12.6	62.51	22.91	27.00	62.56	22.93	27.02	62.61	22.95	27.04	62.65	22.96	27.06	62.71	22.98	27.09
12.7	63.00	23.09	27.21	63.06	23.11	27.24	63.11	23.13	27.26	63.16	23.15	27.28	63.20	23.16	27.30
12.8	63.50	23.27	27.43	63.55	23.29	27.45	63.60	23.31	27.47	63.65	23.33	27.49	63.70	23.35	27.51
12.9	63.99	23.45	27.64	64.04	23.47	27.66	64.10	23.49	27.69	64.15	23.51	27.71	64.20	23.53	27.73
13.0	64.50	23.64	27.86	64.54	23.65	27.88	64.59	23.67	27.90	64.64	23.69	27.92	64.69	23.71	27.94
13.1	64.99	23.82	28.07	65.04	23.84	28.09	65.08	23.85	28.11	65.14	23.87	28.14	65.19	23.89	28.16
13.2	65.49	24.00	28.29	65.54	24.02	28.31	65.59	24.04	28.33	65.63	24.05	28.35	65.68	24.07	28.37
13.3	65.98	24.18	28.50	66.03	24.20	28.52	66.08	24.22	28.54	66.13	24.24	28.56	66.18	24.25	28.59
13.4	66.47	24.36	28.71	66.53	24.38	28.74	66.58	24.40	28.76	66.63	24.42	28.78	66.68	24.44	28.80
13.5	66.98	24.55	28.93	67.02	24.56	28.95	67.07	24.58	28.97	67.12	24.60	28.99	67.17	24.62	29.01
13.6	67.47	24.73	29.14	67.52	24.75	29.16	67.57	24.76	29.19	67.62	24.78	29.21	67.67	24.80	29.23
13.7	67.97	24.91	29.36	68.02	24.93	29.38	68.07	24.95	29.40	68.11	24.96	29.42	68.16	24.98	29.44
13.8	68.46	25.09	29.57	68.51	25.11	29.59	68.56	25.13	29.61	68.62	25.15	29.64	68.66	25.16	29.66
13.9	68.96	25.27	29.79	69.01	25.29	29.81	69.06	25.31	29.83	69.11	25.33	29.85	69.16	25.35	29.87
14.0	69.45	25.45	30.00	69.50	25.47	30.02	69.55	25.49	30.04	69.60	25.51	30.06	69.66	25.53	30.09
14.1	69.95	25.64	30.21	70.00	25.65	30.24	70.05	25.67	30.26	70.10	25.69	30.28	70.15	25.71	30.30
14.2	70.45	25.82	30.43	70.50	25.84	30.45	70.54	25.85	30.47	70.59	25.87	30.49	70.64	25.89	30.51
14.3	70.94	26.00	30.64	70.99	26.02	30.66	71.05	26.04	30.69	71.09	26.05	30.71	71.14	26.07	30.73
14.4	71.44	26.18	30.86	71.49	26.20	30.88	71.54	26.22	30.90	71.59	26.24	30.92	71.63	26.25	30.94
14.5	71.93	26.36	31.07	71.98	26.38	31.09	72.03	26.40	31.11	72.09	26.42	31.14	72.14	26.44	31.16
14.6	72.44	26.55	31.29	72.48	26.56	31.31	72.53	26.58	31.33	72.58	26.60	31.35	72.63	26.62	31.37
14.7	72.93	26.73	31.50	72.98	26.75	31.52	73.02	26.76	31.54	73.07	26.78	31.56	73.13	26.80	31.59
14.8	73.42	26.91	31.71	73.48	26.93	31.74	73.53	26.95	31.76	73.57	26.96	31.78	73.62	26.98	31.80
14.9	73.92	27.09	31.93	73.97	27.11	31.95	74.02	27.13	31.97	74.07	27.15	31.99	74.11	27.16	32.01
15.0	74.41	27.27	32.14												

(continued 2)

5			6			7			8			9			CAO
AN	AL203	SI02	AN	AL203	SI02	AN	AL203	SI02	AN	AL203	SI02	AN	AL203	SI02	%
49.86	18.27	21.54	49.91	18.29	21.56	49.96	18.31	21.58	50.01	18.33	21.60	50.06	18.35	21.62	10.0
50.35	18.45	21.75	50.40	18.47	21.77	50.45	18.49	21.79	50.50	18.51	21.81	50.56	18.53	21.84	10.1
50.85	18.64	21.96	50.90	18.65	21.99	50.95	18.67	22.01	51.00	18.69	22.03	51.05	18.71	22.05	10.2
51.35	18.82	22.18	51.40	18.84	22.20	51.44	18.85	22.22	51.49	18.87	22.24	51.54	18.89	22.26	10.3
51.84	19.00	22.39	51.89	19.02	22.41	51.95	19.04	22.44	51.99	19.05	22.46	52.04	19.07	22.48	10.4
52.34	19.18	22.61	52.39	19.20	22.63	52.44	19.22	22.65	52.49	19.24	22.67	52.53	19.25	22.69	10.5
52.83	19.36	22.82	52.88	19.38	22.84	52.93	19.40	22.86	52.99	19.42	22.89	53.04	19.44	22.91	10.6
53.34	19.55	23.04	53.38	19.56	23.06	53.43	19.58	23.08	53.48	19.60	23.10	53.53	19.62	23.12	10.7
53.83	19.73	23.25	53.88	19.75	23.27	53.92	19.76	23.29	53.97	19.78	23.31	54.03	19.80	23.34	10.8
54.32	19.91	23.46	54.38	19.93	23.49	54.43	19.95	23.51	54.47	19.96	23.53	54.52	19.98	23.55	10.9
54.82	20.09	23.68	54.87	20.11	23.70	54.92	20.13	23.72	54.97	20.15	23.74	55.01	20.16	23.76	11.0
55.31	20.27	23.89	55.36	20.29	23.91	55.42	20.31	23.94	55.47	20.33	23.96	55.52	20.35	23.98	11.1
55.81	20.45	24.11	55.86	20.47	24.13	55.91	20.49	24.15	55.96	20.51	24.17	56.01	20.53	24.19	11.2
56.31	20.64	24.32	56.35	20.65	24.34	56.40	20.67	24.36	56.46	20.69	24.39	56.51	20.71	24.41	11.3
56.81	20.82	24.54	56.86	20.84	24.56	56.90	20.85	24.58	56.95	20.87	24.60	57.00	20.89	24.62	11.4
57.30	21.00	24.75	57.35	21.02	24.77	57.40	21.04	24.79	57.44	21.05	24.81	57.50	21.07	24.84	11.5
57.79	21.18	24.96	57.85	21.20	24.99	57.90	21.22	25.01	57.95	21.24	25.03	57.99	21.25	25.05	11.6
58.29	21.36	25.18	58.34	21.38	25.20	58.39	21.40	25.22	58.44	21.42	25.24	58.49	21.44	25.26	11.7
58.79	21.55	25.39	58.83	21.56	25.41	58.89	21.58	25.44	58.94	21.60	25.46	58.99	21.62	25.48	11.8
59.29	21.73	25.61	59.34	21.75	25.63	59.38	21.76	25.65	59.43	21.78	25.67	59.48	21.80	25.69	11.9
59.78	21.91	25.82	59.83	21.93	25.84	59.88	21.95	25.86	59.93	21.96	25.89	59.98	21.98	25.91	12.0
60.28	22.09	26.04	60.33	22.11	26.06	60.38	22.13	26.08	60.43	22.15	26.10	60.47	22.16	26.12	12.1
60.77	22.27	26.25	60.82	22.29	26.27	60.87	22.31	26.29	60.92	22.33	26.31	60.98	22.35	26.34	12.2
61.26	22.45	26.46	61.32	22.47	26.49	61.37	22.49	26.51	61.42	22.51	26.53	61.47	22.53	26.55	12.3
61.77	22.64	26.68	61.81	22.65	26.70	61.86	22.67	26.72	61.91	22.69	26.74	61.96	22.71	26.76	12.4
62.26	22.82	26.89	62.31	22.84	26.91	62.36	22.85	26.94	62.41	22.87	26.96	62.46	22.89	26.98	12.5
62.76	23.00	27.11	62.81	23.02	27.13	62.86	23.04	27.15	62.90	23.05	27.17	62.95	23.07	27.19	12.6
63.25	23.18	27.32	63.30	23.20	27.34	63.35	23.22	27.36	63.41	23.24	27.39	63.45	23.25	27.41	12.7
63.75	23.36	27.54	63.80	23.38	27.56	63.85	23.40	27.58	63.90	23.42	27.60	63.95	23.44	27.62	12.8
64.25	23.55	27.75	64.29	23.56	27.77	64.34	23.58	27.79	64.39	23.60	27.81	64.45	23.62	27.84	12.9
64.74	23.73	27.96	64.80	23.75	27.99	64.84	23.76	28.01	64.89	23.78	28.03	64.94	23.80	28.05	13.0
65.24	23.91	28.18	65.29	23.93	28.20	65.34	23.95	28.22	65.38	23.96	28.24	65.43	23.98	28.26	13.1
65.73	24.09	28.39	65.78	24.11	28.41	65.84	24.13	28.44	65.89	24.15	28.46	65.93	24.16	28.48	13.2
66.23	24.27	28.61	66.28	24.29	28.63	66.33	24.31	28.65	66.38	24.33	28.67	66.43	24.35	28.69	13.3
66.72	24.45	28.82	66.77	24.47	28.84	66.82	24.49	28.86	66.88	24.51	28.89	66.93	24.53	28.91	13.4
67.23	24.64	29.04	67.27	24.65	29.06	67.32	24.67	29.08	67.37	24.69	29.10	67.42	24.71	29.12	13.5
67.72	24.82	29.25	67.77	24.84	29.27	67.81	24.85	29.29	67.86	24.87	29.31	67.92	24.89	29.34	13.6
68.21	25.00	29.46	68.27	25.02	29.49	68.32	25.04	29.51	68.36	25.05	29.53	68.41	25.07	29.55	13.7
68.71	25.18	29.68	68.76	25.20	29.70	68.81	25.22	29.72	68.86	25.24	29.74	68.90	25.25	29.76	13.8
69.20	25.36	29.89	69.25	25.38	29.91	69.31	25.40	29.94	69.36	25.42	29.96	69.41	25.44	29.98	13.9
69.71	25.55	30.11	69.75	25.56	30.13	69.80	25.58	30.15	69.85	25.60	30.17	69.90	25.62	30.19	14.0
70.20	25.73	30.32	70.25	25.75	30.34	70.29	25.76	30.36	70.35	25.78	30.39	70.40	25.80	30.41	14.1
70.70	25.91	30.54	70.75	25.93	30.56	70.80	25.95	30.58	70.84	25.96	30.60	70.89	25.98	30.62	14.2
71.19	26.09	30.75	71.24	26.11	30.77	71.29	26.13	30.79	71.34	26.15	30.81	71.39	26.16	30.84	14.3
71.68	26.27	30.96	71.74	26.29	30.99	71.79	26.31	31.01	71.84	26.33	31.03	71.89	26.35	31.05	14.4
72.18	26.45	31.18	72.23	26.47	31.20	72.28	26.49	31.22	72.33	26.51	31.24	72.38	26.53	31.26	14.5
72.68	26.64	31.39	72.72	26.65	31.41	72.78	26.67	31.44	72.83	26.69	31.46	72.88	26.71	31.48	14.6
73.18	26.82	31.61	73.23	26.84	31.63	73.27	26.85	31.65	73.32	26.87	31.67	73.37	26.89	31.69	14.7
73.67	27.00	31.82	73.72	27.02	31.84	73.77	27.04	31.86	73.82	27.05	31.89	73.87	27.07	31.91	14.8
74.17	27.18	32.04	74.22	27.20	32.06	74.27	27.22	32.08	74.32	27.24	32.10	74.36	27.25	32.12	14.9
															15.0

an

Al_2O_3% 0.01～4.99

Table 6-2

AL203	0			1			2			3			4		
%	AN	CAO	SIO2	AN	CAO	SIO2	AN	CAO	SIO2	AN	CAO	SIO2	AN	CAO	SIO2
0.	0.	0.	0.	0.03	0.01	0.01	0.05	0.01	0.02	0.09	0.02	0.04	0.11	0.02	0.05
0.1	0.28	0.06	0.12	0.30	0.06	0.13	0.33	0.07	0.14	0.35	0.07	0.15	0.39	0.08	0.17
0.2	0.55	0.11	0.24	0.58	0.12	0.25	0.60	0.12	0.26	0.63	0.13	0.27	0.65	0.13	0.28
0.3	0.82	0.17	0.35	0.85	0.17	0.37	0.88	0.18	0.38	0.90	0.18	0.39	0.93	0.19	0.40
0.4	1.09	0.22	0.47	1.12	0.23	0.48	1.15	0.23	0.50	1.18	0.24	0.51	1.20	0.24	0.52
0.5	1.37	0.28	0.59	1.39	0.28	0.60	1.42	0.29	0.61	1.44	0.29	0.62	1.48	0.30	0.64
0.6	1.64	0.33	0.71	1.67	0.34	0.72	1.69	0.34	0.73	1.72	0.35	0.74	1.74	0.35	0.75
0.7	1.92	0.39	0.83	1.94	0.39	0.84	1.97	0.40	0.85	1.99	0.40	0.86	2.02	0.41	0.87
0.8	2.18	0.44	0.94	2.21	0.45	0.95	2.24	0.45	0.97	2.27	0.46	0.98	2.29	0.46	0.99
0.9	2.46	0.50	1.06	2.48	0.50	1.07	2.51	0.51	1.08	2.54	0.51	1.10	2.57	0.52	1.11
1.0	2.73	0.55	1.18	2.76	0.56	1.19	2.78	0.56	1.20	2.81	0.57	1.21	2.84	0.57	1.23
1.1	3.01	0.61	1.30	3.03	0.61	1.31	3.06	0.62	1.32	3.08	0.62	1.33	3.11	0.63	1.34
1.2	3.27	0.66	1.41	3.31	0.67	1.43	3.33	0.67	1.44	3.36	0.68	1.45	3.38	0.68	1.46
1.3	3.55	0.72	1.53	3.57	0.72	1.54	3.61	0.73	1.56	3.63	0.73	1.57	3.66	0.74	1.58
1.4	3.82	0.77	1.65	3.85	0.78	1.66	3.87	0.78	1.67	3.91	0.79	1.69	3.93	0.79	1.70
1.5	4.10	0.83	1.77	4.12	0.83	1.78	4.15	0.84	1.79	4.17	0.84	1.80	4.21	0.85	1.82
1.6	4.37	0.88	1.89	4.40	0.89	1.90	4.42	0.89	1.91	4.45	0.90	1.92	4.47	0.90	1.93
1.7	4.64	0.94	2.00	4.67	0.94	2.02	4.70	0.95	2.03	4.72	0.95	2.04	4.75	0.96	2.05
1.8	4.91	0.99	2.12	4.94	1.00	2.13	4.97	1.00	2.15	5.00	1.01	2.16	5.02	1.01	2.17
1.9	5.19	1.05	2.24	5.21	1.05	2.25	5.24	1.06	2.26	5.26	1.06	2.27	5.30	1.07	2.29
2.0	5.46	1.10	2.36	5.49	1.11	2.37	5.51	1.11	2.38	5.54	1.12	2.39	5.56	1.12	2.40
2.1	5.74	1.16	2.48	5.76	1.16	2.49	5.79	1.17	2.50	5.81	1.17	2.51	5.84	1.18	2.52
2.2	6.00	1.21	2.59	6.03	1.22	2.60	6.06	1.22	2.62	6.09	1.23	2.63	6.11	1.23	2.64
2.3	6.28	1.27	2.71	6.30	1.27	2.72	6.33	1.28	2.73	6.36	1.28	2.75	6.39	1.29	2.76
2.4	6.55	1.32	2.83	6.58	1.33	2.84	6.60	1.33	2.85	6.63	1.34	2.86	6.66	1.34	2.88
2.5	6.83	1.38	2.95	6.85	1.38	2.96	6.88	1.39	2.97	6.90	1.39	2.98	6.93	1.40	2.99
2.6	7.09	1.43	3.06	7.13	1.44	3.08	7.15	1.44	3.09	7.18	1.45	3.10	7.20	1.45	3.11
2.7	7.37	1.49	3.18	7.39	1.49	3.19	7.43	1.50	3.21	7.45	1.50	3.22	7.48	1.51	3.23
2.8	7.64	1.54	3.30	7.67	1.55	3.31	7.69	1.55	3.32	7.73	1.56	3.34	7.75	1.56	3.35
2.9	7.92	1.60	3.42	7.94	1.60	3.43	7.97	1.61	3.44	7.99	1.61	3.45	8.03	1.62	3.47
3.0	8.19	1.65	3.54	8.22	1.66	3.55	8.24	1.66	3.56	8.27	1.67	3.57	8.29	1.67	3.58
3.1	8.46	1.71	3.65	8.49	1.71	3.67	8.52	1.72	3.68	8.54	1.72	3.69	8.57	1.73	3.70
3.2	8.73	1.76	3.77	8.76	1.77	3.78	8.79	1.77	3.80	8.82	1.78	3.81	8.84	1.78	3.82
3.3	9.01	1.82	3.89	9.03	1.82	3.90	9.06	1.83	3.91	9.08	1.83	3.92	9.12	1.84	3.94
3.4	9.28	1.87	4.01	9.31	1.88	4.02	9.33	1.88	4.03	9.36	1.89	4.04	9.38	1.89	4.05
3.5	9.56	1.93	4.13	9.58	1.93	4.14	9.61	1.94	4.15	9.63	1.94	4.16	9.66	1.95	4.17
3.6	9.82	1.98	4.24	9.85	1.99	4.25	9.88	1.99	4.27	9.91	2.00	4.28	9.93	2.00	4.29
3.7	10.10	2.04	4.36	10.12	2.04	4.37	10.15	2.05	4.38	10.18	2.05	4.40	10.21	2.06	4.41
3.8	10.37	2.09	4.48	10.40	2.10	4.49	10.42	2.10	4.50	10.45	2.11	4.51	10.48	2.11	4.53
3.9	10.65	2.15	4.60	10.67	2.15	4.61	10.70	2.16	4.62	10.72	2.16	4.63	10.75	2.17	4.64
4.0	10.91	2.20	4.71	10.95	2.21	4.73	10.97	2.21	4.74	11.00	2.22	4.75	11.02	2.22	4.76
4.1	11.19	2.26	4.83	11.21	2.26	4.84	11.25	2.27	4.86	11.27	2.27	4.87	11.30	2.28	4.88
4.2	11.46	2.31	4.95	11.49	2.32	4.96	11.51	2.32	4.97	11.55	2.33	4.99	11.57	2.33	5.00
4.3	11.74	2.37	5.07	11.76	2.37	5.08	11.79	2.38	5.09	11.81	2.38	5.10	11.85	2.39	5.12
4.4	12.01	2.42	5.19	12.04	2.43	5.20	12.06	2.43	5.21	12.09	2.44	5.22	12.11	2.44	5.23
4.5	12.28	2.48	5.30	12.31	2.48	5.32	12.34	2.49	5.33	12.36	2.49	5.34	12.39	2.50	5.35
4.6	12.55	2.53	5.42	12.58	2.54	5.43	12.61	2.54	5.45	12.64	2.55	5.46	12.66	2.55	5.47
4.7	12.83	2.59	5.54	12.85	2.59	5.55	12.88	2.60	5.56	12.90	2.60	5.57	12.94	2.61	5.59
4.8	13.10	2.64	5.66	13.13	2.65	5.67	13.15	2.65	5.68	13.18	2.66	5.69	13.20	2.66	5.70
4.9	13.38	2.70	5.78	13.40	2.70	5.79	13.43	2.71	5.80	13.45	2.71	5.81	13.48	2.72	5.82

5			6			7			8			9			AL203
AN	CAO	SIO2	AN	CAO	SIO2	AN	CAO	SIO2	AN	CAO	SIO2	AN	CAO	SIO2	%
0.14	0.03	0.06	0.16	0.03	0.07	0.19	0.04	0.08	0.21	0.04	0.09	0.25	0.05	0.11	0.
0.41	0.08	0.18	0.44	0.09	0.19	0.46	0.09	0.20	0.49	0.10	0.21	0.51	0.10	0.22	0.1
0.68	0.14	0.29	0.71	0.14	0.31	0.74	0.15	0.32	0.76	0.15	0.33	0.79	0.16	0.34	0.2
0.95	0.19	0.41	0.98	0.20	0.42	1.01	0.20	0.44	1.04	0.21	0.45	1.06	0.21	0.46	0.3
1.23	0.25	0.53	1.25	0.25	0.54	1.28	0.26	0.55	1.31	0.26	0.57	1.34	0.27	0.58	0.4
1.50	0.30	0.65	1.53	0.31	0.66	1.55	0.31	0.67	1.58	0.32	0.68	1.61	0.32	0.70	0.5
1.78	0.36	0.77	1.80	0.36	0.78	1.83	0.37	0.79	1.85	0.37	0.80	1.88	0.38	0.81	0.6
2.04	0.41	0.88	2.08	0.42	0.90	2.10	0.42	0.91	2.13	0.43	0.92	2.15	0.43	0.93	0.7
2.32	0.47	1.00	2.34	0.47	1.01	2.38	0.48	1.03	2.40	0.48	1.04	2.43	0.49	1.05	0.8
2.59	0.52	1.12	2.62	0.53	1.13	2.64	0.53	1.14	2.68	0.54	1.16	2.70	0.54	1.17	0.9
2.87	0.58	1.24	2.89	0.58	1.25	2.92	0.59	1.26	2.94	0.59	1.27	2.97	0.60	1.28	1.0
3.14	0.63	1.36	3.17	0.64	1.37	3.19	0.64	1.38	3.22	0.65	1.39	3.24	0.65	1.40	1.1
3.41	0.69	1.47	3.44	0.69	1.49	3.47	0.70	1.50	3.49	0.70	1.51	3.52	0.71	1.52	1.2
3.68	0.74	1.59	3.71	0.75	1.60	3.73	0.75	1.61	3.77	0.76	1.63	3.79	0.76	1.64	1.3
3.96	0.80	1.71	3.98	0.80	1.72	4.01	0.81	1.73	4.03	0.81	1.74	4.07	0.82	1.76	1.4
4.23	0.85	1.83	4.26	0.86	1.84	4.28	0.86	1.85	4.31	0.87	1.86	4.33	0.87	1.87	1.5
4.50	0.91	1.94	4.53	0.91	1.96	4.56	0.92	1.97	4.58	0.92	1.98	4.61	0.93	1.99	1.6
4.77	0.96	2.06	4.80	0.97	2.07	4.83	0.97	2.09	4.86	0.98	2.10	4.88	0.98	2.11	1.7
5.05	1.02	2.18	5.07	1.02	2.19	5.10	1.03	2.20	5.13	1.03	2.22	5.16	1.04	2.23	1.8
5.32	1.07	2.30	5.35	1.08	2.31	5.37	1.08	2.32	5.40	1.09	2.33	5.43	1.09	2.35	1.9
5.60	1.13	2.42	5.62	1.13	2.43	5.65	1.14	2.44	5.67	1.14	2.45	5.70	1.15	2.46	2.0
5.86	1.18	2.53	5.90	1.19	2.55	5.92	1.19	2.56	5.95	1.20	2.57	5.97	1.20	2.58	2.1
6.14	1.24	2.65	6.16	1.24	2.66	6.20	1.25	2.68	6.22	1.25	2.69	6.25	1.26	2.70	2.2
6.41	1.29	2.77	6.44	1.30	2.78	6.46	1.30	2.79	6.50	1.31	2.81	6.52	1.31	2.82	2.3
6.69	1.35	2.89	6.71	1.35	2.90	6.74	1.36	2.91	6.76	1.36	2.92	6.79	1.37	2.93	2.4
6.96	1.40	3.01	6.99	1.41	3.02	7.01	1.41	3.03	7.04	1.42	3.04	7.06	1.42	3.05	2.5
7.23	1.46	3.12	7.26	1.46	3.14	7.29	1.47	3.15	7.31	1.47	3.16	7.34	1.48	3.17	2.6
7.50	1.51	3.24	7.53	1.52	3.25	7.55	1.52	3.26	7.59	1.53	3.28	7.61	1.53	3.29	2.7
7.78	1.57	3.36	7.80	1.57	3.37	7.83	1.58	3.38	7.85	1.58	3.39	7.89	1.59	3.41	2.8
8.05	1.62	3.48	8.08	1.63	3.49	8.10	1.63	3.50	8.13	1.64	3.51	8.15	1.64	3.52	2.9
8.32	1.68	3.59	8.35	1.68	3.61	8.38	1.69	3.62	8.40	1.69	3.63	8.43	1.70	3.64	3.0
8.59	1.73	3.71	8.62	1.74	3.72	8.65	1.74	3.74	8.68	1.75	3.75	8.70	1.75	3.76	3.1
8.87	1.79	3.83	8.89	1.79	3.84	8.92	1.80	3.85	8.95	1.80	3.87	8.98	1.81	3.88	3.2
9.14	1.84	3.95	9.17	1.85	3.96	9.19	1.85	3.97	9.22	1.86	3.98	9.25	1.86	4.00	3.3
9.42	1.90	4.07	9.44	1.90	4.08	9.47	1.91	4.09	9.49	1.91	4.10	9.52	1.92	4.11	3.4
9.68	1.95	4.18	9.72	1.96	4.20	9.74	1.96	4.21	9.77	1.97	4.22	9.79	1.97	4.23	3.5
9.96	2.01	4.30	9.98	2.01	4.31	10.02	2.02	4.33	10.04	2.02	4.34	10.07	2.03	4.35	3.6
10.23	2.06	4.42	10.26	2.07	4.43	10.28	2.07	4.44	10.32	2.08	4.46	10.34	2.08	4.47	3.7
10.51	2.12	4.54	10.53	2.12	4.55	10.56	2.13	4.56	10.58	2.13	4.57	10.61	2.14	4.58	3.8
10.78	2.17	4.66	10.81	2.18	4.67	10.83	2.18	4.68	10.86	2.19	4.69	10.88	2.19	4.70	3.9
11.05	2.23	4.77	11.08	2.23	4.79	11.11	2.24	4.80	11.13	2.24	4.81	11.16	2.25	4.82	4.0
11.32	2.28	4.89	11.35	2.29	4.90	11.37	2.29	4.91	11.41	2.30	4.93	11.43	2.30	4.94	4.1
11.60	2.34	5.01	11.62	2.34	5.02	11.65	2.35	5.03	11.67	2.35	5.04	11.71	2.36	5.06	4.2
11.87	2.39	5.13	11.90	2.40	5.14	11.92	2.40	5.15	11.95	2.41	5.16	11.97	2.41	5.17	4.3
12.14	2.45	5.24	12.17	2.45	5.26	12.20	2.46	5.27	12.22	2.46	5.28	12.25	2.47	5.29	4.4
12.41	2.50	5.36	12.44	2.51	5.37	12.47	2.51	5.39	12.50	2.52	5.40	12.52	2.52	5.41	4.5
12.69	2.56	5.48	12.71	2.56	5.49	12.74	2.57	5.50	12.77	2.57	5.52	12.80	2.58	5.53	4.6
12.96	2.61	5.60	12.99	2.62	5.61	13.01	2.62	5.62	13.04	2.63	5.63	13.07	2.63	5.65	4.7
13.24	2.67	5.72	13.26	2.67	5.73	13.29	2.68	5.74	13.31	2.68	5.75	13.34	2.69	5.76	4.8
13.50	2.72	5.83	13.54	2.73	5.85	13.56	2.73	5.86	13.59	2.74	5.87	13.61	2.74	5.88	4.9

an

Al_2O_3% 5.00～9.99

Table 6-2

AL203	0			1			2			3			4		
%	AN	CAO	SIO2	AN	CAO	SIO2	AN	CAO	SIO2	AN	CAO	SIO2	AN	CAO	SIO2
5.0	13.64	2.75	5.89	13.67	2.76	5.90	13.70	2.76	5.92	13.73	2.77	5.93	13.75	2.77	5.94
5.1	13.92	2.81	6.01	13.94	2.81	6.02	13.97	2.82	6.03	14.00	2.82	6.05	14.03	2.83	6.06
5.2	14.19	2.86	6.13	14.22	2.87	6.14	14.24	2.87	6.15	14.27	2.88	6.16	14.30	2.88	6.18
5.3	14.47	2.92	6.25	14.49	2.92	6.26	14.52	2.93	6.27	14.54	2.93	6.28	14.57	2.94	6.29
5.4	14.73	2.97	6.36	14.77	2.98	6.38	14.79	2.98	6.39	14.82	2.99	6.40	14.84	2.99	6.41
5.5	15.01	3.03	6.48	15.03	3.03	6.49	15.07	3.04	6.51	15.09	3.04	6.52	15.12	3.05	6.53
5.6	15.28	3.08	6.60	15.31	3.09	6.61	15.33	3.09	6.62	15.37	3.10	6.64	15.39	3.10	6.65
5.7	15.56	3.14	6.72	15.58	3.14	6.73	15.61	3.15	6.74	15.63	3.15	6.75	15.67	3.16	6.77
5.8	15.83	3.19	6.84	15.86	3.20	6.85	15.88	3.20	6.86	15.91	3.21	6.87	15.93	3.21	6.88
5.9	16.10	3.25	6.95	16.13	3.25	6.97	16.16	3.26	6.98	16.18	3.26	6.99	16.21	3.27	7.00
6.0	16.37	3.30	7.07	16.40	3.31	7.08	16.43	3.31	7.10	16.46	3.32	7.11	16.48	3.32	7.12
6.1	16.65	3.36	7.19	16.67	3.36	7.20	16.70	3.37	7.21	16.72	3.37	7.22	16.76	3.38	7.24
6.2	16.92	3.41	7.31	16.95	3.42	7.32	16.97	3.42	7.33	17.00	3.43	7.34	17.02	3.43	7.35
6.3	17.20	3.47	7.43	17.22	3.47	7.44	17.25	3.48	7.45	17.27	3.48	7.46	17.30	3.49	7.47
6.4	17.46	3.52	7.54	17.49	3.53	7.55	17.52	3.53	7.57	17.55	3.54	7.58	17.57	3.54	7.59
6.5	17.74	3.58	7.66	17.76	3.58	7.67	17.79	3.59	7.68	17.82	3.59	7.70	17.85	3.60	7.71
6.6	18.01	3.63	7.78	18.04	3.64	7.79	18.06	3.64	7.80	18.09	3.65	7.81	18.12	3.65	7.83
6.7	18.29	3.69	7.90	18.31	3.69	7.91	18.34	3.70	7.92	18.36	3.70	7.93	18.39	3.71	7.94
6.8	18.55	3.74	8.01	18.59	3.75	8.03	18.61	3.75	8.04	18.64	3.76	8.05	18.66	3.76	8.06
6.9	18.83	3.80	8.13	18.85	3.80	8.14	18.89	3.81	8.16	18.91	3.81	8.17	18.94	3.82	8.18
7.0	19.10	3.85	8.25	19.13	3.86	8.26	19.15	3.86	8.27	19.19	3.87	8.29	19.21	3.87	8.30
7.1	19.38	3.91	8.37	19.40	3.91	8.38	19.43	3.92	8.39	19.45	3.92	8.40	19.49	3.93	8.42
7.2	19.65	3.96	8.49	19.68	3.97	8.50	19.70	3.97	8.51	19.73	3.98	8.52	19.75	3.98	8.53
7.3	19.92	4.02	8.60	19.95	4.02	8.62	19.98	4.03	8.63	20.00	4.03	8.64	20.03	4.04	8.65
7.4	20.19	4.07	8.72	20.22	4.08	8.73	20.25	4.08	8.75	20.28	4.09	8.76	20.30	4.09	8.77
7.5	20.47	4.13	8.84	20.49	4.13	8.85	20.52	4.14	8.86	20.54	4.14	8.87	20.58	4.15	8.89
7.6	20.74	4.18	8.96	20.77	4.19	8.97	20.79	4.19	8.98	20.82	4.20	8.99	20.84	4.20	9.00
7.7	21.02	4.24	9.08	21.04	4.24	9.09	21.07	4.25	9.10	21.09	4.25	9.11	21.12	4.26	9.12
7.8	21.28	4.29	9.19	21.31	4.30	9.20	21.34	4.30	9.22	21.37	4.31	9.23	21.39	4.31	9.24
7.9	21.56	4.35	9.31	21.58	4.35	9.32	21.61	4.36	9.33	21.64	4.36	9.35	21.67	4.37	9.36
8.0	21.83	4.40	9.43	21.86	4.41	9.44	21.88	4.41	9.45	21.91	4.42	9.46	21.94	4.42	9.48
8.1	22.11	4.46	9.55	22.13	4.46	9.56	22.16	4.47	9.57	22.18	4.47	9.58	22.21	4.48	9.59
8.2	22.37	4.51	9.66	22.41	4.52	9.68	22.43	4.52	9.69	22.46	4.53	9.70	22.48	4.53	9.71
8.3	22.65	4.57	9.78	22.67	4.57	9.79	22.71	4.58	9.81	22.73	4.58	9.82	22.76	4.59	9.83
8.4	22.92	4.62	9.90	22.95	4.63	9.91	22.97	4.63	9.92	23.01	4.64	9.94	23.03	4.64	9.95
8.5	23.20	4.68	10.02	23.22	4.68	10.03	23.25	4.69	10.04	23.27	4.69	10.05	23.31	4.70	10.07
8.6	23.47	4.73	10.14	23.50	4.74	10.15	23.52	4.74	10.16	23.55	4.75	10.17	23.57	4.75	10.18
8.7	23.74	4.79	10.25	23.77	4.79	10.27	23.80	4.80	10.28	23.82	4.80	10.29	23.85	4.81	10.30
8.8	24.01	4.84	10.37	24.04	4.85	10.38	24.07	4.85	10.40	24.10	4.86	10.41	24.12	4.86	10.42
8.9	24.29	4.90	10.49	24.31	4.90	10.50	24.34	4.91	10.51	24.36	4.91	10.52	24.40	4.92	10.54
9.0	24.56	4.95	10.61	24.59	4.96	10.62	24.61	4.96	10.63	24.64	4.97	10.64	24.66	4.97	10.65
9.1	24.84	5.01	10.73	24.86	5.01	10.74	24.89	5.02	10.75	24.91	5.02	10.76	24.94	5.03	10.77
9.2	25.10	5.06	10.84	25.13	5.07	10.85	25.16	5.07	10.87	25.19	5.08	10.88	25.21	5.08	10.89
9.3	25.38	5.12	10.96	25.40	5.12	10.97	25.43	5.13	10.98	25.46	5.13	11.00	25.49	5.14	11.01
9.4	25.65	5.17	11.08	25.68	5.18	11.09	25.70	5.18	11.10	25.73	5.19	11.11	25.76	5.19	11.13
9.5	25.93	5.23	11.20	25.95	5.23	11.21	25.98	5.24	11.22	26.00	5.24	11.23	26.03	5.25	11.24
9.6	26.19	5.28	11.31	26.23	5.29	11.33	26.25	5.29	11.34	26.28	5.30	11.35	26.30	5.30	11.36
9.7	26.47	5.34	11.43	26.49	5.34	11.44	26.53	5.35	11.46	26.55	5.35	11.47	26.58	5.36	11.48
9.8	26.74	5.39	11.55	26.77	5.40	11.56	26.79	5.40	11.57	26.83	5.41	11.59	26.85	5.41	11.60
9.9	27.02	5.45	11.67	27.04	5.45	11.68	27.07	5.46	11.69	27.09	5.46	11.70	27.13	5.47	11.72

(continued 1)

5			6			7			8			9			AL203
AN	CAO	SIO2	AN	CAO	SIO2	AN	CAO	SIO2	AN	CAO	SIO2	AN	CAO	SIO2	%
13.78	2.78	5.95	13.80	2.78	5.96	13.84	2.79	5.98	13.86	2.79	5.99	13.89	2.80	6.00	5.0
14.05	2.83	6.07	14.08	2.84	6.08	14.10	2.84	6.09	14.14	2.85	6.11	14.16	2.85	6.12	5.1
14.33	2.89	6.19	14.35	2.89	6.20	14.38	2.90	6.21	14.40	2.90	6.22	14.43	2.91	6.23	5.2
14.60	2.94	6.31	14.63	2.95	6.32	14.65	2.95	6.33	14.68	2.96	6.34	14.70	2.96	6.35	5.3
14.87	3.00	6.42	14.90	3.00	6.44	14.93	3.01	6.45	14.95	3.01	6.46	14.98	3.02	6.47	5.4
15.14	3.05	6.54	15.17	3.06	6.55	15.19	3.06	6.56	15.23	3.07	6.58	15.25	3.07	6.59	5.5
15.42	3.11	6.66	15.44	3.11	6.67	15.47	3.12	6.68	15.49	3.12	6.69	15.53	3.13	6.71	5.6
15.69	3.16	6.78	15.72	3.17	6.79	15.74	3.17	6.80	15.77	3.18	6.81	15.79	3.18	6.82	5.7
15.96	3.22	6.89	15.99	3.22	6.91	16.02	3.23	6.92	16.04	3.23	6.93	16.07	3.24	6.94	5.8
16.23	3.27	7.01	16.26	3.28	7.02	16.29	3.28	7.04	16.32	3.29	7.05	16.34	3.29	7.06	5.9
16.51	3.33	7.13	16.53	3.33	7.14	16.56	3.34	7.15	16.59	3.34	7.17	16.62	3.35	7.18	6.0
16.78	3.38	7.25	16.81	3.39	7.26	16.83	3.39	7.27	16.86	3.40	7.28	16.89	3.40	7.30	6.1
17.06	3.44	7.37	17.08	3.44	7.38	17.11	3.45	7.39	17.13	3.45	7.40	17.16	3.46	7.41	6.2
17.32	3.49	7.48	17.36	3.50	7.50	17.38	3.50	7.51	17.41	3.51	7.52	17.43	3.51	7.53	6.3
17.60	3.55	7.60	17.62	3.55	7.61	17.66	3.56	7.63	17.68	3.56	7.64	17.71	3.57	7.65	6.4
17.87	3.60	7.72	17.90	3.61	7.73	17.92	3.61	7.74	17.96	3.62	7.76	17.98	3.62	7.77	6.5
18.15	3.66	7.84	18.17	3.66	7.85	18.20	3.67	7.86	18.22	3.67	7.87	18.25	3.68	7.88	6.6
18.42	3.71	7.96	18.45	3.72	7.97	18.47	3.72	7.98	18.50	3.73	7.99	18.52	3.73	8.00	6.7
18.69	3.77	8.07	18.72	3.77	8.09	18.75	3.78	8.10	18.77	3.78	8.11	18.80	3.79	8.12	6.8
18.96	3.82	8.19	18.99	3.83	8.20	19.01	3.83	8.21	19.05	3.84	8.23	19.07	3.84	8.24	6.9
19.24	3.88	8.31	19.26	3.88	8.32	19.29	3.89	8.33	19.31	3.89	8.34	19.35	3.90	8.36	7.0
19.51	3.93	8.43	19.54	3.94	8.44	19.56	3.94	8.45	19.59	3.95	8.46	19.61	3.95	8.47	7.1
19.78	3.99	8.54	19.81	3.99	8.56	19.84	4.00	8.57	19.86	4.00	8.58	19.89	4.01	8.59	7.2
20.05	4.04	8.66	20.08	4.05	8.67	20.11	4.05	8.69	20.14	4.06	8.70	20.16	4.06	8.71	7.3
20.33	4.10	8.78	20.35	4.10	8.79	20.38	4.11	8.80	20.41	4.11	8.82	20.44	4.12	8.83	7.4
20.60	4.15	8.90	20.63	4.16	8.91	20.65	4.16	8.92	20.68	4.17	8.93	20.71	4.17	8.95	7.5
20.88	4.21	9.02	20.90	4.21	9.03	20.93	4.22	9.04	20.95	4.22	9.05	20.98	4.23	9.06	7.6
21.14	4.26	9.13	21.18	4.27	9.15	21.20	4.27	9.16	21.23	4.28	9.17	21.25	4.28	9.18	7.7
21.42	4.32	9.25	21.44	4.32	9.26	21.48	4.33	9.28	21.50	4.33	9.29	21.53	4.34	9.30	7.8
21.69	4.37	9.37	21.72	4.38	9.38	21.74	4.38	9.39	21.78	4.39	9.41	21.80	4.39	9.42	7.9
21.97	4.43	9.49	21.99	4.43	9.50	22.02	4.44	9.51	22.04	4.44	9.52	22.07	4.45	9.53	8.0
22.24	4.48	9.61	22.27	4.49	9.62	22.29	4.49	9.63	22.32	4.50	9.64	22.34	4.50	9.65	8.1
22.51	4.54	9.72	22.54	4.54	9.74	22.57	4.55	9.75	22.59	4.55	9.76	22.62	4.56	9.77	8.2
22.78	4.59	9.84	22.81	4.60	9.85	22.83	4.60	9.86	22.87	4.61	9.88	22.89	4.61	9.89	8.3
23.06	4.65	9.96	23.08	4.65	9.97	23.11	4.66	9.98	23.13	4.66	9.99	23.17	4.67	10.01	8.4
23.33	4.70	10.08	23.36	4.71	10.09	23.38	4.71	10.10	23.41	4.72	10.11	23.43	4.72	10.12	8.5
23.60	4.76	10.19	23.63	4.76	10.21	23.66	4.77	10.22	23.68	4.77	10.23	23.71	4.78	10.24	8.6
23.87	4.81	10.31	23.90	4.82	10.32	23.93	4.82	10.34	23.96	4.83	10.35	23.98	4.83	10.36	8.7
24.15	4.87	10.43	24.17	4.87	10.44	24.20	4.88	10.45	24.23	4.88	10.47	24.26	4.89	10.48	8.8
24.42	4.92	10.55	24.45	4.93	10.56	24.47	4.93	10.57	24.50	4.94	10.58	24.53	4.94	10.60	8.9
24.70	4.98	10.67	24.72	4.98	10.68	24.75	4.99	10.69	24.77	4.99	10.70	24.80	5.00	10.71	9.0
24.96	5.03	10.78	25.00	5.04	10.80	25.02	5.04	10.81	25.05	5.05	10.82	25.07	5.05	10.83	9.1
25.24	5.09	10.90	25.26	5.09	10.91	25.30	5.10	10.93	25.32	5.10	10.94	25.35	5.11	10.95	9.2
25.51	5.14	11.02	25.54	5.15	11.03	25.56	5.15	11.04	25.60	5.16	11.06	25.62	5.16	11.07	9.3
25.79	5.20	11.14	25.81	5.20	11.15	25.84	5.21	11.16	25.86	5.21	11.17	25.89	5.22	11.18	9.4
26.06	5.25	11.26	26.09	5.26	11.27	26.11	5.26	11.28	26.14	5.27	11.29	26.16	5.27	11.30	9.5
26.33	5.31	11.37	26.36	5.31	11.39	26.39	5.32	11.40	26.41	5.32	11.41	26.44	5.33	11.42	9.6
26.60	5.36	11.49	26.63	5.37	11.50	26.65	5.37	11.51	26.69	5.38	11.53	26.71	5.38	11.54	9.7
26.88	5.42	11.61	26.90	5.42	11.62	26.93	5.43	11.63	26.95	5.43	11.64	26.99	5.44	11.66	9.8
27.15	5.47	11.73	27.18	5.48	11.74	27.20	5.48	11.75	27.23	5.49	11.76	27.25	5.49	11.77	9.9

an
Al_2O_3% 10.00～15.00

Table 6-2

AL203	0			1			2			3			4		
%	AN	CAO	SIO2	AN	CAO	SIO2	AN	CAO	SIO2	AN	CAO	SIO2	AN	CAO	SIO2
10.0	27.29	5.50	11.79	27.32	5.51	11.80	27.34	5.51	11.81	27.37	5.52	11.82	27.39	5.52	11.83
10.1	27.56	5.56	11.90	27.59	5.56	11.92	27.62	5.57	11.93	27.64	5.57	11.94	27.67	5.58	11.95
10.2	27.83	5.61	12.02	27.86	5.62	12.03	27.89	5.62	12.05	27.92	5.63	12.06	27.94	5.63	12.07
10.3	28.11	5.67	12.14	28.13	5.67	12.15	28.16	5.68	12.16	28.18	5.68	12.17	28.22	5.69	12.19
10.4	28.38	5.72	12.26	28.41	5.73	12.27	28.43	5.73	12.28	28.46	5.74	12.29	28.48	5.74	12.30
10.5	28.66	5.78	12.38	28.68	5.78	12.39	28.71	5.79	12.40	28.73	5.79	12.41	28.76	5.80	12.42
10.6	28.92	5.83	12.49	28.95	5.84	12.50	28.98	5.84	12.52	29.01	5.85	12.53	29.03	5.85	12.54
10.7	29.20	5.89	12.61	29.22	5.89	12.62	29.25	5.90	12.63	29.28	5.90	12.65	29.31	5.91	12.66
10.8	29.47	5.94	12.73	29.50	5.95	12.74	29.52	5.95	12.75	29.55	5.96	12.76	29.58	5.96	12.78
10.9	29.75	6.00	12.85	29.77	6.00	12.86	29.80	6.01	12.87	29.82	6.01	12.88	29.85	6.02	12.89
11.0	30.01	6.05	12.96	30.05	6.06	12.98	30.07	6.06	12.99	30.10	6.07	13.00	30.12	6.07	13.01
11.1	30.29	6.11	13.08	30.31	6.11	13.09	30.35	6.12	13.11	30.37	6.12	13.12	30.40	6.13	13.13
11.2	30.56	6.16	13.20	30.59	6.17	13.21	30.61	6.17	13.22	30.65	6.18	13.24	30.67	6.18	13.25
11.3	30.84	6.22	13.32	30.86	6.22	13.33	30.89	6.23	13.34	30.91	6.23	13.35	30.95	6.24	13.37
11.4	31.11	6.27	13.44	31.14	6.28	13.45	31.16	6.28	13.46	31.19	6.29	13.47	31.21	6.29	13.48
11.5	31.38	6.33	13.55	31.41	6.33	13.57	31.44	6.34	13.58	31.46	6.34	13.59	31.49	6.35	13.60
11.6	31.65	6.38	13.67	31.68	6.39	13.68	31.71	6.39	13.70	31.74	6.40	13.71	31.76	6.40	13.72
11.7	31.93	6.44	13.79	31.95	6.44	13.80	31.98	6.45	13.81	32.00	6.45	13.82	32.04	6.46	13.84
11.8	32.20	6.49	13.91	32.23	6.50	13.92	32.25	6.50	13.93	32.28	6.51	13.94	32.30	6.51	13.95
11.9	32.48	6.55	14.03	32.50	6.55	14.04	32.53	6.56	14.05	32.55	6.56	14.06	32.58	6.57	14.07
12.0	32.74	6.60	14.14	32.77	6.61	14.15	32.80	6.61	14.17	32.83	6.62	14.18	32.85	6.62	14.19
12.1	33.02	6.66	14.26	33.04	6.66	14.27	33.07	6.67	14.28	33.10	6.67	14.30	33.13	6.68	14.31
12.2	33.29	6.71	14.38	33.32	6.72	14.39	33.34	6.72	14.40	33.37	6.73	14.41	33.40	6.73	14.43
12.3	33.57	6.77	14.50	33.59	6.77	14.51	33.62	6.78	14.52	33.64	6.78	14.53	33.67	6.79	14.54
12.4	33.83	6.82	14.61	33.87	6.83	14.63	33.89	6.83	14.64	33.92	6.84	14.65	33.94	6.84	14.66
12.5	34.11	6.88	14.73	34.13	6.88	14.74	34.17	6.89	14.76	34.19	6.89	14.77	34.22	6.90	14.78
12.6	34.38	6.93	14.85	34.41	6.94	14.86	34.43	6.94	14.87	34.47	6.95	14.89	34.49	6.95	14.90
12.7	34.66	6.99	14.97	34.68	6.99	14.98	34.71	7.00	14.99	34.73	7.00	15.00	34.77	7.01	15.02
12.8	34.93	7.04	15.09	34.96	7.05	15.10	34.98	7.05	15.11	35.01	7.06	15.12	35.03	7.06	15.13
12.9	35.20	7.10	15.20	35.23	7.10	15.22	35.26	7.11	15.23	35.28	7.11	15.24	35.31	7.12	15.25
13.0	35.47	7.15	15.32	35.50	7.16	15.33	35.53	7.16	15.35	35.56	7.17	15.36	35.58	7.17	15.37
13.1	35.75	7.21	15.44	35.77	7.21	15.45	35.80	7.22	15.46	35.82	7.22	15.47	35.86	7.23	15.49
13.2	36.02	7.26	15.56	36.05	7.27	15.57	36.07	7.27	15.58	36.10	7.28	15.59	36.12	7.28	15.60
13.3	36.30	7.32	15.68	36.32	7.32	15.69	36.35	7.33	15.70	36.37	7.33	15.71	36.40	7.34	15.72
13.4	36.56	7.37	15.79	36.59	7.38	15.80	36.62	7.38	15.82	36.65	7.39	15.83	36.67	7.39	15.84
13.5	36.84	7.43	15.91	36.86	7.43	15.92	36.89	7.44	15.93	36.92	7.44	15.95	36.95	7.45	15.96
13.6	37.11	7.48	16.03	37.14	7.49	16.04	37.16	7.49	16.05	37.19	7.50	16.06	37.22	7.50	16.08
13.7	37.39	7.54	16.15	37.41	7.54	16.16	37.44	7.55	16.17	37.46	7.55	16.18	37.49	7.56	16.19
13.8	37.65	7.59	16.26	37.69	7.60	16.28	37.71	7.60	16.29	37.74	7.61	16.30	37.76	7.61	16.31
13.9	37.93	7.65	16.38	37.95	7.65	16.39	37.99	7.66	16.41	38.01	7.66	16.42	38.04	7.67	16.43
14.0	38.20	7.70	16.50	38.23	7.71	16.51	38.25	7.71	16.52	38.29	7.72	16.54	38.31	7.72	16.55
14.1	38.48	7.76	16.62	38.50	7.76	16.63	38.53	7.77	16.64	38.55	7.77	16.65	38.59	7.78	16.67
14.2	38.75	7.81	16.74	38.78	7.82	16.75	38.80	7.82	16.76	38.83	7.83	16.77	38.85	7.83	16.78
14.3	39.02	7.87	16.85	39.05	7.87	16.87	39.08	7.88	16.88	39.10	7.88	16.89	39.13	7.89	16.90
14.4	39.29	7.92	16.97	39.32	7.93	16.98	39.35	7.93	17.00	39.38	7.94	17.01	39.40	7.94	17.02
14.5	39.57	7.98	17.09	39.59	7.98	17.10	39.62	7.99	17.11	39.64	7.99	17.12	39.68	8.00	17.14
14.6	39.84	8.03	17.21	39.87	8.04	17.22	39.89	8.04	17.23	39.92	8.05	17.24	39.94	8.05	17.25
14.7	40.12	8.09	17.33	40.14	8.09	17.34	40.17	8.10	17.35	40.19	8.10	17.36	40.22	8.11	17.37
14.8	40.38	8.14	17.44	40.41	8.15	17.45	40.44	8.15	17.47	40.47	8.16	17.48	40.49	8.16	17.49
14.9	40.66	8.20	17.56	40.68	8.20	17.57	40.71	8.21	17.58	40.74	8.21	17.60	40.77	8.22	17.61
15.0	40.93	8.25	17.68												

(continued 2)

5			6			7			8			9			AL203
AN	CAO	SIO2	AN	CAO	SIO2	AN	CAO	SIO2	AN	CAO	SIO2	AN	CAO	SIO2	%
27.42	5.53	11.84	27.45	5.53	11.86	27.48	5.54	11.87	27.50	5.54	11.88	27.53	5.55	11.89	10.0
27.69	5.58	11.96	27.72	5.59	11.97	27.75	5.59	11.99	27.78	5.60	12.00	27.80	5.60	12.01	10.1
27.97	5.64	12.08	27.99	5.64	12.09	28.02	5.65	12.10	28.05	5.65	12.12	28.08	5.66	12.13	10.2
28.24	5.69	12.20	28.27	5.70	12.21	28.29	5.70	12.22	28.32	5.71	12.23	28.35	5.71	12.25	10.3
28.52	5.75	12.32	28.54	5.75	12.33	28.57	5.76	12.34	28.59	5.76	12.35	28.62	5.77	12.36	10.4
28.78	5.80	12.43	28.82	5.81	12.45	28.84	5.81	12.46	28.87	5.82	12.47	28.89	5.82	12.48	10.5
29.06	5.86	12.55	29.08	5.86	12.56	29.12	5.87	12.58	29.14	5.87	12.59	29.17	5.88	12.60	10.6
29.33	5.91	12.67	29.36	5.92	12.68	29.38	5.92	12.69	29.42	5.93	12.71	29.44	5.93	12.72	10.7
29.61	5.97	12.79	29.63	5.97	12.80	29.66	5.98	12.81	29.68	5.98	12.82	29.71	5.99	12.83	10.8
29.88	6.02	12.91	29.91	6.03	12.92	29.93	6.03	12.93	29.96	6.04	12.94	29.98	6.04	12.95	10.9
30.15	6.08	13.02	30.18	6.08	13.04	30.21	6.09	13.05	30.23	6.09	13.06	30.26	6.10	13.07	11.0
30.42	6.13	13.14	30.45	6.14	13.15	30.47	6.14	13.16	30.51	6.15	13.18	30.53	6.15	13.19	11.1
30.70	6.19	13.26	30.72	6.19	13.27	30.75	6.20	13.28	30.77	6.20	13.29	30.81	6.21	13.31	11.2
30.97	6.24	13.38	31.00	6.25	13.39	31.02	6.25	13.40	31.05	6.26	13.41	31.07	6.26	13.42	11.3
31.24	6.30	13.49	31.27	6.30	13.51	31.30	6.31	13.52	31.32	6.31	13.53	31.35	6.32	13.54	11.4
31.51	6.35	13.61	31.54	6.36	13.62	31.57	6.36	13.64	31.60	6.37	13.65	31.62	6.37	13.66	11.5
31.79	6.41	13.73	31.81	6.41	13.74	31.84	6.42	13.75	31.87	6.42	13.77	31.90	6.43	13.78	11.6
32.06	6.46	13.85	32.09	6.47	13.86	32.11	6.47	13.87	32.14	6.48	13.88	32.17	6.48	13.90	11.7
32.34	6.52	13.97	32.36	6.52	13.98	32.39	6.53	13.99	32.41	6.53	14.00	32.44	6.54	14.01	11.8
32.60	6.57	14.08	32.64	6.58	14.10	32.66	6.58	14.11	32.69	6.59	14.12	32.71	6.59	14.13	11.9
32.88	6.63	14.20	32.90	6.63	14.21	32.94	6.64	14.23	32.96	6.64	14.24	32.99	6.65	14.25	12.0
33.15	6.68	14.32	33.18	6.69	14.33	33.20	6.69	14.34	33.24	6.70	14.36	33.26	6.70	14.37	12.1
33.43	6.74	14.44	33.45	6.74	14.45	33.48	6.75	14.46	33.50	6.75	14.47	33.53	6.76	14.48	12.2
33.70	6.79	14.56	33.73	6.80	14.57	33.75	6.80	14.58	33.78	6.81	14.59	33.80	6.81	14.60	12.3
33.97	6.85	14.67	34.00	6.85	14.69	34.03	6.86	14.70	34.05	6.86	14.71	34.08	6.87	14.72	12.4
34.24	6.90	14.79	34.27	6.91	14.80	34.29	6.91	14.81	34.33	6.92	14.83	34.35	6.92	14.84	12.5
34.52	6.96	14.91	34.54	6.96	14.92	34.57	6.97	14.93	34.59	6.97	14.94	34.63	6.98	14.96	12.6
34.79	7.01	15.03	34.82	7.02	15.04	34.84	7.02	15.05	34.87	7.03	15.06	34.89	7.03	15.07	12.7
35.06	7.07	15.14	35.09	7.07	15.16	35.12	7.08	15.17	35.14	7.08	15.18	35.17	7.09	15.19	12.8
35.33	7.12	15.26	35.36	7.13	15.27	35.39	7.13	15.29	35.42	7.14	15.30	35.44	7.14	15.31	12.9
35.61	7.18	15.38	35.63	7.18	15.39	35.66	7.19	15.40	35.69	7.19	15.42	35.72	7.20	15.43	13.0
35.88	7.23	15.50	35.91	7.24	15.51	35.93	7.24	15.52	35.96	7.25	15.53	35.99	7.25	15.55	13.1
36.16	7.29	15.62	36.18	7.29	15.63	36.21	7.30	15.64	36.23	7.30	15.65	36.26	7.31	15.66	13.2
36.42	7.34	15.73	36.46	7.35	15.75	36.48	7.35	15.76	36.51	7.36	15.77	36.53	7.36	15.78	13.3
36.70	7.40	15.85	36.72	7.40	15.86	36.76	7.41	15.88	36.78	7.41	15.89	36.81	7.42	15.90	13.4
36.97	7.45	15.97	37.00	7.46	15.98	37.02	7.46	15.99	37.06	7.47	16.01	37.08	7.47	16.02	13.5
37.25	7.51	16.09	37.27	7.51	16.10	37.30	7.52	16.11	37.32	7.52	16.12	37.35	7.53	16.13	13.6
37.52	7.56	16.21	37.55	7.57	16.22	37.57	7.57	16.23	37.60	7.58	16.24	37.62	7.58	16.25	13.7
37.79	7.62	16.32	37.82	7.62	16.34	37.85	7.63	16.35	37.87	7.63	16.36	37.90	7.64	16.37	13.8
38.06	7.67	16.44	38.09	7.68	16.45	38.11	7.68	16.46	38.15	7.69	16.48	38.17	7.69	16.49	13.9
38.34	7.73	16.56	38.36	7.73	16.57	38.39	7.74	16.58	38.41	7.74	16.59	38.45	7.75	16.61	14.0
38.61	7.78	16.68	38.64	7.79	16.69	38.66	7.79	16.70	38.69	7.80	16.71	38.71	7.80	16.72	14.1
38.88	7.84	16.79	38.91	7.84	16.81	38.94	7.85	16.82	38.96	7.85	16.83	38.99	7.86	16.84	14.2
39.15	7.89	16.91	39.18	7.90	16.92	39.21	7.90	16.94	39.24	7.91	16.95	39.26	7.91	16.96	14.3
39.43	7.95	17.03	39.45	7.95	17.04	39.48	7.96	17.05	39.51	7.96	17.07	39.54	7.97	17.08	14.4
39.70	8.00	17.15	39.73	8.01	17.16	39.75	8.01	17.17	39.78	8.02	17.18	39.81	8.02	17.20	14.5
39.98	8.06	17.27	40.00	8.06	17.28	40.03	8.07	17.29	40.05	8.07	17.30	40.08	8.08	17.31	14.6
40.24	8.11	17.38	40.28	8.12	17.40	40.30	8.12	17.41	40.33	8.13	17.42	40.35	8.13	17.43	14.7
40.52	8.17	17.50	40.54	8.17	17.51	40.58	8.18	17.53	40.60	8.18	17.54	40.63	8.19	17.55	14.8
40.79	8.22	17.62	40.82	8.23	17.63	40.84	8.23	17.64	40.88	8.24	17.66	40.90	8.24	17.67	14.9
															15.0

WO
CaO% 0.01～4.99

Table 7-1

CAO	0		1		2		3		4	
%	WO	SIO2	WO	SIO2	WO	SIO2	WO	SIO2	WO	SIO2
0.	0.	0.	0.02	0.01	0.04	0.02	0.06	0.03	0.08	0.04
0.1	0.21	0.11	0.23	0.12	0.25	0.13	0.27	0.14	0.29	0.15
0.2	0.41	0.21	0.43	0.22	0.46	0.24	0.48	0.25	0.50	0.26
0.3	0.62	0.32	0.64	0.33	0.66	0.34	0.68	0.35	0.70	0.36
0.4	0.83	0.43	0.85	0.44	0.87	0.45	0.89	0.46	0.91	0.47
0.5	1.04	0.54	1.06	0.55	1.08	0.56	1.10	0.57	1.12	0.58
0.6	1.24	0.64	1.26	0.65	1.28	0.66	1.30	0.67	1.33	0.69
0.7	1.45	0.75	1.47	0.76	1.49	0.77	1.51	0.78	1.53	0.79
0.8	1.66	0.86	1.68	0.87	1.70	0.88	1.72	0.89	1.74	0.90
0.9	1.86	0.96	1.88	0.97	1.91	0.99	1.93	1.00	1.95	1.01
1.0	2.07	1.07	2.09	1.08	2.11	1.09	2.13	1.10	2.15	1.11
1.1	2.28	1.18	2.30	1.19	2.32	1.20	2.34	1.21	2.36	1.22
1.2	2.49	1.29	2.51	1.30	2.53	1.31	2.55	1.32	2.57	1.33
1.3	2.69	1.39	2.71	1.40	2.73	1.41	2.75	1.42	2.78	1.44
1.4	2.90	1.50	2.92	1.51	2.94	1.52	2.96	1.53	2.98	1.54
1.5	3.11	1.61	3.13	1.62	3.15	1.63	3.17	1.64	3.19	1.65
1.6	3.31	1.71	3.33	1.72	3.36	1.74	3.38	1.75	3.40	1.76
1.7	3.52	1.82	3.54	1.83	3.56	1.84	3.58	1.85	3.60	1.86
1.8	3.73	1.93	3.75	1.94	3.77	1.95	3.79	1.96	3.81	1.97
1.9	3.94	2.04	3.96	2.05	3.98	2.06	4.00	2.07	4.02	2.08
2.0	4.14	2.14	4.16	2.15	4.18	2.16	4.20	2.17	4.23	2.19
2.1	4.35	2.25	4.37	2.26	4.39	2.27	4.41	2.28	4.43	2.29
2.2	4.56	2.36	4.58	2.37	4.60	2.38	4.62	2.39	4.64	2.40
2.3	4.76	2.46	4.78	2.47	4.81	2.49	4.83	2.50	4.85	2.51
2.4	4.97	2.57	4.99	2.58	5.01	2.59	5.03	2.60	5.05	2.61
2.5	5.18	2.68	5.20	2.69	5.22	2.70	5.24	2.71	5.26	2.72
2.6	5.39	2.79	5.41	2.80	5.43	2.81	5.45	2.82	5.47	2.83
2.7	5.59	2.89	5.61	2.90	5.63	2.91	5.65	2.92	5.68	2.94
2.8	5.80	3.00	5.82	3.01	5.84	3.02	5.86	3.03	5.88	3.04
2.9	6.01	3.11	6.03	3.12	6.05	3.13	6.07	3.14	6.09	3.15
3.0	6.21	3.21	6.23	3.22	6.26	3.24	6.28	3.25	6.30	3.26
3.1	6.42	3.32	6.44	3.33	6.46	3.34	6.48	3.35	6.50	3.36
3.2	6.63	3.43	6.65	3.44	6.67	3.45	6.69	3.46	6.71	3.47
3.3	6.84	3.54	6.86	3.55	6.88	3.56	6.90	3.57	6.92	3.58
3.4	7.04	3.64	7.06	3.65	7.08	3.66	7.10	3.67	7.13	3.69
3.5	7.25	3.75	7.27	3.76	7.29	3.77	7.31	3.78	7.33	3.79
3.6	7.46	3.86	7.48	3.87	7.50	3.88	7.52	3.89	7.54	3.90
3.7	7.66	3.96	7.68	3.97	7.71	3.99	7.73	4.00	7.75	4.01
3.8	7.87	4.07	7.89	4.08	7.91	4.09	7.93	4.10	7.95	4.11
3.9	8.08	4.18	8.10	4.19	8.12	4.20	8.14	4.21	8.16	4.22
4.0	8.29	4.29	8.31	4.30	8.33	4.31	8.35	4.32	8.37	4.33
4.1	8.49	4.39	8.51	4.40	8.53	4.41	8.55	4.42	8.58	4.44
4.2	8.70	4.50	8.72	4.51	8.74	4.52	8.76	4.53	8.78	4.54
4.3	8.91	4.61	8.93	4.62	8.95	4.63	8.97	4.64	8.99	4.65
4.4	9.11	4.71	9.13	4.72	9.16	4.74	9.18	4.75	9.20	4.76
4.5	9.32	4.82	9.34	4.83	9.36	4.84	9.38	4.85	9.40	4.86
4.6	9.53	4.93	9.55	4.94	9.57	4.95	9.59	4.96	9.61	4.97
4.7	9.74	5.04	9.76	5.05	9.78	5.06	9.80	5.07	9.82	5.08
4.8	9.94	5.14	9.96	5.15	9.98	5.16	10.00	5.17	10.03	5.19
4.9	10.15	5.25	10.17	5.26	10.19	5.27	10.21	5.28	10.23	5.29

5		6		7		8		9		CAO
WO	SIO2	WO	SIO2	WO	SIO2	WO	SIO2	WO	SIO2	%
0.10	0.05	0.12	0.06	0.14	0.07	0.17	0.09	0.19	0.10	0.
0.31	0.16	0.33	0.17	0.35	0.18	0.37	0.19	0.39	0.20	0.1
0.52	0.27	0.54	0.28	0.56	0.29	0.58	0.30	0.60	0.31	0.2
0.72	0.37	0.75	0.39	0.77	0.40	0.79	0.41	0.81	0.42	0.3
0.93	0.48	0.95	0.49	0.97	0.50	0.99	0.51	1.01	0.52	0.4
1.14	0.59	1.16	0.60	1.18	0.61	1.20	0.62	1.22	0.63	0.5
1.35	0.70	1.37	0.71	1.39	0.72	1.41	0.73	1.43	0.74	0.6
1.55	0.80	1.57	0.81	1.59	0.82	1.62	0.84	1.64	0.85	0.7
1.76	0.91	1.78	0.92	1.80	0.93	1.82	0.94	1.84	0.95	0.8
1.97	1.02	1.99	1.03	2.01	1.04	2.03	1.05	2.05	1.06	0.9
2.17	1.12	2.20	1.14	2.22	1.15	2.24	1.16	2.26	1.17	1.0
2.38	1.23	2.40	1.24	2.42	1.25	2.44	1.26	2.46	1.27	1.1
2.59	1.34	2.61	1.35	2.63	1.36	2.65	1.37	2.67	1.38	1.2
2.80	1.45	2.82	1.46	2.84	1.47	2.86	1.48	2.88	1.49	1.3
3.00	1.55	3.02	1.56	3.04	1.57	3.07	1.59	3.09	1.60	1.4
3.21	1.66	3.23	1.67	3.25	1.68	3.27	1.69	3.29	1.70	1.5
3.42	1.77	3.44	1.78	3.46	1.79	3.48	1.80	3.50	1.81	1.6
3.62	1.87	3.65	1.89	3.67	1.90	3.69	1.91	3.71	1.92	1.7
3.83	1.98	3.85	1.99	3.87	2.00	3.89	2.01	3.91	2.02	1.8
4.04	2.09	4.06	2.10	4.08	2.11	4.10	2.12	4.12	2.13	1.9
4.25	2.20	4.27	2.21	4.29	2.22	4.31	2.23	4.33	2.24	2.0
4.45	2.30	4.47	2.31	4.49	2.32	4.52	2.34	4.54	2.35	2.1
4.66	2.41	4.68	2.42	4.70	2.43	4.72	2.44	4.74	2.45	2.2
4.87	2.52	4.89	2.53	4.91	2.54	4.93	2.55	4.95	2.56	2.3
5.07	2.62	5.10	2.64	5.12	2.65	5.14	2.66	5.16	2.67	2.4
5.28	2.73	5.30	2.74	5.32	2.75	5.34	2.76	5.36	2.77	2.5
5.49	2.84	5.51	2.85	5.53	2.86	5.55	2.87	5.57	2.88	2.6
5.70	2.95	5.72	2.96	5.74	2.97	5.76	2.98	5.78	2.99	2.7
5.90	3.05	5.92	3.06	5.94	3.07	5.97	3.09	5.99	3.10	2.8
6.11	3.16	6.13	3.17	6.15	3.18	6.17	3.19	6.19	3.20	2.9
6.32	3.27	6.34	3.28	6.36	3.29	6.38	3.30	6.40	3.31	3.0
6.52	3.37	6.55	3.39	6.57	3.40	6.59	3.41	6.61	3.42	3.1
6.73	3.48	6.75	3.49	6.77	3.50	6.79	3.51	6.81	3.52	3.2
6.94	3.59	6.96	3.60	6.98	3.61	7.00	3.62	7.02	3.63	3.3
7.15	3.70	7.17	3.71	7.19	3.72	7.21	3.73	7.23	3.74	3.4
7.35	3.80	7.37	3.81	7.39	3.82	7.42	3.84	7.44	3.85	3.5
7.56	3.91	7.58	3.92	7.60	3.93	7.62	3.94	7.64	3.95	3.6
7.77	4.02	7.79	4.03	7.81	4.04	7.83	4.05	7.85	4.06	3.7
7.97	4.12	8.00	4.14	8.02	4.15	8.04	4.16	8.06	4.17	3.8
8.18	4.23	8.20	4.24	8.22	4.25	8.24	4.26	8.26	4.27	3.9
8.39	4.34	8.41	4.35	8.43	4.36	8.45	4.37	8.47	4.38	4.0
8.60	4.45	8.62	4.46	8.64	4.47	8.66	4.48	8.68	4.49	4.1
8.80	4.55	8.82	4.56	8.84	4.57	8.87	4.59	8.89	4.60	4.2
9.01	4.66	9.03	4.67	9.05	4.68	9.07	4.69	9.09	4.70	4.3
9.22	4.77	9.24	4.78	9.26	4.79	9.28	4.80	9.30	4.81	4.4
9.42	4.87	9.45	4.89	9.47	4.90	9.49	4.91	9.51	4.92	4.5
9.63	4.98	9.65	4.99	9.67	5.00	9.69	5.01	9.71	5.02	4.6
9.84	5.09	9.86	5.10	9.88	5.11	9.90	5.12	9.92	5.13	4.7
10.05	5.20	10.07	5.21	10.09	5.22	10.11	5.23	10.13	5.24	4.8
10.25	5.30	10.27	5.31	10.29	5.32	10.32	5.34	10.34	5.35	4.9

WO
CaO% 5.00～10.00

Table 7-1

CAO	0		1		2		3		4	
%	WO	SIO2	WO	SIO2	WO	SIO2	WO	SIO2	WO	SIO2
5.0	10.36	5.36	10.38	5.37	10.40	5.38	10.42	5.39	10.44	5.40
5.1	10.56	5.46	10.58	5.47	10.61	5.49	10.63	5.50	10.65	5.51
5.2	10.77	5.57	10.79	5.58	10.81	5.59	10.83	5.60	10.85	5.61
5.3	10.98	5.68	11.00	5.69	11.02	5.70	11.04	5.71	11.06	5.72
5.4	11.19	5.79	11.21	5.80	11.23	5.81	11.25	5.82	11.27	5.83
5.5	11.39	5.89	11.41	5.90	11.43	5.91	11.45	5.92	11.48	5.94
5.6	11.60	6.00	11.62	6.01	11.64	6.02	11.66	6.03	11.68	6.04
5.7	11.81	6.11	11.83	6.12	11.85	6.13	11.87	6.14	11.89	6.15
5.8	12.01	6.21	12.03	6.22	12.06	6.24	12.08	6.25	12.10	6.26
5.9	12.22	6.32	12.24	6.33	12.26	6.34	12.28	6.35	12.30	6.36
6.0	12.43	6.43	12.45	6.44	12.47	6.45	12.49	6.46	12.51	6.47
6.1	12.64	6.54	12.66	6.55	12.68	6.56	12.70	6.57	12.72	6.58
6.2	12.84	6.64	12.86	6.65	12.88	6.66	12.90	6.67	12.93	6.69
6.3	13.05	6.75	13.07	6.76	13.09	6.77	13.11	6.78	13.13	6.79
6.4	13.26	6.86	13.28	6.87	13.30	6.88	13.32	6.89	13.34	6.90
6.5	13.46	6.96	13.48	6.97	13.51	6.99	13.53	7.00	13.55	7.01
6.6	13.67	7.07	13.69	7.08	13.71	7.09	13.73	7.10	13.75	7.11
6.7	13.88	7.18	13.90	7.19	13.92	7.20	13.94	7.21	13.96	7.22
6.8	14.09	7.29	14.11	7.30	14.13	7.31	14.15	7.32	14.17	7.33
6.9	14.29	7.39	14.31	7.40	14.33	7.41	14.35	7.42	14.38	7.44
7.0	14.50	7.50	14.52	7.51	14.54	7.52	14.56	7.53	14.58	7.54
7.1	14.71	7.61	14.73	7.62	14.75	7.63	14.77	7.64	14.79	7.65
7.2	14.91	7.71	14.93	7.72	14.96	7.74	14.98	7.75	15.00	7.76
7.3	15.12	7.82	15.14	7.83	15.16	7.84	15.18	7.85	15.20	7.86
7.4	15.33	7.93	15.35	7.94	15.37	7.95	15.39	7.96	15.41	7.97
7.5	15.54	8.04	15.56	8.05	15.58	8.06	15.60	8.07	15.62	8.08
7.6	15.74	8.14	15.76	8.15	15.78	8.16	15.80	8.17	15.83	8.19
7.7	15.95	8.25	15.97	8.26	15.99	8.27	16.01	8.28	16.03	8.29
7.8	16.16	8.36	16.18	8.37	16.20	8.38	16.22	8.39	16.24	8.40
7.9	16.36	8.46	16.38	8.47	16.41	8.49	16.43	8.50	16.45	8.51
8.0	16.57	8.57	16.59	8.58	16.61	8.59	16.63	8.60	16.65	8.61
8.1	16.78	8.68	16.80	8.69	16.82	8.70	16.84	8.71	16.86	8.72
8.2	16.99	8.79	17.01	8.80	17.03	8.81	17.05	8.82	17.07	8.83
8.3	17.19	8.89	17.21	8.90	17.23	8.91	17.25	8.92	17.28	8.94
8.4	17.40	9.00	17.42	9.01	17.44	9.02	17.46	9.03	17.48	9.04
8.5	17.61	9.11	17.63	9.12	17.65	9.13	17.67	9.14	17.69	9.15
8.6	17.81	9.21	17.83	9.22	17.86	9.24	17.88	9.25	17.90	9.26
8.7	18.02	9.32	18.04	9.33	18.06	9.34	18.08	9.35	18.10	9.36
8.8	18.23	9.43	18.25	9.44	18.27	9.45	18.29	9.46	18.31	9.47
8.9	18.44	9.54	18.46	9.55	18.48	9.56	18.50	9.57	18.52	9.58
9.0	18.64	9.64	18.66	9.65	18.68	9.66	18.70	9.67	18.73	9.69
9.1	18.85	9.75	18.87	9.76	18.89	9.77	18.91	9.78	18.93	9.79
9.2	19.06	9.86	19.08	9.87	19.10	9.88	19.12	9.89	19.14	9.90
9.3	19.26	9.96	19.28	9.97	19.31	9.99	19.33	10.00	19.35	10.01
9.4	19.47	10.07	19.49	10.08	19.51	10.09	19.53	10.10	19.55	10.11
9.5	19.68	10.18	19.70	10.19	19.72	10.20	19.74	10.21	19.76	10.22
9.6	19.89	10.29	19.91	10.30	19.93	10.31	19.95	10.32	19.97	10.33
9.7	20.09	10.39	20.11	10.40	20.13	10.41	20.15	10.42	20.18	10.44
9.8	20.30	10.50	20.32	10.51	20.34	10.52	20.36	10.53	20.38	10.54
9.9	20.51	10.61	20.53	10.62	20.55	10.63	20.57	10.64	20.59	10.65
10.0	20.71	10.71								

(continued)

5		6		7		8		9		CAO
WO	SIO2	WO	SIO2	WO	SIO2	WO	SIO2	WO	SIO2	%
10.46	5.41	10.48	5.42	10.50	5.43	10.52	5.44	10.54	5.45	5.0
10.67	5.52	10.69	5.53	10.71	5.54	10.73	5.55	10.75	5.56	5.1
10.87	5.62	10.90	5.64	10.92	5.65	10.94	5.66	10.96	5.67	5.2
11.08	5.73	11.10	5.74	11.12	5.75	11.14	5.76	11.16	5.77	5.3
11.29	5.84	11.31	5.85	11.33	5.86	11.35	5.87	11.37	5.88	5.4
11.50	5.95	11.52	5.96	11.54	5.97	11.56	5.98	11.58	5.99	5.5
11.70	6.05	11.72	6.06	11.74	6.07	11.77	6.09	11.79	6.10	5.6
11.91	6.16	11.93	6.17	11.95	6.18	11.97	6.19	11.99	6.20	5.7
12.12	6.27	12.14	6.28	12.16	6.29	12.18	6.30	12.20	6.31	5.8
12.32	6.37	12.35	6.39	12.37	6.40	12.39	6.41	12.41	6.42	5.9
12.53	6.48	12.55	6.49	12.57	6.50	12.59	6.51	12.61	6.52	6.0
12.74	6.59	12.76	6.60	12.78	6.61	12.80	6.62	12.82	6.63	6.1
12.95	6.70	12.97	6.71	12.99	6.72	13.01	6.73	13.03	6.74	6.2
13.15	6.80	13.17	6.81	13.19	6.82	13.22	6.84	13.24	6.85	6.3
13.36	6.91	13.38	6.92	13.40	6.93	13.42	6.94	13.44	6.95	6.4
13.57	7.02	13.59	7.03	13.61	7.04	13.63	7.05	13.65	7.06	6.5
13.77	7.12	13.80	7.14	13.82	7.15	13.84	7.16	13.86	7.17	6.6
13.98	7.23	14.00	7.24	14.02	7.25	14.04	7.26	14.06	7.27	6.7
14.19	7.34	14.21	7.35	14.23	7.36	14.25	7.37	14.27	7.38	6.8
14.40	7.45	14.42	7.46	14.44	7.47	14.46	7.48	14.48	7.49	6.9
14.60	7.55	14.62	7.56	14.64	7.57	14.67	7.59	14.69	7.60	7.0
14.81	7.66	14.83	7.67	14.85	7.68	14.87	7.69	14.89	7.70	7.1
15.02	7.77	15.04	7.78	15.06	7.79	15.08	7.80	15.10	7.81	7.2
15.22	7.87	15.25	7.89	15.27	7.90	15.29	7.91	15.31	7.92	7.3
15.43	7.98	15.45	7.99	15.47	8.00	15.49	8.01	15.51	8.02	7.4
15.64	8.09	15.66	8.10	15.68	8.11	15.70	8.12	15.72	8.13	7.5
15.85	8.20	15.87	8.21	15.89	8.22	15.91	8.23	15.93	8.24	7.6
16.05	8.30	16.07	8.31	16.09	8.32	16.12	8.34	16.14	8.35	7.7
16.26	8.41	16.28	8.42	16.30	8.43	16.32	8.44	16.34	8.45	7.8
16.47	8.52	16.49	8.53	16.51	8.54	16.53	8.55	16.55	8.56	7.9
16.67	8.62	16.70	8.64	16.72	8.65	16.74	8.66	16.76	8.67	8.0
16.88	8.73	16.90	8.74	16.92	8.75	16.94	8.76	16.96	8.77	8.1
17.09	8.84	17.11	8.85	17.13	8.86	17.15	8.87	17.17	8.88	8.2
17.30	8.95	17.32	8.96	17.34	8.97	17.36	8.98	17.38	8.99	8.3
17.50	9.05	17.52	9.06	17.54	9.07	17.57	9.09	17.59	9.10	8.4
17.71	9.16	17.73	9.17	17.75	9.18	17.77	9.19	17.79	9.20	8.5
17.92	9.27	17.94	9.28	17.96	9.29	17.98	9.30	18.00	9.31	8.6
18.12	9.37	18.15	9.39	18.17	9.40	18.19	9.41	18.21	9.42	8.7
18.33	9.48	18.35	9.49	18.37	9.50	18.39	9.51	18.41	9.52	8.8
18.54	9.59	18.56	9.60	18.58	9.61	18.60	9.62	18.62	9.63	8.9
18.75	9.70	18.77	9.71	18.79	9.72	18.81	9.73	18.83	9.74	9.0
18.95	9.80	18.97	9.81	18.99	9.82	19.02	9.84	19.04	9.85	9.1
19.16	9.91	19.18	9.92	19.20	9.93	19.22	9.94	19.24	9.95	9.2
19.37	10.02	19.39	10.03	19.41	10.04	19.43	10.05	19.45	10.06	9.3
19.57	10.12	19.60	10.14	19.62	10.15	19.64	10.16	19.66	10.17	9.4
19.78	10.23	19.80	10.24	19.82	10.25	19.84	10.26	19.86	10.27	9.5
19.99	10.34	20.01	10.35	20.03	10.36	20.05	10.37	20.07	10.38	9.6
20.20	10.45	20.22	10.46	20.24	10.47	20.26	10.48	20.28	10.49	9.7
20.40	10.55	20.42	10.56	20.44	10.57	20.47	10.59	20.49	10.60	9.8
20.61	10.66	20.63	10.67	20.65	10.68	20.67	10.69	20.69	10.70	9.9
										10.0

WO

SiO_2% 0.01～5.00

Table 7-2

SIO2	0		1		2		3		4	
%	WO	CAO	WO	CAO	WO	CAO	WO	CAO	WO	CAO
0.	0.	0.	0.02	0.01	0.04	0.02	0.06	0.03	0.08	0.04
0.1	0.19	0.09	0.21	0.10	0.23	0.11	0.25	0.12	0.27	0.13
0.2	0.39	0.19	0.41	0.20	0.43	0.21	0.44	0.21	0.46	0.22
0.3	0.58	0.28	0.60	0.29	0.62	0.30	0.64	0.31	0.66	0.32
0.4	0.77	0.37	0.79	0.38	0.81	0.39	0.83	0.40	0.85	0.41
0.5	0.97	0.47	0.99	0.48	1.01	0.49	1.02	0.49	1.04	0.50
0.6	1.16	0.56	1.18	0.57	1.20	0.58	1.22	0.59	1.24	0.60
0.7	1.35	0.65	1.37	0.66	1.39	0.67	1.41	0.68	1.43	0.69
0.8	1.55	0.75	1.57	0.76	1.59	0.77	1.60	0.77	1.62	0.78
0.9	1.74	0.84	1.76	.80	1.	0.86	1.80	0 87	1.82	0.88
1.0	1.93	0.93	1.95	0.94	1.97	0.95	1.99	0.96	2.01	0.97
1.1	2.13	1.03	2.15	1.04	2.17	1.05	2.18	1.05	2.20	1.06
1.2	2.32	1.12	2.34	1.13	2.36	1.14	2.38	1.15	2.40	1.16
1.3	2.51	1.21	2.53	1.22	2.55	1.23	2.57	1.24	2.59	1.25
1.4	2.71	1.31	2.73	1.32	2.75	1.33	2.76	1.33	2.78	1.34
1.5	2.90	1.40	2.92	1.41	2.94	1.42	2.96	1.43	2.98	1.44
1.6	3.09	1.49	3.11	1.50	3.13	1.51	3.15	1.52	3.17	1.53
1.7	3.29	1.59	3.31	1.60	3.33	1.61	3.34	1.61	3.36	1.62
1.8	3.48	1.68	3.50	1.69	3.52	1.70	3.54	1.71	3.56	1.72
1.9	3.67	1.77	3.69	1.78	3.71	1.79	3.73	1.80	3.75	1.81
2.0	3.87	1.87	3.89	1.88	3.91	1.89	3.92	1.89	3.94	1.90
2.1	4.06	1.96	4.08	1.97	4.10	1.98	4.12	1.99	4.14	2.00
2.2	4.25	2.05	4.27	2.06	4.29	2.07	4.31	2.08	4.33	2.09
2.3	4.45	2.15	4.47	2.16	4.49	2.17	4.50	2.17	4.52	2.18
2.4	4.64	2.24	4.66	2.25	4.68	2.26	4.70	2.27	4.72	2.28
2.5	4.83	2.33	4.85	2.34	4.87	2.35	4.89	2.36	4.91	2.37
2.6	5.03	2.43	5.05	2.44	5.07	2.45	5.08	2.45	5.10	2.46
2.7	5.22	2.52	5.24	2.53	5.26	2.54	5.28	2.55	5.30	2.56
2.8	5.41	2.61	5.43	2.62	5.45	2.63	5.47	2.64	5.49	2.65
2.9	5.61	2.71	5.63	2.72	5.65	2.73	5.66	2.73	5.68	2.74
3.0	5.80	2.80	5.82	2.81	5.84	2.82	5.86	2.83	5.88	2.84
3.1	5.99	2.89	6.01	2.90	6.03	2.91	6.05	2.92	6.07	2.93
3.2	6.19	2.99	6.21	3.00	6.23	3.01	6.24	3.01	6.26	3.02
3.3	6.33	3.03	6.40	3.09	6.42	3.10	6.44	3.11	6.46	3.12
3.4	6.57	3.17	6.59	3.18	6.61	3.19	6.63	3.20	6.65	3.21
3.5	6.77	3.27	6.79	3.28	6.81	3.29	6.82	3.29	6.84	3.30
3.6	6.96	3.36	6.98	3.37	7.00	3.38	7.02	3.39	7.04	3.40
3.7	7.15	3.45	7.17	3.46	7.19	3.47	7.21	3.48	7.23	3.49
3.8	7.35	3.55	7.37	3.56	7.39	3.57	7.40	3.57	7.42	3.58
3.9	7.54	3.64	7.56	3.65	7.58	3.66	7.60	3.67	7.62	3.68
4.0	7.73	3.73	7.75	3.74	7.77	3.75	7.79	3.76	7.81	3.77
4.1	7.93	3.83	7.95	3.84	7.97	3.85	7.98	3.85	8.00	3.86
4.2	8.12	3.92	8.14	3.93	8.16	3.94	8.18	3.95	8.20	3.96
4.3	8.31	4.01	8.33	4.02	8.35	4.03	8.37	4.04	8.39	4.05
4.4	8.51	4.11	8.53	4.12	8.55	4.13	8.56	4.13	8.58	4.14
4.5	8.70	4.20	8.72	4.21	8.74	4.22	8.76	4.23	8.78	4.24
4.6	8.89	4.29	8.91	4.30	8.93	4.31	8.95	4.32	8.97	4.33
4.7	9.09	4.39	9.11	4.40	9.13	4.41	9.14	4.41	9.16	4.42
4.8	9.28	4.48	9.30	4.49	9.32	4.50	9.34	4.51	9.36	4.52
4.9	9.47	4.57	9.49	4.58	9.51	4.59	9.53	4.60	9.55	4.61
5.0	9.67	4.67								

5		6		7		8		9		SI02
WO	CAO	WO	CAO	WO	CAO	WO	CAO	WO	CAO	%
0.10	0.05	0.12	0.06	0.14	0.07	0.15	0.07	0.17	0.08	0.
0.29	0.14	0.31	0.15	0.33	0.16	0.35	0.17	0.37	0.18	0.1
0.48	0.23	0.50	0.24	0.52	0.25	0.54	0.26	0.56	0.27	0.2
0.68	0.33	0.70	0.34	0.72	0.35	0.73	0.35	0.75	0.36	0.3
0.87	0.42	0.89	0.43	0.91	0.44	0.93	0.45	0.95	0.46	0.4
1.06	0.51	1.08	0.52	1.10	0.53	1.12	0.54	1.14	0.55	0.5
1.26	0.61	1.28	0.62	1.30	0.63	1.31	0.63	1.33	0.64	0.6
1.45	0.70	1.47	0.71	1.49	0.72	1.51	0.73	1.53	0.74	0.7
1.64	0.79	1.66	0.80	1.68	0.81	1.70	0.82	1.72	0.83	0.8
1.84	0.89	1.86	0.90	1.88	0.91	1.89	0.91	1.91	0.92	0.9
2.03	0.98	2.05	0.99	2.07	1.00	2.09	1.01	2.11	1.02	1.0
2.22	1.07	2.24	1.08	2.26	1.09	2.28	1.10	2.30	1.11	1.1
2.42	1.17	2.44	1.18	2.46	1.19	2.47	1.19	2.49	1.20	1.2
2.61	1.26	2.63	1.27	2.65	1.28	2.67	1.29	2.69	1.30	1.3
2.80	1.35	2.82	1.36	2.84	1.37	2.86	1.38	2.88	1.39	1.4
3.00	1.45	3.02	1.46	3.04	1.47	3.05	1.47	3.07	1.48	1.5
3.19	1.54	3.21	1.55	3.23	1.56	3.25	1.57	3.27	1.58	1.6
3.38	1.63	3.40	1.64	3.42	1.65	3.44	1.66	3.46	1.67	1.7
3.58	1.73	3.60	1.74	3.62	1.75	3.63	1.75	3.65	1.76	1.8
3.77	1.82	3.79	1.83	3.81	1.84	3.83	1.85	3.85	1.86	1.9
3.96	1.91	3.98	1.92	4.00	1.93	4.02	1.94	4.04	1.95	2.0
4.16	2.01	4.18	2.02	4.20	2.03	4.21	2.03	4.23	2.04	2.1
4.35	2.10	4.37	2.11	4.39	2.12	4.41	2.13	4.43	2.14	2.2
4.54	2.19	4.56	2.20	4.58	2.21	4.60	2.22	4.62	2.23	2.3
4.74	2.29	4.76	2.30	4.78	2.31	4.79	2.31	4.81	2.32	2.4
4.93	2.38	4.95	2.39	4.97	2.40	4.99	2.41	5.01	2.42	2.5
5.12	2.47	5.14	2.48	5.16	2.49	5.18	2.50	5.20	2.51	2.6
5.32	2.57	5.34	2.58	5.36	2.59	5.37	2.59	5.39	2.60	2.7
5.51	2.66	5.53	2.67	5.55	2.68	5.57	2.69	5.59	2.70	2.8
5.70	2.75	5.72	2.76	5.74	2.77	5.76	2.78	5.78	2.79	2.9
5.90	2.85	5.92	2.86	5.94	2.87	5.95	2.87	5.97	2.88	3.0
6.09	2.94	6.11	2.95	6.13	2.96	6.15	2.97	6.17	2.98	3.1
6.28	3.03	6.30	3.04	6.32	3.05	6.34	3.06	6.36	3.07	3.2
6.48	3.13	6.50	3.14	6.52	3.15	6.53	3.15	6.55	3.16	3.3
6.67	3.22	6.69	3.23	6.71	3.24	6.73	3.25	6.75	3.26	3.4
6.86	3.31	6.88	3.32	6.90	3.33	6.92	3.34	6.94	3.35	3.5
7.06	3.41	7.08	3.42	7.10	3.43	7.11	3.43	7.13	3.44	3.6
7.25	3.50	7.27	3.51	7.29	3.52	7.31	3.53	7.33	3.54	3.7
7.44	3.59	7.46	3.60	7.48	3.61	7.50	3.62	7.52	3.63	3.8
7.64	3.69	7.66	3.70	7.68	3.71	7.69	3.71	7.71	3.72	3.9
7.83	3.78	7.85	3.79	7.87	3.80	7.89	3.81	7.91	3.82	4.0
8.02	3.87	8.04	3.88	8.06	3.89	8.08	3.90	8.10	3.91	4.1
8.22	3.97	8.24	3.98	8.26	3.99	8.27	3.99	8.29	4.00	4.2
8.41	4.06	8.43	4.07	8.45	4.08	8.47	4.09	8.49	4.10	4.3
8.60	4.15	8.62	4.16	8.64	4.17	8.66	4.18	8.68	4.19	4.4
8.80	4.25	8.82	4.26	8.84	4.27	8.85	4.27	8.87	4.28	4.5
8.99	4.34	9.01	4.35	9.03	4.36	9.05	4.37	9.07	4.38	4.6
9.18	4.43	9.20	4.44	9.22	4.45	9.24	4.46	9.26	4.47	4.7
9.38	4.53	9.40	4.54	9.42	4.55	9.43	4.55	9.45	4.56	4.8
9.57	4.62	9.59	4.63	9.61	4.64	9.63	4.65	9.65	4.66	4.9
										5.0

en
MgO% 0.01～4.99

Table 8-1

MGO	0		1		2		3		4	
%	EN	SIO2	EN	SIO2	EN	SIO2	EN	SIO2	EN	SIO2
0.	0.	0.	0.02	0.01	0.05	0.03	0.07	0.04	0.10	0.06
0.1	0.25	0.15	0.27	0.16	0.30	0.18	0.32	0.19	0.35	0.21
0.2	0.50	0.30	0.52	0.31	0.55	0.33	0.57	0.34	0.60	0.36
0.3	0.75	0.45	0.77	0.46	0.80	0.48	0.82	0.49	0.85	0.51
0.4	1.00	0.60	1.02	0.61	1.05	0.63	1.07	0.64	1.10	0.66
0.5	1.25	0.75	1.27	0.76	1.30	0.78	1.32	0.79	1.35	0.81
0.6	1.49	0.89	1.52	0.91	1.54	0.92	1.57	0.94	1.59	0.95
0.7	1.74	1.04	1.77	1.06	1.79	1.07	1.82	1.09	1.84	1.10
0.8	1.99	1.19	2.02	1.21	2.04	1.22	2.07	1.24	2.09	1.25
0.9	2.24	1.34	2.27	1.36	2.29	1.37	2.32	1.39	2.34	1.40
1.0	2.49	1.49	2.52	1.51	2.54	1.52	2.57	1.54	2.59	1.55
1.1	2.74	1.64	2.76	1.65	2.79	1.67	2.81	1.68	2.84	1.70
1.2	2.99	1.79	3.01	1.80	3.04	1.82	3.06	1.83	3.09	1.85
1.3	3.24	1.94	3.26	1.95	3.29	1.97	3.31	1.98	3.34	2.00
1.4	3.49	2.09	3.51	2.10	3.54	2.12	3.56	2.13	3.59	2.15
1.5	3.74	2.24	3.76	2.25	3.79	2.27	3.81	2.28	3.84	2.30
1.6	3.99	2.39	4.01	2.40	4.04	2.42	4.06	2.43	4.08	2.44
1.7	4.23	2.53	4.26	2.55	4.28	2.56	4.31	2.58	4.33	2.59
1.8	4.48	2.68	4.51	2.70	4.53	2.71	4.56	2.73	4.58	2.74
1.9	4.73	2.83	4.76	2.85	4.78	2.86	4.81	2.88	4.83	2.89
2.0	4.98	2.98	5.01	3.00	5.03	3.01	5.06	3.03	5.08	3.04
2.1	5.23	3.13	5.26	3.15	5.28	3.16	5.31	3.18	5.33	3.19
2.2	5.48	3.28	5.50	3.29	5.53	3.31	5.55	3.32	5.58	3.34
2.3	5.73	3.43	5.75	3.44	5.78	3.46	5.80	3.47	5.83	3.49
2.4	5.98	3.58	6.00	3.59	6.03	3.61	6.05	3.62	6.08	3.64
2.5	6.23	3.73	6.25	3.74	6.28	3.76	6.30	3.77	6.33	3.79
2.6	6.48	3.88	6.50	3.89	6.53	3.91	6.55	3.92	6.58	3.94
2.7	6.73	4.03	6.75	4.04	6.77	4.05	6.80	4.07	6.82	4.08
2.8	6.97	4.17	7.00	4.19	7.02	4.20	7.05	4.22	7.07	4.23
2.9	7.22	4.32	7.25	4.34	7.27	4.35	7.30	4.37	7.32	4.38
3.0	7.47	4.47	7.50	4.49	7.52	4.50	7.55	4.52	7.57	4.53
3.1	7.72	4.62	7.75	4.64	7.77	4.65	7.80	4.67	7.82	4.68
3.2	7.97	4.77	8.00	4.79	8.02	4.80	8.05	4.82	8.07	4.83
3.3	8.22	4.92	8.24	4.93	8.27	4.95	8.29	4.96	8.32	4.98
3.4	8.47	5.07	8.49	5.08	8.52	5.10	8.54	5.11	8.57	5.13
3.5	8.72	5.22	8.74	5.23	8.77	5.25	8.79	5.26	8.82	5.28
3.6	8.97	5.37	8.99	5.38	9.02	5.40	9.04	5.41	9.07	5.43
3.7	9.22	5.52	9.24	5.53	9.27	5.55	9.29	5.56	9.32	5.58
3.8	9.46	5.66	9.49	5.68	9.51	5.69	9.54	5.71	9.56	5.72
3.9	9.71	5.81	9.74	5.83	9.76	5.84	9.79	5.86	9.81	5.87
4.0	9.96	5.96	9.99	5.98	10.01	5.99	10.04	6.01	10.06	6.02
4.1	10.21	6.11	10.24	6.13	10.26	6.14	10.29	6.16	10.31	6.17
4.2	10.46	6.26	10.49	6.28	10.51	6.29	10.54	6.31	10.56	6.32
4.3	10.71	6.41	10.74	6.43	10.76	6.44	10.79	6.46	10.81	6.47
4.4	10.96	6.56	10.98	6.57	11.01	6.59	11.03	6.60	11.06	6.62
4.5	11.21	6.71	11.23	6.72	11.26	6.74	11.28	6.75	11.31	6.77
4.6	11.46	6.86	11.48	6.87	11.51	6.89	11.53	6.90	11.56	6.92
4.7	11.71	7.01	11.73	7.02	11.76	7.04	11.78	7.05	11.81	7.07
4.8	11.96	7.16	11.98	7.17	12.01	7.19	12.03	7.20	12.06	7.22
4.9	12.20	7.30	12.23	7.32	12.25	7.33	12.28	7.35	12.30	7.36

5		6		7		8		9		MGO
EN	SIO2	EN	SIO2	EN	SIO2	EN	SIO2	EN	SIO2	%
0.12	0.07	0.15	0.09	0.17	0.10	0.20	0.12	0.22	0.13	0.
0.37	0.22	0.40	0.24	0.42	0.25	0.45	0.27	0.47	0.28	0.1
0.62	0.37	0.65	0.39	0.67	0.40	0.70	0.42	0.72	0.43	0.2
0.87	0.52	0.90	0.54	0.92	0.55	0.95	0.57	0.97	0.58	0.3
1.12	0.67	1.15	0.69	1.17	0.70	1.20	0.72	1.22	0.73	0.4
1.37	0.82	1.39	0.83	1.42	0.85	1.44	0.86	1.47	0.88	0.5
1.62	0.97	1.64	0.98	1.67	1.00	1.69	1.01	1.72	1.03	0.6
1.87	1.12	1.89	1.13	1.92	1.15	1.94	1.16	1.97	1.18	0.7
2.12	1.27	2.14	1.28	2.17	1.30	2.19	1.31	2.22	1.33	0.8
2.37	1.42	2.39	1.43	2.42	1.45	2.44	1.46	2.47	1.48	0.9
2.62	1.57	2.64	1.58	2.67	1.60	2.69	1.61	2.71	1.62	1.0
2.86	1.71	2.89	1.73	2.91	1.74	2.94	1.76	2.96	1.77	1.1
3.11	1.86	3.14	1.88	3.16	1.89	3.19	1.91	3.21	1.92	1.2
3.36	2.01	3.39	2.03	3.41	2.04	3.44	2.06	3.46	2.07	1.3
3.61	2.16	3.64	2.18	3.66	2.19	3.69	2.21	3.71	2.22	1.4
3.86	2.31	3.89	2.33	3.91	2.34	3.94	2.36	3.96	2.37	1.5
4.11	2.46	4.13	2.47	4.16	2.49	4.18	2.50	4.21	2.52	1.6
4.36	2.61	4.38	2.62	4.41	2.64	4.43	2.65	4.46	2.67	1.7
4.61	2.76	4.63	2.77	4.66	2.79	4.68	2.80	4.71	2.82	1.8
4.86	2.91	4.88	2.92	4.91	2.94	4.93	2.95	4.96	2.97	1.9
5.11	3.06	5.13	3.07	5.16	3.09	5.18	3.10	5.21	3.12	2.0
5.36	3.21	5.38	3.22	5.40	3.23	5.43	3.25	5.45	3.26	2.1
5.60	3.35	5.63	3.37	5.65	3.38	5.68	3.40	5.70	3.41	2.2
5.85	3.50	5.88	3.52	5.90	3.53	5.93	3.55	5.95	3.56	2.3
6.10	3.65	6.13	3.67	6.15	3.68	6.18	3.70	6.20	3.71	2.4
6.35	3.80	6.38	3.82	6.40	3.83	6.43	3.85	6.45	3.86	2.5
6.60	3.95	6.63	3.97	6.65	3.98	6.68	4.00	6.70	4.01	2.6
6.85	4.10	6.87	4.11	6.90	4.13	6.92	4.14	6.95	4.16	2.7
7.10	4.25	7.12	4.26	7.15	4.28	7.17	4.29	7.20	4.31	2.8
7.35	4.40	7.37	4.41	7.40	4.43	7.42	4.44	7.45	4.46	2.9
7.60	4.55	7.62	4.56	7.65	4.58	7.67	4.59	7.70	4.61	3.0
7.85	4.70	7.87	4.71	7.90	4.73	7.92	4.74	7.95	4.76	3.1
8.10	4.85	8.12	4.86	8.14	4.87	8.17	4.89	8.19	4.90	3.2
8.34	4.99	8.37	5.01	8.39	5.02	8.42	5.04	8.44	5.05	3.3
8.59	5.14	8.62	5.16	8.64	5.17	8.67	5.19	8.69	5.20	3.4
8.84	5.29	8.87	5.31	8.89	5.32	8.92	5.34	8.94	5.35	3.5
9.09	5.44	9.12	5.46	9.14	5.47	9.17	5.49	9.19	5.50	3.6
9.34	5.59	9.37	5.61	9.39	5.62	9.42	5.64	9.44	5.65	3.7
9.59	5.74	9.61	5.75	9.64	5.77	9.66	5.78	9.69	5.80	3.8
9.84	5.89	9.86	5.90	9.89	5.92	9.91	5.93	9.94	5.95	3.9
10.09	6.04	10.11	6.05	10.14	6.07	10.16	6.08	10.19	6.10	4.0
10.34	6.19	10.36	6.20	10.39	6.22	10.41	6.23	10.44	6.25	4.1
10.59	6.34	10.61	6.35	10.64	6.37	10.66	6.38	10.69	6.40	4.2
10.83	6.48	10.86	6.50	10.88	6.51	10.91	6.53	10.93	6.54	4.3
11.08	6.63	11.11	6.65	11.13	6.66	11.16	6.68	11.18	6.69	4.4
11.33	6.78	11.36	6.80	11.38	6.81	11.41	6.83	11.43	6.84	4.5
11.58	6.93	11.61	6.95	11.63	6.96	11.66	6.98	11.68	6.99	4.6
11.83	7.08	11.86	7.10	11.88	7.11	11.91	7.13	11.93	7.14	4.7
12.08	7.23	12.11	7.25	12.13	7.26	12.16	7.28	12.18	7.29	4.8
12.33	7.38	12.35	7.39	12.38	7.41	12.40	7.42	12.43	7.44	4.9

en
MgO% 5.00～10.00

Table 8-1

MGO	0		1		2		3		4	
%	EN	SIO2	EN	SIO2	EN	SIO2	EN	SIO2	EN	SIO2
5.0	12.45	7.45	12.48	7.47	12.50	7.48	12.53	7.50	12.55	7.51
5.1	12.70	7.60	12.73	7.62	12.75	7.63	12.78	7.65	12.80	7.66
5.2	12.95	7.75	12.98	7.77	13.00	7.78	13.03	7.80	13.05	7.81
5.3	13.20	7.90	13.23	7.92	13.25	7.93	13.28	7.95	13.30	7.96
5.4	13.45	8.05	13.48	8.07	13.50	8.08	13.52	8.09	13.55	8.11
5.5	13.70	8.20	13.72	8.21	13.75	8.23	13.77	8.24	13.80	8.26
5.6	13.95	8.35	13.97	8.36	14.00	8.38	14.02	8.39	14.05	8.41
5.7	14.20	8.50	14.22	8.51	14.25	8.53	14.27	8.54	14.30	8.56
5.8	14.45	8.65	14.47	8.66	14.50	8.68	14.52	8.69	14.55	8.71
5.9	14.70	8.80	14.72	8.81	14.75	8.83	14.77	8.84	14.80	8.86
6.0	14.94	8.94	14.97	8.96	14.99	8.97	15.02	8.99	15.04	9.00
6.1	15.19	9.09	15.22	9.11	15.24	9.12	15.27	9.14	15.29	9.15
6.2	15.44	9.24	15.47	9.26	15.49	9.27	15.52	9.29	15.54	9.30
6.3	15.69	9.39	15.72	9.41	15.74	9.42	15.77	9.44	15.79	9.45
6.4	15.94	9.54	15.97	9.56	15.99	9.57	16.02	9.59	16.04	9.60
6.5	16.19	9.69	16.21	9.70	16.24	9.72	16.26	9.73	16.29	9.75
6.6	16.44	9.84	16.46	9.85	16.49	9.87	16.51	9.88	16.54	9.90
6.7	16.69	9.99	16.71	10.00	16.74	10.02	16.76	10.03	16.79	10.05
6.8	16.94	10.14	16.96	10.15	16.99	10.17	17.01	10.18	17.04	10.20
6.9	17.19	10.29	17.21	10.30	17.24	10.32	17.26	10.33	17.29	10.35
7.0	17.44	10.44	17.46	10.45	17.49	10.47	17.51	10.48	17.54	10.50
7.1	17.68	10.58	17.71	10.60	17.73	10.61	17.76	10.63	17.78	10.64
7.2	17.93	10.73	17.96	10.75	17.98	10.76	18.01	10.78	18.03	10.79
7.3	18.18	10.88	18.21	10.90	18.23	10.91	18.26	10.93	18.28	10.94
7.4	18.43	11.03	18.46	11.05	18.48	11.06	18.51	11.08	18.53	11.09
7.5	18.68	11.18	18.71	11.20	18.73	11.21	18.76	11.23	18.78	11.24
7.6	18.93	11.33	18.95	11.34	18.98	11.36	19.00	11.37	19.03	11.39
7.7	19.18	11.48	19.20	11.49	19.23	11.51	19.25	11.52	19.28	11.54
7.8	19.43	11.63	19.45	11.64	19.48	11.66	19.50	11.67	19.53	11.69
7.9	19.68	11.78	19.70	11.79	19.73	11.81	19.75	11.82	19.78	11.84
8.0	19.93	11.93	19.95	11.94	19.98	11.96	20.00	11.97	20.03	11.99
8.1	20.18	12.08	20.20	12.09	20.23	12.11	20.25	12.12	20.27	12.13
8.2	20.42	12.22	20.45	12.24	20.47	12.25	20.50	12.27	20.52	12.28
8.3	20.67	12.37	20.70	12.39	20.72	12.40	20.75	12.42	20.77	12.43
8.4	20.92	12.52	20.95	12.54	20.97	12.55	21.00	12.57	21.02	12.58
8.5	21.17	12.67	21.20	12.69	21.22	12.70	21.25	12.72	21.27	12.73
8.6	21.42	12.82	21.45	12.84	21.47	12.85	21.50	12.87	21.52	12.88
8.7	21.67	12.97	21.69	12.98	21.72	13.00	21.74	13.01	21.77	13.03
8.8	21.92	13.12	21.94	13.13	21.97	13.15	21.99	13.16	22.02	13.18
8.9	22.17	13.27	22.19	13.28	22.22	13.30	22.24	13.31	22.27	13.33
9.0	22.42	13.42	22.44	13.43	22.47	13.45	22.49	13.46	22.52	13.48
9.1	22.67	13.57	22.69	13.58	22.72	13.60	22.74	13.61	22.77	13.63
9.2	22.92	13.72	22.94	13.73	22.96	13.74	22.99	13.76	23.01	13.77
9.3	23.16	13.86	23.19	13.88	23.21	13.89	23.24	13.91	23.26	13.92
9.4	23.41	14.01	23.44	14.03	23.46	14.04	23.49	14.06	23.51	14.07
9.5	23.66	14.16	23.69	14.18	23.71	14.19	23.74	14.21	23.76	14.22
9.6	23.91	14.31	23.94	14.33	23.96	14.34	23.99	14.36	24.01	14.37
9.7	24.16	14.46	24.19	14.48	24.21	14.49	24.24	14.51	24.26	14.52
9.8	24.41	14.61	24.43	14.62	24.46	14.64	24.48	14.65	24.51	14.67
9.9	24.66	14.76	24.68	14.77	24.71	14.79	24.73	14.80	24.76	14.82
10.0	24.91	14.91								

(continued)

5		6		7		8		9		MGO
EN	SIO2	EN	SIO2	EN	SIO2	EN	SIO2	EN	SIO2	%
12.58	7.53	12.60	7.54	12.63	7.56	12.65	7.57	12.68	7.59	5.0
12.83	7.68	12.85	7.69	12.88	7.71	12.90	7.72	12.93	7.74	5.1
13.08	7.83	13.10	7.84	13.13	7.86	13.15	7.87	13.18	7.89	5.2
13.33	7.98	13.35	7.99	13.38	8.01	13.40	8.02	13.43	8.04	5.3
13.57	8.12	13.60	8.14	13.62	8.15	13.65	8.17	13.67	8.18	5.4
13.82	8.27	13.85	8.29	13.87	8.30	13.90	8.32	13.92	8.33	5.5
14.07	8.42	14.10	8.44	14.12	8.45	14.15	8.47	14.17	8.48	5.6
14.32	8.57	14.35	8.59	14.37	8.60	14.40	8.62	14.42	8.63	5.7
14.57	8.72	14.60	8.74	14.62	8.75	14.65	8.77	14.67	8.78	5.8
14.82	8.87	14.85	8.89	14.87	8.90	14.89	8.91	14.92	8.93	5.9
15.07	9.02	15.09	9.03	15.12	9.05	15.14	9.06	15.17	9.08	6.0
15.32	9.17	15.34	9.18	15.37	9.20	15.39	9.21	15.42	9.23	6.1
15.57	9.32	15.59	9.33	15.62	9.35	15.64	9.36	15.67	9.38	6.2
15.82	9.47	15.84	9.48	15.87	9.50	15.89	9.51	15.92	9.53	6.3
16.07	9.62	16.09	9.63	16.12	9.65	16.14	9.66	16.17	9.68	6.4
16.31	9.76	16.34	9.78	16.36	9.79	16.39	9.81	16.41	9.82	6.5
16.56	9.91	16.59	9.93	16.61	9.94	16.64	9.96	16.66	9.97	6.6
16.81	10.06	16.84	10.08	16.86	10.09	16.89	10.11	16.91	10.12	6.7
17.06	10.21	17.09	10.23	17.11	10.24	17.14	10.26	17.16	10.27	6.8
17.31	10.36	17.34	10.38	17.36	10.39	17.39	10.41	17.41	10.42	6.9
17.56	10.51	17.58	10.52	17.61	10.54	17.63	10.55	17.66	10.57	7.0
17.81	10.66	17.83	10.67	17.86	10.69	17.88	10.70	17.91	10.72	7.1
18.06	10.81	18.08	10.82	18.11	10.84	18.13	10.85	18.16	10.87	7.2
18.31	10.96	18.33	10.97	18.36	10.99	18.38	11.00	18.41	11.02	7.3
18.56	11.11	18.58	11.12	18.61	11.14	18.63	11.15	18.66	11.17	7.4
18.81	11.26	18.83	11.27	18.86	11.29	18.88	11.30	18.91	11.32	7.5
19.05	11.40	19.08	11.42	19.10	11.43	19.13	11.45	19.15	11.46	7.6
19.30	11.55	19.33	11.57	19.35	11.58	19.38	11.60	19.40	11.61	7.7
19.55	11.70	19.58	11.72	19.60	11.73	19.63	11.75	19.65	11.76	7.8
19.80	11.85	19.83	11.87	19.85	11.88	19.88	11.90	19.90	11.91	7.9
20.05	12.00	20.08	12.02	20.10	12.03	20.13	12.05	20.15	12.06	8.0
20.30	12.15	20.32	12.16	20.35	12.18	20.37	12.19	20.40	12.21	8.1
20.55	12.30	20.57	12.31	20.60	12.33	20.62	12.34	20.65	12.36	8.2
20.80	12.45	20.82	12.46	20.85	12.48	20.87	12.49	20.90	12.51	8.3
21.05	12.60	21.07	12.61	21.10	12.63	21.12	12.64	21.15	12.66	8.4
21.30	12.75	21.32	12.76	21.35	12.78	21.37	12.79	21.40	12.81	8.5
21.55	12.90	21.57	12.91	21.60	12.93	21.62	12.94	21.64	12.95	8.6
21.79	13.04	21.82	13.06	21.84	13.07	21.87	13.09	21.89	13.10	8.7
22.04	13.19	22.07	13.21	22.09	13.22	22.12	13.24	22.14	13.25	8.8
22.29	13.34	22.32	13.36	22.34	13.37	22.37	13.39	22.39	13.40	8.9
22.54	13.49	22.57	13.51	22.59	13.52	22.62	13.54	22.64	13.55	9.0
22.79	13.64	22.82	13.66	22.84	13.67	22.87	13.69	22.89	13.70	9.1
23.04	13.79	23.06	13.80	23.09	13.82	23.11	13.83	23.14	13.85	9.2
23.29	13.94	23.31	13.95	23.34	13.97	23.36	13.98	23.39	14.00	9.3
23.54	14.09	23.56	14.10	23.59	14.12	23.61	14.13	23.64	14.15	9.4
23.79	14.24	23.81	14.25	23.84	14.27	23.86	14.28	23.89	14.30	9.5
24.04	14.39	24.06	14.40	24.09	14.42	24.11	14.43	24.14	14.45	9.6
24.29	14.54	24.31	14.55	24.33	14.56	24.36	14.58	24.38	14.59	9.7
24.53	14.68	24.56	14.70	24.58	14.71	24.61	14.73	24.63	14.74	9.8
24.78	14.83	24.81	14.85	24.83	14.86	24.86	14.88	24.88	14.89	9.9
										10.0

en
SiO_2% 0.01～5.00

Table 8-2

SI02	0		1		2		3		4	
%	EN	MGO	EN	MGO	EN	MGO	EN	MGO	EN	MGO
0.	0.	0.	0.02	0.01	0.03	0.01	0.05	0.02	0.07	0.03
0.1	0.17	0.07	0.18	0.07	0.20	0.08	0.22	0.09	0.23	0.09
0.2	0.33	0.13	0.35	0.14	0.37	0.15	0.38	0.15	0.40	0.16
0.3	0.50	0.20	0.52	0.21	0.53	0.21	0.55	0.22	0.57	0.23
0.4	0.67	0.27	0.69	0.28	0.70	0.28	0.72	0.29	0.74	0.30
0.5	0.84	0.34	0.85	0.34	0.87	0.35	0.89	0.36	0.90	0.36
0.6	1.00	0.40	1.02	0.41	1.04	0.42	1.05	0.42	1.07	0.43
0.7	1.17	0.47	1.19	0.48	1.20	0.48	1.22	0.49	1.24	0.50
0.8	1.34	0.54	1.35	0.54	1.37	0.55	1.39	0.56	1.40	0.56
0.9	1.50	0.60	1.52	0.61	1.54	0.62	1.55	0.62	1.57	0.63
1.0	1.67	0.67	1.69	0.68	1.70	0.68	1.72	0.69	1.74	0.70
1.1	1.84	0.74	1.85	0.74	1.87	0.75	1.89	0.76	1.90	0.76
1.2	2.00	0.80	2.02	0.81	2.04	0.82	2.06	0.83	2.07	0.83
1.3	2.17	0.87	2.19	0.88	2.21	0.89	2.22	0.89	2.24	0.90
1.4	2.34	0.94	2.36	0.95	2.37	0.95	2.39	0.96	2.41	0.97
1.5	2.51	1.01	2.52	1.01	2.54	1.02	2.56	1.03	2.57	1.03
1.6	2.67	1.07	2.69	1.08	2.71	1.09	2.72	1.09	2.74	1.10
1.7	2.84	1.14	2.86	1.15	2.87	1.15	2.89	1.16	2.91	1.17
1.8	3.01	1.21	3.02	1.21	3.04	1.22	3.06	1.23	3.07	1.23
1.9	3.17	1.27	3.19	1.28	3.21	1.29	3.22	1.29	3.24	1.30
2.0	3.34	1.34	3.36	1.35	3.37	1.35	3.39	1.36	3.41	1.37
2.1	3.51	1.41	3.53	1.42	3.54	1.42	3.56	1.43	3.58	1.44
2.2	3.68	1.48	3.69	1.48	3.71	1.49	3.73	1.50	3.74	1.50
2.3	3.84	1.54	3.86	1.55	3.88	1.56	3.89	1.56	3.91	1.57
2.4	4.01	1.61	4.03	1.62	4.04	1.62	4.06	1.63	4.08	1.64
2.5	4.18	1.68	4.19	1.68	4.21	1.69	4.23	1.70	4.24	1.70
2.6	4.34	1.74	4.36	1.75	4.38	1.76	4.39	1.76	4.41	1.77
2.7	4.51	1.81	4.53	1.82	4.54	1.82	4.56	1.83	4.58	1.84
2.8	4.68	1.88	4.69	1.88	4.71	1.89	4.73	1.90	4.75	1.91
2.9	4.85	1.95	4.86	1.95	4.88	1.96	4.90	1.97	4.91	1.97
3.0	5.01	2.01	5.03	2.02	5.05	2.03	5.06	2.03	5.08	2.04
3.1	5.18	2.08	5.20	2.09	5.21	2.09	5.23	2.10	5.25	2.11
3.2	5.35	2.15	5.36	2.15	5.38	2.16	5.40	2.17	5.41	2.17
3.3	5.51	2.21	5.53	2.22	5.55	2.23	5.56	2.23	5.58	2.24
3.4	5.68	2.28	5.70	2.29	5.71	2.29	5.73	2.30	5.75	2.31
3.5	5.85	2.35	5.86	2.35	5.88	2.36	5.90	2.37	5.91	2.37
3.6	6.01	2.41	6.03	2.42	6.05	2.43	6.06	2.43	6.08	2.44
3.7	6.18	2.48	6.20	2.49	6.22	2.50	6.23	2.50	6.25	2.51
3.8	6.35	2.55	6.37	2.56	6.38	2.56	6.40	2.57	6.42	2.58
3.9	6.52	2.62	6.53	2.62	6.55	2.63	6.57	2.64	6.58	2.64
4.0	6.68	2.68	6.70	2.69	6.72	2.70	6.73	2.70	6.75	2.71
4.1	6.85	2.75	6.87	2.76	6.88	2.76	6.90	2.77	6.92	2.78
4.2	7.02	2.82	7.03	2.82	7.05	2.83	7.07	2.84	7.08	2.84
4.3	7.18	2.88	7.20	2.89	7.22	2.90	7.23	2.90	7.25	2.91
4.4	7.35	2.95	7.37	2.96	7.38	2.96	7.40	2.97	7.42	2.98
4.5	7.52	3.02	7.54	3.03	7.55	3.03	7.57	3.04	7.59	3.05
4.6	7.69	3.09	7.70	3.09	7.72	3.10	7.74	3.11	7.75	3.11
4.7	7.85	3.15	7.87	3.16	7.89	3.17	7.90	3.17	7.92	3.18
4.8	8.02	3.22	8.04	3.23	8.05	3.23	8.07	3.24	8.09	3.25
4.9	8.19	3.29	8.20	3.29	8.22	3.30	8.24	3.31	8.25	3.31
5.0	8.35	3.35								

5		6		7		8		9		SIO2
EN	MGO	EN	MGO	EN	MGO	EN	MGO	EN	MGO	%
0.08	0.03	0.10	0.04	0.12	0.05	0.13	0.05	0.15	0.06	0.
0.25	0.10	0.27	0.11	0.28	0.11	0.30	0.12	0.32	0.13	0.1
0.42	0.17	0.43	0.17	0.45	0.18	0.47	0.19	0.48	0.19	0.2
0.58	0.23	0.60	0.24	0.62	0.25	0.63	0.25	0.65	0.26	0.3
0.75	0.30	0.77	0.31	0.79	0.32	0.80	0.32	0.82	0.33	0.4
0.92	0.37	0.94	0.38	0.95	0.38	0.97	0.39	0.99	0.40	0.5
1.09	0.44	1.10	0.44	1.12	0.45	1.14	0.46	1.15	0.46	0.6
1.25	0.50	1.27	0.51	1.29	0.52	1.30	0.52	1.32	0.53	0.7
1.42	0.57	1.44	0.58	1.45	0.58	1.47	0.59	1.49	0.60	0.8
1.59	0.64	1.60	0.64	1.62	0.65	1.64	0.66	1.65	0.66	0.9
1.75	0.70	1.77	0.71	1.79	0.72	1.80	0.72	1.82	0.73	1.0
1.92	0.77	1.94	0.78	1.95	0.78	1.97	0.79	1.99	0.80	1.1
2.09	0.84	2.11	0.85	2.12	0.85	2.14	0.86	2.16	0.87	1.2
2.26	0.91	2.27	0.91	2.29	0.92	2.31	0.93	2.32	0.93	1.3
2.42	0.97	2.44	0.98	2.46	0.99	2.47	0.99	2.49	1.00	1.4
2.59	1.04	2.61	1.05	2.62	1.05	2.64	1.06	2.66	1.07	1.5
2.76	1.11	2.77	1.11	2.79	1.12	2.81	1.13	2.82	1.13	1.6
2.92	1.17	2.94	1.18	2.96	1.19	2.97	1.19	2.99	1.20	1.7
3.09	1.24	3.11	1.25	3.12	1.25	3.14	1.26	3.16	1.27	1.8
3.26	1.31	3.27	1.31	3.29	1.32	3.31	1.33	3.32	1.33	1.9
3.43	1.38	3.44	1.38	3.46	1.39	3.48	1.40	3.49	1.40	2.0
3.59	1.44	3.61	1.45	3.63	1.46	3.64	1.46	3.66	1.47	2.1
3.76	1.51	3.78	1.52	3.79	1.52	3.81	1.53	3.83	1.54	2.2
3.93	1.58	3.94	1.58	3.96	1.59	3.98	1.60	3.99	1.60	2.3
4.09	1.64	4.11	1.65	4.13	1.66	4.14	1.66	4.16	1.67	2.4
4.26	1.71	4.28	1.72	4.29	1.72	4.31	1.73	4.33	1.74	2.5
4.43	1.78	4.44	1.78	4.46	1.79	4.48	1.80	4.49	1.80	2.6
4.59	1.84	4.61	1.85	4.63	1.86	4.64	1.86	4.66	1.87	2.7
4.76	1.91	4.78	1.92	4.80	1.93	4.81	1.93	4.83	1.94	2.8
4.93	1.98	4.95	1.99	4.96	1.99	4.98	2.00	5.00	2.01	2.9
5.10	2.05	5.11	2.05	5.13	2.06	5.15	2.07	5.16	2.07	3.0
5.26	2.11	5.28	2.12	5.30	2.13	5.31	2.13	5.33	2.14	3.1
5.43	2.18	5.45	2.19	5.46	2.19	5.48	2.20	5.50	2.21	3.2
5.60	2.25	5.61	2.25	5.63	2.26	5.65	2.27	5.66	2.27	3.3
5.76	2.31	5.78	2.32	5.80	2.33	5.81	2.33	5.83	2.34	3.4
5.93	2.38	5.95	2.39	5.96	2.39	5.98	2.40	6.00	2.41	3.5
6.10	2.45	6.12	2.46	6.13	2.46	6.15	2.47	6.17	2.48	3.6
6.27	2.52	6.28	2.52	6.30	2.53	6.32	2.54	6.33	2.54	3.7
6.43	2.58	6.45	2.59	6.47	2.60	6.48	2.60	6.50	2.61	3.8
6.60	2.65	6.62	2.66	6.63	2.66	6.65	2.67	6.67	2.68	3.9
6.77	2.72	6.78	2.72	6.80	2.73	6.82	2.74	6.83	2.74	4.0
6.93	2.78	6.95	2.79	6.97	2.80	6.98	2.80	7.00	2.81	4.1
7.10	2.85	7.12	2.86	7.13	2.86	7.15	2.87	7.17	2.88	4.2
7.27	2.92	7.28	2.92	7.30	2.93	7.32	2.94	7.33	2.94	4.3
7.44	2.99	7.45	2.99	7.47	3.00	7.49	3.01	7.50	3.01	4.4
7.60	3.05	7.62	3.06	7.64	3.07	7.65	3.07	7.67	3.08	4.5
7.77	3.12	7.79	3.13	7.80	3.13	7.82	3.14	7.84	3.15	4.6
7.94	3.19	7.95	3.19	7.97	3.20	7.99	3.21	8.00	3.21	4.7
8.10	3.25	8.12	3.26	8.14	3.27	8.15	3.27	8.17	3.28	4.8
8.27	3.32	8.29	3.33	8.30	3.33	8.32	3.34	8.34	3.35	4.9
										5.0

fs
FeO% 0.01～4.99

Table 9-1

FEO	0		1		2		3		4	
%	FS	SIO2	FS	SIO2	FS	SIO2	FS	SIO2	FS	SIO2
0.	0.	0.	0.02	0.01	0.04	0.02	0.06	0.03	0.07	0.03
0.1	0.18	0.08	0.20	0.09	0.22	0.10	0.24	0.11	0.26	0.12
0.2	0.37	0.17	0.39	0.18	0.40	0.18	0.42	0.19	0.44	0.20
0.3	0.55	0.25	0.57	0.26	0.59	0.27	0.61	0.28	0.62	0.28
0.4	0.73	0.33	0.75	0.34	0.77	0.35	0.79	0.36	0.81	0.37
0.5	0.92	0.42	0.94	0.43	0.95	0.43	0.97	0.44	0.99	0.45
0.6	1.10	0.50	1.12	0.51	1.14	0.52	1.16	0.53	1.18	0.54
0.7	1.29	0.59	1.30	0.59	1.32	0.60	1.34	0.61	1.36	0.62
0.8	1.47	0.67	1.49	0.68	1.51	0.69	1.52	0.69	1.54	0.70
0.9	1.65	0.75	1.67	0.76	1.69	0.77	1.71	0.78	1.73	0.79
1.0	1.84	0.84	1.85	0.84	1.87	0.85	1.89	0.86	1.91	0.87
1.1	2.02	0.92	2.04	0.93	2.06	0.94	2.08	0.95	2.09	0.95
1.2	2.20	1.00	2.22	1.01	2.24	1.02	2.26	1.03	2.28	1.04
1.3	2.39	1.09	2.41	1.10	2.42	1.10	2.44	1.11	2.46	1.12
1.4	2.57	1.17	2.59	1.18	2.61	1.19	2.63	1.20	2.64	1.20
1.5	2.75	1.25	2.77	1.26	2.79	1.27	2.81	1.28	2.83	1.29
1.6	2.94	1.34	2.96	1.35	2.97	1.35	2.99	1.36	3.01	1.37
1.7	3.12	1.42	3.14	1.43	3.16	1.44	3.18	1.45	3.20	1.46
1.8	3.31	1.51	3.32	1.51	3.34	1.52	3.36	1.53	3.38	1.54
1.9	3.49	1.59	3.51	1.60	3.53	1.61	3.54	1.61	3.56	1.62
2.0	3.67	1.67	3.69	1.68	3.71	1.69	3.73	1.70	3.75	1.71
2.1	3.86	1.76	3.87	1.76	3.89	1.77	3.91	1.78	3.93	1.79
2.2	4.04	1.84	4.06	1.85	4.08	1.86	4.09	1.86	4.11	1.87
2.3	4.22	1.92	4.24	1.93	4.26	1.94	4.28	1.95	4.30	1.96
2.4	4.41	2.01	4.43	2.02	4.44	2.02	4.46	2.03	4.48	2.04
2.5	4.59	2.09	4.61	2.10	4.63	2.11	4.65	2.12	4.66	2.12
2.6	4.77	2.17	4.79	2.18	4.81	2.19	4.83	2.20	4.85	2.21
2.7	4.96	2.26	4.98	2.27	4.99	2.27	5.01	2.28	5.03	2.29
2.8	5.14	2.34	5.16	2.35	5.18	2.36	5.20	2.37	5.22	2.38
2.9	5.33	2.43	5.34	2.43	5.36	2.44	5.38	2.45	5.40	2.46
3.0	5.51	2.51	5.53	2.52	5.55	2.53	5.56	2.53	5.58	2.54
3.1	5.69	2.59	5.71	2.60	5.73	2.61	5.75	2.62	5.77	2.63
3.2	5.88	2.68	5.89	2.68	5.91	2.69	5.93	2.70	5.95	2.71
3.3	6.06	2.76	6.08	2.77	6.10	2.78	6.11	2.78	6.13	2.79
3.4	6.24	2.84	6.26	2.85	6.28	2.86	6.30	2.87	6.32	2.88
3.5	6.43	2.93	6.45	2.94	6.46	2.94	6.48	2.95	6.50	2.96
3.6	6.61	3.01	6.63	3.02	6.65	3.03	6.67	3.04	6.68	3.04
3.7	6.79	3.09	6.81	3.10	6.83	3.11	6.85	3.12	6.87	3.13
3.8	6.98	3.18	7.00	3.19	7.01	3.19	7.03	3.20	7.05	3.21
3.9	7.16	3.26	7.18	3.27	7.20	3.28	7.22	3.29	7.24	3.30
4.0	7.35	3.35	7.36	3.35	7.38	3.36	7.40	3.37	7.42	3.38
4.1	7.53	3.43	7.55	3.44	7.57	3.45	7.58	3.45	7.60	3.46
4.2	7.71	3.51	7.73	3.52	7.75	3.53	7.77	3.54	7.79	3.55
4.3	7.90	3.60	7.91	3.60	7.93	3.61	7.95	3.62	7.97	3.63
4.4	8.08	3.68	8.10	3.69	8.12	3.70	8.13	3.70	8.15	3.71
4.5	8.26	3.76	8.28	3.77	8.30	3.78	8.32	3.79	8.34	3.80
4.6	8.45	3.85	8.47	3.86	8.48	3.86	8.50	3.87	8.52	3.88
4.7	8.63	3.93	8.65	3.94	8.67	3.95	8.69	3.96	8.70	3.96
4.8	8.81	4.01	8.83	4.02	8.85	4.03	8.87	4.04	8.89	4.05
4.9	9.00	4.10	9.02	4.11	9.03	4.11	9.05	4.12	9.07	4.13

5		6		7		8		9		FEO
FS	SIO2	FS	SIO2	FS	SIO2	FS	SIO2	FS	SIO2	%
0.09	0.04	0.11	0.05	0.13	0.06	0.15	0.07	0.17	0.08	0.
0.28	0.13	0.29	0.13	0.31	0.14	0.33	0.15	0.35	0.16	0.1
0.46	0.21	0.48	0.22	0.50	0.23	0.51	0.23	0.53	0.24	0.2
0.64	0.29	0.66	0.30	0.68	0.31	0.70	0.32	0.72	0.33	0.3
0.83	0.38	0.84	0.38	0.86	0.39	0.88	0.40	0.90	0.41	0.4
1.01	0.46	1.03	0.47	1.05	0.48	1.07	0.49	1.08	0.49	0.5
1.19	0.54	1.21	0.55	1.23	0.56	1.25	0.57	1.27	0.58	0.6
1.38	0.63	1.40	0.64	1.41	0.64	1.43	0.65	1.45	0.66	0.7
1.56	0.71	1.58	0.72	1.60	0.73	1.62	0.74	1.63	0.74	0.8
1.74	0.79	1.76	0.80	1.78	0.81	1.80	0.82	1.82	0.83	0.9
1.93	0.88	1.95	0.89	1.96	0.89	1.98	0.90	2.00	0.91	1.0
2.11	0.96	2.13	0.97	2.15	0.98	2.17	0.99	2.19	1.00	1.1
2.30	1.05	2.31	1.05	2.33	1.06	2.35	1.07	2.37	1.08	1.2
2.48	1.13	2.50	1.14	2.52	1.15	2.53	1.15	2.55	1.16	1.3
2.66	1.21	2.68	1.22	2.70	1.23	2.72	1.24	2.74	1.25	1.4
2.85	1.30	2.86	1.30	2.88	1.31	2.90	1.32	2.92	1.33	1.5
3.03	1.38	3.05	1.39	3.07	1.40	3.08	1.40	3.10	1.41	1.6
3.21	1.46	3.23	1.47	3.25	1.48	3.27	1.49	3.29	1.50	1.7
3.40	1.55	3.42	1.56	3.43	1.56	3.45	1.57	3.47	1.58	1.8
3.58	1.63	3.60	1.64	3.62	1.65	3.64	1.66	3.65	1.66	1.9
3.76	1.71	3.78	1.72	3.80	1.73	3.82	1.74	3.84	1.75	2.0
3.95	1.80	3.97	1.81	3.98	1.81	4.00	1.82	4.02	1.83	2.1
4.13	1.88	4.15	1.89	4.17	1.90	4.19	1.91	4.21	1.92	2.2
4.32	1.97	4.33	1.97	4.35	1.98	4.37	1.99	4.39	2.00	2.3
4.50	2.05	4.52	2.06	4.54	2.07	4.55	2.07	4.57	2.08	2.4
4.68	2.13	4.70	2.14	4.72	2.15	4.74	2.16	4.76	2.17	2.5
4.87	2.22	4.88	2.22	4.90	2.23	4.92	2.24	4.94	2.25	2.6
5.05	2.30	5.07	2.31	5.09	2.32	5.10	2.32	5.12	2.33	2.7
5.23	2.38	5.25	2.39	5.27	2.40	5.29	2.41	5.31	2.42	2.8
5.42	2.47	5.44	2.48	5.45	2.48	5.47	2.49	5.49	2.50	2.9
5.60	2.55	5.62	2.56	5.64	2.57	5.66	2.58	5.67	2.58	3.0
5.78	2.63	5.80	2.64	5.82	2.65	5.84	2.66	5.86	2.67	3.1
5.97	2.72	5.99	2.73	6.00	2.73	6.02	2.74	6.04	2.75	3.2
6.15	2.80	6.17	2.81	6.19	2.82	6.21	2.83	6.23	2.84	3.3
6.34	2.89	6.35	2.89	6.37	2.90	6.39	2.91	6.41	2.92	3.4
6.52	2.97	6.54	2.98	6.56	2.99	6.57	2.99	6.59	3.00	3.5
6.70	3.05	6.72	3.06	6.74	3.07	6.76	3.08	6.78	3.09	3.6
6.89	3.14	6.90	3.14	6.92	3.15	6.94	3.16	6.96	3.17	3.7
7.07	3.22	7.09	3.23	7.11	3.24	7.12	3.24	7.14	3.25	3.8
7.25	3.30	7.27	3.31	7.29	3.32	7.31	3.33	7.33	3.34	3.9
7.44	3.39	7.46	3.40	7.47	3.40	7.49	3.41	7.51	3.42	4.0
7.62	3.47	7.64	3.48	7.66	3.49	7.68	3.50	7.69	3.50	4.1
7.80	3.55	7.82	3.56	7.84	3.57	7.86	3.58	7.88	3.59	4.2
7.99	3.64	8.01	3.65	8.02	3.65	8.04	3.66	8.06	3.67	4.3
8.17	3.72	8.19	3.73	8.21	3.74	8.23	3.75	8.24	3.75	4.4
8.36	3.81	8.37	3.81	8.39	3.82	8.41	3.83	8.43	3.84	4.5
8.54	3.89	8.56	3.90	8.58	3.91	8.59	3.91	8.61	3.92	4.6
8.72	3.97	8.74	3.98	8.76	3.99	8.78	4.00	8.80	4.01	4.7
8.91	4.06	8.92	4.06	8.94	4.07	8.96	4.08	8.98	4.09	4.8
9.09	4.14	9.11	4.15	9.13	4.16	9.14	4.16	9.16	4.17	4.9

fs
FeO% 5.00～10.00

Table 9-1

FEO	0		1		2		3		4	
%	FS	SIO2	FS	SIO2	FS	SIO2	FS	SIO2	FS	SIO2
5.0	9.18	4.18	9.20	4.19	9.22	4.20	9.24	4.21	9.25	4.21
5.1	9.37	4.27	9.38	4.27	9.40	4.28	9.42	4.29	9.44	4.30
5.2	9.55	4.35	9.57	4.36	9.59	4.37	9.60	4.37	9.62	4.38
5.3	9.73	4.43	9.75	4.44	9.77	4.45	9.79	4.46	9.81	4.47
5.4	9.92	4.52	9.93	4.52	9.95	4.53	9.97	4.54	9.99	4.55
5.5	10.10	4.60	10.12	4.61	10.14	4.62	10.15	4.62	10.17	4.63
5.6	10.28	4.68	10.30	4.69	10.32	4.70	10.34	4.71	10.36	4.72
5.7	10.47	4.77	10.49	4.78	10.50	4.78	10.52	4.79	10.54	4.80
5.8	10.65	4.85	10.67	4.86	10.69	4.87	10.71	4.88	10.72	4.88
5.9	10.83	4.93	10.85	4.94	10.87	4.95	10.89	4.96	10.91	4.97
6.0	11.02	5.02	11.04	5.03	11.05	5.03	11.07	5.04	11.09	5.05
6.1	11.20	5.10	11.22	5.11	11.24	5.12	11.26	5.13	11.27	5.13
6.2	11.39	5.19	11.40	5.19	11.42	5.20	11.44	5.21	11.46	5.22
6.3	11.57	5.27	11.59	5.28	11.61	5.29	11.62	5.29	11.64	5.30
6.4	11.75	5.35	11.77	5.36	11.79	5.37	11.81	5.38	11.83	5.39
6.5	11.94	5.44	11.95	5.44	11.97	5.45	11.99	5.46	12.01	5.47
6.6	12.12	5.52	12.14	5.53	12.16	5.54	12.17	5.54	12.19	5.55
6.7	12.30	5.60	12.32	5.61	12.34	5.62	12.36	5.63	12.38	5.64
6.8	12.49	5.69	12.51	5.70	12.52	5.70	12.54	5.71	12.56	5.72
6.9	12.67	5.77	12.69	5.78	12.71	5.79	12.73	5.80	12.74	5.80
7.0	12.85	5.85	12.87	5.86	12.89	5.87	12.91	5.88	12.93	5.89
7.1	13.04	5.94	13.06	5.95	13.07	5.95	13.09	5.96	13.11	5.97
7.2	13.22	6.02	13.24	6.03	13.26	6.04	13.28	6.05	13.29	6.05
7.3	13.40	6.10	13.42	6.11	13.44	6.12	13.46	6.13	13.48	6.14
7.4	13.59	6.19	13.61	6.20	13.63	6.21	13.64	6.21	13.66	6.22
7.5	13.77	6.27	13.79	6.28	13.81	6.29	13.83	6.30	13.85	6.31
7.6	13.96	6.36	13.97	6.36	13.99	6.37	14.01	6.38	14.03	6.39
7.7	14.14	6.44	14.16	6.45	14.18	6.46	14.19	6.46	14.21	6.47
7.8	14.32	6.52	14.34	6.53	14.36	6.54	14.38	6.55	14.40	6.56
7.9	14.51	6.61	14.53	6.62	14.54	6.62	14.56	6.63	14.58	6.64
8.0	14.69	6.69	14.71	6.70	14.73	6.71	14.75	6.72	14.76	6.72
8.1	14.87	6.77	14.89	6.78	14.91	6.79	14.93	6.80	14.95	6.81
8.2	15.06	6.86	15.08	6.87	15.09	6.87	15.11	6.88	15.13	6.89
8.3	15.24	6.94	15.26	6.95	15.28	6.96	15.30	6.97	15.31	6.97
8.4	15.42	7.02	15.44	7.03	15.46	7.04	15.48	7.05	15.50	7.06
8.5	15.61	7.11	15.63	7.12	15.65	7.13	15.66	7.13	15.68	7.14
8.6	15.79	7.19	15.81	7.20	15.83	7.21	15.85	7.22	15.87	7.23
8.7	15.98	7.28	15.99	7.28	16.01	7.29	16.03	7.30	16.05	7.31
8.8	16.16	7.36	16.18	7.37	16.20	7.38	16.21	7.38	16.23	7.39
8.9	16.34	7.44	16.36	7.45	16.38	7.46	16.40	7.47	16.42	7.48
9.0	16.53	7.53	16.55	7.54	16.56	7.54	16.58	7.55	16.60	7.56
9.1	16.71	7.61	16.73	7.62	16.75	7.63	16.77	7.64	16.78	7.64
9.2	16.89	7.69	16.91	7.70	16.93	7.71	16.95	7.72	16.97	7.73
9.3	17.08	7.78	17.10	7.79	17.11	7.79	17.13	7.80	17.15	7.81
9.4	17.26	7.86	17.28	7.87	17.30	7.88	17.32	7.89	17.33	7.89
9.5	17.44	7.94	17.46	7.95	17.48	7.96	17.50	7.97	17.52	7.98
9.6	17.63	8.03	17.65	8.04	17.67	8.05	17.68	8.05	17.70	8.06
9.7	17.81	8.11	17.83	8.12	17.85	8.13	17.87	8.14	17.89	8.15
9.8	18.00	8.20	18.01	8.20	18.03	8.21	18.05	8.22	18.07	8.23
9.9	18.18	8.28	18.20	8.29	18.22	8.30	18.23	8.30	18.25	8.31
10.0	18.36	8.36								

(continued)

5		6		7		8		9		FEO
FS	SIO2	FS	SIO2	FS	SIO2	FS	SIO2	FS	SIO2	%
9.27	4.22	9.29	4.23	9.31	4.24	9.33	4.25	9.35	4.26	5.0
9.46	4.31	9.48	4.32	9.49	4.32	9.51	4.33	9.53	4.34	5.1
9.64	4.39	9.66	4.40	9.68	4.41	9.70	4.42	9.71	4.42	5.2
9.82	4.47	9.84	4.48	9.86	4.49	9.88	4.50	9.90	4.51	5.3
10.01	4.56	10.03	4.57	10.04	4.57	10.06	4.58	10.08	4.59	5.4
10.19	4.64	10.21	4.65	10.23	4.66	10.25	4.67	10.26	4.67	5.5
10.38	4.73	10.39	4.73	10.41	4.74	10.43	4.75	10.45	4.76	5.6
10.56	4.81	10.58	4.82	10.60	4.83	10.61	4.83	10.63	4.84	5.7
10.74	4.89	10.76	4.90	10.78	4.91	10.80	4.92	10.82	4.93	5.8
10.93	4.98	10.94	4.98	10.96	4.99	10.98	5.00	11.00	5.01	5.9
11.11	5.06	11.13	5.07	11.15	5.08	11.16	5.08	11.18	5.09	6.0
11.29	5.14	11.31	5.15	11.33	5.16	11.35	5.17	11.37	5.18	6.1
11.48	5.23	11.50	5.24	11.51	5.24	11.53	5.25	11.55	5.26	6.2
11.66	5.31	11.68	5.32	11.70	5.33	11.72	5.34	11.73	5.34	6.3
11.84	5.39	11.86	5.40	11.88	5.41	11.90	5.42	11.92	5.43	6.4
12.03	5.48	12.05	5.49	12.06	5.49	12.08	5.50	12.10	5.51	6.5
12.21	5.56	12.23	5.57	12.25	5.58	12.27	5.59	12.28	5.59	6.6
12.40	5.65	12.41	5.65	12.43	5.66	12.45	5.67	12.47	5.68	6.7
12.58	5.73	12.60	5.74	12.62	5.75	12.63	5.75	12.65	5.76	6.8
12.76	5.81	12.78	5.82	12.80	5.83	12.82	5.84	12.84	5.85	6.9
12.95	5.90	12.96	5.90	12.98	5.91	13.00	5.92	13.02	5.93	7.0
13.13	5.98	13.15	5.99	13.17	6.00	13.18	6.00	13.20	6.01	7.1
13.31	6.06	13.33	6.07	13.35	6.08	13.37	6.09	13.39	6.10	7.2
13.50	6.15	13.52	6.16	13.53	6.16	13.55	6.17	13.57	6.18	7.3
13.68	6.23	13.70	6.24	13.72	6.25	13.74	6.26	13.75	6.26	7.4
13.86	6.31	13.88	6.32	13.90	6.33	13.92	6.34	13.94	6.35	7.5
14.05	6.40	14.07	6.41	14.08	6.41	14.10	6.42	14.12	6.43	7.6
14.23	6.48	14.25	6.49	14.27	6.50	14.29	6.51	14.30	6.51	7.7
14.41	6.56	14.43	6.57	14.45	6.58	14.47	6.59	14.49	6.60	7.8
14.60	6.65	14.62	6.66	14.64	6.67	14.65	6.67	14.67	6.68	7.9
14.78	6.73	14.80	6.74	14.82	6.75	14.84	6.76	14.86	6.77	8.0
14.97	6.82	14.98	6.82	15.00	6.83	15.02	6.84	15.04	6.85	8.1
15.15	6.90	15.17	6.91	15.19	6.92	15.20	6.92	15.22	6.93	8.2
15.33	6.98	15.35	6.99	15.37	7.00	15.39	7.01	15.41	7.02	8.3
15.52	7.07	15.54	7.08	15.55	7.08	15.57	7.09	15.59	7.10	8.4
15.70	7.15	15.72	7.16	15.74	7.17	15.76	7.18	15.77	7.18	8.5
15.88	7.23	15.90	7.24	15.92	7.25	15.94	7.26	15.96	7.27	8.6
16.07	7.32	16.09	7.33	16.10	7.33	16.12	7.34	16.14	7.35	8.7
16.25	7.40	16.27	7.41	16.29	7.42	16.31	7.43	16.32	7.43	8.8
16.43	7.48	16.45	7.49	16.47	7.50	16.49	7.51	16.51	7.52	8.9
16.62	7.57	16.64	7.58	16.66	7.59	16.67	7.59	16.69	7.60	9.0
16.80	7.65	16.82	7.66	16.84	7.67	16.86	7.68	16.88	7.69	9.1
16.99	7.74	17.00	7.74	17.02	7.75	17.04	7.76	17.06	7.77	9.2
17.17	7.82	17.19	7.83	17.21	7.84	17.22	7.84	17.24	7.85	9.3
17.35	7.90	17.37	7.91	17.39	7.92	17.41	7.93	17.43	7.94	9.4
17.54	7.99	17.56	8.00	17.57	8.00	17.59	8.01	17.61	8.02	9.5
17.72	8.07	17.74	8.08	17.76	8.09	17.78	8.10	17.79	8.10	9.6
17.90	8.15	17.92	8.16	17.94	8.17	17.96	8.18	17.98	8.19	9.7
18.09	8.24	18.11	8.25	18.12	8.25	18.14	8.26	18.16	8.27	9.8
18.27	8.32	18.29	8.33	18.31	8.34	18.33	8.35	18.34	8.35	9.9
										10.0

fs
SiO_2% 0.01～5.00

Table 9-2

SIO2	0		1		2		3		4	
%	FS	FEO	FS	FEO	FS	FEO	FS	FEO	FS	FEO
0.	0.	0.	0.02	0.01	0.04	0.02	0.07	0.04	0.09	0.05
0.1	0.22	0.12	0.24	0.13	0.26	0.14	0.29	0.16	0.31	0.17
0.2	0.44	0.24	0.46	0.25	0.48	0.26	0.51	0.28	0.53	0.29
0.3	0.66	0.36	0.68	0.37	0.70	0.38	0.72	0.39	0.75	0.41
0.4	0.88	0.48	0.90	0.49	0.92	0.50	0.94	0.51	0.97	0.53
0.5	1.10	0.60	1.12	0.61	1.14	0.62	1.16	0.63	1.19	0.65
0.6	1.32	0.72	1.34	0.73	1.36	0.74	1.38	0.75	1.41	0.77
0.7	1.54	0.84	1.56	0.85	1.58	0.86	1.60	0.87	1.62	0.88
0.8	1.76	0.96	1.78	0.97	1.80	0.98	1.82	0.99	1.84	1.00
0.9	1.98	1.08	2.00	1.09	2.02	1.10	2.04	1.11	2.06	1.12
1.0	2.20	1.20	2.22	1.21	2.24	1.22	2.26	1.23	2.28	1.24
1.1	2.42	1.32	2.44	1.33	2.46	1.34	2.48	1.35	2.50	1.36
1.2	2.63	1.43	2.66	1.45	2.68	1.46	2.70	1.47	2.72	1.48
1.3	2.85	1.55	2.88	1.57	2.90	1.58	2.92	1.59	2.94	1.60
1.4	3.07	1.67	3.10	1.69	3.12	1.70	3.14	1.71	3.16	1.72
1.5	3.29	1.79	3.32	1.81	3.34	1.82	3.36	1.83	3.38	1.84
1.6	3.51	1.91	3.54	1.93	3.56	1.94	3.58	1.95	3.60	1.96
1.7	3.73	2.03	3.75	2.04	3.78	2.06	3.80	2.07	3.82	2.08
1.8	3.95	2.15	3.97	2.16	4.00	2.18	4.02	2.19	4.04	2.20
1.9	4.17	2.27	4.19	2.28	4.22	2.30	4.24	2.31	4.26	2.32
2.0	4.39	2.39	4.41	2.40	4.44	2.42	4.46	2.43	4.48	2.44
2.1	4.61	2.51	4.63	2.52	4.65	2.53	4.68	2.55	4.70	2.56
2.2	4.83	2.63	4.85	2.64	4.87	2.65	4.90	2.67	4.92	2.68
2.3	5.05	2.75	5.07	2.76	5.09	2.77	5.12	2.79	5.14	2.80
2.4	5.27	2.87	5.29	2.88	5.31	2.89	5.34	2.91	5.36	2.92
2.5	5.49	2.99	5.51	3.00	5.53	3.01	5.56	3.03	5.58	3.04
2.6	5.71	3.11	5.73	3.12	5.75	3.13	5.77	3.14	5.80	3.16
2.7	5.93	3.23	5.95	3.24	5.97	3.25	5.99	3.26	6.02	3.28
2.8	6.15	3.35	6.17	3.36	6.19	3.37	6.21	3.38	6.24	3.40
2.9	6.37	3.47	6.39	3.48	6.41	3.49	6.43	3.50	6.46	3.52
3.0	6.59	3.59	6.61	3.60	6.63	3.61	6.65	3.62	6.68	3.64
3.1	6.81	3.71	6.83	3.72	6.85	3.73	6.87	3.74	6.89	3.75
3.2	7.03	3.83	7.05	3.84	7.07	3.85	7.09	3.86	7.11	3.87
3.3	7.25	3.95	7.27	3.96	7.29	3.97	7.31	3.98	7.33	3.99
3.4	7.47	4.07	7.49	4.08	7.51	4.09	7.53	4.10	7.55	4.11
3.5	7.69	4.19	7.71	4.20	7.73	4.21	7.75	4.22	7.77	4.23
3.6	7.90	4.30	7.93	4.32	7.95	4.33	7.97	4.34	7.99	4.35
3.7	8.12	4.42	8.15	4.44	8.17	4.45	8.19	4.46	8.21	4.47
3.8	8.34	4.54	8.37	4.56	8.39	4.57	8.41	4.58	8.43	4.59
3.9	8.56	4.66	8.59	4.68	8.61	4.69	8.63	4.70	8.65	4.71
4.0	8.78	4.78	8.80	4.79	8.83	4.81	8.85	4.82	8.87	4.83
4.1	9.00	4.90	9.02	4.91	9.05	4.93	9.07	4.94	9.09	4.95
4.2	9.22	5.02	9.24	5.03	9.27	5.05	9.29	5.06	9.31	5.07
4.3	9.44	5.14	9.46	5.15	9.49	5.17	9.51	5.18	9.53	5.19
4.4	9.66	5.26	9.68	5.27	9.71	5.29	9.73	5.30	9.75	5.31
4.5	9.88	5.38	9.90	5.39	9.92	5.40	9.95	5.42	9.97	5.43
4.6	10.10	5.50	10.12	5.51	10.14	5.52	10.17	5.54	10.19	5.55
4.7	10.32	5.62	10.34	5.63	10.36	5.64	10.39	5.66	10.41	5.67
4.8	10.54	5.74	10.56	5.75	10.58	5.76	10.61	5.78	10.63	5.79
4.9	10.76	5.86	10.78	5.87	10.80	5.88	10.83	5.90	10.85	5.91
5.0	10.98	5.98								

5		6		7		8		9		SIO2
FS	FEO	FS	FEO	FS	FEO	FS	FEO	FS	FEO	%
0.11	0.06	0.13	0.07	0.15	0.08	0.18	0.10	0.20	0.11	0.
0.33	0.18	0.35	0.19	0.37	0.20	0.40	0.22	0.42	0.23	0.1
0.55	0.30	0.57	0.31	0.59	0.32	0.61	0.33	0.64	0.35	0.2
0.77	0.42	0.79	0.43	0.81	0.44	0.83	0.45	0.86	0.47	0.3
0.99	0.54	1.01	0.55	1.03	0.56	1.05	0.57	1.08	0.59	0.4
1.21	0.66	1.23	0.67	1.25	0.68	1.27	0.69	1.30	0.71	0.5
1.43	0.78	1.45	0.79	1.47	0.80	1.49	0.81	1.52	0.83	0.6
1.65	0.90	1.67	0.91	1.69	0.92	1.71	0.93	1.73	0.94	0.7
1.87	1.02	1.89	1.03	1.91	1.04	1.93	1.05	1.95	1.06	0.8
2.09	1.14	2.11	1.15	2.13	1.16	2.15	1.17	2.17	1.18	0.9
2.31	1.26	2.33	1.27	2.35	1.28	2.37	1.29	2.39	1.30	1.0
2.53	1.38	2.55	1.39	2.57	1.40	2.59	1.41	2.61	1.42	1.1
2.74	1.49	2.77	1.51	2.79	1.52	2.81	1.53	2.83	1.54	1.2
2.96	1.61	2.99	1.63	3.01	1.64	3.03	1.65	3.05	1.66	1.3
3.18	1.73	3.21	1.75	3.23	1.76	3.25	1.77	3.27	1.78	1.4
3.40	1.85	3.43	1.87	3.45	1.88	3.47	1.89	3.49	1.90	1.5
3.62	1.97	3.64	1.98	3.67	2.00	3.69	2.01	3.71	2.02	1.6
3.84	2.09	3.86	2.10	3.89	2.12	3.91	2.13	3.93	2.14	1.7
4.06	2.21	4.08	2.22	4.11	2.24	4.13	2.25	4.15	2.26	1.8
4.28	2.33	4.30	2.34	4.33	2.36	4.35	2.37	4.37	2.38	1.9
4.50	2.45	4.52	2.46	4.55	2.48	4.57	2.49	4.59	2.50	2.0
4.72	2.57	4.74	2.58	4.76	2.59	4.79	2.61	4.81	2.62	2.1
4.94	2.69	4.96	2.70	4.98	2.71	5.01	2.73	5.03	2.74	2.2
5.16	2.81	5.18	2.82	5.20	2.83	5.23	2.85	5.25	2.86	2.3
5.38	2.93	5.40	2.94	5.42	2.95	5.45	2.97	5.47	2.98	2.4
5.60	3.05	5.62	3.06	5.64	3.07	5.67	3.09	5.69	3.10	2.5
5.82	3.17	5.84	3.18	5.86	3.19	5.88	3.20	5.91	3.22	2.6
6.04	3.29	6.06	3.30	6.08	3.31	6.10	3.32	6.13	3.34	2.7
6.26	3.41	6.28	3.42	6.30	3.43	6.32	3.44	6.35	3.46	2.8
6.48	3.53	6.50	3.54	6.52	3.55	6.54	3.56	6.57	3.58	2.9
6.70	3.65	6.72	3.66	6.74	3.67	6.76	3.68	6.78	3.69	3.0
6.92	3.77	6.94	3.78	6.96	3.79	6.98	3.80	7.00	3.81	3.1
7.14	3.89	7.16	3.90	7.18	3.91	7.20	3.92	7.22	3.93	3.2
7.36	4.01	7.38	4.02	7.40	4.03	7.42	4.04	7.44	4.05	3.3
7.58	4.13	7.60	4.14	7.62	4.15	7.64	4.16	7.66	4.17	3.4
7.79	4.24	7.82	4.26	7.84	4.27	7.86	4.28	7.88	4.29	3.5
8.01	4.36	8.04	4.38	8.06	4.39	8.08	4.40	8.10	4.41	3.6
8.23	4.48	8.26	4.50	8.28	4.51	8.30	4.52	8.32	4.53	3.7
8.45	4.60	8.48	4.62	8.50	4.63	8.52	4.64	8.54	4.65	3.8
8.67	4.72	8.70	4.74	8.72	4.75	8.74	4.76	8.76	4.77	3.9
8.89	4.84	8.91	4.85	8.94	4.87	8.96	4.88	8.98	4.89	4.0
9.11	4.96	9.13	4.97	9.16	4.99	9.18	5.00	9.20	5.01	4.1
9.33	5.08	9.35	5.09	9.38	5.11	9.40	5.12	9.42	5.13	4.2
9.55	5.20	9.57	5.21	9.60	5.23	9.62	5.24	9.64	5.25	4.3
9.77	5.32	9.79	5.33	9.82	5.35	9.84	5.36	9.86	5.37	4.4
9.99	5.44	10.01	5.45	10.03	5.46	10.06	5.48	10.08	5.49	4.5
10.21	5.56	10.23	5.57	10.25	5.58	10.28	5.60	10.30	5.61	4.6
10.43	5.68	10.45	5.69	10.47	5.70	10.50	5.72	10.52	5.73	4.7
10.65	5.80	10.67	5.81	10.69	5.82	10.72	5.84	10.74	5.85	4.8
10.87	5.92	10.89	5.93	10.91	5.94	10.93	5.95	10.96	5.97	4.9
										5.0

fo
MgO% 0.01～4.99

Table 10-1

MGO	0		1		2		3		4	
%	FO	SIO2	FO	SIO2	FO	SIO2	FO	SIO2	FO	SIO2
0.	0.	0.	0.02	0.01	0.03	0.01	0.05	0.02	0.07	0.03
0.1	0.17	0.07	0.19	0.08	0.21	0.09	0.23	0.10	0.24	0.10
0.2	0.35	0.15	0.37	0.16	0.38	0.16	0.40	0.17	0.42	0.18
0.3	0.52	0.22	0.54	0.23	0.56	0.24	0.58	0.25	0.59	0.25
0.4	0.70	0.30	0.72	0.31	0.73	0.31	0.75	0.32	0.77	0.33
0.5	0.87	0.37	0.89	0.38	0.91	0.39	0.93	0.40	0.94	0.40
0.6	1.05	0.45	1.06	0.45	1.08	0.46	1.10	0.47	1.12	0.48
0.7	1.22	0.52	1.24	0.53	1.26	0.54	1.27	0.54	1.29	0.55
0.8	1.40	0.60	1.41	0.60	1.43	0.61	1.45	0.62	1.47	0.63
0.9	1.57	0.67	1.59	0.68	1.61	0.69	1.62	0.69	1.64	0.70
1.0	1.75	0.75	1.76	0.75	1.78	0.76	1.80	0.77	1.82	0.78
1.1	1.92	0.82	1.94	0.83	1.95	0.83	1.97	0.84	1.99	0.85
1.2	2.09	0.89	2.11	0.90	2.13	0.91	2.15	0.92	2.16	0.92
1.3	2.27	0.97	2.29	0.98	2.30	0.98	2.32	0.99	2.34	1.00
1.4	2.44	1.04	2.46	1.05	2.48	1.06	2.50	1.07	2.51	1.07
1.5	2.62	1.12	2.64	1.13	2.65	1.13	2.67	1.14	2.69	1.15
1.6	2.79	1.19	2.81	1.20	2.83	1.21	2.84	1.21	2.86	1.22
1.7	2.97	1.27	2.98	1.27	3.00	1.28	3.02	1.29	3.04	1.30
1.8	3.14	1.34	3.16	1.35	3.18	1.36	3.19	1.36	3.21	1.37
1.9	3.32	1.42	3.33	1.42	3.35	1.43	3.37	1.44	3.39	1.45
2.0	3.49	1.49	3.51	1.50	3.53	1.51	3.54	1.51	3.56	1.52
2.1	3.67	1.57	3.68	1.57	3.70	1.58	3.72	1.59	3.74	1.60
2.2	3.84	1.64	3.86	1.65	3.87	1.65	3.89	1.66	3.91	1.67
2.3	4.01	1.71	4.03	1.72	4.05	1.73	4.07	1.74	4.08	1.74
2.4	4.19	1.79	4.21	1.80	4.22	1.80	4.24	1.81	4.26	1.82
2.5	4.36	1.86	4.38	1.87	4.40	1.88	4.42	1.89	4.43	1.89
2.6	4.54	1.94	4.56	1.95	4.57	1.95	4.59	1.96	4.61	1.97
2.7	4.71	2.01	4.73	2.02	4.75	2.03	4.76	2.03	4.78	2.04
2.8	4.89	2.09	4.90	2.09	4.92	2.10	4.94	2.11	4.96	2.12
2.9	5.06	2.16	5.08	2.17	5.10	2.18	5.11	2.18	5.13	2.19
3.0	5.24	2.24	5.25	2.24	5.27	2.25	5.29	2.26	5.31	2.27
3.1	5.41	2.31	5.43	2.32	5.45	2.33	5.46	2.33	5.48	2.34
3.2	5.59	2.39	5.60	2.39	5.62	2.40	5.64	2.41	5.66	2.42
3.3	5.76	2.46	5.78	2.47	5.79	2.47	5.81	2.48	5.83	2.49
3.4	5.93	2.53	5.95	2.54	5.97	2.55	5.99	2.56	6.00	2.56
3.5	6.11	2.61	6.13	2.62	6.14	2.62	6.16	2.63	6.18	2.64
3.6	6.28	2.68	6.30	2.69	6.32	2.70	6.34	2.71	6.35	2.71
3.7	6.46	2.76	6.48	2.77	6.49	2.77	6.51	2.78	6.53	2.79
3.8	6.63	2.83	6.65	2.84	6.67	2.85	6.68	2.85	6.70	2.86
3.9	6.81	2.91	6.82	2.91	6.84	2.92	6.86	2.93	6.88	2.94
4.0	6.98	2.98	7.00	2.99	7.02	3.00	7.03	3.00	7.05	3.01
4.1	7.16	3.06	7.17	3.06	7.19	3.07	7.21	3.08	7.23	3.09
4.2	7.33	3.13	7.35	3.14	7.37	3.15	7.38	3.15	7.40	3.16
4.3	7.51	3.21	7.52	3.21	7.54	3.22	7.56	3.23	7.57	3.23
4.4	7.68	3.28	7.70	3.29	7.71	3.29	7.73	3.30	7.75	3.31
4.5	7.85	3.35	7.87	3.36	7.89	3.37	7.91	3.38	7.92	3.38
4.6	8.03	3.43	8.05	3.44	8.06	3.44	8.08	3.45	8.10	3.46
4.7	8.20	3.50	8.22	3.51	8.24	3.52	8.26	3.53	8.27	3.53
4.8	8.38	3.58	8.40	3.59	8.41	3.59	8.43	3.60	8.45	3.61
4.9	8.55	3.65	8.57	3.66	8.59	3.67	8.60	3.67	8.62	3.68

5		6		7		8		9		MGO
FO	SIO2	FO	SIO2	FO	SIO2	FO	SIO2	FO	SIO2	%
0.09	0.04	0.10	0.04	0.12	0.05	0.14	0.06	0.16	0.07	0.
0.26	0.11	0.28	0.12	0.30	0.13	0.31	0.13	0.33	0.14	0.1
0.44	0.19	0.45	0.19	0.47	0.20	0.49	0.21	0.51	0.22	0.2
0.61	0.26	0.63	0.27	0.65	0.28	0.66	0.28	0.68	0.29	0.3
0.79	0.34	0.80	0.34	0.82	0.35	0.84	0.36	0.86	0.37	0.4
0.96	0.41	0.98	0.42	0.99	0.42	1.01	0.43	1.03	0.44	0.5
1.13	0.48	1.15	0.49	1.17	0.50	1.19	0.51	1.20	0.51	0.6
1.31	0.56	1.33	0.57	1.34	0.57	1.36	0.58	1.38	0.59	0.7
1.48	0.63	1.50	0.64	1.52	0.65	1.54	0.66	1.55	0.66	0.8
1.66	0.71	1.68	0.72	1.69	0.72	1.71	0.73	1.73	0.74	0.9
1.83	0.78	1.85	0.79	1.87	0.80	1.89	0.81	1.90	0.81	1.0
2.01	0.86	2.02	0.86	2.04	0.87	2.06	0.88	2.08	0.89	1.1
2.18	0.93	2.20	0.94	2.22	0.95	2.23	0.95	2.25	0.96	1.2
2.36	1.01	2.37	1.01	2.39	1.02	2.41	1.03	2.43	1.04	1.3
2.53	1.08	2.55	1.09	2.57	1.10	2.58	1.10	2.60	1.11	1.4
2.71	1.16	2.72	1.16	2.74	1.17	2.76	1.18	2.78	1.19	1.5
2.88	1.23	2.90	1.24	2.91	1.24	2.93	1.25	2.95	1.26	1.6
3.05	1.30	3.07	1.31	3.09	1.32	3.11	1.33	3.12	1.33	1.7
3.23	1.38	3.25	1.39	3.26	1.39	3.28	1.40	3.30	1.41	1.8
3.40	1.45	3.42	1.46	3.44	1.47	3.46	1.48	3.47	1.48	1.9
3.58	1.53	3.60	1.54	3.61	1.54	3.63	1.55	3.65	1.56	2.0
3.75	1.60	3.77	1.61	3.79	1.62	3.80	1.62	3.82	1.63	2.1
3.93	1.68	3.94	1.68	3.96	1.69	3.98	1.70	4.00	1.71	2.2
4.10	1.75	4.12	1.76	4.14	1.77	4.15	1.77	4.17	1.78	2.3
4.28	1.83	4.29	1.83	4.31	1.84	4.33	1.85	4.35	1.86	2.4
4.45	1.90	4.47	1.91	4.49	1.92	4.50	1.92	4.52	1.93	2.5
4.63	1.98	4.64	1.98	4.66	1.99	4.68	2.00	4.70	2.01	2.6
4.80	2.05	4.82	2.06	4.83	2.06	4.85	2.07	4.87	2.08	2.7
4.97	2.12	4.99	2.13	5.01	2.14	5.03	2.15	5.04	2.15	2.8
5.15	2.20	5.17	2.21	5.18	2.21	5.20	2.22	5.22	2.23	2.9
5.32	2.27	5.34	2.28	5.36	2.29	5.38	2.30	5.39	2.30	3.0
5.50	2.35	5.52	2.36	5.53	2.36	5.55	2.37	5.57	2.38	3.1
5.67	2.42	5.69	2.43	5.71	2.44	5.72	2.44	5.74	2.45	3.2
5.85	2.50	5.86	2.50	5.88	2.51	5.90	2.52	5.92	2.53	3.3
6.02	2.57	6.04	2.58	6.06	2.59	6.07	2.59	6.09	2.60	3.4
6.20	2.65	6.21	2.65	6.23	2.66	6.25	2.67	6.27	2.68	3.5
6.37	2.72	6.39	2.73	6.41	2.74	6.42	2.74	6.44	2.75	3.6
6.55	2.80	6.56	2.80	6.58	2.81	6.60	2.82	6.62	2.83	3.7
6.72	2.87	6.74	2.88	6.75	2.88	6.77	2.89	6.79	2.90	3.8
6.89	2.94	6.91	2.95	6.93	2.96	6.95	2.97	6.96	2.97	3.9
7.07	3.02	7.09	3.03	7.10	3.03	7.12	3.04	7.14	3.05	4.0
7.24	3.09	7.26	3.10	7.28	3.11	7.30	3.12	7.31	3.12	4.1
7.42	3.17	7.44	3.18	7.45	3.18	7.47	3.19	7.49	3.20	4.2
7.59	3.24	7.61	3.25	7.63	3.26	7.64	3.26	7.66	3.27	4.3
7.77	3.32	7.78	3.32	7.80	3.33	7.82	3.34	7.84	3.35	4.4
7.94	3.39	7.96	3.40	7.98	3.41	7.99	3.41	8.01	3.42	4.5
8.12	3.47	8.13	3.47	8.15	3.48	8.17	3.49	8.19	3.50	4.6
8.29	3.54	8.31	3.55	8.33	3.56	8.34	3.56	8.36	3.57	4.7
8.47	3.62	8.48	3.62	8.50	3.63	8.52	3.64	8.53	3.64	4.8
8.64	3.69	8.66	3.70	8.67	3.70	8.69	3.71	8.71	3.72	4.9

fo
MgO% 5.00～10.00

Table 10-1

MGO	0		1		2		3		4	
%	FO	SIO2	FO	SIO2	FO	SIO2	FO	SIO2	FO	SIO2
5.0	8.73	3.73	8.74	3.73	8.76	3.74	8.78	3.75	8.80	3.76
5.1	8.90	3.80	8.92	3.81	8.94	3.82	8.95	3.82	8.97	3.83
5.2	9.08	3.88	9.09	3.88	9.11	3.89	9.13	3.90	9.15	3.91
5.3	9.25	3.95	9.27	3.96	9.29	3.97	9.30	3.97	9.32	3.98
5.4	9.43	4.03	9.44	4.03	9.46	4.04	9.48	4.05	9.49	4.05
5.5	9.60	4.10	9.62	4.11	9.63	4.11	9.65	4.12	9.67	4.13
5.6	9.77	4.17	9.79	4.18	9.81	4.19	9.83	4.20	9.84	4.20
5.7	9.95	4.25	9.97	4.26	9.98	4.26	10.00	4.27	10.02	4.28
5.8	10.12	4.32	10.14	4.33	10.16	4.34	10.18	4.35	10.19	4.35
5.9	10.30	4.40	10.32	4.41	10.33	4.41	10.35	4.42	10.37	4.43
6.0	10.47	4.47	10.49	4.48	10.51	4.49	10.52	4.49	10.54	4.50
6.1	10.65	4.55	10.66	4.55	10.68	4.56	10.70	4.57	10.72	4.58
6.2	10.82	4.62	10.84	4.63	10.86	4.64	10.87	4.64	10.89	4.65
6.3	11.00	4.70	11.01	4.70	11.03	4.71	11.05	4.72	11.07	4.73
6.4	11.17	4.77	11.19	4.78	11.21	4.79	11.22	4.79	11.24	4.80
6.5	11.35	4.85	11.36	4.85	11.38	4.86	11.40	4.87	11.41	4.87
6.6	11.52	4.92	11.54	4.93	11.55	4.93	11.57	4.94	11.59	4.95
6.7	11.69	4.99	11.71	5.00	11.73	5.01	11.75	5.02	11.76	5.02
6.8	11.87	5.07	11.89	5.08	11.90	5.08	11.92	5.09	11.94	5.10
6.9	12.04	5.14	12.06	5.15	12.08	5.16	12.10	5.17	12.11	5.17
7.0	12.22	5.22	12.24	5.23	12.25	5.23	12.27	5.24	12.29	5.25
7.1	12.39	5.29	12.41	5.30	12.43	5.31	12.44	5.31	12.46	5.32
7.2	12.57	5.37	12.58	5.37	12.60	5.38	12.62	5.39	12.64	5.40
7.3	12.74	5.44	12.76	5.45	12.78	5.46	12.79	5.46	12.81	5.47
7.4	12.92	5.52	12.93	5.52	12.95	5.53	12.97	5.54	12.99	5.55
7.5	13.09	5.59	13.11	5.60	13.13	5.61	13.14	5.61	13.16	5.62
7.6	13.26	5.66	13.28	5.67	13.30	5.68	13.32	5.69	13.33	5.69
7.7	13.44	5.74	13.46	5.75	13.47	5.75	13.49	5.76	13.51	5.77
7.8	13.61	5.81	13.63	5.82	13.65	5.83	13.67	5.84	13.68	5.84
7.9	13.79	5.89	13.81	5.90	13.82	5.90	13.84	5.91	13.86	5.92
8.0	13.96	5.96	13.98	5.97	14.00	5.98	14.02	5.99	14.03	5.99
8.1	14.14	6.04	14.16	6.05	14.17	6.05	14.19	6.06	14.21	6.07
8.2	14.31	6.11	14.33	6.12	14.35	6.13	14.36	6.13	14.38	6.14
8.3	14.49	6.19	14.50	6.19	14.52	6.20	14.54	6.21	14.56	6.22
8.4	14.66	6.26	14.68	6.27	14.70	6.28	14.71	6.28	14.73	6.29
8.5	14.84	6.34	14.85	6.34	14.87	6.35	14.89	6.36	14.91	6.37
8.6	15.01	6.41	15.03	6.42	15.05	6.43	15.06	6.43	15.08	6.44
8.7	15.18	6.48	15.20	6.49	15.22	6.50	15.24	6.51	15.25	6.51
8.8	15.36	6.56	15.38	6.57	15.39	6.57	15.41	6.58	15.43	6.59
8.9	15.53	6.63	15.55	6.64	15.57	6.65	15.59	6.66	15.60	6.66
9.0	15.71	6.71	15.73	6.72	15.74	6.72	15.76	6.73	15.78	6.74
9.1	15.88	6.78	15.90	6.79	15.92	6.80	15.94	6.81	15.95	6.81
9.2	16.06	6.86	16.08	6.87	16.09	6.87	16.11	6.88	16.13	6.89
9.3	16.23	6.93	16.25	6.94	16.27	6.95	16.28	6.95	16.30	6.96
9.4	16.41	7.01	16.42	7.01	16.44	7.02	16.46	7.03	16.48	7.04
9.5	16.58	7.08	16.60	7.09	16.62	7.10	16.63	7.10	16.65	7.11
9.6	16.76	7.16	16.77	7.16	16.79	7.17	16.81	7.18	16.83	7.19
9.7	16.93	7.23	16.95	7.24	16.97	7.25	16.98	7.25	17.00	7.26
9.8	17.10	7.30	17.12	7.31	17.14	7.32	17.16	7.33	17.17	7.33
9.9	17.28	7.38	17.30	7.39	17.31	7.39	17.33	7.40	17.35	7.41
10.0	17.45	7.45								

(continued)

5		6		7		8		9		MGO
FO	SIO2	FO	SIO2	FO	SIO2	FO	SIO2	FO	SIO2	%
8.81	3.76	8.83	3.77	8.85	3.78	8.87	3.79	8.88	3.79	5.0
8.99	3.84	9.01	3.85	9.02	3.85	9.04	3.86	9.06	3.87	5.1
9.16	3.91	9.18	3.92	9.20	3.93	9.22	3.94	9.23	3.94	5.2
9.34	3.99	9.36	4.00	9.37	4.00	9.39	4.01	9.41	4.02	5.3
9.51	4.06	9.53	4.07	9.55	4.08	9.56	4.08	9.58	4.09	5.4
9.69	4.14	9.70	4.14	9.72	4.15	9.74	4.16	9.76	4.17	5.5
9.86	4.21	9.88	4.22	9.90	4.23	9.91	4.23	9.93	4.24	5.6
10.04	4.29	10.05	4.29	10.07	4.30	10.09	4.31	10.11	4.32	5.7
10.21	4.36	10.23	4.37	10.25	4.38	10.26	4.38	10.28	4.39	5.8
10.39	4.44	10.40	4.44	10.42	4.45	10.44	4.46	10.45	4.46	5.9
10.56	4.51	10.58	4.52	10.59	4.52	10.61	4.53	10.63	4.54	6.0
10.73	4.58	10.75	4.59	10.77	4.60	10.79	4.61	10.80	4.61	6.1
10.91	4.66	10.93	4.67	10.94	4.67	10.96	4.68	10.98	4.69	6.2
11.08	4.73	11.10	4.74	11.12	4.75	11.14	4.76	11.15	4.76	6.3
11.26	4.81	11.28	4.82	11.29	4.82	11.31	4.83	11.33	4.84	6.4
11.43	4.88	11.45	4.89	11.47	4.90	11.48	4.90	11.50	4.91	6.5
11.61	4.96	11.62	4.96	11.64	4.97	11.66	4.98	11.68	4.99	6.6
11.78	5.03	11.80	5.04	11.82	5.05	11.83	5.05	11.85	5.06	6.7
11.96	5.11	11.97	5.11	11.99	5.12	12.01	5.13	12.03	5.14	6.8
12.13	5.18	12.15	5.19	12.17	5.20	12.18	5.20	12.20	5.21	6.9
12.30	5.25	12.32	5.26	12.34	5.27	12.36	5.28	12.37	5.28	7.0
12.48	5.33	12.50	5.34	12.51	5.34	12.53	5.35	12.55	5.36	7.1
12.65	5.40	12.67	5.41	12.69	5.42	12.71	5.43	12.72	5.43	7.2
12.83	5.48	12.85	5.49	12.86	5.49	12.88	5.50	12.90	5.51	7.3
13.00	5.55	13.02	5.56	13.04	5.57	13.06	5.58	13.07	5.58	7.4
13.18	5.63	13.20	5.64	13.21	5.64	13.23	5.65	13.25	5.66	7.5
13.35	5.70	13.37	5.71	13.39	5.72	13.40	5.72	13.42	5.73	7.6
13.53	5.78	13.54	5.78	13.56	5.79	13.58	5.80	13.60	5.81	7.7
13.70	5.85	13.72	5.86	13.74	5.87	13.75	5.87	13.77	5.88	7.8
13.88	5.93	13.89	5.93	13.91	5.94	13.93	5.95	13.95	5.96	7.9
14.05	6.00	14.07	6.01	14.09	6.02	14.10	6.02	14.12	6.03	8.0
14.22	6.07	14.24	6.08	14.26	6.09	14.28	6.10	14.29	6.10	8.1
14.40	6.15	14.42	6.16	14.43	6.16	14.45	6.17	14.47	6.18	8.2
14.57	6.22	14.59	6.23	14.61	6.24	14.63	6.25	14.64	6.25	8.3
14.75	6.30	14.77	6.31	14.78	6.31	14.80	6.32	14.82	6.33	8.4
14.92	6.37	14.94	6.38	14.96	6.39	14.98	6.40	14.99	6.40	8.5
15.10	6.45	15.12	6.46	15.13	6.46	15.15	6.47	15.17	6.48	8.6
15.27	6.52	15.29	6.53	15.31	6.54	15.32	6.54	15.34	6.55	8.7
15.45	6.60	15.46	6.60	15.48	6.61	15.50	6.62	15.52	6.63	8.8
15.62	6.67	15.64	6.68	15.66	6.69	15.67	6.69	15.69	6.70	8.9
15.80	6.75	15.81	6.75	15.83	6.76	15.85	6.77	15.87	6.78	9.0
15.97	6.82	15.99	6.83	16.01	6.84	16.02	6.84	16.04	6.85	9.1
16.14	6.89	16.16	6.90	16.18	6.91	16.20	6.92	16.21	6.92	9.2
16.32	6.97	16.34	6.98	16.35	6.98	16.37	6.99	16.39	7.00	9.3
16.49	7.04	16.51	7.05	16.53	7.06	16.55	7.07	16.56	7.07	9.4
16.67	7.12	16.69	7.13	16.70	7.13	16.72	7.14	16.74	7.15	9.5
16.84	7.19	16.86	7.20	16.88	7.21	16.90	7.22	16.91	7.22	9.6
17.02	7.27	17.04	7.28	17.05	7.28	17.07	7.29	17.09	7.30	9.7
17.19	7.34	17.21	7.35	17.23	7.36	17.24	7.36	17.26	7.37	9.8
17.37	7.42	17.38	7.42	17.40	7.43	17.42	7.44	17.44	7.45	9.9
										10.0

fo
SiO_2% 0.01～5.00

Table 10-2

SIO2	0		1		2		3		4	
%	FO	MGO	FO	MGO	FO	MGO	FO	MGO	FO	MGO
0.	0.	0.	0.02	0.01	0.05	0.03	0.07	0.04	0.09	0.05
0.1	0.23	0.13	0.26	0.15	0.28	0.16	0.30	0.17	0.33	0.19
0.2	0.47	0.27	0.49	0.28	0.52	0.30	0.54	0.31	0.56	0.32
0.3	0.70	0.40	0.73	0.42	0.75	0.43	0.77	0.44	0.80	0.46
0.4	0.94	0.54	0.96	0.55	0.98	0.56	1.01	0.58	1.03	0.59
0.5	1.17	0.67	1.19	0.68	1.22	0.70	1.24	0.71	1.26	0.72
0.6	1.40	0.80	1.43	0.82	1.45	0.83	1.48	0.85	1.50	0.86
0.7	1.64	0.94	1.66	0.95	1.69	0.97	1.71	0.98	1.73	0.99
0.8	1.87	1.07	1.90	1.09	1.92	1.10	1.94	1.11	1.97	1.13
0.9	2.11	1.21	2.13	1.22	2.15	1.23	2.18	1.25	2.20	1.26
1.0	2.34	1.34	2.36	1.35	2.39	1.37	2.41	1.38	2.44	1.40
1.1	2.58	1.48	2.60	1.49	2.62	1.50	2.65	1.52	2.67	1.53
1.2	2.81	1.61	2.83	1.62	2.86	1.64	2.88	1.65	2.90	1.66
1.3	3.04	1.74	3.07	1.76	3.09	1.77	3.11	1.78	3.14	1.80
1.4	3.28	1.88	3.30	1.89	3.33	1.91	3.35	1.92	3.37	1.93
1.5	3.51	2.01	3.54	2.03	3.56	2.04	3.58	2.05	3.61	2.07
1.6	3.75	2.15	3.77	2.16	3.79	2.17	3.82	2.19	3.84	2.20
1.7	3.98	2.28	4.00	2.29	4.03	2.31	4.05	2.32	4.07	2.33
1.8	4.21	2.41	4.24	2.43	4.26	2.44	4.29	2.46	4.31	2.47
1.9	4.45	2.55	4.47	2.56	4.50	2.58	4.52	2.59	4.54	2.60
2.0	4.68	2.68	4.71	2.70	4.73	2.71	4.75	2.72	4.78	2.74
2.1	4.92	2.82	4.94	2.83	4.96	2.84	4.99	2.86	5.01	2.87
2.2	5.15	2.95	5.17	2.96	5.20	2.98	5.22	2.99	5.25	3.01
2.3	5.39	3.09	5.41	3.10	5.43	3.11	5.46	3.13	5.48	3.14
2.4	5.62	3.22	5.64	3.23	5.67	3.25	5.69	3.26	5.71	3.27
2.5	5.85	3.35	5.88	3.37	5.90	3.38	5.92	3.39	5.95	3.41
2.6	6.09	3.49	6.11	3.50	6.13	3.51	6.16	3.53	6.18	3.54
2.7	6.32	3.62	6.35	3.64	6.37	3.65	6.39	3.66	6.42	3.68
2.8	6.56	3.76	6.58	3.77	6.60	3.78	6.63	3.80	6.65	3.81
2.9	6.79	3.89	6.81	3.90	6.84	3.92	6.86	3.93	6.88	3.94
3.0	7.02	4.02	7.05	4.04	7.07	4.05	7.09	4.06	7.12	4.08
3.1	7.26	4.16	7.28	4.17	7.31	4.19	7.33	4.20	7.35	4.21
3.2	7.49	4.29	7.52	4.31	7.54	4.32	7.56	4.33	7.59	4.35
3.3	7.73	4.43	7.75	4.44	7.77	4.45	7.80	4.47	7.82	4.48
3.4	7.96	4.56	7.98	4.57	8.01	4.59	8.03	4.60	8.06	4.62
3.5	8.20	4.70	8.22	4.71	8.24	4.72	8.27	4.74	8.29	4.75
3.6	8.43	4.83	8.45	4.84	8.48	4.86	8.50	4.87	8.52	4.88
3.7	8.66	4.96	8.69	4.98	8.71	4.99	8.73	5.00	8.76	5.02
3.8	8.90	5.10	8.92	5.11	8.94	5.12	8.97	5.14	8.99	5.15
3.9	9.13	5.23	9.16	5.25	9.18	5.26	9.20	5.27	9.23	5.29
4.0	9.37	5.37	9.39	5.38	9.41	5.39	9.44	5.41	9.46	5.42
4.1	9.60	5.50	9.62	5.51	9.65	5.53	9.67	5.54	9.69	5.55
4.2	9.83	5.63	9.86	5.65	9.88	5.66	9.90	5.67	9.93	5.69
4.3	10.07	5.77	10.09	5.78	10.12	5.80	10.14	5.81	10.16	5.82
4.4	10.30	5.90	10.33	5.92	10.35	5.93	10.37	5.94	10.40	5.96
4.5	10.54	6.04	10.56	6.05	10.58	6.06	10.61	6.08	10.63	6.09
4.6	10.77	6.17	10.79	6.18	10.82	6.20	10.84	6.21	10.86	6.22
4.7	11.01	6.31	11.03	6.32	11.05	6.33	11.08	6.35	11.10	6.36
4.8	11.24	6.44	11.26	6.45	11.29	6.47	11.31	6.48	11.33	6.49
4.9	11.47	6.57	11.50	6.59	11.52	6.60	11.54	6.61	11.57	6.63
5.0	11.71	6.71								

5		6		7		8		9		SI02
FO	MGO	FO	MGO	FO	MGO	FO	MGO	FO	MGO	%
0.12	0.07	0.14	0.08	0.16	0.09	0.19	0.11	0.21	0.12	0.
0.35	0.20	0.37	0.21	0.40	0.23	0.42	0.24	0.44	0.25	0.1
0.59	0.34	0.61	0.35	0.63	0.36	0.66	0.38	0.68	0.39	0.2
0.82	0.47	0.84	0.48	0.87	0.50	0.89	0.51	0.91	0.52	0.3
1.05	0.60	1.08	0.62	1.10	0.63	1.12	0.64	1.15	0.66	0.4
1.29	0.74	1.31	0.75	1.33	0.76	1.36	0.78	1.38	0.79	0.5
1.52	0.87	1.55	0.89	1.57	0.90	1.59	0.91	1.62	0.93	0.6
1.76	1.01	1.78	1.02	1.80	1.03	1.83	1.05	1.85	1.06	0.7
1.99	1.14	2.01	1.15	2.04	1.17	2.06	1.18	2.08	1.19	0.8
2.22	1.27	2.25	1.29	2.27	1.30	2.29	1.31	2.32	1.33	0.9
2.46	1.41	2.48	1.42	2.51	1.44	2.53	1.45	2.55	1.46	1.0
2.69	1.54	2.72	1.56	2.74	1.57	2.76	1.58	2.79	1.60	1.1
2.93	1.68	2.95	1.69	2.97	1.70	3.00	1.72	3.02	1.73	1.2
3.16	1.81	3.18	1.82	3.21	1.84	3.23	1.85	3.25	1.86	1.3
3.40	1.95	3.42	1.96	3.44	1.97	3.47	1.99	3.49	2.00	1.4
3.63	2.08	3.65	2.09	3.68	2.11	3.70	2.12	3.72	2.13	1.5
3.86	2.21	3.89	2.23	3.91	2.24	3.93	2.25	3.96	2.27	1.6
4.10	2.35	4.12	2.36	4.14	2.37	4.17	2.39	4.19	2.40	1.7
4.33	2.48	4.36	2.50	4.38	2.51	4.40	2.52	4.43	2.54	1.8
4.57	2.62	4.59	2.63	4.61	2.64	4.64	2.66	4.66	2.67	1.9
4.80	2.75	4.82	2.76	4.85	2.78	4.87	2.79	4.89	2.80	2.0
5.03	2.88	5.06	2.90	5.08	2.91	5.10	2.92	5.13	2.94	2.1
5.27	3.02	5.29	3.03	5.32	3.05	5.34	3.06	5.36	3.07	2.2
5.50	3.15	5.53	3.17	5.55	3.18	5.57	3.19	5.60	3.21	2.3
5.74	3.29	5.76	3.30	5.78	3.31	5.81	3.33	5.83	3.34	2.4
5.97	3.42	5.99	3.43	6.02	3.45	6.04	3.46	6.06	3.47	2.5
6.21	3.56	6.23	3.57	6.25	3.58	6.28	3.60	6.30	3.61	2.6
6.44	3.69	6.46	3.70	6.49	3.72	6.51	3.73	6.53	3.74	2.7
6.67	3.82	6.70	3.84	6.72	3.85	6.74	3.86	6.77	3.88	2.8
6.91	3.96	6.93	3.97	6.95	3.98	6.98	4.00	7.00	4.01	2.9
7.14	4.09	7.17	4.11	7.19	4.12	7.21	4.13	7.24	4.15	3.0
7.38	4.23	7.40	4.24	7.42	4.25	7.45	4.27	7.47	4.28	3.1
7.61	4.36	7.63	4.37	7.66	4.39	7.68	4.40	7.70	4.41	3.2
7.84	4.49	7.87	4.51	7.89	4.52	7.91	4.53	7.94	4.55	3.3
8.08	4.63	8.10	4.64	8.13	4.66	8.15	4.67	8.17	4.68	3.4
8.31	4.76	8.34	4.78	8.36	4.79	8.38	4.80	8.41	4.82	3.5
8.55	4.90	8.57	4.91	8.59	4.92	8.62	4.94	8.64	4.95	3.6
8.78	5.03	8.80	5.04	8.83	5.06	8.85	5.07	8.87	5.08	3.7
9.02	5.17	9.04	5.18	9.06	5.19	9.09	5.21	9.11	5.22	3.8
9.25	5.30	9.27	5.31	9.30	5.33	9.32	5.34	9.34	5.35	3.9
9.48	5.43	9.51	5.45	9.53	5.46	9.55	5.47	9.58	5.49	4.0
9.72	5.57	9.74	5.58	9.76	5.59	9.79	5.61	9.81	5.62	4.1
9.95	5.70	9.98	5.72	10.00	5.73	10.02	5.74	10.05	5.76	4.2
10.19	5.84	10.21	5.85	10.23	5.86	10.26	5.88	10.28	5.89	4.3
10.42	5.97	10.44	5.98	10.47	6.00	10.49	6.01	10.51	6.02	4.4
10.65	6.10	10.68	6.12	10.70	6.13	10.72	6.14	10.75	6.16	4.5
10.89	6.24	10.91	6.25	10.94	6.27	10.96	6.28	10.98	6.29	4.6
11.12	6.37	11.15	6.39	11.17	6.40	11.19	6.41	11.22	6.43	4.7
11.36	6.51	11.38	6.52	11.40	6.53	11.43	6.55	11.45	6.56	4.8
11.59	6.64	11.61	6.65	11.64	6.67	11.66	6.68	11.68	6.69	4.9
										5.0

fa
FeO% 0.01～5.00

Table 11-1

FEO	0		1		2		3		4	
%	FA	SIO2	FA	SIO2	FA	SIO2	FA	SIO2	FA	SIO2
0.	0.	0.	0.01	0.	0.03	0.01	0.04	0.01	0.06	0.02
0.1	0.14	0.04	0.16	0.05	0.17	0.05	0.18	0.05	0.20	0.06
0.2	0.28	0.08	0.30	0.09	0.31	0.09	0.33	0.10	0.34	0.10
0.3	0.43	0.13	0.44	0.13	0.45	0.13	0.47	0.14	0.48	0.14
0.4	0.57	0.17	0.58	0.17	0.60	0.18	0.61	0.18	0.62	0.18
0.5	0.71	0.21	0.72	0.21	0.74	0.22	0.75	0.22	0.77	0.23
0.6	0.85	0.25	0.87	0.26	0.88	0.26	0.89	0.26	0.91	0.27
0.7	0.99	0.29	1.01	0.30	1.02	0.30	1.04	0.31	1.05	0.31
0.8	1.13	0.33	1.15	0.34	1.16	0.34	1.18	0.35	1.19	0.35
0.9	1.28	0.38	1.29	0.38	1.30	0.38	1.32	0.39	1.33	0.39
1.0	1.42	0.42	1.43	0.42	1.45	0.43	1.46	0.43	1.47	0.43
1.1	1.56	0.46	1.57	0.46	1.59	0.47	1.60	0.47	1.62	0.48
1.2	1.70	0.50	1.72	0.51	1.73	0.51	1.74	0.51	1.76	0.52
1.3	1.84	0.54	1.86	0.55	1.87	0.55	1.89	0.56	1.90	0.56
1.4	1.99	0.59	2.00	0.59	2.01	0.59	2.03	0.60	2.04	0.60
1.5	2.13	0.63	2.14	0.63	2.16	0.64	2.17	0.64	2.18	0.64
1.6	2.27	0.67	2.28	0.67	2.30	0.68	2.31	0.68	2.33	0.69
1.7	2.41	0.71	2.43	0.72	2.44	0.72	2.45	0.72	2.47	0.73
1.8	2.55	0.75	2.57	0.76	2.58	0.76	2.60	0.77	2.61	0.77
1.9	2.69	0.79	2.71	0.80	2.72	0.80	2.74	0.81	2.75	0.81
2.0	2.84	0.84	2.85	0.84	2.86	0.84	2.88	0.85	2.89	0.85
2.1	2.98	0.88	2.99	0.88	3.01	0.89	3.02	0.89	3.03	0.89
2.2	3.12	0.92	3.13	0.92	3.15	0.93	3.16	0.93	3.18	0.94
2.3	3.26	0.96	3.28	0.97	3.29	0.97	3.30	0.97	3.32	0.98
2.4	3.40	1.00	3.42	1.01	3.43	1.01	3.45	1.02	3.46	1.02
2.5	3.55	1.05	3.56	1.05	3.57	1.05	3.59	1.06	3.60	1.06
2.6	3.69	1.09	3.70	1.09	3.72	1.10	3.73	1.10	3.74	1.10
2.7	3.83	1.13	3.84	1.13	3.86	1.14	3.87	1.14	3.89	1.15
2.8	3.97	1.17	3.99	1.18	4.00	1.18	4.01	1.18	4.03	1.19
2.9	4.11	1.21	4.13	1.22	4.14	1.22	4.16	1.23	4.17	1.23
3.0	4.25	1.25	4.27	1.26	4.28	1.26	4.30	1.27	4.31	1.27
3.1	4.40	1.30	4.41	1.30	4.42	1.30	4.44	1.31	4.45	1.31
3.2	4.54	1.34	4.55	1.34	4.57	1.35	4.58	1.35	4.59	1.35
3.3	4.68	1.38	4.69	1.38	4.71	1.39	4.72	1.39	4.74	1.40
3.4	4.82	1.42	4.84	1.43	4.85	1.43	4.86	1.43	4.88	1.44
3.5	4.96	1.46	4.98	1.47	4.99	1.47	5.01	1.48	5.02	1.48
3.6	5.11	1.51	5.12	1.51	5.13	1.51	5.15	1.52	5.16	1.52
3.7	5.25	1.55	5.26	1.55	5.28	1.56	5.29	1.56	5.30	1.56
3.8	5.39	1.59	5.40	1.59	5.42	1.60	5.43	1.60	5.45	1.61
3.9	5.53	1.63	5.54	1.63	5.56	1.64	5.57	1.64	5.59	1.65
4.0	5.67	1.67	5.69	1.68	5.70	1.68	5.72	1.69	5.73	1.69
4.1	5.81	1.71	5.83	1.72	5.84	1.72	5.86	1.73	5.87	1.73
4.2	5.96	1.76	5.97	1.76	5.98	1.76	6.00	1.77	6.01	1.77
4.3	6.10	1.80	6.11	1.80	6.13	1.81	6.14	1.81	6.15	1.81
4.4	6.24	1.84	6.25	1.84	6.27	1.85	6.28	1.85	6.30	1.86
4.5	6.38	1.88	6.40	1.89	6.41	1.89	6.42	1.89	6.44	1.90
4.6	6.52	1.92	6.54	1.93	6.55	1.93	6.57	1.94	6.58	1.94
4.7	6.67	1.97	6.68	1.97	6.69	1.97	6.71	1.98	6.72	1.98
4.8	6.81	2.01	6.82	2.01	6.84	2.02	6.85	2.02	6.86	2.02
4.9	6.95	2.05	6.96	2.05	6.98	2.06	6.99	2.06	7.01	2.07
5.0	7.09	2.09								

5		6		7		8		9		FEO
FA	SIO2	FA	SIO2	FA	SIO2	FA	SIO2	FA	SIO2	%
0.07	0.02	0.09	0.03	0.10	0.03	0.11	0.03	0.13	0.04	0.
0.21	0.06	0.23	0.07	0.24	0.07	0.26	0.08	0.27	0.08	0.1
0.35	0.10	0.37	0.11	0.38	0.11	0.40	0.12	0.41	0.12	0.2
0.50	0.15	0.51	0.15	0.52	0.15	0.54	0.16	0.55	0.16	0.3
0.64	0.19	0.65	0.19	0.67	0.20	0.68	0.20	0.69	0.20	0.4
0.78	0.23	0.79	0.23	0.81	0.24	0.82	0.24	0.84	0.25	0.5
0.92	0.27	0.94	0.28	0.95	0.28	0.96	0.28	0.98	0.29	0.6
1.06	0.31	1.08	0.32	1.09	0.32	1.11	0.33	1.12	0.33	0.7
1.21	0.36	1.22	0.36	1.23	0.36	1.25	0.37	1.26	0.37	0.8
1.35	0.40	1.36	0.40	1.38	0.41	1.39	0.41	1.40	0.41	0.9
1.49	0.44	1.50	0.44	1.52	0.45	1.53	0.45	1.55	0.46	1.0
1.63	0.48	1.65	0.49	1.66	0.49	1.67	0.49	1.69	0.50	1.1
1.77	0.52	1.79	0.53	1.80	0.53	1.82	0.54	1.83	0.54	1.2
1.91	0.56	1.93	0.57	1.94	0.57	1.96	0.58	1.97	0.58	1.3
2.06	0.61	2.07	0.61	2.08	0.61	2.10	0.62	2.11	0.62	1.4
2.20	0.65	2.21	0.65	2.23	0.66	2.24	0.66	2.25	0.66	1.5
2.34	0.69	2.35	0.69	2.37	0.70	2.38	0.70	2.40	0.71	1.6
2.48	0.73	2.50	0.74	2.51	0.74	2.52	0.74	2.54	0.75	1.7
2.62	0.77	2.64	0.78	2.65	0.78	2.67	0.79	2.68	0.79	1.8
2.77	0.82	2.78	0.82	2.79	0.82	2.81	0.83	2.82	0.83	1.9
2.91	0.86	2.92	0.86	2.94	0.87	2.95	0.87	2.96	0.87	2.0
3.05	0.90	3.06	0.90	3.08	0.91	3.09	0.91	3.11	0.92	2.1
3.19	0.94	3.21	0.95	3.22	0.95	3.23	0.95	3.25	0.96	2.2
3.33	0.98	3.35	0.99	3.36	0.99	3.38	1.00	3.39	1.00	2.3
3.47	1.02	3.49	1.03	3.50	1.03	3.52	1.04	3.53	1.04	2.4
3.62	1.07	3.63	1.07	3.64	1.07	3.66	1.08	3.67	1.08	2.5
3.76	1.11	3.77	1.11	3.79	1.12	3.80	1.12	3.81	1.12	2.6
3.90	1.15	3.91	1.15	3.93	1.16	3.94	1.16	3.96	1.17	2.7
4.04	1.19	4.06	1.20	4.07	1.20	4.08	1.20	4.10	1.21	2.8
4.18	1.23	4.20	1.24	4.21	1.24	4.23	1.25	4.24	1.25	2.9
4.33	1.28	4.34	1.28	4.35	1.28	4.37	1.29	4.38	1.29	3.0
4.47	1.32	4.48	1.32	4.50	1.33	4.51	1.33	4.52	1.33	3.1
4.61	1.36	4.62	1.36	4.64	1.37	4.65	1.37	4.67	1.38	3.2
4.75	1.40	4.76	1.40	4.78	1.41	4.79	1.41	4.81	1.42	3.3
4.89	1.44	4.91	1.45	4.92	1.45	4.94	1.46	4.95	1.46	3.4
5.03	1.48	5.05	1.49	5.06	1.49	5.08	1.50	5.09	1.50	3.5
5.18	1.53	5.19	1.53	5.20	1.53	5.22	1.54	5.23	1.54	3.6
5.32	1.57	5.33	1.57	5.35	1.58	5.36	1.58	5.37	1.58	3.7
5.46	1.61	5.47	1.61	5.49	1.62	5.50	1.62	5.52	1.63	3.8
5.60	1.65	5.62	1.66	5.63	1.66	5.64	1.66	5.66	1.67	3.9
5.74	1.69	5.76	1.70	5.77	1.70	5.79	1.71	5.80	1.71	4.0
5.89	1.74	5.90	1.74	5.91	1.74	5.93	1.75	5.94	1.75	4.1
6.03	1.78	6.04	1.78	6.06	1.79	6.07	1.79	6.08	1.79	4.2
6.17	1.82	6.18	1.82	6.20	1.83	6.21	1.83	6.23	1.84	4.3
6.31	1.86	6.32	1.86	6.34	1.87	6.35	1.87	6.37	1.88	4.4
6.45	1.90	6.47	1.91	6.48	1.91	6.50	1.92	6.51	1.92	4.5
6.59	1.94	6.61	1.95	6.62	1.95	6.64	1.96	6.65	1.96	4.6
6.74	1.99	6.75	1.99	6.76	1.99	6.78	2.00	6.79	2.00	4.7
6.88	2.03	6.89	2.03	6.91	2.04	6.92	2.04	6.93	2.04	4.8
7.02	2.07	7.03	2.07	7.05	2.08	7.06	2.08	7.08	2.09	4.9
										5.0

fa
SiO_2% 0.01～5.00

Table 11-2

SI02	0		1		2		3		4	
%	FA	FEO	FA	FEO	FA	FEO	FA	FEO	FA	FEO
0.	0.	0.	0.03	0.02	0.07	0.05	0.10	0.07	0.14	0.10
0.1	0.34	0.24	0.37	0.26	0.41	0.29	0.44	0.31	0.47	0.33
0.2	0.68	0.48	0.71	0.50	0.75	0.53	0.78	0.55	0.81	0.57
0.3	1.02	0.72	1.05	0.74	1.09	0.77	1.12	0.79	1.15	0.81
0.4	1.36	0.96	1.39	0.98	1.42	1.00	1.46	1.03	1.49	1.05
0.5	1.70	1.20	1.73	1.22	1.76	1.24	1.80	1.27	1.83	1.29
0.6	2.03	1.43	2.07	1.46	2.10	1.48	2.14	1.51	2.17	1.53
0.7	2.37	1.67	2.41	1.70	2.44	1.72	2.48	1.75	2.51	1.77
0.8	2.71	1.91	2.75	1.94	2.78	1.96	2.81	1.98	2.85	2.01
0.9	3.05	2.15	3.09	2.18	3.12	2.20	3.15	2.22	3.19	2.25
1.0	3.39	2.39	3.43	2.42	3.46	2.44	3.49	2.46	3.53	2.49
1.1	3.73	2.63	3.76	2.65	3.80	2.68	3.83	2.70	3.87	2.73
1.2	4.07	2.87	4.10	2.89	4.14	2.92	4.17	2.94	4.21	2.97
1.3	4.41	3.11	4.44	3.13	4.48	3.16	4.51	3.18	4.54	3.20
1.4	4.75	3.35	4.78	3.37	4.82	3.40	4.85	3.42	4.88	3.44
1.5	5.09	3.59	5.12	3.61	5.16	3.64	5.19	3.66	5.22	3.68
1.6	5.43	3.83	5.46	3.85	5.49	3.87	5.53	3.90	5.56	3.92
1.7	5.77	4.07	5.80	4.09	5.83	4.11	5.87	4.14	5.90	4.16
1.8	6.10	4.30	6.14	4.33	6.17	4.35	6.21	4.38	6.24	4.40
1.9	6.44	4.54	6.48	4.57	6.51	4.59	6.55	4.62	6.58	4.64
2.0	6.78	4.78	6.82	4.81	6.85	4.83	6.88	4.85	6.92	4.88
2.1	7.12	5.02	7.16	5.05	7.19	5.07	7.22	5.09	7.26	5.12
2.2	7.46	5.26	7.50	5.29	7.53	5.31	7.56	5.33	7.60	5.36
2.3	7.80	5.50	7.83	5.52	7.87	5.55	7.90	5.57	7.94	5.60
2.4	8.14	5.74	8.17	5.76	8.21	5.79	8.24	5.81	8.28	5.84
2.5	8.48	5.98	8.51	6.00	8.55	6.03	8.58	6.05	8.61	6.07
2.6	8.82	6.22	8.85	6.24	8.89	6.27	8.92	6.29	8.95	6.31
2.7	9.16	6.46	9.19	6.48	9.22	6.50	9.26	6.53	9.29	6.55
2.8	9.50	6.70	9.53	6.72	9.56	6.74	9.60	6.77	9.63	6.79
2.9	9.84	6.94	9.87	6.96	9.90	6.98	9.94	7.01	9.97	7.03
3.0	10.17	7.17	10.21	7.20	10.24	7.22	10.28	7.25	10.31	7.27
3.1	10.51	7.41	10.55	7.44	10.58	7.46	10.62	7.49	10.65	7.51
3.2	10.85	7.65	10.89	7.68	10.92	7.70	10.95	7.72	10.99	7.75
3.3	11.19	7.89	11.23	7.92	11.26	7.94	11.29	7.96	11.33	7.99
3.4	11.53	8.13	11.57	8.16	11.60	8.18	11.63	8.20	11.67	8.23
3.5	11.87	8.37	11.90	8.39	11.94	8.42	11.97	8.44	12.01	8.47
3.6	12.21	8.61	12.24	8.63	12.28	8.66	12.31	8.68	12.35	8.71
3.7	12.55	8.85	12.58	8.87	12.62	8.90	12.65	8.92	12.68	8.94
3.8	12.89	9.09	12.92	9.11	12.96	9.14	12.99	9.16	13.02	9.18
3.9	13.23	9.33	13.26	9.35	13.29	9.37	13.33	9.40	13.36	9.42
4.0	13.57	9.57	13.60	9.59	13.63	9.61	13.67	9.64	13.70	9.66
4.1	13.91	9.81	13.94	9.83	13.97	9.85	14.01	9.88	14.04	9.90
4.2	14.24	10.04	14.28	10.07	14.31	10.09	14.35	10.12	14.38	10.14
4.3	14.58	10.28	14.62	10.31	14.65	10.33	14.69	10.36	14.72	10.38
4.4	14.92	10.52	14.96	10.55	14.99	10.57	15.02	10.59	15.06	10.62
4.5	15.26	10.76	15.30	10.79	15.33	10.81	15.36	10.83	15.40	10.86
4.6	15.60	11.00	15.63	11.02	15.67	11.05	15.70	11.07	15.74	11.10
4.7	15.94	11.24	15.97	11.26	16.01	11.29	16.04	11.31	16.08	11.34
4.8	16.28	11.48	16.31	11.50	16.35	11.53	16.38	11.55	16.41	11.57
4.9	16.62	11.72	16.65	11.74	16.69	11.77	16.72	11.79	16.75	11.81
5.0	16.96	11.96								

5		6		7		8		9		SIO2
FA	FEO	FA	FEO	FA	FEO	FA	FEO	FA	FEO	%
0.17	0.12	0.20	0.14	0.24	0.17	0.27	0.19	0.31	0.22	0.
0.51	0.36	0.54	0.38	0.58	0.41	0.61	0.43	0.64	0.45	0.1
0.85	0.60	0.88	0.62	0.92	0.65	0.95	0.67	0.98	0.69	0.2
1.19	0.84	1.22	0.86	1.25	0.88	1.29	0.91	1.32	0.93	0.3
1.53	1.08	1.56	1.10	1.59	1.12	1.63	1.15	1.66	1.17	0.4
1.87	1.32	1.90	1.34	1.93	1.36	1.97	1.39	2.00	1.41	0.5
2.20	1.55	2.24	1.58	2.27	1.60	2.31	1.63	2.34	1.65	0.6
2.54	1.79	2.58	1.82	2.61	1.84	2.65	1.87	2.68	1.89	0.7
2.88	2.03	2.92	2.06	2.95	2.08	2.98	2.10	3.02	2.13	0.8
3.22	2.27	3.26	2.30	3.29	2.32	3.32	2.34	3.36	2.37	0.9
3.56	2.51	3.59	2.53	3.63	2.56	3.66	2.58	3.70	2.61	1.0
3.90	2.75	3.93	2.77	3.97	2.80	4.00	2.82	4.04	2.85	1.1
4.24	2.99	4.27	3.01	4.31	3.04	4.34	3.06	4.38	3.09	1.2
4.58	3.23	4.61	3.25	4.65	3.28	4.68	3.30	4.71	3.32	1.3
4.92	3.47	4.95	3.49	4.99	3.52	5.02	3.54	5.05	3.56	1.4
5.26	3.71	5.29	3.73	5.32	3.75	5.36	3.78	5.39	3.80	1.5
5.60	3.95	5.63	3.97	5.66	3.99	5.70	4.02	5.73	4.04	1.6
5.94	4.19	5.97	4.21	6.00	4.23	6.04	4.26	6.07	4.28	1.7
6.27	4.42	6.31	4.45	6.34	4.47	6.38	4.50	6.41	4.52	1.8
6.61	4.66	6.65	4.69	6.68	4.71	6.72	4.74	6.75	4.76	1.9
6.95	4.90	6.99	4.93	7.02	4.95	7.05	4.97	7.09	5.00	2.0
7.29	5.14	7.33	5.17	7.36	5.19	7.39	5.21	7.43	5.24	2.1
7.63	5.38	7.66	5.40	7.70	5.43	7.73	5.45	7.77	5.48	2.2
7.97	5.62	8.00	5.64	8.04	5.67	8.07	5.69	8.11	5.72	2.3
8.31	5.86	8.34	5.88	8.38	5.91	8.41	5.93	8.44	5.95	2.4
8.65	6.10	8.68	6.12	8.72	6.15	8.75	6.17	8.78	6.19	2.5
8.99	6.34	9.02	6.36	9.06	6.39	9.09	6.41	9.12	6.43	2.6
9.33	6.58	9.36	6.60	9.39	6.62	9.43	6.65	9.46	6.67	2.7
9.67	6.82	9.70	6.84	9.73	6.86	9.77	6.89	9.80	6.91	2.8
10.00	7.05	10.04	7.08	10.07	7.10	10.11	7.13	10.14	7.15	2.9
10.34	7.29	10.38	7.32	10.41	7.34	10.45	7.37	10.48	7.39	3.0
10.68	7.53	10.72	7.56	10.75	7.58	10.78	7.60	10.82	7.63	3.1
11.02	7.77	11.06	7.80	11.09	7.82	11.12	7.84	11.16	7.87	3.2
11.36	8.01	11.40	8.04	11.43	8.06	11.46	8.08	11.50	8.11	3.3
11.70	8.25	11.73	8.27	11.77	8.30	11.80	8.32	11.84	8.35	3.4
12.04	8.49	12.07	8.51	12.11	8.54	12.14	8.56	12.18	8.59	3.5
12.38	8.73	12.41	8.75	12.45	8.78	12.48	8.80	12.51	8.82	3.6
12.72	8.97	12.75	8.99	12.79	9.02	12.82	9.04	12.85	9.06	3.7
13.06	9.21	13.09	9.23	13.13	9.26	13.16	9.28	13.19	9.30	3.8
13.40	9.45	13.43	9.47	13.46	9.49	13.50	9.52	13.53	9.54	3.9
13.74	9.69	13.77	9.71	13.80	9.73	13.84	9.76	13.87	9.78	4.0
14.07	9.92	14.11	9.95	14.14	9.97	14.18	10.00	14.21	10.02	4.1
14.41	10.16	14.45	10.19	14.48	10.21	14.52	10.24	14.55	10.26	4.2
14.75	10.40	14.79	10.43	14.82	10.45	14.85	10.47	14.89	10.50	4.3
15.09	10.64	15.13	10.67	15.16	10.69	15.19	10.71	15.23	10.74	4.4
15.43	10.88	15.47	10.91	15.50	10.93	15.53	10.95	15.57	10.98	4.5
15.77	11.12	15.80	11.14	15.84	11.17	15.87	11.19	15.91	11.22	4.6
16.11	11.36	16.14	11.38	16.18	11.41	16.21	11.43	16.25	11.46	4.7
16.45	11.60	16.48	11.62	16.52	11.65	16.55	11.67	16.58	11.69	4.8
16.79	11.84	16.82	11.86	16.86	11.89	16.89	11.91	16.92	11.93	4.9
										5.0

ne

SiO_2% 0.01～5.00

Table 12

SI02	0			1			2			3			4		
%	NE	NA20	AL203	NE	NA20	AL203	NE	NA20	AL203	NE	NA20	AL203	NE	NA20	AL203
0.	0.	0.	0.	0.03	0.01	0.01	0.05	0.01	0.02	0.08	0.02	0.03	0.09	0.02	0.03
0.1	0.23	0.05	0.08	0.26	0.06	0.09	0.28	0.06	0.10	0.31	0.07	0.11	0.33	0.07	0.12
0.2	0.47	0.10	0.17	0.50	0.11	0.18	0.52	0.11	0.19	0.55	0.12	0.20	0.56	0.12	0.20
0.3	0.70	0.15	0.25	0.73	0.16	0.26	0.76	0.17	0.27	0.78	0.17	0.28	0.81	0.18	0.29
0.4	0.95	0.21	0.34	0.97	0.21	0.35	1.00	0.22	0.36	1.01	0.22	0.36	1.04	0.23	0.37
0.5	1.18	0.26	0.42	1.20	0.26	0.43	1.23	0.27	0.44	1.25	0.27	0.45	1.28	0.28	0.46
0.6	1.42	0.31	0.51	1.44	0.31	0.52	1.47	0.32	0.53	1.48	0.32	0.53	1.51	0.33	0.54
0.7	1.65	0.36	0.59	1.68	0.37	0.60	1.70	0.37	0.61	1.73	0.38	0.62	1.75	0.38	0.63
0.8	1.89	0.41	0.68	1.92	0.42	0.69	1.94	0.42	0.70	1.96	0.43	0.70	1.98	0.43	0.71
0.9	2.12	0.46	0.76	2.15	0.47	0.77	2.17	0.47	0.78	2.20	0.48	0.79	2.22	0.48	0.80
1.0	2.37	0.52	0.85	2.39	0.52	0.86	2.42	0.53	0.87	2.43	0.53	0.87	2.46	0.54	0.88
1.1	2.60	0.57	0.93	2.62	0.57	0.94	2.65	0.58	0.95	2.67	0.58	0.96	2.70	0.59	0.97
1.2	2.84	0.62	1.02	2.86	0.62	1.03	2.89	0.63	1.04	2.90	0.63	1.04	2.93	0.64	1.05
1.3	3.07	0.67	1.10	3.10	0.68	1.11	3.12	0.68	1.12	3.15	0.69	1.13	3.17	0.69	1.14
1.4	3.31	0.72	1.19	3.34	0.73	1.20	3.35	0.73	1.20	3.38	0.74	1.21	3.40	0.74	1.22
1.5	3.54	0.77	1.27	3.57	0.78	1.28	3.59	0.78	1.29	3.62	0.79	1.30	3.64	0.79	1.31
1.6	3.79	0.83	1.36	3.81	0.83	1.37	3.83	0.84	1.37	3.85	0.84	1.38	3.88	0.85	1.39
1.7	4.02	0.88	1.44	4.04	0.88	1.45	4.07	0.89	1.46	4.09	0.89	1.47	4.12	0.90	1.48
1.8	4.26	0.93	1.53	4.28	0.93	1.54	4.30	0.94	1.54	4.32	0.94	1.55	4.35	0.95	1.56
1.9	4.49	0.98	1.61	4.52	0.99	1.62	4.54	0.99	1.63	4.57	1.00	1.64	4.59	1.00	1.65
2.0	4.73	1.03	1.70	4.76	1.04	1.71	4.77	1.04	1.71	4.80	1.05	1.72	4.82	1.05	1.73
2.1	4.96	1.08	1.78	4.99	1.09	1.79	5.01	1.09	1.80	5.04	1.10	1.81	5.06	1.10	1.82
2.2	5.20	1.13	1.87	5.23	1.14	1.88	5.24	1.14	1.88	5.27	1.15	1.89	5.30	1.16	1.90
2.3	5.44	1.19	1.95	5.46	1.19	1.96	5.49	1.20	1.97	5.51	1.20	1.98	5.54	1.21	1.99
2.4	5.68	1.24	2.04	5.69	1.24	2.04	5.72	1.25	2.05	5.74	1.25	2.06	5.77	1.26	2.07
2.5	5.91	1.29	2.12	5.93	1.29	2.13	5.96	1.30	2.14	5.98	1.30	2.15	6.01	1.31	2.16
2.6	6.15	1.34	2.21	6.17	1.35	2.21	6.19	1.35	2.22	6.22	1.36	2.23	6.24	1.36	2.24
2.7	6.38	1.39	2.29	6.41	1.40	2.30	6.43	1.40	2.31	6.46	1.41	2.32	6.47	1.41	2.32
2.8	6.62	1.44	2.38	6.64	1.45	2.38	6.66	1.45	2.39	6.69	1.46	2.40	6.71	1.46	2.41
2.9	6.86	1.50	2.46	6.88	1.50	2.47	6.91	1.51	2.48	6.93	1.51	2.49	6.95	1.52	2.49
3.0	7.10	1.55	2.55	7.11	1.55	2.55	7.14	1.56	2.56	7.16	1.56	2.57	7.19	1.57	2.58
3.1	7.33	1.60	2.63	7.35	1.60	2.64	7.38	1.61	2.65	7.40	1.61	2.66	7.42	1.62	2.66
3.2	7.57	1.65	2.72	7.59	1.66	2.72	7.61	1.66	2.73	7.64	1.67	2.74	7.66	1.67	2.75
3.3	7.80	1.70	2.80	7.83	1.71	2.81	7.85	1.71	2.82	7.88	1.72	2.83	7.89	1.72	2.83
3.4	8.03	1.75	2.88	8.06	1.76	2.89	8.08	1.76	2.90	8.11	1.77	2.91	8.13	1.77	2.92
3.5	8.28	1.81	2.97	8.30	1.81	2.98	8.33	1.82	2.99	8.35	1.82	3.00	8.37	1.83	3.00
3.6	8.51	1.86	3.05	8.53	1.86	3.06	8.56	1.87	3.07	8.58	1.87	3.08	8.61	1.88	3.09
3.7	8.75	1.91	3.14	8.77	1.91	3.15	8.80	1.92	3.16	8.81	1.92	3.16	8.84	1.93	3.17
3.8	8.98	1.96	3.22	9.01	1.97	3.23	9.03	1.97	3.24	9.06	1.98	3.25	9.08	1.98	3.26
3.9	9.22	2.01	3.31	9.25	2.02	3.32	9.27	2.02	3.33	9.29	2.03	3.33	9.31	2.03	3.34
4.0	9.45	2.06	3.39	9.48	2.07	3.40	9.50	2.07	3.41	9.53	2.08	3.42	9.55	2.08	3.43
4.1	9.69	2.11	3.48	9.72	2.12	3.49	9.74	2.12	3.50	9.76	2.13	3.50	9.79	2.14	3.51
4.2	9.93	2.17	3.56	9.95	2.17	3.57	9.98	2.18	3.58	10.00	2.18	3.59	10.03	2.19	3.60
4.3	10.17	2.22	3.65	10.19	2.22	3.66	10.22	2.23	3.67	10.23	2.23	3.67	10.26	2.24	3.68
4.4	10.40	2.27	3.73	10.42	2.27	3.74	10.45	2.28	3.75	10.47	2.28	3.76	10.50	2.29	3.77
4.5	10.64	2.32	3.82	10.67	2.33	3.83	10.69	2.33	3.84	10.71	2.34	3.84	10.73	2.34	3.85
4.6	10.87	2.37	3.90	10.90	2.38	3.91	10.92	2.38	3.92	10.95	2.39	3.93	10.97	2.39	3.94
4.7	11.11	2.42	3.99	11.14	2.43	4.00	11.15	2.43	4.00	11.18	2.44	4.01	11.20	2.44	4.02
4.8	11.35	2.48	4.07	11.37	2.48	4.08	11.40	2.49	4.09	11.42	2.49	4.10	11.45	2.50	4.11
4.9	11.59	2.53	4.16	11.61	2.53	4.17	11.63	2.54	4.17	11.65	2.54	4.18	11.68	2.55	4.19
5.0	11.82	2.58	4.24												

5			6			7			8			9			SI02
NE	NA20	AL203	NE	NA20	AL203	NE	NA20	AL203	NE	NA20	AL203	NE	NA20	AL203	%
0.12	0.03	0.04	0.14	0.03	0.05	0.17	0.04	0.06	0.19	0.04	0.07	0.22	0.05	0.08	0.
0.36	0.08	0.13	0.38	0.08	0.14	0.40	0.09	0.14	0.42	0.09	0.15	0.45	0.10	0.16	0.1
0.59	0.13	0.21	0.61	0.13	0.22	0.64	0.14	0.23	0.66	0.14	0.24	0.69	0.15	0.25	0.2
0.83	0.18	0.30	0.86	0.19	0.31	0.87	0.19	0.31	0.90	0.20	0.32	0.92	0.20	0.33	0.3
1.06	0.23	0.38	1.09	0.24	0.39	1.11	0.24	0.40	1.14	0.25	0.41	1.16	0.25	0.42	0.4
1.30	0.28	0.47	1.33	0.29	0.48	1.34	0.29	0.48	1.37	0.30	0.49	1.39	0.30	0.50	0.5
1.54	0.34	0.55	1.56	0.34	0.56	1.59	0.35	0.57	1.61	0.35	0.58	1.64	0.36	0.59	0.6
1.78	0.39	0.64	1.79	0.39	0.64	1.82	0.40	0.65	1.84	0.40	0.66	1.87	0.41	0.67	0.7
2.01	0.44	0.72	2.03	0.44	0.73	2.06	0.45	0.74	2.08	0.45	0.75	2.11	0.46	0.76	0.8
2.25	0.49	0.81	2.27	0.50	0.81	2.29	0.50	0.82	2.32	0.51	0.83	2.34	0.51	0.84	0.9
2.48	0.54	0.89	2.51	0.55	0.90	2.53	0.55	0.91	2.56	0.56	0.92	2.57	0.56	0.92	1.0
2.72	0.59	0.98	2.74	0.60	0.98	2.76	0.60	0.99	2.79	0.61	1.00	2.81	0.61	1.01	1.1
2.95	0.64	1.06	2.98	0.65	1.07	3.01	0.66	1.08	3.03	0.66	1.09	3.05	0.67	1.09	1.2
3.20	0.70	1.15	3.21	0.70	1.15	3.24	0.71	1.16	3.26	0.71	1.17	3.29	0.72	1.18	1.3
3.43	0.75	1.23	3.45	0.75	1.24	3.48	0.76	1.25	3.50	0.76	1.26	3.52	0.77	1.26	1.4
3.67	0.80	1.32	3.68	0.80	1.32	3.71	0.81	1.33	3.73	0.81	1.34	3.76	0.82	1.35	1.5
3.90	0.85	1.40	3.93	0.86	1.41	3.95	0.86	1.42	3.98	0.87	1.43	3.99	0.87	1.43	1.6
4.13	0.90	1.48	4.16	0.91	1.49	4.18	0.91	1.50	4.21	0.92	1.51	4.23	0.92	1.52	1.7
4.37	0.95	1.57	4.40	0.96	1.58	4.42	0.96	1.59	4.45	0.97	1.60	4.46	0.97	1.60	1.8
4.61	1.01	1.65	4.63	1.01	1.66	4.66	1.02	1.67	4.68	1.02	1.68	4.71	1.03	1.69	1.9
4.85	1.06	1.74	4.87	1.06	1.75	4.90	1.07	1.76	4.91	1.07	1.76	4.94	1.08	1.77	2.0
5.08	1.11	1.82	5.10	1.11	1.83	5.13	1.12	1.84	5.15	1.12	1.85	5.18	1.13	1.86	2.1
5.32	1.16	1.91	5.35	1.17	1.92	5.37	1.17	1.93	5.39	1.18	1.93	5.41	1.18	1.94	2.2
5.55	1.21	1.99	5.58	1.22	2.00	5.60	1.22	2.01	5.63	1.23	2.02	5.65	1.23	2.03	2.3
5.79	1.26	2.08	5.82	1.27	2.09	5.84	1.27	2.10	5.86	1.28	2.10	5.88	1.28	2.11	2.4
6.03	1.32	2.16	6.05	1.32	2.17	6.08	1.33	2.18	6.10	1.33	2.19	6.13	1.34	2.20	2.5
6.27	1.37	2.25	6.29	1.37	2.26	6.32	1.38	2.27	6.33	1.38	2.27	6.36	1.39	2.28	2.6
6.50	1.42	2.33	6.52	1.42	2.34	6.55	1.43	2.35	6.57	1.43	2.36	6.60	1.44	2.37	2.7
6.74	1.47	2.42	6.77	1.48	2.43	6.79	1.48	2.44	6.81	1.49	2.44	6.83	1.49	2.45	2.8
6.97	1.52	2.50	7.00	1.53	2.51	7.02	1.53	2.52	7.05	1.54	2.53	7.07	1.54	2.54	2.9
7.21	1.57	2.59	7.24	1.58	2.60	7.25	1.58	2.60	7.28	1.59	2.61	7.30	1.59	2.62	3.0
7.44	1.62	2.67	7.47	1.63	2.68	7.49	1.63	2.69	7.52	1.64	2.70	7.55	1.65	2.71	3.1
7.69	1.68	2.76	7.71	1.68	2.77	7.73	1.69	2.77	7.75	1.69	2.78	7.78	1.70	2.79	3.2
7.92	1.73	2.84	7.94	1.73	2.85	7.97	1.74	2.86	7.99	1.74	2.87	8.02	1.75	2.88	3.3
8.16	1.78	2.93	8.18	1.78	2.94	8.20	1.79	2.94	8.22	1.79	2.95	8.25	1.80	2.96	3.4
8.39	1.83	3.01	8.42	1.84	3.02	8.44	1.84	3.03	8.47	1.85	3.04	8.49	1.85	3.05	3.5
8.63	1.88	3.10	8.66	1.89	3.11	8.67	1.89	3.11	8.70	1.90	3.12	8.72	1.90	3.13	3.6
8.86	1.93	3.18	8.89	1.94	3.19	8.91	1.94	3.20	8.94	1.95	3.21	8.96	1.95	3.22	3.7
9.11	1.99	3.27	9.13	1.99	3.28	9.15	2.00	3.28	9.17	2.00	3.29	9.20	2.01	3.30	3.8
9.34	2.04	3.35	9.36	2.04	3.36	9.39	2.05	3.37	9.41	2.05	3.38	9.44	2.06	3.39	3.9
9.58	2.09	3.44	9.59	2.09	3.44	9.62	2.10	3.45	9.64	2.10	3.46	9.67	2.11	3.47	4.0
9.81	2.14	3.52	9.84	2.15	3.53	9.86	2.15	3.54	9.89	2.16	3.55	9.91	2.16	3.56	4.1
10.05	2.19	3.61	10.07	2.20	3.61	10.09	2.20	3.62	10.12	2.21	3.63	10.14	2.21	3.64	4.2
10.28	2.24	3.69	10.31	2.25	3.70	10.33	2.25	3.71	10.36	2.26	3.72	10.37	2.26	3.72	4.3
10.53	2.30	3.78	10.54	2.30	3.78	10.57	2.31	3.79	10.59	2.31	3.80	10.62	2.32	3.81	4.4
10.76	2.35	3.86	10.78	2.35	3.87	10.81	2.36	3.88	10.83	2.36	3.89	10.85	2.37	3.89	4.5
11.00	2.40	3.95	11.01	2.40	3.95	11.04	2.41	3.96	11.06	2.41	3.97	11.09	2.42	3.98	4.6
11.23	2.45	4.03	11.26	2.46	4.04	11.28	2.46	4.05	11.31	2.47	4.06	11.32	2.47	4.06	4.7
11.47	2.50	4.12	11.49	2.51	4.12	11.51	2.51	4.13	11.54	2.52	4.14	11.56	2.52	4.15	4.8
11.70	2.55	4.20	11.73	2.56	4.21	11.75	2.56	4.22	11.78	2.57	4.23	11.79	2.57	4.23	4.9
															5.0

地質調査所化学課資料として，分析法の集録を昭和34年から行なっており，発行順に番号を付けるとともに，3けたの数字をもってこれを分類し，その最初の1けたは次の項目を示すことにする．地質調査所化学分析法もこれに従う．

最初の1けた

0　通則，分光分析，地化学探鉱など一般的な項目
1　金属元素
2　非金属元素
3　けい酸塩，よう業原料
4　鉱　物
5　水（工業用水，温泉，ガス水など）
6　石炭，ガス

地質調査所化学分析法
Methods of Chemical Analysis in Geological Survey of Japan.

No. 36 (001(3)), 1967：通則
General Rules.

No. 37 (108), 1967：鉱石中のビスマス分析法—加藤甲壬
Chemical Analysis of Bismuth in Ores.

No. 38 (137-1), 1967：二酸化マンガン分析法—磯野　清
Chemical Analysis of Manganese Dioxide in Ores.

No. 39 (311), 1968：岩石中の水分，炭素および二酸化炭素分析法—藤谷吉三
Chemical Analysis of Total Water, Carbon and Carbon Dioxide in Rocks.

No. 40 (201(3)), 1968：石灰石，ドロマイト完全分析法—磯野　清・藤貫　正・永井　茂金子博祐
Total Analysis of Limestone and Dolomite.

No. 41 (041), 1969：ガスクロマトグラフ分析法—永田松三・米谷　宏・大場信雄
Gas Chromatography.

No. 42 (301(3)), 1969：けい酸塩岩石の完全分析法—前田憲二郎・大森江い・大森貞子
Total Analysis of Silicate Rocks.

No. 43 (051(2)), 1969：金属鉱床の地化学探査分析法 (1)—東野徳大
Analytical Methods used in Geochemical Exploration for Metal Ores.

No. 44 (102(3)), 1970：鉱石中の銅分析法—加藤甲壬
Chemical Analysis of Copper in Ores.

No. 45 (104(2)), 1970：鉱石中の亜鉛分析法—加藤甲壬
Chemical Analysis of Zinc in Ores.

No. 46 (151(4)), 1970：岩石中のウラン分析法—望月常一・大場きみじ
Chemical Analysis of Uranium in Rocks.

No. 47 (141(2)), 1972：鉱石・岩石中のニッケル分析法—貴志晴雄・大場きみじ
Chemical Analysis of Nickel in Ores and Rocks.

No. 48 (501(3)), 1973：表流水，地下水の水質分析法—池田喜代治・永井　茂
Methods of Chemical Analysis for Surface and Underground Water Samples.

ノルム計算の簡略法

OHMORI, T.

大森貞子

地質調査所化学分析法, No. 49, p. 1～82, 1975
5 illus., 17 tab.

この方法はノルム計算を簡単に行なう方法である．本来の方法は，化学分析表の各酸化物の重量パーセントを分子比に換算し，ノルム鉱物を作り，再び各鉱物の分子比をそれぞれの標準鉱物重量パーセントに換算する方法である．この簡略法は，分析表の各酸化物の重量パーセントそのままから，表を利用して直ちに標準鉱物重量パーセントを求めるものである．

543.6

昭和50年2月7日　印　刷
昭和50年2月12日　発　行

工業技術院地質調査所
川崎市高津区久本 135

印刷者　富　田　　潔
印刷所　学術図書印刷株式会社
東京都練馬区豊玉北2ノ13

METHODS OF
CHEMICAL ANALYSIS IN
GEOLOGICAL SURVEY OF JAPAN

Isamu KOBAYASHI, Director

SIMPLIFIED METHOD OF THE NORM CALCULATION

By

Teiko OHMORI

GEOLOGICAL SURVEY OF JAPAN
Hisamoto, Takatsu-ku, Kawasaki-shi, Japan
1975

地質調化学分析
Chem. Anal. Geol.
Surv. J., No. 49, 1975