

A1.5. *Mixes with quartz in place of silica*

Results for the pure calcium system (corresponding to anorthite + 8 quartz) are summarized in Table 8. The crystallization was carried out in closed vessels at water vapour pressure or density of 0.33.

Table 8

<i>T</i> (°C)	400	385	375	363	340	330
Products	An	An	An.W	W.An	W(An)	W
	285	265	220			
	E.W	E	E			

The results of a similar series of experiments with the sodium system and quartz are listed in Table 9.

Table 9

<i>T</i> (°C)	335	303	279	267	265	260	160	115
Products	Ab,Q	Ab,Q	A,Ab,Q	A,Q	A,Q	A,Q	A,Q	A,Q

A1.6. *Mixes with sodium carbonate and bicarbonate*

A series of experiments was conducted with mixes of composition  $\text{Na}_2\text{O}$ ,  $\text{Al}_2\text{O}_3$ ,  $18\text{SiO}_2$  where the soda was added as bicarbonate or carbonate. The pH of these solutions is lower than that of mixes using sodium hydroxide. At 250°C the pH of molar  $\text{NaHCO}_3$  is about 9.0 and of an equimolar solution of carbonate-bicarbonate, about 10.8 (ELLIS and FYFE, 1957). The results are summarized in Table 10.

Table 10

Sodium compound	<i>T</i> (°C)	Products
$\text{NaHCO}_3$	255	M.A.C.Q
$\text{NaHCO}_3$	258	A.M.Q
$\text{NaHCO}_3/\text{Na}_2\text{CO}_3$	258	(A.)(M).Q
$\text{NaHCO}_3$	265	A.M.Q
$\text{NaHCO}_3/\text{Na}_2\text{CO}_3$	265	A.Ab.Q
$\text{NaHCO}_3$	262	M.A.C.Q
$\text{NaHCO}_3$	275	M.A.Q
$\text{NaHCO}_3$	280	Ab.Q
$\text{NaHCO}_3/\text{Na}_2\text{CO}_3$	280	Ab.Q

A1.7. *Experiments using minerals as starting materials*

A1.7.1. *Xonotlite*. In a further attempt to reduce the activity of the starting materials the mineral xonotlite was used as a source of calcium and was mixed with quartz and active alumina. The composition used corresponded to calcium mordenite. Results are summarized in Table 11.

Table 11

<i>T</i> (°C)	390	380	380	365	360	320	315	310	265
<i>P</i> (bars)	5000	2000	s.w.v.p	2000	s.w.v.p	s.w.v.p	5000	2000	4000
Products	An.Q	W.An.Q	W.An.Q	W.An.Q	W.An.Q	E.W.Q	W.E.Q	W.E.Q	E.Q