

Table 2. Results of experiments on the stability of plagioclase in olivine-rich compositions. Unless otherwise stated (see footnotes), the identification of olivine, pyroxenes, garnet and plagioclase is based on X-ray diffraction data. Spinel was readily identified optically and confirmed by X-ray data in most cases.

Abbreviations: Fo - forsterite, Fa - fayalite, Ol - olivine, Px - pyroxene, Sp - spinel, An - anorthite, Pl - plagioclase, Ga - garnet

Corrected pressure Kb	Temperature °C	Time Hrs.	Reactants	Products
FORSTERITE + ANORTHITE				
8.1	1250	4	Glass + 10% Seed (Px + Sp)	Fo + An
9.0	1250	4	" " " "	Fo + Px ¹ + Sp
9.0	1250	3	Glass + quench Fo	Fo + An
9.9	1250	3	Glass	Fo + Px ¹ + Sp
9.0	1300	1	Glass + quench Fo	Fo + An
9.9	1300	1	" " "	Fo + Px ¹ + Sp
9.9	1300	1	Glass	Fo + Px ¹ + Sp
FAYALITE + ANORTHITE (runs in graphite capsules)				
8.1	1100	6	Fa + An	Fa + An + glass
9.0	1100	6	" "	Fa + Ga + glass
8.1	1100	6	Glass	Fa + An + glass
9.0	1100	6	" "	Fa + Ga + glass
9.0	1100	1	" "	Fa + Ga + An + glass
7.2	1100	6	Glass + 10% Seed (Ga + Fa)	Hercynite + glass
7.2	1100	2	" " " "	Fa + Hercynite + glass
8.1	1100	6	" " " "	Fa + An + Ga + glass (glass appears local)
6.3	1050	3	" " " "	Fa + An No garnet
7.2	1050	3	" " " "	Fa + An + Ga Minor garnet
7.2	1050	24	" " " "	Fa + An + Ga Minor garnet. Coarser grained but similar in garnet content to 3 hr run
8.1	1050	3	" " " "	Fa + An + Ga Common garnet, minor anorthite
5.4	900	24	" " " "	Fa + An (+ Ga) Garnet rare and crystals corroded
6.3	900	24	" " " "	Fa + An + minor garnet
6.3	900	88	" " " "	Fa + An + trace garnet, less garnet than in 24 hr run
7.2	900	24	" " " "	Fa + Ga + An. Garnet common, minor anorthite
8.1	900	26	" " " "	Fa + Ga No pyroxene or anorthite

If equation 5 represents a stable equilibrium relation, then it is possible that the olivine + labradorite mix could yield assemblages of orthopyroxene + olivine + plagioclase + nepheline at intermediate pressures. However, Bultitude (1968) has demonstrated the instability of nepheline + plagioclase + pyroxene + olivine assemblages relative to plagioclase + spinel + pyroxene in complex olivine nephelinite at very low pressure — probably due to combination of reactions (7), (8).