

| High Alumina Basalt (T.H. Green, 1967, Ringwood & Green, 1966) | Quartz Tholeiite B (Green and Ringwood, 1967a) | NM5-9.3% Plagioclase (Eclogite component of plagioclase eclogite) | Quartz Tholeiite A (Green and Ringwood, 1967a) | Alkali-poor olivine tholeiite (Green & Ringwood 1967a) |
|--|--|--|--|--|
| Jd ₃₁ Ac ₈ Di ₆₁ | Jd ₃₅ Ac ₁₉ Di ₄₆ | Jd ₄₁ Di ₅₉ | Jd ₁₇ Ac ₂₅ Di ₅₈ | Jd ₁₁ Ac ₃ Di ₈₆ |
| Gr ₂₈ * ¹ | Gr ₂₈ * ¹ | Gr ₂₁ * | Gr ₂₈ * | Gr ₁₉ ¹ |
| 1.01 | 0.85 | 0.83 | 0.70 | 0.53 |
| 6 | 2.5 | 15.1 | 3 | 23 |
| 65 | 61 | 53 | 61 | 66 |
| Olivine tholeiite | Quartz tholeiite | Olivine tholeiite | Quartz tholeiite | Olivine tholeiite |
| Qz + Ky | Qz | Qz | Qz | No Qz or Ky |
| 23.5±1 | 20±1 | 20.5 | 18±1 | 13±5 |
| 12±0.5 | 14±0.5 | 10.5 | 14±0.5 | 9.5±5 |

FIGURE CAPTIONS

Fig. 1. Comparison of experimentally determined solidi and ^{sub} subsolidus boundaries. Dashed lines refer to the/solidus garnet appearance and plagioclase disappearance of Ito and Kennedy (1971) and the previous data for the same olivine tholeiite by Cohen, Ito and Kennedy (1967). The short lines marked by question marks are the approximate boundaries for garnet appearance and plagioclase disappearance as determined in 1967. The solid lines marked 'Qz tholeiite' refer to the experimentally determined boundaries of Green and Ringwood 1967. The dotted lines for plagioclase disappearance and garnet appearance illustrate the slopes for those boundaries actually used for extrapolation to lower temperatures - these lie well within experimental error in relation to the solid lines which were drawn from the experimental points. The line marked olivine tholeiite is the solidus for a composition yielding quartz-free eclogite (garnet + clinopyroxene + rutile + ilmenite) and contrasts with the solidi for the two quartz eclogite compositions.

Fig. 2. Diagram illustrating the effect of chemical composition on the pressure required for the incoming of garnet (lower boundary) and the outgoing of plagioclase (upper boundary). All data are at 1100°C; compositions 1-6 are from Ringwood and Green (1966); 7,8,9,10 are compositions from the references shown.