

Carbon isotopic composition of microdiamonds

P.D. KINNY¹, R.L. TRAUTMAN², B.J. GRIFFIN³, I.C.W. FITZSIMONS¹ AND B. HARTE⁴

1. Tectonics Special Research Centre, School of Applied Geology, Curtin University of Technology, GPO Box U1987, Perth 6001, Australia. Email: pk@lithos.curtin.edu.au
2. Department of Geology and Geophysics, University of Western Australia, Perth 6907, Australia.
3. Centre for Microscopy and Microanalysis, University of Western Australia, Perth 6907, Australia.
4. Department of Geology and Geophysics, University of Edinburgh, EH9 3JW, Edinburgh, U.K.

ABSTRACT

130 microdiamonds (<0.5 mm diameter) analysed from 17 kimberlitic sources worldwide using SIMS, show an overall distribution pattern of ¹³C/¹²C that is similar to that of larger commercial-sized stones. This implies similar mantle origins for all such diamonds regardless of size. Delta ¹³C variations up to 10 permil occur within some stones.