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Determining Oxygen in Polymers

A new method of determining the oxygen content in organosilicon polymers and organic materials is described by M. Aramata and T. Igarashi of Shin-Etsu Chemical Co. Ltd., and J. Okayama and M. Ikeda of HORIBA Ltd., in Japan (*Anal. Sci.*, 1998, 14, (3), 541-546). The silicon-silicon bonds in the polymers, which give them their unique electronic and optical properties, are easily oxidised to Si-O-Si resulting in loss of performance.

Oxygen content was investigated in an inert-gas fusion converter where samples of poly-organosiloxane/silicone and organosilicon polymers were pyrolysed in a furnace at 2600°C. Further reduction by a heated platinum/carbon catalyst gave carbon monoxide, which could be determined by an IR absorption technique.