

ANNOUNCEMENT

PRODUCTION AND AVAILABILITY OF CARBON-13

Readers of the JLCR and especially those involved in the synthesis and use of carbon-13 labelled compounds will be pleased to learn that Cambridge Isotope Laboratories (CIL) in their announcement on March 29, 1991, have started up the world's largest production facility for this stable isotope of carbon.

The production process used separates both carbon-13 and carbon-12 by cryogenic distillation of carbon monoxide, and is a similar process to that previously developed and operated at Los Alamos National Laboratories, New Mexico, USA which was closed down by the USA Department of Energy in 1986. The new CIL plant completed in 1990 is on a 6 acre site at Xenia near Dayton, Ohio, and required a year to cool down its 2 mile cascade of stainless steel columns and tubing for the cryogenic separation of the carbon isotopes. The plant has a capacity for producing more than 25 kilograms of 99% pure carbon-13 a year and this is more than twice the current world supply. With no waste disposal risks or expense because the recyclic process uses no additional chemicals, there are no environmental problems.

Carbon-13 is used for labelling chemical compounds for use in biomedical and scientific research. Applications in medical and academic centres include biomedical nuclear magnetic resonance (NMR), stable isotope ratio analyses using gas chromatography/mass spectrometry (GC/MS) and uses in dysfunction "breath tests". Carbon-13 labelled compounds are also used in new drug studies to complement pharmacokinetics data achieved with the radioactive equivalent compound labelled with carbon-14. Most readers will be well familiar with all these applications.

As a consequence of the production of carbon-13 of course, very pure (99%) carbon-12 is also available in large quantities from the new production facility. Interestingly General Electric recently produced isotopically pure carbon-12 diamonds which have superior properties for industrial applications.

Further details about the availability of carbon-13 and compounds labelled with this stable isotope can be obtained from Cambridge Isotope Laboratories, Inc., 20 Commerce Way, Woburn, Massachusetts, 01801, USA (Tel: 1-800-322-1174 or 617-938-0067 Telex: 951935).

(Editorial)