



Carbon-14

WORKING SAFELY WITH CARBON-14

Radioactive half-life $T_{1/2}$	5730 years
Principal emission	0.156 MeV beta (maximum)
Monitoring for contamination	Thin end - window Geiger-Müller detector
Biological Monitoring	Urine samples Breath measurements (CO ₂)
Annual Limit on Intake (ALI) by ingestion	9 x 10 ⁷ Bq (~2.4mCi) ** (Labelled Organic Compounds)
Maximum range in air	24 cm
Maximum range in water	0.28 mm
Shielding	1 cm Perspex / Plexiglas. Thinner Perspex / Plexiglas down to 3 mm, although adequate to reduce doses, does not have good mechanical properties.

Special Considerations

There is a possibility that some organic compounds can be absorbed through gloves. Care needs to be taken not to generate carbon dioxide which could be inhaled.

** Based on occupational effective dose equivalent limit of 50 mSv for stochastic risks

The Annual Limit on Intake (ALI) data are based on the recommendations of the International Commission on Radiological Protection (ICRP) Publication 30 but may change should the ICRP Publication 60 recommendations be adopted by your national regulatory authority.

The data provided is general information which gives a basic understanding of radiation safety. You must however consult your local radiation protection adviser to ensure that you comply with all national regulations and local rules.