

Oxygen-18 (^{18}O)



Oxygen-18 (O-18, ^{18}O) is a natural, stable isotope of oxygen, and it is supplied in the form of O-18 water (H_2^{18}O). O-18 is an important precursor for the production of fluorodeoxyglucose (FDG) used in positron emission tomography (PET).

Positron emission tomography (PET) is a nuclear medicine imaging technique which produces a three-dimensional image or map of functional processes in the body. The system detects pairs of gamma rays emitted indirectly by a positron-emitting radionuclide (tracer), which is introduced into the body on a biologically active molecule. Images of tracer concentration in three-dimensional space within the body are then reconstructed by computer analysis. In modern scanners, this reconstruction is often accomplished with the aid of a computed tomography (CT) X-ray scan performed on the patient during the same session, in the same machine.

Generally, in the radiopharmaceutical industry, enriched water (H_2^{18}O) is bombarded with hydrogen ions in either a cyclotron or a linear accelerator, creating Fluorine-18, which is then synthesized into FDG and injected into a patient.

ISOFLEX offers >97% enriched O-18 water in 50-cc glass vials. Smaller vial quantities are available under special order.

Please contact ISOFLEX for a Reference Certificate of Analysis.

In addition, in light of the worldwide shortage of O-18, ISOFLEX offers an innovative O-18 water recycling program that can benefit you and your company or institution. Ask us for details.