

YIELDS FOR THE PRODUCTION OF PHOSPHORUS-32 USING THE CHARGED AND UNCHARGED PARTICLES IN MEDICAL PRACTICE

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ABSTRACT

Phosphorus-32 is one of the radioisotopes which has found more applications as tracer in such diverse fields as biology, medicine, gauging and agriculture. Phosphorus-32 is a radionuclide suitable for labeling a wide range of radiopharmaceuticals emitting beta particles (1.71 MeV) as well as for local therapy of tumors. Among the possible methods for cyclotron production of Phosphorus-32 we investigate the proton irradiation on, natural (Nickel, [Iron](#), [Silver](#) and [Vanadium](#)). The proton and deuteron irradiation on different isotopes Sulfur, [Cobalt](#), [Silicon](#), [Gold](#), [Thorium](#) targets we are considered. The reactor production method on Sulfur are considered in this paper. The total integral yield based on the main published and approved experimental results of excitation functions were calculated.

KEYWORDS: ³²P Production, Excitation Function, Integral Yield, Isotopes of Sulfur, Nuclear Medicine