

 β

Beta Energy: 85 keV average
(249 keV max)
Range in air: 20 inches
Range in lucite: 0.020 inches
Shielding: 3/8" plexiglass recommended

Critical Organ: bone, lungs, lower GI
Exposure Routes: inhalation, ingestion,
skin absorption
Dosimetry¹: none required for aliquoting
Bioassay:¹ Urine

Detection & Measurement

GM Pancake: efficiency ~10%
Liquid Scintillation Counting—smear test

Half Life

Physical: 25.4 days
Biological: 1155 days
Effective: 24.9 days

 $T_{1/2}$ **Special Precautions:**

- ⚠ ³³P beta radiation is primarily an internal hazard, but some energetic betas could penetrate gloves and deliver a high skin dose;
- ⚠ Use double gloves and change external pair often;
- ⚠ Use Geiger Mueller counter with pancake probe for self-survey/hand frisking;
- ⚠ Analyze smears by LCS for removable contamination;
- ⚠ Do not shield with lead sheets or foil.

Personal
Protective
Equipment

Disposal: Decay in Storage

1. Dosimetry and bioassay are not required for <5 mCi monthly ³³P use.

2. Urine bioassay may be required after any accident/incident where intake is suspected.