# Stopping target choice

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1. Beryllium (Be), 99.8% :
- Target thickness – 16.6mg/cm$^2$ (90μ), Positron Energy Loss (PEL) – 38KeV/target thickness.
- Magnetic admixtures (ppm): Fe – 300, Co – 5, Ni – 200.
- Covered by carbon film (2000 Angstroms) to provide corrosion protection.
- Target diameter – 100mm.
- Price – $3500/two pieces, BRUSH WELLMAN Co.
- Advantage – minimal positron energy loss inside the target.
- Disadvantage – big magnetic elements admixture can cause a slow ($\tau \cong \mu s$) muon depolarization. Good target for ρ, η, δ.

2. Graphite (C), 99.999%:
- Target thickness – 15.9mg/cm$^2$ (90μ), PEL – 45KeV/target thickness.
- Magnetic admixtures (ppm): Fe, Co, Ni – <1.
- Target diameter – 100mm.
- Price – $100/each, ESPI–METALS Co.
- Advantage – low positron energy loss, low conductive electron density → possibility to compare a flip-flop muon depolarization in flight.
- Disadvantage – porosity 28%, pore size – 0.8μ. $CF_4$/ISO gas can penetrate into the pores. Maximal $CF_4$/ISO contamination may be about $4 \cdot 10^{-4}$. Muon polarization in $CF_4$/ISO gas has been measured at B=2T. It is $P_\mu > 0.95$. $CF_4$/ISO admixture can decrease original $P_\mu = 1$ on $3 \cdot 10^{-5}$. Covering of both sides of the target by aluminum film should fix the problem.

3.Aluminum (Al), 99.999%:
- Target thickness – 20mg/cm$^2$ (75μ), PEL – 71KeV/target thickness.
- Target diameter – 100mm.
- Magnetic admixtures (ppm): Fe, Co, Ni <1.
- Price – $5000/kg, GOODFELLOW Co.
- Advantage – good target for comparison with graphite.
- Disadvantage – high price, additional tests are needed for the high purity foil stretching.

4. Copper (Cu), 99.99+%:
- Target thickness – 25mg/cm$^2$ (28μ), PEL – 113KeV/target thickness.
- Target diameter – 100mm.
- Magnetic admixtures (ppm): Fe – 2, Ni – 2, Co – <1.
- Price (100×100mm) – $280/5pcs, GOODFELLOW Co.
- Target with high Z for response function evaluation.

5. Gold (Au), 99.99+%:
- Target thickness – 39mg/cm$^2$ (25μ), PEL – 314KeV/target thickness.
- Target diameter – 100mm.
- Magnetic admixtures (ppm): Fe, Ni, Co <1.
- Price (100×100mm) – $1100/each, GOODFELLOW Co.
- Target with high Z for response function evaluation.