

MOLYBDENUM-99 (⁹⁹Mo)

Isotope : Mo-99 (1991)

Property : Mo-99 in 0.2M NaOH

SPECIFICATIONS

Appearance of the solution	Clear, colourless or almost colourless solution
Radionuclidic identity	Main gamma ray at 0.740 MeV ^{99m} Tc peak at 0.141 MeV
Radiochemical identity	$Rf_{Test} = Rf_{Ref} \pm 5\%$
Alkalinity ⁽¹⁾	pH > 8
Radionuclidic purity	
Gamma impurities ¹³¹ I/ ⁹⁹ Mo, ¹⁰³ Ru/ ⁹⁹ Mo, ¹³² Te/ ⁹⁹ Mo	$\leq 5.10^{-5}$ (or $\leq 5.10^{-3}$ per cent of total ⁹⁹ Mo radioactivity)
Beta impurities (⁸⁹ Sr, ⁹⁰ Sr)/ ⁹⁹ Mo	$\leq 6.10^{-7}$ (or $\leq 6.10^{-5}$ per cent of total ⁹⁹ Mo radioactivity)
Other beta and gamma impurities ¹²⁵ Sb, ¹²⁷ Sb, ¹⁰⁶ Ru, ⁹⁵ Nb, ⁹⁵ Zr, ¹³³ I, ¹⁰⁵ Rh, ⁸² Br and ¹²⁵ Sn ⁽²⁾	$\leq 1.10^{-4}$ (or $\leq 1.10^{-2}$ per cent of total ⁹⁹ Mo radioactivity)
Total Alpha	$\leq 1.10^{-9}$ (or $\leq 1.10^{-7}$ per cent of total ⁹⁹ Mo radioactivity)
Radiochemical purity	Molybdate (MoO_4^{2-}) and Pertechnetate (TcO_4^-) $\geq 97\%$
Specific activity at expiry date ⁽³⁾	≥ 87.3 GBq/mg
Radioactive concentration at expiry date ⁽³⁾	≥ 17.4 GBq/mL

⁽¹⁾ Not performed routinely, but conducted at least during the annual stability study.

⁽²⁾ ^{99m}Tc excluded.

⁽³⁾ Expiry date = last day 12.00 (noon) CET at which Mo-99 can be used (9 days after Mo-99 production at IRE).