

TECHNICAL DATA

Nuclide	^{177}Lu
Half-life	6.647 days
Decay mode	Beta decay
Beta (β^-) energy	$E(\beta^-)_{\text{max}} = 0.497 \text{ MeV}$
Gamma radiation keV (%)	112.9 (6.23), 208.4 (10.41)
Chemical form	LuCl_3
Solvent	0.04 M HCl solution ($\pm 0.01\text{M}$)
Activity Concentration	1 Ci/mL +/- 10%
Activity	0.3 to 200 GBq per vial
Shelf Life	10 days

RELEASE PARAMETERS

Parameter	Value	Method
Appearance	Clear, colorless liquid	Visual
Identification	Characteristic photons identified	HPGe
Specific activity (at end of production)	$\geq 3,300 \text{ GBq/mg}$	HPGe and ICP-MS
Radionuclidic purity	$\geq 99.9\% \text{ }^{177}\text{Lu}$	Gamma spectrometry
Radiochemical purity	$\geq 99\% \text{ as }^{177}\text{LuCl}_3$	TLC
Sterility	Sterile	Direct Inoculation
Endotoxin	$\leq 17.5 \text{ EU/mL}$	Chromogenic technique
pH	1.0 – 2.0	pH test strip
Chloride	Positive Test	ICP-MS

Chemical Purity	Value	Method
Fe	$\leq 0.25 \text{ }\mu\text{g/GBq }^{177}\text{Lu}$	ICP-MS
Cu	$\leq 0.5 \text{ }\mu\text{g/GBq }^{177}\text{Lu}$	ICP-MS
Zn	$\leq 0.5 \text{ }\mu\text{g/GBq }^{177}\text{Lu}$	ICP-MS
Pb	$\leq 0.5 \text{ }\mu\text{g/GBq }^{177}\text{Lu}$	ICP-MS
^{176}Yb	$\leq 0.1 \text{ }\mu\text{g/GBq }^{177}\text{Lu}$	ICP-MS