

²²⁵Ac Actinium-225 Chloride Radiochemical

Actinium-225 (Ac-225) is a powerful radioisotope used in targeted alpha therapies (TATs). This emerging class of therapy combines alpha-emitting radionuclides such as Ac-225 with tumor-seeking targeting vectors that selectively guide the isotope to cancer cells within the body. When the Ac-225 undergoes radioactive decay, it releases a highly concentrated and cytotoxic dose of alpha particles that can kill tumor cells.

BWXT Medical is actively collaborating with pharmaceutical companies to deliver high quality Ac-225 and other therapeutic isotopes to help advance these important new therapies.

Process Data

Target

Natural thorium as metal

Nuclear Reaction

$^{232}\text{Th}(p, x) ^{225}\text{Ra}(\beta, 14.92\text{d}) ^{225}\text{Ac}$

Product Specification

Half-Life

9.92 days

Appearance/Form

Solid Actinium trichloride
 $[\text{}^{225}\text{Ac}]\text{AcCl}_3$

Radionuclidic Identity

Most prominent gamma photons energies at
 440 ± 2 keV (Bi-213) and
 218 ± 2 keV (Fr-221)

Radionuclidic purity

@ Reference Date and Time¹

Ac-225 > 99.0 % (based on Fr-221 and Bi-213)

Ac-227 ≤ 0.0010 % (ICP-MS)

Radiochemical purity

Ac-225 ≥ 99% is present as ionic form

Others ≤ 1%

Specific Activity

No carrier added

Chemical Purity

< 0.025 μg /MBq²

Measured metal ion impurities @ Reference Date and Time^{1,2}

Shelf-Life

20 days from Production Date

Primary packaging

V-Vial (3 mL or 5 mL)

Product Origin

Vancouver, Canada

¹Reference date and time is 3-days post production
²V, Cr, Mn, Co, Ni, Cu, Zr, La, Ce, Pr, Nd, Pb, Bi, Th, Ba

BWXT Medical Advantage



- Innovative process and production methods for high purity, no carrier-added (n.c.a.) Ac-225 (no Ac-227)
- Work closely with pharma and biotech customers on development, clinical and regulatory needs
- Shipping since 2022 for development and clinical trials of targeted alpha therapies (TATs)
- Weekly manufacturing and custom dispensing of Indium-111 Chloride for imaging pairing
- Expertise, infrastructure and distribution capabilities to support advancement and growth of these important therapies

Other BWXT Medical Products:

- Indium (In-111) Oxyquinoline Solution (US Only)
- Indium-111 Chloride Radiochemical Solution
- Iodine-123 Sodium Iodide Radiochemical
- Iodine-123 Sodium Iodide Oral Solution (Canada Only)
- Strontium-82 Chloride Radiochemical Solution
- Germanium-68 Chloride Radiochemical Solution

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