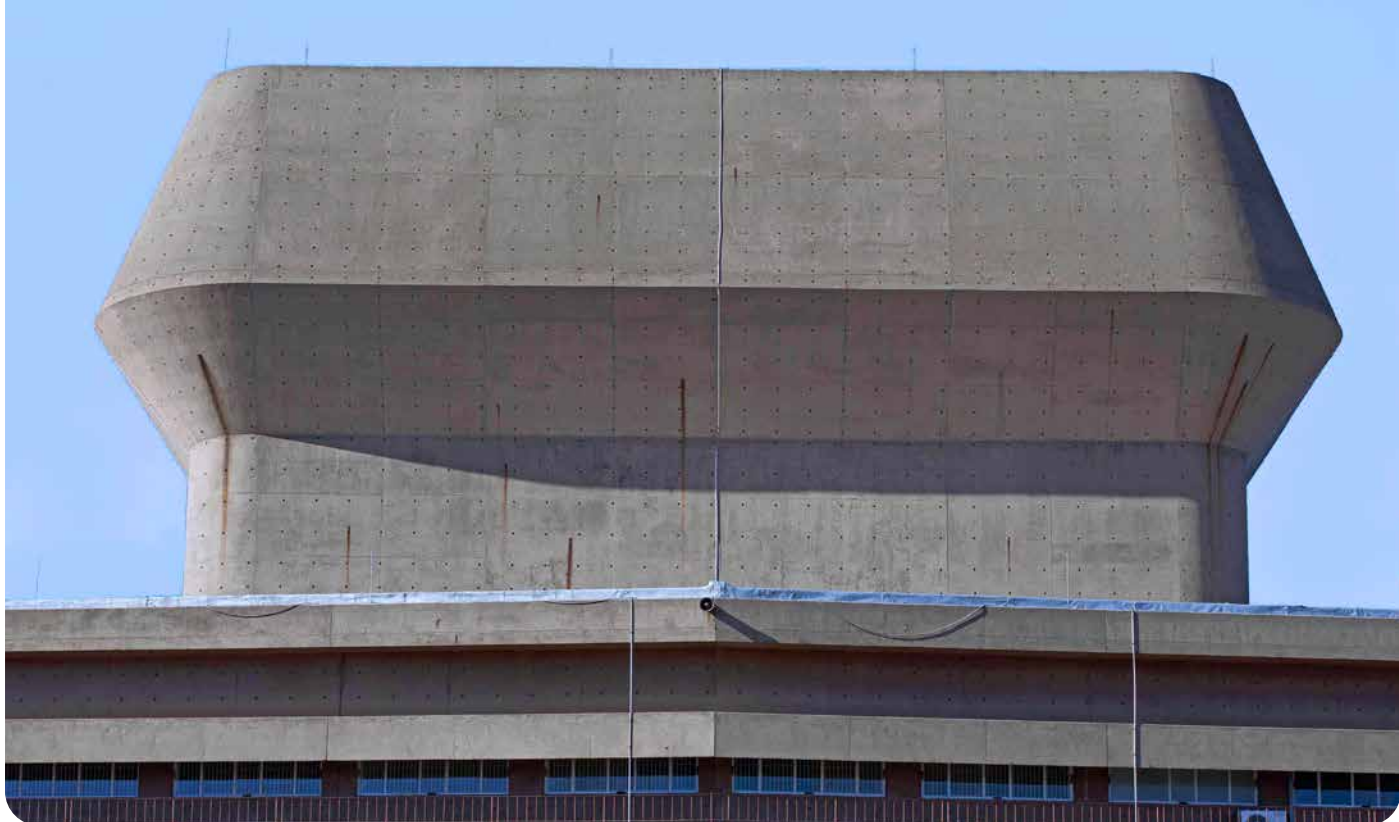




FISSION MOLYBDENUM-99

NTP
Actively enhancing life 
NTP Radioisotopes SOC. Ltd





FISSION MOLYBDENUM-99

NTP Radioisotopes SOC Ltd is committed to improving the diagnosis and treatment of illness through the provision of quality radiopharmaceutical products.

Molybdenum-99 (Mo-99) is the parent isotope of technetium-99m (Tc-99m) and is the essential feedstock and Active Pharmaceutical Ingredient (API) for all technetium generators. Tc-99m is the most important imaging agent used in nuclear medicine diagnostic procedures today, offering high imaging quality and low radiation exposure. Tc-99m is an extremely versatile radioisotope that can attach to a number of different chemicals used to target different organs and systems in specific diagnostic procedures.

Fission-based Mo-99 with its high specific activity and resultant high yield is the gold standard API for Tc-99m generator manufacturers.

NTP is located at the Pelindaba nuclear facility, approximately 60 km from OR Tambo International Airport, from where deliveries to all major international destinations can be timeously scheduled.

The gold standard for nuclear medicine imaging



*High specific activity.
Best product quality
and yield.*

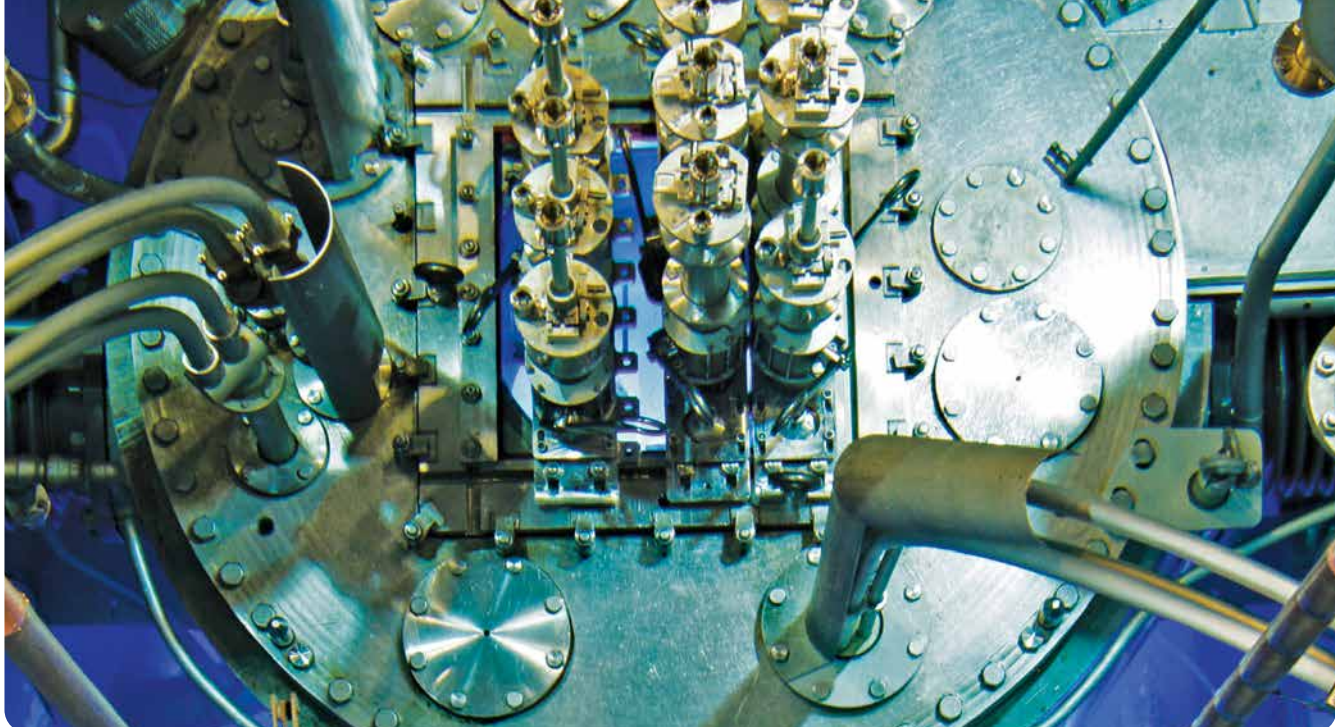


GLOBAL SUPPLY PARTNERSHIPS

NTP ranks among the largest medical radioisotope producers in the world and maintains good relationships with its supply partners ANSTO (Australia) and IRE (Belgium), offering security of supply to the global medical radioisotope market.

INTEGRATED API PRODUCTION AND PROCESSING

- A 20 MW Oak Ridge-design tank-in-pool reactor (SAFARI-1), operated by highly skilled and experienced personnel, with an exemplary record since 1965
- The SAFARI-1 reactor operates on low-enriched uranium (LEU) fuel and targets, conforming to International Safeguards requirements
- An on-site hot cell complex, equipped to safely produce and handle materials with high levels of radioactivity
- Chemical processes for the extraction and purification of fission isotopes
- An adequate supply of types A and B(U) transport containers – designed, manufactured and licensed by NTP
- Independent and accredited radio-analytical facilities
- A licensed, operational site for waste disposal
- Back-up supply agreements with other major radiochemical producers
- Special arrangements and stand-by options with major airlines serving all continents
- ISO 9001:2015 and cGMP certified operations



PRODUCT SPECIFICATIONS

Chemical form	Mo ⁺⁶ in solution (Na ₂ ⁹⁹ MoO ₄)
Solution normality	0.2 NaOH
Specific activity	> 3.7 x 10 ¹⁰ Bq ⁹⁹ Mo/mg Mo
Radionuclidic purity	
¹³¹ I/ ⁹⁹ Mo	≤5.0 x 10 ⁻⁵
¹⁰³ Ru/ ⁹⁹ Mo	≤5.0 x 10 ⁻⁵
⁸⁹ Sr/ ⁹⁹ Mo	≤6.0 x 10 ⁻⁷
⁹⁰ Sr/ ⁹⁹ Mo	≤1.5 x 10 ⁻⁸
¹³² Te - ¹³² I/ ⁹⁹ Mo	≤2.0 x 10 ⁻⁵
¹¹² Ag - ¹¹² Pd/ ⁹⁹ Mo	≤1.5 x 10 ⁻⁵
Total α	≤1.0 x 10 ⁻⁹
Radiochemical purity	
⁹⁹ MoO ₄ ⁻² / ⁹⁹ Mo	≥95%

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