

PRODUCT SPECIFICATION

THERANOSTIC APPLICATION



Lu-177

- **Lutetium chloride (LuCl₃), carrier-added**
 - Half-life: ⌚ 6.65 days
 - Total activity: ⚙️ on customer's request
 - Specific activity: + > 23 Ci/mg on delivery time
 - Radioisotopic purity: ⚠️ < 0.02% 177mLu; < 0.01 % other isotopes
 - Radiochemical purity: ⚙️ > 99% 177Lu
 - Packaging: 📦 standard glass vial for medical product
- **Lutetium chloride (LuCl₃) solution in hydrochloric acid (HCl), carrier-free**
 - Half-life: ⌚ 6.65 days
 - Total activity: ⚙️ on customer's request
 - Specific activity: + > 80 Ci/mg on production date
 - Radioisotope purity: ⚠️ > 99.99%
 - Radiochemical purity: ⚙️ > 99.99%
 - Packaging: 📦 standard glass vial for medical product



Ac-225

- **Nitrate in solid form**
 - Half-life: ⌚ 10.0 days
 - Total activity: ⚙️ on customer's request
 - Specific activity: + > 58000 Ci/g
 - Purity: ○ Ac-225 99,9 %, Ra-225 < 0,02%, Ra-224 < 0,02%, Th-229 < 0,007
 - Other isotopes: ⚠️ < 0,0006%, non-active impurities: < 10 mkg
 - Packaging: 📦 standard glass vial for medical product



Ge-68/Ga-68

- **⁶⁸Ge/⁶⁸Ga generator**
 - Ga-68 – yield in 5 ml of eluent is not less than 70% at the first time of operation and not less than 45% in 3 years or after 400 elutions.
 - The breakthrough of Ge-68 is not more than 0.005%.
 - The Ga-68– generator is produced with a nominal activity of Ge-68 – 10mCi (370MBq), 20mCi (740MBq), 30mCi (1110 MBq), 40 mCi (1480 MBq), 50 mCi (1850 MBq) and 100 mCi (3700 MBq).
 - The admissible deviation from nominal activity ranges from 0 to +10%.

PRODUCT SPECIFICATION

STABLE ISOTOPES



Mo-98

- **Used for alternative production of Mo-99/ Tc-99m without the use of U-235 targets**
 - Chemical form: ⚙️ metal /oxide (MoO₃)
 - Physical form: ⚙️ powder/grains
 - Enrichment level: + ≥ 98 at. % Total content of Mo-92, Mo-94, Mo-95, Mo-96, Mo-97, Mo-100 ≤ 2 at. %
 - Purity: ○ ≥99.8% (the content of impurities such as Al, Co, Cr, Cu, Fe, Mg, Mn, Na, Ni, Si, Sn, Ti, W^o, Zn no more than 0.2%)^o W < 5 ppm
 - Package: 📦 a glass vial packed into a wooden box



Mo-100

- - Chemical form: ⚙️ metal /oxide (MoO₃)
 - Physical form: ⚙️ powder/grains
 - Enrichment level: + ≥ 99.7 at. %
 - Isotopic Composition: ⚠️ Mo-92 Mo-94 Mo-95 Mo-96 Mo-97 Mo-98
0.005-0.007 ppm 0.005-0.007 ppm 0.005-0.007 ppm 0.005-0.007 ppm 0.005-0.007 ppm 0.15-0.17 ppm
 - Purity: ○ ≥99.9% (the content of impurities such as Al, Co, Cr, Cu, Fe, Mg, Mn, Na, Ni, Si, Sn, Ti, W^o, Zn no more than 0.1%)^o W < 20 ppm
 - Package: 📦 a glass vial packed into a wooden box



Xe-129

- **Hyperpolarized Xe-129 is used as a contrast agent for lung MRI**
 - Physical form: ⚙️ gas
 - Enrichment level: + ≥92.00%^o Other enrichment levels are available under Client's request
 - Purity: ○ ≥99.9% (the content of impurities such as H₂O, O₂, CO, CO₂, CF₄, CH₄, C₂H₄, C₂H₂, C₂H₆ no more than 0.1%)
The content of each impurity could be additionally agreed
 - Package: 📦 cylinder



Zn-68

- **Used for production of radioactive isotope Ga-68 that is used for diagnostic and treatment of advanced prostate cancer**
 - Physical form: ⚙️ metal, oxide
 - Enrichment level: + 98.0-99.3%^o More accurate information regarding enrichment level can be obtained upon request
 - Purity: ○ 99,9% (the content of impurities such as Al, As, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Pb, Si, Sn, Na no more than 0,1%) The content of each impurity could be additionally agreed
 - Package: 📦 glass cans with screw on/off cap in a plywood case

ISOTOPES FOR NUCLEAR MEDICINE



ISOTOPE
ROSATOM

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ISOTOPE
ROSATOM

JSC ISOTOPE: ABOUT US

KEY FACTS AND FIGURES

1958
FOUNDED IN

JSC Isotope is an expert in organizing secure supplies of products and solutions for nuclear medicine. We offer isotope-based products, including medical generators, radiopharmaceuticals as well as a wide range of raw material.



WORLDWIDE DISTRIBUTION

> **50** COUNTRIES

ESTABLISHED LOGISTICS AND DISTRIBUTION CHANNELS

Located in Moscow, JSC Isotope is responsible for distribution and marketing of isotope products, produced by Rosatom State Atomic Energy Corporation plants.

We deliver our products all over the world by air, sea and land. JSC Isotope is a leading supplier of bulk medical isotopes to Latin America, Asia and Middle East.

PRODUCTS FOR MEDICAL USE FROM

10
PRODUCTION SITES

~ **9000**



SHIPMENTS ANNUALLY



R&D
ONGOING TECHNOLOGY DEVELOPMENT AND IMPROVEMENT

WIDE FLEET OF CERTIFIED CONTAINERS

> **100** MODELS



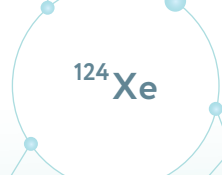
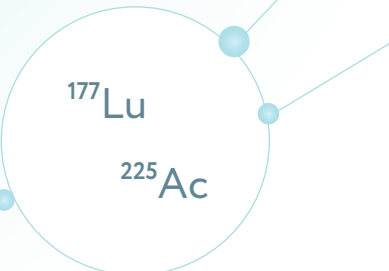
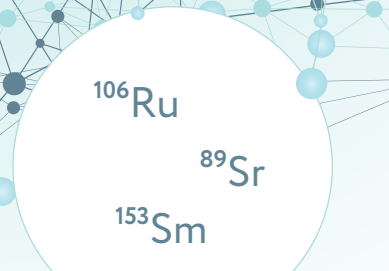
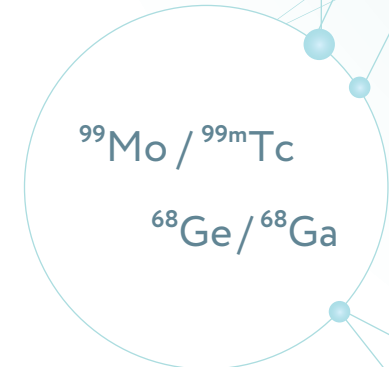
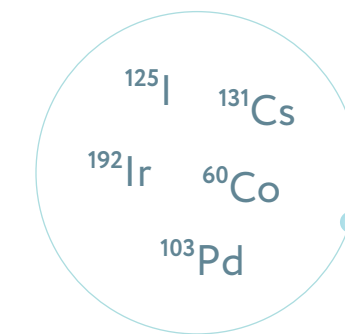
> **20** CORE ISOTOPES FOR NUCLEAR MEDICINE

OUR PRODUCTS

FOR THERAPY AND DIAGNOSTICS

WE OFFER

Internal backup reactors and radiochemistry



* more detailed information upon request

For more than 60 years JSC Isotope has been delivering radioactive and stable isotopes of almost the entire periodic table. Rosatom enterprises are equipped with fission, cyclotron, electromagnetic and gas centrifuge technologies that allow to produce a broad product range.