

Mo-99 Fact Sheet

Molybdenum-99 Fission Radiochemical

Sodium Molybdate (Mo-99) (fission)

Half-Life: 66 hours

Molybdenum-99 Fission Radiochemical

Molybdenum-99 is used to manufacture technetium-99m generators. Technetium-99m is the most widely used isotope in Nuclear Medicine. Technetium-99m generators short half-life of six hours and the energy emitted (140 keV) make it an ideal imaging agent. MDS Nordion has been a reliable supplier of molybdenum-99 to the Nuclear Medicine community for over 25 years.

MDS Nordion has a unique base of technical expertise and production capabilities. State-of-the-art facilities provide a reliable supply of isotopes to customers around the world. Our strong focus on customer service and quality has made us a world leader.

Process Data

Nuclear Reaction

^{235}U (n,f)

Product Specification

Chemical Form

Cat. No Mo-99-S-0.2N:*

^{99}Mo as molybdate in 0.2N \pm 0.1N NaOH solution

Cat. No Mo-99-S-2N:

^{99}Mo as molybdate in 2N \pm 0.4N NaOH solution

Cat. No Mo-99-S-0.2N NH_4NO_3 :

^{99}Mo as molybdate in 0.2 \pm 0.1N NaOH solution containing 1M NH_4NO_3

Cat. No Mo-99-S-2N NH_4NO_3 :

^{99}Mo as molybdate in 2N \pm 0.4N NaOH solution containing 1M NH_4NO_3

Specific Activity

No carrier added

(\geq 185,000 GBq/g at calibration time)

Radionuclidic Purity

Gamma: $^{131}\text{I} \leq 5 \times 10^{-2}$ MBq/GBq ^{99}Mo
 $^{103}\text{Ru} \leq 5 \times 10^{-2}$ MBq/GBq ^{99}Mo

Beta: $^{89}\text{Sr} \leq 6 \times 10^{-4}$ MBq/GBq ^{99}Mo
 $^{90}\text{Sr} \leq 6 \times 10^{-5}$ MBq/GBq ^{99}Mo

Alpha: $\leq 1 \times 10^{-6}$ MBq/GBq ^{99}Mo

Other β,γ : $\leq 1 \times 10^{-1}$ MBq/GBq ^{99}Mo

*On request, this product may be stabilized by the addition of 2-4 mg of NaOCl/Ci ^{99}Mo at the customer's calibration time.

Packaging

HDPE Bottle

Availability

Please inquire

Product Origin

Fleurus, Belgium

World Class Delivery Service

MDS Nordion has a world class distribution system that includes a unique, software-based order management system. Carefully managed transportation logistics ensure products reach their destination on time.

Pricing

List Price – US\$1,500/Ci
(6 day/12:00ET)

Please note that the radiochemicals listed are not tested for sterility or pyrogenicity. Verification of their suitability for use in humans is the sole responsibility of the purchaser.

Molybdenum-99 Decay Table Half-Life: 66 hours

HOURS:	0	1	2	3	4	5	6	7	8	9
0	1.0000	0.9896	0.9792	0.9690	0.9589	0.9488	0.9389	0.9291	0.9194	0.9098
10	0.9003	0.8909	0.8816	0.8724	0.8633	0.8542	0.8453	0.8365	0.8278	0.8191
20	0.8105	0.8021	0.7937	0.7854	0.7772	0.7691	0.7610	0.7531	0.7452	0.7374
30	0.7297	0.7221	0.7146	0.7071	0.6997	0.6924	0.6852	0.6780	0.6709	0.6639
40	0.6570	0.6501	0.6433	0.6366	0.6300	0.6234	0.6169	0.6104	0.6040	0.5977
50	0.5915	0.5853	0.5792	0.5731	0.5672	0.5612	0.5554	0.5496	0.5438	0.5381
60	0.5325	0.5270	0.5215	0.5160	0.5106	0.5053	0.5000	0.4948	0.4896	0.4845
70	0.4794	0.4744	0.4695	0.4646	0.4597	0.4549	0.4502	0.4454	0.4408	0.4362
80	0.4316	0.4271	0.4227	0.4182	0.4139	0.4096	0.4053	0.4010	0.3968	0.3927
90	0.3886	0.3845	0.3805	0.3765	0.3726	0.3687	0.3649	0.3611	0.3573	0.3536
100	0.3499	0.3462	0.3426	0.3390	0.3355	0.3320	0.3285	0.3251	0.3217	0.3183
110	0.3150	0.3117	0.3084	0.3052	0.3020	0.2989	0.2957	0.2927	0.2896	0.2866
120	0.2836	0.2806	0.2777	0.2748	0.2719	0.2691	0.2663	0.2635	0.2607	0.2580
130	0.2553	0.2526	0.2500	0.2474	0.2448	0.2422	0.2397	0.2372	0.2347	0.2323
140	0.2299	0.2275	0.2251	0.2227	0.2204	0.2181	0.2158	0.2136	0.2113	0.2091
150	0.2069	0.2048	0.2026	0.2005	0.1984	0.1964	0.1943	0.1923	0.1903	0.1883
160	0.1863	0.1844	0.1824	0.1805	0.1786	0.1768	0.1749	0.1731	0.1713	0.1695
170	0.1677	0.1660	0.1642	0.1625	0.1608	0.1592	0.1575	0.1558	0.1542	0.1526
180	0.1510	0.1494	0.1479	0.1463	0.1448	0.1433	0.1418	0.1403	0.1388	0.1374
190	0.1360	0.1345	0.1331	0.1317	0.1304	0.1290	0.1277	0.1263	0.1250	0.1237

The half-life values stated are as of time of publication. MDS Nordion values may vary.

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