

Y-90 Fact Sheet

Yttrium-90 Radiochemical Yttrium Chloride Solution

Yttrium (Y-90) Chloride

Half-Life: 64.1 hours

Yttrium-90 Radiochemical Yttrium Chloride Solution

Yttrium-90 is a pure beta-emitter with a half-life of 64.1 hours, average energy of 0.935 and maximum of 2.284 MeV. It is produced from the liquid extraction of a strontium-90 generator.

Yttrium-90 is an ideal isotope for radiotherapy. With its high specific activity (no carrier added) and very high chemical purity, yttrium-90 chloride is suitable for the radiolabelling of radiotherapeutic agents. This makes yttrium-90 an ideal isotope for destroying tumors.

MDS Nordion has an unparalleled base of technical expertise and production capabilities. Our global distribution systems supply medical isotopes to radiopharmacies and radiopharmaceutical companies around the world. Our commitment to customer relationships, partnerships and advancing the science of nuclear medicine have made us a world leader.

Process Data

Nuclear Reaction

Fission Product $^{90}\text{Sr} \rightarrow ^{90}\text{Y}$

Product Specification

Chemical Composition

^{90}Y as YCl_3 in 0.04 N HCl solution

Specific Activity

No carrier added

Radioactive Concentration*

Low concentration 200 ± 50 mCi/mL

High concentration ≥ 500 mCi/mL

Chemical Purity*

≤ 100 $\mu\text{g}/\text{Ci}$

(Total combined Zn, Cd, Pb, Cu)

Radionuclidic Purity**

≤ 20.0 μCi of ^{90}Sr per Ci of ^{90}Y

*Stock calibration as of 1200 hr ET following day of processing.

**At expiry.

Packaging

- Octovial – plastic outer vial, glass inner V-vial (2.5 mL)
- Schott quartz lined glass vial (2 mL)

Availability

Please inquire

Product Origin

Ottawa, Canada

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.

Yttrium-90 Decay Table Half-Life: 64.1 hours

HOURS:	0	1	2	3	4	5	6	7	8	9
0	1.0000	0.9892	0.9786	0.9681	0.9577	0.9474	0.9372	0.9271	0.9171	0.9073
10	0.8975	0.8879	0.8783	0.8689	0.8595	0.8503	0.8411	0.8321	0.8231	0.8143
20	0.8055	0.7969	0.7883	0.7798	0.7714	0.7631	0.7549	0.7468	0.7388	0.7308
30	0.7230	0.7152	0.7075	0.6999	0.6924	0.6849	0.6775	0.6703	0.6630	0.6559
40	0.6489	0.6419	0.6350	0.6281	0.6214	0.6147	0.6081	0.6016	0.5951	0.5887
50	0.5824	0.5761	0.5699	0.5638	0.5577	0.5517	0.5458	0.5399	0.5341	0.5283
60	0.5227	0.5170	0.5115	0.5060	0.5005	0.4952	0.4898	0.4846	0.4794	0.4742
70	0.4691	0.4641	0.4591	0.4541	0.4492	0.4444	0.4396	0.4349	0.4302	0.4256
80	0.4210	0.4165	0.4120	0.4076	0.4032	0.3989	0.3946	0.3903	0.3861	0.3820
90	0.3779	0.3738	0.3698	0.3658	0.3619	0.3580	0.3541	0.3503	0.3466	0.3428
100	0.3391	0.3355	0.3319	0.3283	0.3248	0.3213	0.3178	0.3144	0.3110	0.3077
110	0.3044	0.3011	0.2979	0.2947	0.2915	0.2884	0.2853	0.2822	0.2792	0.2762
120	0.2732	0.2702	0.2673	0.2645	0.2616	0.2588	0.2560	0.2533	0.2505	0.2478
130	0.2452	0.2425	0.2399	0.2374	0.2348	0.2323	0.2298	0.2273	0.2249	0.2224
140	0.2201	0.2177	0.2153	0.2130	0.2107	0.2085	0.2062	0.2040	0.2018	0.1996
150	0.1975	0.1954	0.1933	0.1912	0.1891	0.1871	0.1851	0.1831	0.1811	0.1792
160	0.1773	0.1753	0.1735	0.1716	0.1698	0.1679	0.1661	0.1643	0.1626	0.1608
170	0.1591	0.1574	0.1557	0.1540	0.1524	0.1507	0.1491	0.1475	0.1459	0.1443
180	0.1428	0.1412	0.1397	0.1382	0.1367	0.1353	0.1338	0.1324	0.1309	0.1295
190	0.1281	0.1268	0.1254	0.1241	0.1227	0.1214	0.1201	0.1188	0.1175	0.1163

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

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