

## Iodine-125 Radiochemical Sodium Iodide Solution

### Sodium Iodide (I-125)

**Half-Life: 59.4 days**

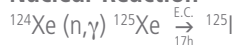
#### IODINE-125 RADIOCHEMICAL SODIUM IODIDE SOLUTION

Iodine-125 can be used for a variety of applications. A low energy gamma emitter, with a half-life of 59.4 days, iodine-125 is a versatile isotope that is generating increasing interest in diagnostic and therapeutic applications. Current applications include in vitro diagnostic kits (radioimmunoassays), as a source for bone densitometry devices, protein iodination and therapeutic seed implants used in the treatment of prostate cancer.

Nordion has an unparalleled base of technical expertise and production capabilities. State-of-the-art facilities provide a reliable supply of isotopes to customers around the world.

#### PROCESS DATA

##### Nuclear Reaction



##### Chemical Processing

Dry distillation of iodine from target into NaOH solution

##### Assay

NaI gamma spectrometry at 27.5 keV ( $k\alpha$  and  $k\beta$  Te x-rays)

#### PRODUCT SPECIFICATION

##### Chemical Form

$^{125}\text{I}$  as iodide in dilute NaOH solution

##### pH

8.0 – 11

##### Specific Activity\*

No carrier added

##### Activity Concentration\*

≥ 500 mCi/mL (high)  
250 – 500 mCi/mL (intermediate)  
100 – 250 mCi/mL (low)

##### Radiopurity\*

≥ 99.9%  
Gamma:  $^{126}\text{I} \leq 0.005\%$   
 $^{137}\text{Cs} + ^{134}\text{Cs} \leq 0.0001\%$

##### Iodates

≤ 2%

\*Activity and radiopurity specifications are at customer's calibration time.

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.

#### PACKAGING

- Square glass bottle with octagonal screw cap (15 mL)
- Octovial – plastic outer vial, glass inner V-vial (1.5 mL, 2.5 mL)
- Microvial (5 mL)  
(Other vial options are available).

#### AVAILABILITY

Dispensed daily

#### PRODUCT ORIGIN

Ottawa, Canada

#### WORLD CLASS DELIVERY SERVICE

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.



## Iodine-125 Decay Table Half-Life: 59.4 days

DAYS	0	1	2	3	4	5	6	7	8	9
0	1.0000	0.9884	0.9769	0.9656	0.9544	0.9433	0.9324	0.9216	0.9109	0.9003
10	0.8899	0.8795	0.8693	0.8592	0.8493	0.8394	0.8297	0.8201	0.8105	0.8011
20	0.7919	0.7827	0.7736	0.7646	0.7557	0.7470	0.7383	0.7297	0.7213	0.7129
30	0.7046	0.6965	0.6884	0.6804	0.6725	0.6647	0.6570	0.6494	0.6418	0.6344
40	0.6270	0.6198	0.6126	0.6055	0.5984	0.5915	0.5846	0.5778	0.5711	0.5645
50	0.5580	0.5515	0.5451	0.5388	0.5325	0.5263	0.5202	0.5142	0.5082	0.5023
60	0.4965	0.4908	0.4851	0.4794	0.4739	0.4684	0.4629	0.4576	0.4523	0.4470
70	0.4418	0.4367	0.4316	0.4266	0.4217	0.4168	0.4119	0.4072	0.4024	0.3978
80	0.3932	0.3886	0.3841	0.3796	0.3752	0.3709	0.3666	0.3623	0.3581	0.3540
90	0.3499	0.3458	0.3418	0.3378	0.3339	0.3300	0.3262	0.3224	0.3187	0.3150
100	0.3113	0.3077	0.3041	0.3006	0.2971	0.2937	0.2903	0.2869	0.2836	0.2803
110	0.2770	0.2738	0.2706	0.2675	0.2644	0.2613	0.2583	0.2553	0.2523	0.2494
120	0.2465	0.2437	0.2408	0.2380	0.2353	0.2326	0.2299	0.2272	0.2246	0.2219
130	0.2194	0.2168	0.2143	0.2118	0.2094	0.2069	0.2045	0.2022	0.1998	0.1975
140	0.1952	0.1929	0.1907	0.1885	0.1863	0.1841	0.1820	0.1799	0.1778	0.1757
150	0.1737	0.1717	0.1697	0.1677	0.1658	0.1639	0.1620	0.1601	0.1582	0.1564
160	0.1546	0.1528	0.1510	0.1493	0.1475	0.1458	0.1441	0.1425	0.1408	0.1392
170	0.1376	0.1360	0.1344	0.1328	0.1313	0.1298	0.1283	0.1268	0.1253	0.1238
180	0.1224	0.1210	0.1196	0.1182	0.1168	0.1155	0.1141	0.1128	0.1115	0.1102
190	0.1089	0.1077	0.1064	0.1052	0.1040	0.1027	0.1016	0.1004	0.0992	0.0981

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

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