

## Iodine-131 (n, gamma) Radiochemical Sodium Iodide Solution

### Sodium Iodide (I-131)

**Half-Life: 8.02 days**

### IODINE-131 (N, GAMMA) RADIO-CHEMICAL SODIUM IODIDE SOLUTION

N-gamma iodine-131 is produced by the irradiation of tellurium-130 in a nuclear reactor.

Iodine-131, with a half-life of 8.02 days, is used for a variety of applications. These include diagnostic and therapeutic thyroid applications (in either a solution or capsule form), industrial tracers, and various research applications such as antibody labelling. Iodine-131 is also used to label antibodies for therapeutic applications in the treatment of cancers.

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 activated target into alkaline solution

#### Assay

High resolution gamma spectrometry at 364 keV

### PRODUCT SPECIFICATION

#### Chemical Form

$^{131}\text{I}$  as iodide in NaOH solution containing 0.02 M  $\text{Na}_2\text{SO}_4$

#### pH

9.0 – 12

#### Specific Activity\*

No carrier added

#### Activity Concentration\*

≥ 1000 mCi/mL (high concentration)  
200 – 1000 mCi/mL (low concentration)

#### Radiopurity\*

≥ 99.9%  
Gamma:  $^{130}\text{I} \leq 0.1\%$

#### Iodates

≤ 2%

#### Heavy Metals

Te ≤ 1 µg/mL

\*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

- Kontes vial – crimp cap glass V-vial (1 mL, 2 mL, 3 mL, 5 mL)
- Square glass bottle with octagonal screw cap (15 mL, 30 mL)
- Hypovial – crimp cap glass vial with septum (6 mL, 30 mL)
- Octovial (1.5 mL, 2.5 mL)  
(Other vial options may be 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-131 Decay Table Half-Life: 8.02 days

HOURS	0	4	8	12	16	20	24	28	32	36	40	44
0	1.0000	0.9857	0.9716	0.9577	0.9440	0.9305	0.9172	0.9041	0.8912	0.8784	0.8658	0.8535
2	0.8413	0.8292	0.8174	0.8057	0.7942	0.7828	0.7716	0.7606	0.7497	0.7390	0.7284	0.7180
4	0.7077	0.6976	0.6876	0.6778	0.6681	0.6585	0.6491	0.6398	0.6307	0.6217	0.6128	0.6040
6	0.5954	0.5869	0.5785	0.5702	0.5620	0.5540	0.5461	0.5383	0.5306	0.5230	0.5155	0.5081
8	0.5009	0.4937	0.4866	0.4797	0.4728	0.4661	0.4594	0.4528	0.4463	0.4400	0.4337	0.4275
10	0.4214	0.4153	0.4094	0.4035	0.3978	0.3921	0.3865	0.3809	0.3755	0.3701	0.3648	0.3596
12	0.3545	0.3494	0.3444	0.3395	0.3346	0.3298	0.3251	0.3205	0.3159	0.3114	0.3069	0.3025
14	0.2982	0.2939	0.2897	0.2856	0.2815	0.2775	0.2735	0.2696	0.2657	0.2619	0.2582	0.2545
16	0.2509	0.2473	0.2437	0.2403	0.2368	0.2334	0.2301	0.2268	0.2236	0.2204	0.2172	0.2141
18	0.2110	0.2080	0.2050	0.2021	0.1992	0.1964	0.1936	0.1908	0.1881	0.1854	0.1827	0.1801
20	0.1775	0.1750	0.1725	0.1700	0.1676	0.1652	0.1628	0.1605	0.1582	0.1560	0.1537	0.1515
22	0.1494	0.1472	0.1451	0.1430	0.1410	0.1390	0.1370	0.1350	0.1331	0.1312	0.1293	0.1275
24	0.1256	0.1239	0.1221	0.1203	0.1186	0.1169	0.1152	0.1136	0.1120	0.1104	0.1088	0.1072
26	0.1057	0.1042	0.1027	0.1012	0.0998	0.0984	0.0970	0.0956	0.0942	0.0929	0.0915	0.0902
28	0.0889	0.0877	0.0864	0.0852	0.0839	0.0827	0.0816	0.0804	0.0792	0.0781	0.0770	0.0759
30	0.0748	0.0737	0.0727	0.0716	0.0706	0.0696	0.0686	0.0676	0.0667	0.0657	0.0648	0.0638
32	0.0629	0.0620	0.0611	0.0603	0.0594	0.0586	0.0577	0.0569	0.0561	0.0553	0.0545	0.0537
34	0.0529	0.0522	0.0514	0.0507	0.0500	0.0493	0.0486	0.0479	0.0472	0.0465	0.0458	0.0452
36	0.0445	0.0439	0.0433	0.0427	0.0420	0.0414	0.0409	0.0403	0.0397	0.0391	0.0386	0.0380
38	0.0375	0.0369	0.0364	0.0359	0.0354	0.0349	0.0344	0.0339	0.0334	0.0329	0.0324	0.0320

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

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