

# Re-186 Fact Sheet

## Rhenium-186 Radiochemical Sodium Perrhenate Solution

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Half-life: 3.72 days

### Rhenium-186 Radiochemical Sodium Perrhenate Solution

Rhenium-186 has several current and potential applications. Although many are still in the investigative stages, they include pain palliation from cancerous metastases in bones, as well as antibody labeling for targeted radiotherapy. The moderate half-life of rhenium-186 and a chemistry that is analogous to technetium-99m make it an appropriate choice for radiolabeling. Rhenium-186 also emits gamma radiation that enables diagnostic imaging of tissue. The radioactive half-life of rhenium-186 complements the biological half-life of antibodies, approximately four days.

### Process Data

#### Nuclear Reaction

$^{185}\text{Re} (n, \gamma) ^{186}\text{Re}$

#### Chemical Processing

Dissolution of Re metal target

#### Assay

High resolution gamma spectroscopy

### Product Specification

#### Chemical Composition

$^{186}\text{Re}$  as perrhenate diluted with 0.9% saline

#### Specific Activity\*

$\geq 500$  mCi/mg

#### Activity Concentration\*

$\geq 50$  mCi/mL

#### Radionuclidic Purity

$\geq 99\%$

#### pH

4.5 – 7

#### H<sub>2</sub>O<sub>2</sub>

$\leq 10$  ppm

#### Radiochemical Purity

$\geq 95\%$  as perrhenate

\*Activity concentration and effective specific activity are at five days post production.

### Packaging

Please inquire

### Availability

Please inquire

### Product Origin

Please inquire

### 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.

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.

## Rhenium-186 Decay Table Half-Life: 3.72 days

HOURS:	0	1	2	3	4	5	6	7	8	9
0	1.0000	0.9923	0.9846	0.9770	0.9694	0.9619	0.9545	0.9471	0.9398	0.9325
10	0.9253	0.9182	0.9111	0.9040	0.8970	0.8901	0.8832	0.8764	0.8696	0.8629
20	0.8562	0.8496	0.8430	0.8365	0.8300	0.8236	0.8172	0.8109	0.8047	0.7984
30	0.7923	0.7861	0.7801	0.7740	0.7680	0.7621	0.7562	0.7504	0.7446	0.7388
40	0.7331	0.7274	0.7218	0.7162	0.7107	0.7052	0.6997	0.6943	0.6890	0.6836
50	0.6783	0.6731	0.6679	0.6627	0.6576	0.6525	0.6475	0.6425	0.6375	0.6326
60	0.6277	0.6228	0.6180	0.6132	0.6085	0.6038	0.5991	0.5945	0.5899	0.5853
70	0.5808	0.5763	0.5719	0.5674	0.5630	0.5587	0.5544	0.5501	0.5458	0.5416
80	0.5374	0.5333	0.5291	0.5251	0.5210	0.5170	0.5130	0.5090	0.5051	0.5012
90	0.4973	0.4934	0.4896	0.4858	0.4821	0.4784	0.4747	0.4710	0.4674	0.4637
100	0.4602	0.4566	0.4531	0.4496	0.4461	0.4426	0.4392	0.4358	0.4324	0.4291
110	0.4258	0.4225	0.4192	0.4160	0.4128	0.4096	0.4064	0.4033	0.4001	0.3971
120	0.3940	0.3909	0.3879	0.3849	0.3819	0.3790	0.3761	0.3731	0.3703	0.3674
130	0.3646	0.3617	0.3589	0.3562	0.3534	0.3507	0.3480	0.3453	0.3426	0.3400
140	0.3373	0.3347	0.3321	0.3296	0.3270	0.3245	0.3220	0.3195	0.3170	0.3146
150	0.3121	0.3097	0.3073	0.3050	0.3026	0.3003	0.2979	0.2956	0.2933	0.2911
160	0.2888	0.2866	0.2844	0.2822	0.2800	0.2778	0.2757	0.2736	0.2714	0.2693
170	0.2673	0.2652	0.2631	0.2611	0.2591	0.2571	0.2551	0.2531	0.2512	0.2492
180	0.2473	0.2454	0.2435	0.2416	0.2397	0.2379	0.2360	0.2342	0.2324	0.2306
190	0.2288	0.2271	0.2253	0.2236	0.2218	0.2201	0.2184	0.2167	0.2151	0.2134

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

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