

# Xe-133 Fact Sheet

## Xenon-133 Fission Radiochemical Xenon Gas

Xenon (Xe-133) (fission)

Half-Life: 5.243 days

### Xenon-133 Fission Radiochemical Xenon Gas

Xenon-133 is a radioisotope used in the manufacturing of xenon-133 radiopharmaceuticals which are widely used in Nuclear Medicine mainly for lung ventilation studies.

MDS 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. Our strong focus on customer service and quality has made us a world leader.

### Process Data

#### Nuclear Reaction

$^{235}\text{U} (n, f)$

### Product Specification

#### Chemical Form

$^{133}\text{Xe}$  gas

#### Specific Activity

Carrier added

#### Radiopurity

$^{131\text{m}}\text{Xe} \leq 1\%$

$^{133\text{m}}\text{Xe} \leq 0.6\%$

$^{133}\text{Xe} + ^{131\text{m}}\text{Xe} + ^{133\text{m}}\text{Xe} \geq 99.9\%$

### Packaging

- Flame sealed break-seal glass ampoule (2 mL)
- Sabine metal gas cylinder (50 mL, 150 mL)
- Hoke metal gas cylinder (10 mL)

### 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.

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.

## Xenon-133 Decay Table Half-Life: 5.243 days

	HOURS:	0	2	4	6	8	10	12	14	16	18	20	22
	0	1.0000	0.9890	0.9782	0.9675	0.9569	0.9464	0.9360	0.9258	0.9156	0.9056	0.8957	0.8859
	1	0.8762	0.8666	0.8571	0.8477	0.8384	0.8292	0.8201	0.8111	0.8022	0.7935	0.7848	0.7762
	2	0.7677	0.7592	0.7509	0.7427	0.7346	0.7265	0.7186	0.7107	0.7029	0.6952	0.6876	0.6800
	3	0.6726	0.6652	0.6579	0.6507	0.6436	0.6365	0.6296	0.6227	0.6159	0.6091	0.6024	0.5958
	4	0.5893	0.5828	0.5765	0.5701	0.5639	0.5577	0.5516	0.5456	0.5396	0.5337	0.5278	0.5220
	5	0.5163	0.5107	0.5051	0.4995	0.4941	0.4886	0.4833	0.4780	0.4728	0.4676	0.4625	0.4574
	6	0.4524	0.4474	0.4425	0.4377	0.4329	0.4281	0.4234	0.4188	0.4142	0.4097	0.4052	0.4008
	7	0.3964	0.3920	0.3877	0.3835	0.3793	0.3751	0.3710	0.3669	0.3629	0.3589	0.3550	0.3511
	8	0.3473	0.3435	0.3397	0.3360	0.3323	0.3287	0.3251	0.3215	0.3180	0.3145	0.3110	0.3076
DAYS	9	0.3043	0.3009	0.2976	0.2944	0.2912	0.2880	0.2848	0.2817	0.2786	0.2755	0.2725	0.2695
	10	0.2666	0.2637	0.2608	0.2579	0.2551	0.2523	0.2495	0.2468	0.2441	0.2414	0.2388	0.2362
	11	0.2336	0.2310	0.2285	0.2260	0.2235	0.2211	0.2186	0.2162	0.2139	0.2115	0.2092	0.2069
	12	0.2046	0.2024	0.2002	0.1980	0.1958	0.1937	0.1916	0.1895	0.1874	0.1853	0.1833	0.1813
	13	0.1793	0.1773	0.1754	0.1735	0.1716	0.1697	0.1678	0.1660	0.1642	0.1624	0.1606	0.1588
	14	0.1571	0.1554	0.1537	0.1520	0.1503	0.1487	0.1471	0.1454	0.1438	0.1423	0.1407	0.1392
	15	0.1376	0.1361	0.1346	0.1332	0.1317	0.1303	0.1288	0.1274	0.1260	0.1247	0.1233	0.1219
	16	0.1206	0.1193	0.1180	0.1167	0.1154	0.1141	0.1129	0.1116	0.1104	0.1092	0.1080	0.1068
	17	0.1057	0.1045	0.1034	0.1022	0.1011	0.1000	0.0989	0.0978	0.0968	0.0957	0.0946	0.0936
	18	0.0926	0.0916	0.0906	0.0896	0.0886	0.0876	0.0867	0.0857	0.0848	0.0838	0.0829	0.0820
	19	0.0811	0.0802	0.0793	0.0785	0.0776	0.0768	0.0759	0.0751	0.0743	0.0735	0.0727	0.0719

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

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