

Isotope ^(b)	Natural abundance ^(c)	Magnetic moment ^(d)	Magnetogyric ratio ^(d)	NMR frequency ^(e)	Standard	Relative receptivity ^(f)	
	C/%	μ/μ_N	$\gamma/10^7 \text{ rad T}^{-1} \text{ s}^{-1}$	Ξ/MHz		D ^p	D ^c
¹ H	99.985	4.83724	— 26.7519	100.000 000	Me ₄ Si	1.000	5.67 × 10 ³
³ H ^(a)	—	5.1596	28.535	(106.664)	Me ₄ Si-t	—	—
³ He	1.3 × 10 ⁻⁴	-3.6851	-20.380	(76.182)	—	5.75 × 10 ⁻⁷	3.26 × 10 ⁻³
¹³ C	1.108	1.2166	6.7283	25.145 004	Me ₄ Si	1.76 × 10 ⁻⁴	1.00
¹⁵ N	0.37	-0.4903	-2.712	10.136 783	MeNO ₂ or [NO ₃] ⁻	3.85 × 10 ⁻⁶	2.19 × 10 ⁻²
¹⁹ F	100	4.5532	25.181	94.094 003 ^(f)	CCl ₃ F	0.834	4.73 × 10 ³
²⁹ Si	4.70	-0.96174	-5.3188	19.867 184	Me ₄ Si	3.69 × 10 ⁻⁴	2.10
³¹ P	100	1.9602	10.841	40.480 737	85% H ₃ PO ₄	0.0665	3.77 × 10 ²
⁵⁷ Fe	2.19	0.1566	0.8661	(3.238)	Fe(CO) ₅	7.43 × 10 ⁻⁷	4.22 × 10 ⁻³
⁷⁷ Se	7.58	0.925	5.12	19.071 523	Me ₂ Se	5.30 × 10 ⁻⁴	3.01
⁸⁹ Y	100	-0.23786	-1.3155	(4.917)	Y(NO ₃) ₃ aq.	1.19 × 10 ⁻⁴	0.675
¹⁰³ Rh	100	-0.153	-0.846	3.172 310	mer-[RhCl ₃ (SMe ₂) ₃]	3.16 × 10 ⁻⁵	0.179
(¹⁰⁷ Ag)	51.82	-0.1966	-1.087	4.047 897	Ag ⁺ aq.	3.48 × 10 ⁻⁵	0.197
¹⁰⁹ Ag	48.18	-0.2260	-1.250	4.653 623			
(¹¹¹ Cd)	12.75	-1.0293	-5.6926	21.215 478	CdMe ₂	1.23 × 10 ⁻³	6.97
¹¹³ Cd ^(h)	12.26	-1.0768	-5.9550	22.193 173			
(¹¹⁵ Sn)	0.35	-1.590	-8.792	(32.86)	Me ₄ Sn	1.24 × 10 ⁻⁴	0.705
(¹¹⁷ Sn)	7.61	-1.732	-9.578	35.632 295			
¹¹⁹ Sn	8.58	-1.8119	-10.021	37.290 662			
(¹²³ Te ^(h))	0.87	-1.275	-7.049	(26.35)	Me ₂ Te	1.59 × 10 ⁻⁴	0.903
¹²⁵ Te	6.99	-1.537	-8.498	31.549 802			
¹²⁹ Xe	26.44	-1.345	-7.441	(27.81)	XeOF ₄	5.69 × 10 ⁻³	32.3
¹⁶⁹ Tm	100	-0.400	-2.21	(8.27)			
¹⁷¹ Yb	14.31	0.8520	4.712	(17.61)	—	5.66 × 10 ⁻⁴	3.21
¹⁸³ W	14.40	0.2025	1.120	4.161 733	—	7.82 × 10 ⁻⁴	4.44
¹⁸⁷ Os	1.64	0.111	0.616	2.282 343	WF ₆	1.06 × 10 ⁻⁵	5.99 × 10 ⁻²
¹⁹⁵ Pt	33.8	1.043	5.768	21.414 376	OsO ₄	2.00 × 10 ⁻⁷	1.14 × 10 ⁻³
¹⁹⁹ Hg	16.84	0.87072	4.8154	17.910 841	[Pt(CN) ₆] ²⁻	3.39 × 10 ⁻³	19.2
(²⁰³ Tl)	29.50	2.7912	15.436	(57.70)	Me ₂ Hg	9.82 × 10 ⁻⁴	5.57
²⁰⁵ Tl	70.50	2.8187	15.589	57.633 833	TlNO ₃ aq.	0.0567	3.22 × 10 ²
²⁰⁷ Pb	22.6	1.002	5.540	20.920 597	Me ₄ Pb	0.140	7.91 × 10 ²
						2.01 × 10 ⁻³	11.4

(a) A complete list, excluding most radioactive nuclei.

(b) Nuclei in brackets are considered to be not the most favourable for the element concerned.

(c) Data from *Handbook of Chemistry and Physics*, 55th edition, CRC Press (1974-5), pages B248-332, except for the value for ¹³C (which is taken from page E69).

(d) Data derived from the compilation of G. H. Fuller, *J. Phys. Chem. Ref. Data* 5, 835 (1976), which lists values of $\mu_{\text{max}} = \gamma \hbar I$, corrected for diamagnetic shielding.

- (e) Resonance frequency in a magnetic field such that the protons of TMS resonate at exactly 100 MHz. The values quoted are for the resonances of the standards listed in the next column and are taken (except where otherwise stated) from *NMR and the Periodic Table*, Eds R. K. Harris & B. E. Mann, Academic Press (1978). Values in brackets are calculated from the magnetogyric ratios given in the preceding column, and are therefore relative to the resonant frequency of bare protons.
- (f) D^P is the receptivity relative to that of ^1H whereas D^C is relative to ^{13}C (see Section 3-6 and Eqn 5-30).
- (g) Radioactive (half-life 12 y)
- (h) Long-lived radioactive isotope
- (i) S. Brownstein & J. Bornais, *J. Magn. Reson.* **38**, 131 (1980).

Isotope ^(b)	Spin ^(c)	Natural	Magnetic	Magnetogyric	Quadruple	NMR	Linewidth	Relative receptivity ^(b)	
		abundance ^(d) C/%	moment ^(c) μ/μ_N	ratio ^(c) $\gamma/10^7$ $\text{rad T}^{-1} \text{s}^{-1}$	moment ^(c,e) 10^{28} Q/m^2	frequency ^(f) E/MHz	factor ^(g) 10^{56} E/m^4	D^p	D^c
² H ⁽ⁱ⁾	1	0.015	1.2126	4.1066	2.8×10^{-3}	15.351	3.9×10^{-5}	1.45×10^{-6}	8.21×10^{-3}
⁶ Li	1	7.42	1.1625	3.9371	-8×10^{-4}	14.717	3.2×10^{-6}	6.31×10^{-4}	3.58
⁷ Li	1	92.58	4.20394	10.3975	-4×10^{-2}	38.866	2.1×10^{-3}	0.272	1.54×10^3
⁹ Be	1	100	-1.52008	-3.75958	5×10^{-2}	14.054	3.3×10^{-3}	1.39×10^{-2}	78.7
¹⁰ B	3	19.58	2.0792	2.8746	8.5×10^{-2}	10.746	1.4×10^{-3}	3.93×10^{-3}	22.3
¹¹ B	3	80.42	3.4708	8.5843	4.1×10^{-2}	32.089	2.2×10^{-3}	0.133	7.52×10^2
¹⁴ N ⁽ⁱ⁾	1	99.63	0.57099	1.9338	1×10^{-2}	7.228	5.0×10^{-4}	1.00×10^{-3}	5.69
¹⁷ O	1	0.037	-2.2407	-3.6279	-2.6×10^{-2}	13.561	2.2×10^{-4}	1.08×10^{-5}	6.11×10^{-2}
²¹ Ne	1	0.257	-0.85433	-2.1130	9×10^{-2}	7.899	1.1×10^{-2}	6.33×10^{-6}	3.59×10^{-2}
²³ Na	1	100	2.86265	7.08013	0.10	26.466	1.3×10^{-2}	9.27×10^{-2}	5.26×10^2
²⁵ Mg	1	10.13	-1.012	-1.639	0.22	6.126	1.5×10^{-2}	2.72×10^{-4}	1.54
²⁷ Al	1	100	4.3084	6.9760	0.15	26.077	7.2×10^{-3}	0.207	1.17×10^3
³³ S	1	0.76	0.8308	2.055	-5.5×10^{-2}	7.681	4.0×10^{-3}	1.72×10^{-5}	9.77×10^{-2}
³⁵ Cl	1	75.53	1.0610	2.6240	-0.10	9.809	1.3×10^{-2}	3.56×10^{-3}	20.2
³⁷ Cl	1	24.47	0.88313	2.1842	-7.9×10^{-2}	8.165	8.3×10^{-3}	6.66×10^{-4}	3.78
³⁹ K	1	93.1	0.50533	1.2498	4.9×10^{-2}	4.672	3.2×10^{-3}	4.75×10^{-4}	2.69
(⁴¹ K)	1	6.88	0.27740	0.68608	6.0×10^{-2}	2.565	4.8×10^{-3}	5.80×10^{-6}	3.29×10^{-2}
⁴³ Ca	1	0.145	-1.4936	-1.8025	0.2 ⁽ⁱ⁾	6.738	5.4×10^{-3}	8.67×10^{-6}	4.92×10^{-2}
⁴⁵ Sc	1	100	5.3927	6.5081	-0.22	24.328	6.6×10^{-3}	0.302	1.72×10^3
⁴⁷ Ti	1	7.28	-0.93292	-1.5105	0.29	5.646	2.7×10^{-2}	1.53×10^{-4}	0.867
⁴⁹ Ti	1	5.51	-1.25198	-1.51093	0.24	5.648	7.8×10^{-3}	2.08×10^{-4}	1.18
(⁵⁰ V) ^(k)	1	0.24	3.6152	2.6717	$\pm 6 \times 10^{-2}$	9.987	1.4×10^{-4}	1.34×10^{-4}	0.759
⁵¹ V	1	99.76	5.8379	7.0453	-5×10^{-2}	26.336	3.4×10^{-4}	0.383	2.17×10^3
⁵³ Cr	1	9.55	-0.6113	-1.512	3×10^{-2}	5.651	1.2×10^{-3}	8.62×10^{-5}	0.489
⁵⁵ Mn	1	100	4.081	6.608	0.4	24.70	5.1×10^{-2}	0.176	9.97×10^2
⁵⁹ Co	1	100	5.234	6.317	0.38	23.61	2.0×10^{-2}	0.277	1.57×10^3
⁶¹ Ni	1	1.19	-0.9680	-2.394	0.16	8.949	3.4×10^{-2}	4.06×10^{-5}	0.231
⁶³ Cu	1	69.09	2.8696	7.0974	-0.211	26.530	5.94×10^{-2}	6.45×10^{-2}	3.66×10^2
⁶⁵ Cu	1	30.91	3.0741	7.6031	-0.195	28.421	5.07×10^{-2}	3.55×10^{-2}	2.01×10^2
⁶⁷ Zn	1	4.11	1.0356	1.6768	0.16	6.2679	8.2×10^{-3}	1.18×10^{-4}	0.670
(⁶⁹ Ga)	1	60.4	2.6007	6.4323	0.19	24.044	4.8×10^{-2}	4.19×10^{-2}	2.38×10^2
⁷¹ Ga	1	39.6	3.3046	8.1731	0.12	30.551	1.9×10^{-2}	5.65×10^{-2}	3.20×10^2
⁷³ Ge	1	7.76	-0.97197	-0.93574	-0.18	3.498	2.4×10^{-3}	1.10×10^{-4}	0.622
⁷⁵ As	1	100	1.858	4.595	0.29	17.18	0.11	2.53×10^{-2}	1.44×10^2
(⁷⁹ Br)	1	50.54	2.7182	6.7228	0.37	25.130	0.18	4.01×10^{-2}	2.28×10^2
⁸¹ Br	1	49.46	2.9300	7.2468	0.31	27.089	0.13	4.92×10^{-2}	2.79×10^2
⁸³ Kr	1	11.55	-1.073	-1.033	0.26	3.860	5.0×10^{-3}	2.19×10^{-4}	1.24
(⁸⁵ Rb)	1	72.15	1.6002	2.5909	0.26	9.685	2.2×10^{-2}	7.65×10^{-3}	43.4

