

"X" Chemical Shift Reference Compounds & Conditions

Applicable to the NMR³ High-Resolution NMR Spectrometers Only

| Isotope | Spin | Reference Compound | Conditions |
|--|---------------|------------------------------------|---|
| ¹ H | $\frac{1}{2}$ | TMS | CDCl ₃ , φ = 1 % |
| | | DSS Methyl Signal | In D ₂ O |
| ² H | 1 | (CD ₃) ₄ Si | Neat |
| ⁶ Li | 1 | LiCl | D ₂ O, 9.7 mol/kg |
| ⁷ Li | 3/2 | LiCl | D ₂ O, 9.7 mol/kg |
| ¹⁰ B | 3 | BF ₃ .Et ₂ O | CDCl ₃ , φ = 15 % |
| ¹¹ B | 3/2 | BF ₃ .Et ₂ O | CDCl ₃ , φ = 15 % |
| ¹³ C | $\frac{1}{2}$ | TMS | CDCl ₃ , φ = 1 % |
| | | DSS Methyl Signal | In D ₂ O |
| ¹⁴ N | 1 | MeNO ₂ | neat (CDCl ₃ for lock) |
| ¹⁵ N | $\frac{1}{2}$ | MeNO ₂ | neat (CDCl ₃ for lock) |
| ¹⁵ N δ(NH ₃) = -380.2 ppm | | NH ₃ (liquid) | external |
| ¹⁷ O | 5/2 | D ₂ O | neat |
| ¹⁹ F | $\frac{1}{2}$ | CCl ₃ F | - |
| ²³ Na | 3/2 | NaCl | D ₂ O, 0.1 mol/dm ³ |
| ²⁵ Mg | 5/2 | MgCl ₂ | D ₂ O, 11 mol/dm ³ |
| ²⁷ Al | 5/2 | Al(NO ₃) ₃ | D ₂ O, 1.1 mol/kg |
| ²⁹ Si | $\frac{1}{2}$ | TMS | CDCl ₃ , φ = 1 % |
| ³¹ P | $\frac{1}{2}$ | H ₃ PO ₄ | - |
| ⁵¹ V | 7/2 | VOCl ₃ | neat (C ₆ D ₆ for lock) |
| ⁷⁷ Se | $\frac{1}{2}$ | Me ₂ Se | neat (C ₆ D ₆ for lock) |
| ¹⁰⁹ Ag (& ¹⁰⁷ Ag) | $\frac{1}{2}$ | AgNO ₃ | D ₂ O saturated |
| ¹¹⁹ Sn (& ¹¹⁷ / ¹¹⁵ Sn) | $\frac{1}{2}$ | Me ₄ Sn | neat (C ₆ D ₆ for lock) |
| ¹⁹⁵ Pt | $\frac{1}{2}$ | Na ₂ PtCl ₆ | D ₂ O, 1.2 mol/dm ³ |
| ¹⁹⁹ Hg | $\frac{1}{2}$ | Me ₂ Hg | neat |
| ²⁰⁷ Pb | $\frac{1}{2}$ | Me ₄ Pb | neat (C ₆ D ₆ for lock) |