

Agilent FastMAS Probes

Data Sheet



Carbon sensitivity comparison of the FastMAS (blue) and UltraFastMAS (gold) probes, measured with glycine using 32 transients at 600 MHz.

Key Benefits

- High-resolution ¹H spectra
- Increased sensitivity per milligram
- Excellent RF performance
 with low power



 1H linewidth and sensitivity enhancement for alanine with increasing MAS. Each spectrum is two scans taken with a 900 ns $\pi/2$ pulse using only 25 W power.







The impressive ¹H sensitivity of FastMAS and UltraFastMAS probes easily support multidimensional NMR experiments. The exchange spectrum shown of ethylfumarate was collected with a 200 ms mixing time and demonstrates a simple 2D experiment, where the cross peaks represent spin exchange taking place during the mixing time.



Low power ¹H decoupling provides impressive results with FastMAS and UltraFastMAS probes. Spin exchange suppression at spinning speeds of 45 kHz or higher allow efficient decoupling using a simple 180 degrees pulse every few rotor cycles. We refer to this decoupling scheme as PIPS, an acronym for PI Pulses. This low average power sequence is easy to set up, requiring only knowledge of pulse width and spinning speed. Shown are 60 KHz ¹³C CPMAS spectra of L-alanine, 1 mg natural abundance, 512 transients without linebroadening. Comparison: MAS-only decoupling, high power CW decoupling, and low power PIPS decoupling.



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