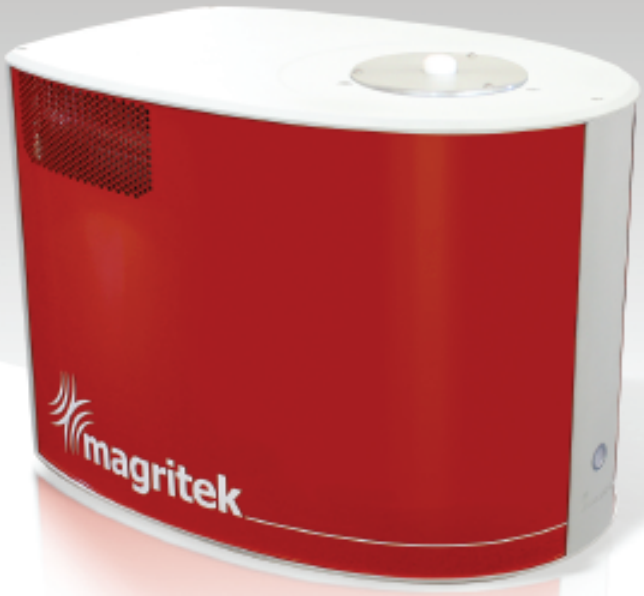

Spinsolve™

The fastest compact NMR spectrometer

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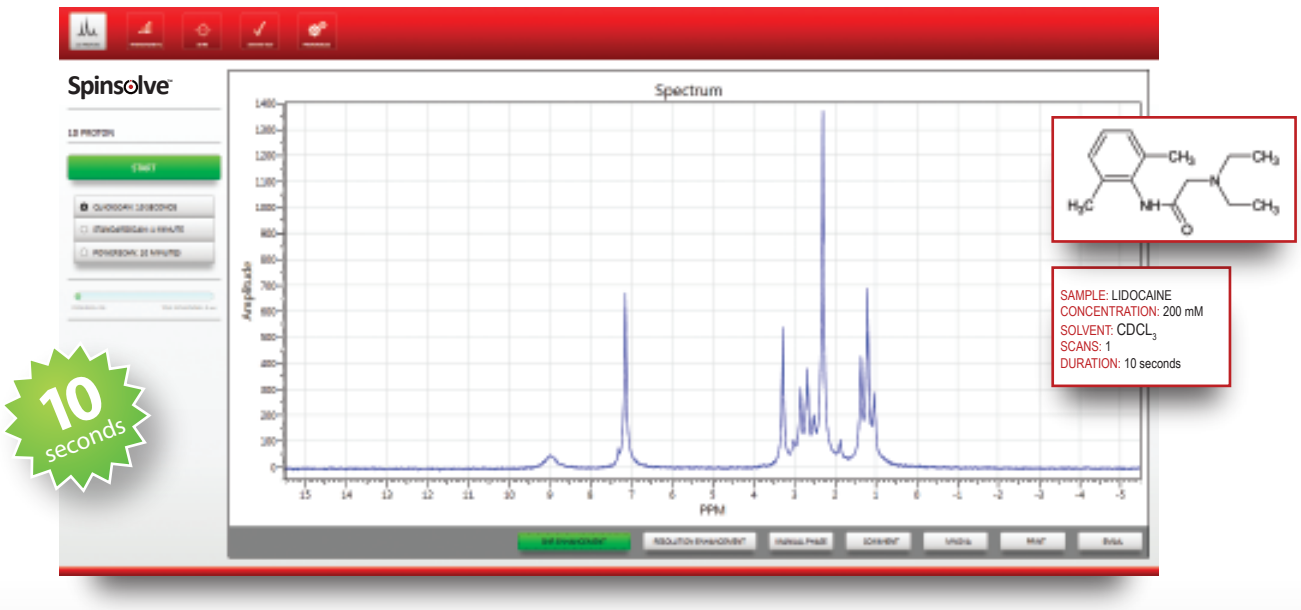
The fastest compact NMR spectrometer

Introducing the Magritek Spinsolve™ NMR Spectrometer, a revolutionary analytical instrument. For the first time chemists can measure proton NMR spectra on their bench in just a few seconds. Imagine having an NMR spectrum moments after your sample is ready, or even while a reaction is running, right there in your lab. Unlike other benchtop NMR spectrometers, the Spinsolve™ NMR spectrometer has superb sensitivity and the performance to provide useful results immediately.

Fast



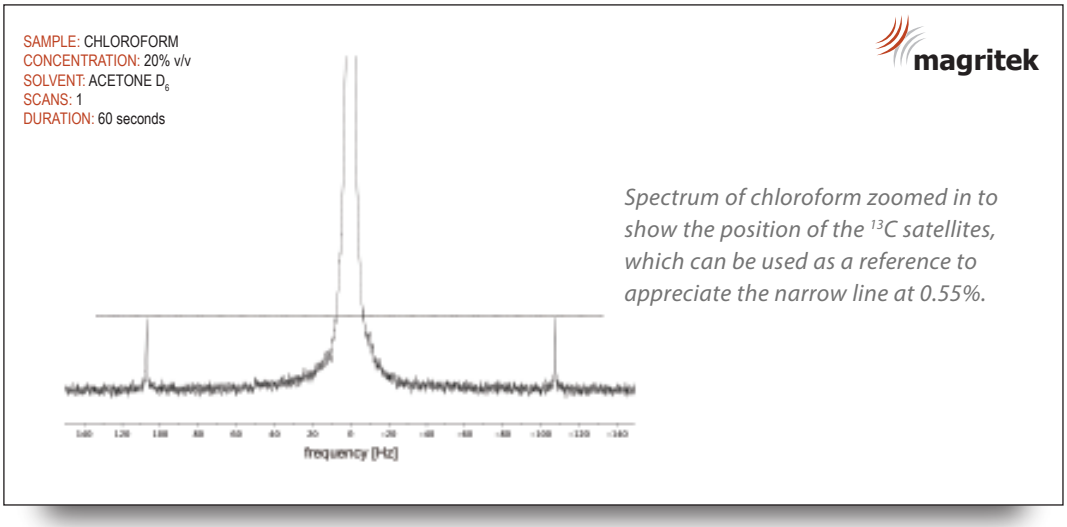
Using the Spinsolve™ NMR spectrometer, a single NMR scan is sufficient to elucidate molecular structure and quantify concentrations, for many samples. The spectrum of lidocaine, shown above, was measured in just 10 seconds. The sensitivity of an NMR instrument defines how long a measurement will take, and sets a limit for the lowest sample concentration that can be detected. With an SNR of 10:1 for a 0.1% ethylbenzene sample, the Spinsolve™ NMR spectrometer is the most sensitive benchtop NMR instrument available on the market today.

Convenient

CRYOGEN FREE

Our patented permanent magnet design enables us to provide a high performance, compact and robust instrument that can fit on a typical chemistry workbench. As it is based on permanent magnet technology it does not require the expensive cryogens used by conventional superconducting NMR magnets. Our unique design also keeps the stray magnetic field completely inside the Spinsolve™ NMR spectrometer, so there are no magnetic field safety issues when working next to the system.

High Resolution



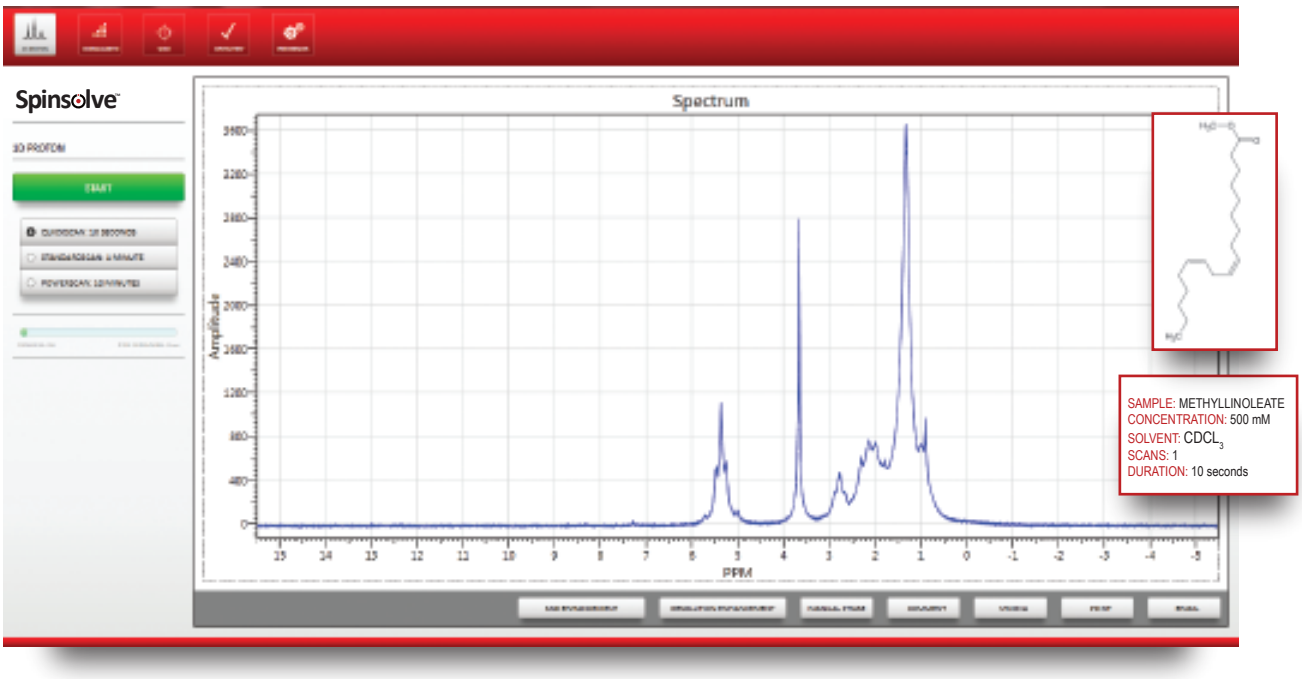
Spectrum of chloroform zoomed in to show the position of the ^{13}C satellites, which can be used as a reference to appreciate the narrow line at 0.55%.

The resolution of an NMR instrument is its power to separate the peaks of different chemical groups in the spectrum. The better the resolution, the higher the complexity of the molecules that can be characterized. The linewidth must be specified not only at half height, but also further down the peak. This is because a broad tail of a large peak can hide other peaks of interest. The Spinsolve™ NMR spectrometer specification of 40 Hz for the peak width at 0.55% is the best of any benchtop NMR system in the market today, which gives it more power to resolve and identify peaks in your NMR spectrum.

Simple and Friendly Operation

Easy-to-use
Software

The Spinsolve™ NMR spectrometer is controlled by easy-to-use software that runs on a separate PC. It has been designed to enable users to operate the system with very little training. Once the spectrum is acquired it can be viewed immediately or easily sent via email or the network to another PC for further analysis.

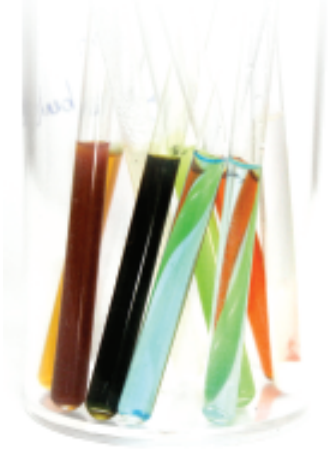


Features

- Simple, one-button operation
- Minimal user controlled parameters
- A simple intuitive graphical interface
- Automated and easy to use. Traditional NMR complexities are hidden and automated
- Includes a 1-year license for Mestrelab Mnova software for advanced data analysis capability

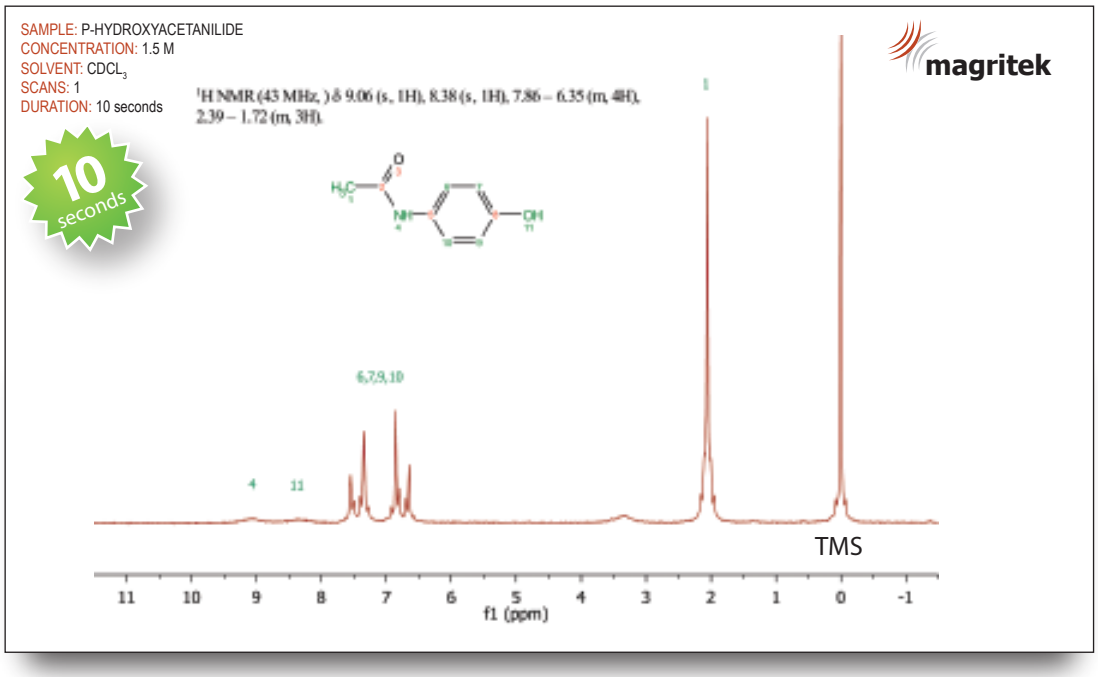
5 mm
Sample Tubes

The Spinsolve™ uses standard 5 mm OD NMR tubes, which means loading samples is fast, simple, and familiar to anyone who has used NMR before. No messing around with capillaries and syringes, which take time to use and can clog easily.



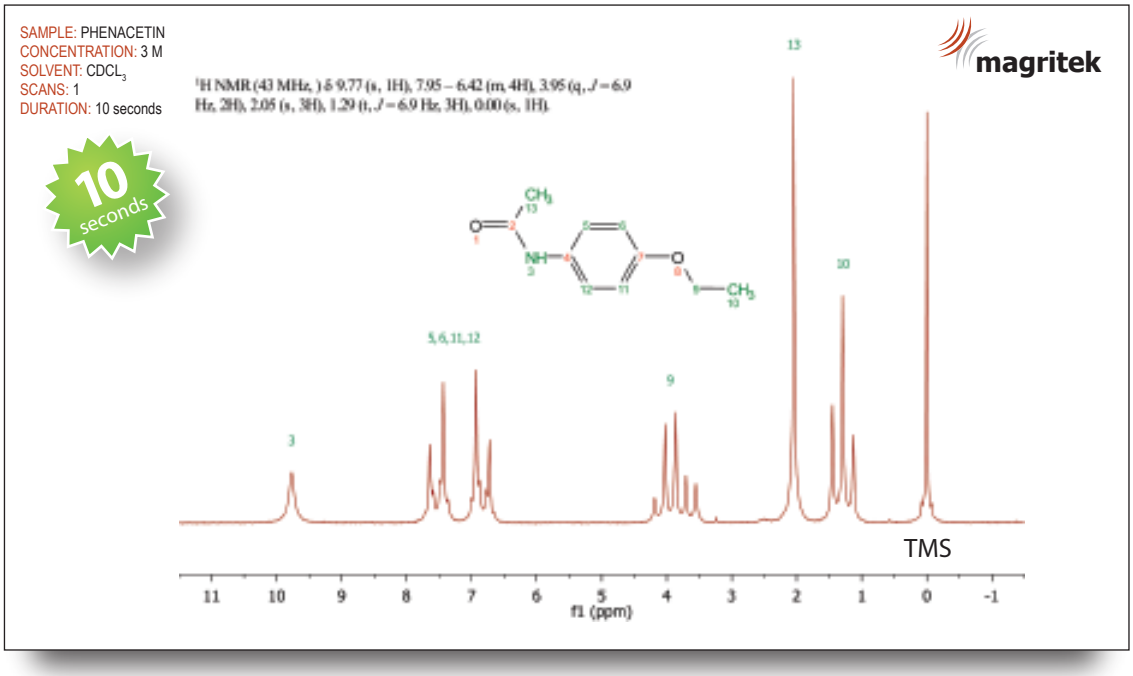
Organic
Chemistry Education

NMR is an essential component of any undergraduate chemistry course, however access to expensive and fragile NMR instruments is difficult and costly. By providing high resolution NMR in a benchtop instrument, students can learn and use NMR as part of their normal lab workflow.



"NMR for everyone, everywhere"

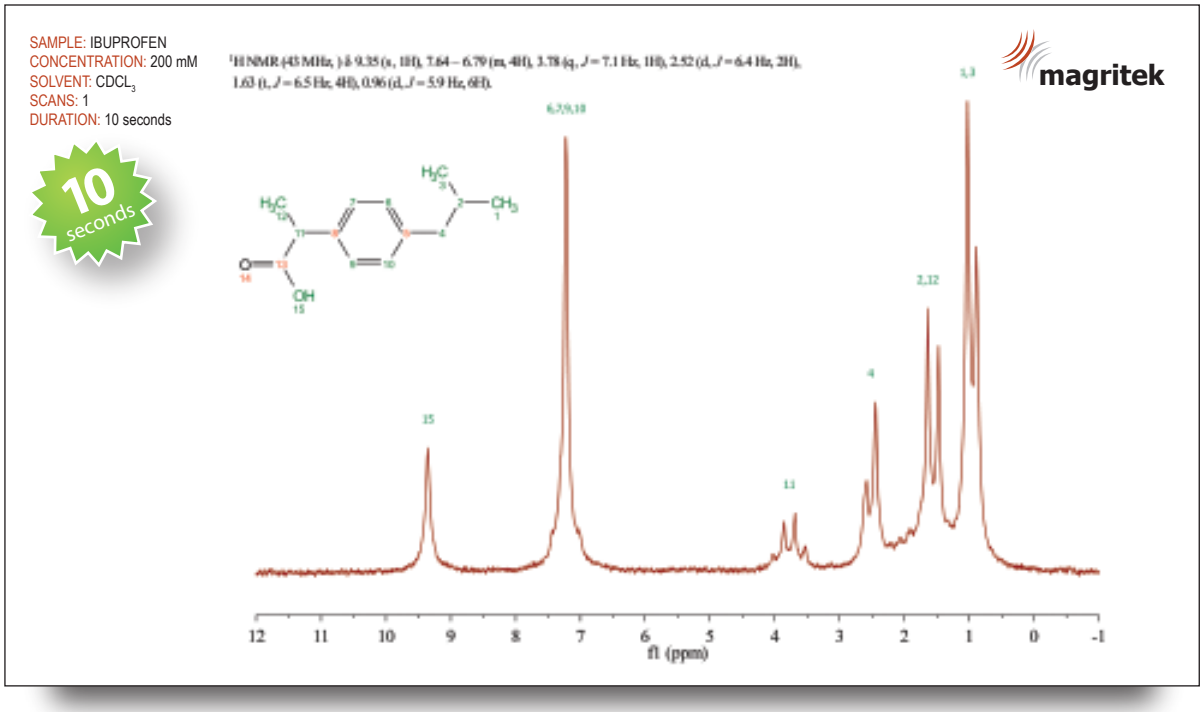
Presented here is an example of a typical student organic chemistry lab task, the preparation of phenacetin. Above, the student has prepared a sample of the intermediate p-hydroxyacetanilide and measured the NMR spectrum on the Spinsolve™ NMR spectrometer.



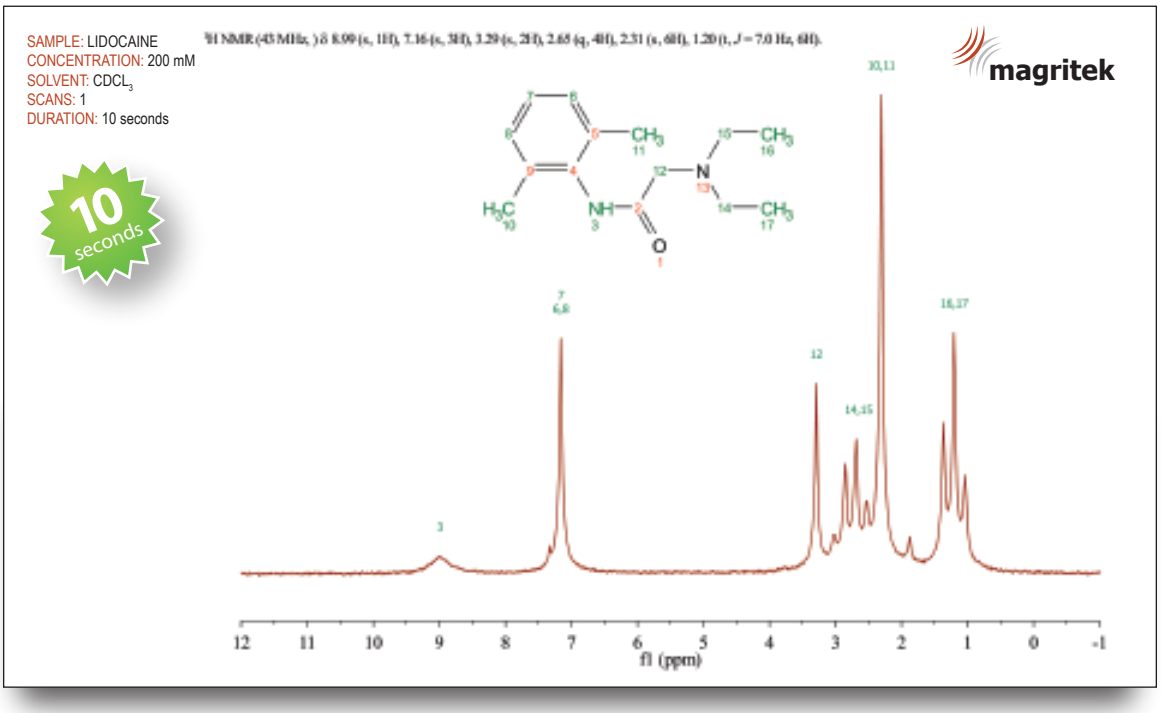
In the second spectrum the student checks if their final product is phenacetin. Note the obvious appearance of the methyl peak at 1.3 ppm and the methylene peak at 3.9 ppm, as well as the disappearance of the hydroxyl peak at 8.4 ppm.

Chemical
Molecular Analysis

Below is a selection of results, which demonstrate the suitability of the Magritek Spinsolve™ NMR spectrometer for chemical molecular analysis. These spectra were all collected with a single scan.

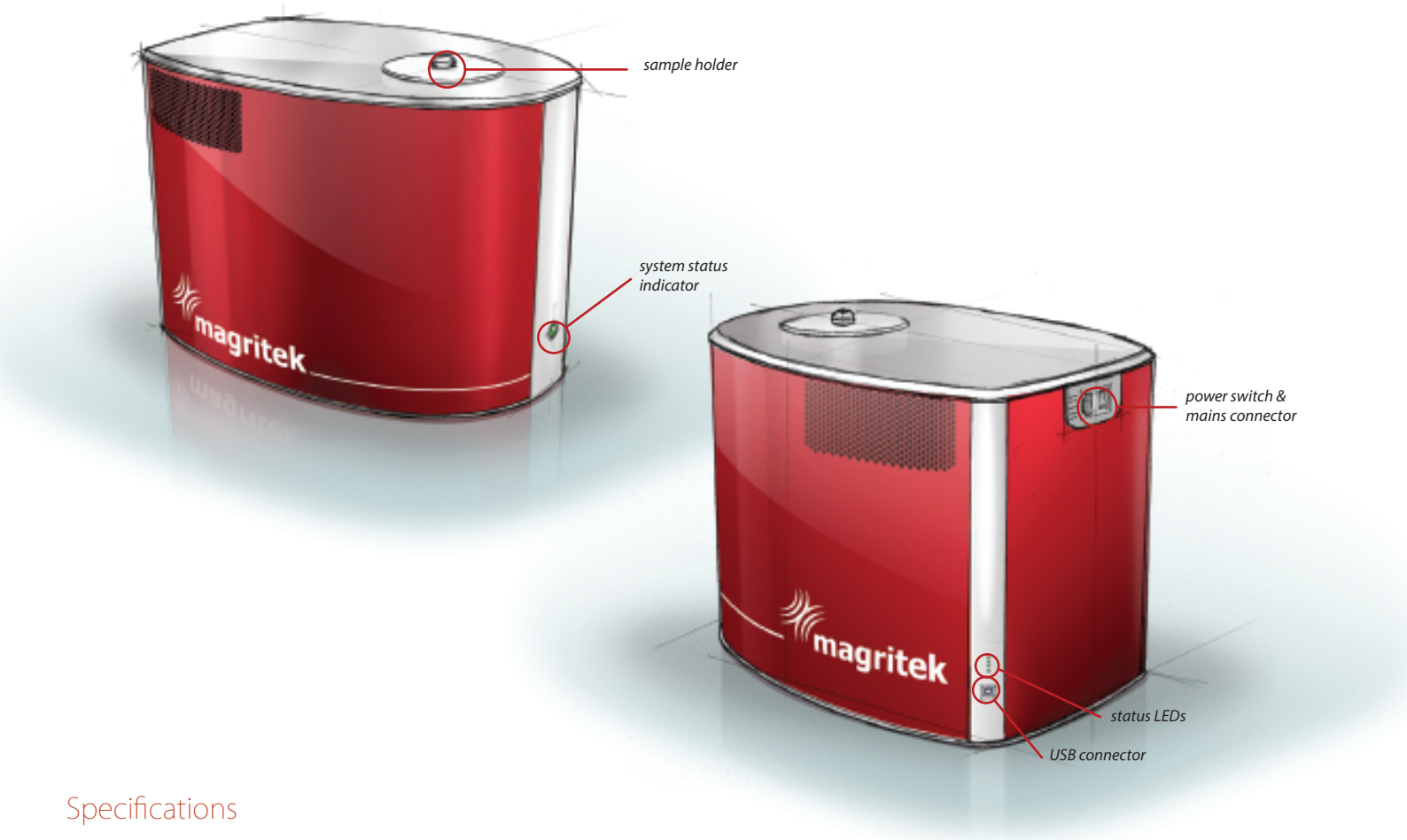


Shown here is a high resolution spectrum of 200 mM ibuprofen dissolved in d-chloroform. It was acquired in a single scan taking just 10 seconds. The lines corresponding to the different protons in the molecule have been completely assigned and the numbers are indicated in the molecule shown in the inset. The methyl peaks at 1 ppm are split by their coupling to the single proton at position 2.



Shown here is an example spectrum of a 200 mM lidocaine sample dissolved in d-chloroform and measured in just 10 seconds. All the spectral features can be observed and resolved. The methyl groups at positions 16 and 17 are resolved completely from the methyl groups at 10 and 11.

Specifications & Requirements



Specifications

Frequency:	42.5 MHz Proton
Resolution:	50% linewidth < 0.7 Hz (16ppb)
Lineshape:	0.55% linewidth < 20 Hz
Weight:	55 kg
Dimensions:	58 x 43 x 40 cm
Sensitivity:	> 10:1 for 0.1% ethylbenzene single scan
Sample:	Standard 5 mm OD NMR sample tubes, at least 7" length
Lock:	Fast automatic lock. Deuterated solvent not required
Magnet:	Permanent and cryogen free
Stray field:	< 2 G all around system

Requirements

Average room temperature: 20 - 25 ˚C.

Maximum temperature fluctuation: ± 2 ˚C

Relative room humidity: 20 - 80% and non-condensing

Mains power: 100-240 V, 50-60 Hz outlet with grounding terminal

Power consumption: 200 W max (150 W typical)

Operating system: Any PC running Windows 7 or later with USB2 port

CE compliance: Yes

The Spinsolve™ NMR spectrometer will work in almost all typical laboratory environments and is designed to sit on a normal lab bench. As with most analytical instruments it should be kept away from devices with rapidly moving parts that may cause vibrations.

Specifications subject to change without notice.

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