

 Cole-Parmer®

PICOSPIN™-45 BENCHTOP NMR SPECTROMETERS

THE POWER OF TRUE NMR IN
A COMPACT INSTRUMENT



picoSpin™-45 Benchtop NMR Spectrometers

COMPACT AND AFFORDABLE—BRINGS NMR INTO REACH

These miniature NMR spectrometers are ideal for use in laboratories, classrooms, or process facilities. Units provide powerful spectroscopy without taking up the space of other NMR spectrometers. At just 10.5 lb (4.7 kg), the picoSpin-45 can be moved from location to location with ease. This complete liquid-phase proton NMR system includes permanent magnet, transmitter, receiver, data acquisition, programmable pulse sequencer, Ethernet interface, and intuitive web-based control software.

EASY TO USE

- No need for specialized knowledge or training to operate
- Highly stable temperature-controlled permanent magnet does not require liquid cryogen
- Industry-standard data format is compatible with standard data analysis packages
- Fluid capillary cartridge is easily replaced by end-user
- Includes one-year license to Mnova NMR software



For Most Innovative
New Product



For Analytical
Instruments



For Science & Medical—
Diagnostic Aids category!



MINIMAL SAMPLE SIZE

Requires just 20 μL of liquid sample—simply inject into an internal capillary via front-panel fittings for spectral analysis

HIGH RESOLUTION

Liquid samples are analyzed with resolution of 60 ppb or better

PERFECT FOR ANY ENVIRONMENT

With no environmental or facility requirements, the picoSpin-45 NMR spectrometer can be set up in any location within your facility. At only 7"W x 5 $\frac{3}{4}$ "H x 11 $\frac{1}{2}$ "D (17.8 x 14.6 x 29.2 cm), this NMR instrument requires minimal bench space and is easily portable.

WIDE ARRAY OF APPLICATIONS

Whether you are doing routine analyses, determining the chemical consistency of a product, process control, testing for impurities in mixtures, or using NMR in an educational setting, the picoSpin provides a spectral solution for any need.

UNITS AVAILABLE TO SUIT YOUR NEEDS

Three versions of the picoSpin-45 NMR spectrometer are available to fulfill your general-use, high-temperature, and fluorine requirements. The picoSpin-45 high-temperature spectrometer operates at temperatures up to 60°C. The picoSpin-45 fluorine spectrometer is designed for those studying fluorine compounds.

**For further information,
go to ColeParmer.com
or call 800-323-4340.**

picoSpin™-45 Benchtop NMR Spectrometers

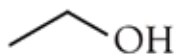
GET SPECTRA QUICKLY AND WHERE YOU NEED IT

With its highly stable temperature-controlled permanent magnet, the picoSpin-45 NMR spectrometer allows for maintenance-free operation without the need for cryogenics. Simply place on a laboratory benchtop and the unit is ready to go in just 45 minutes, with typical sample run times less than one minute. Once ready, spectra and data are easily accessible from any web browser.

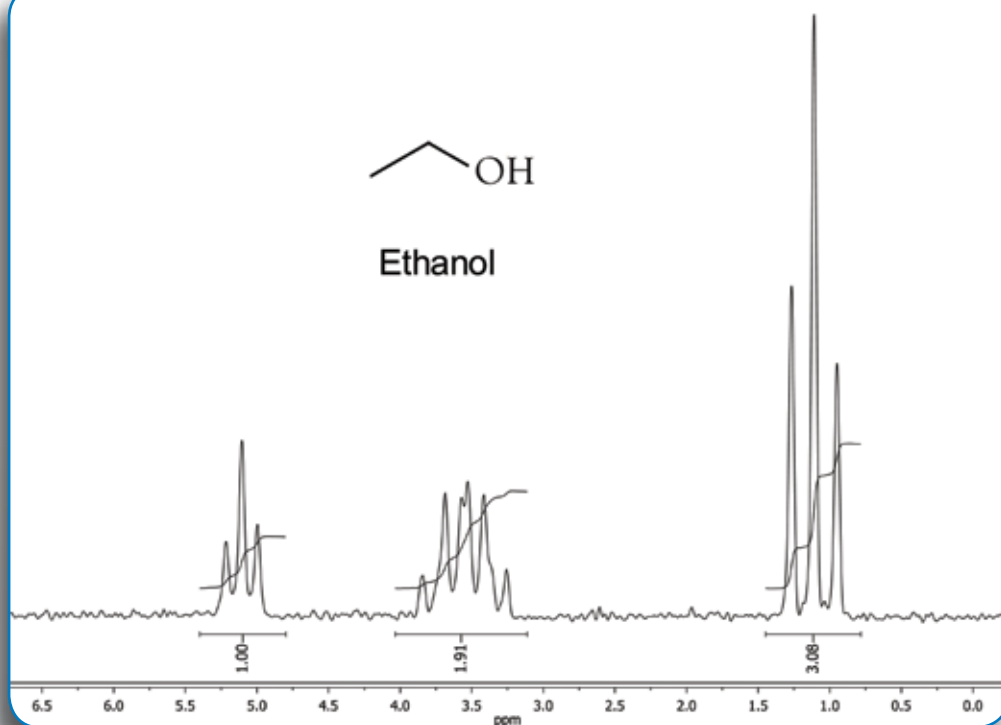
Example spectra are shown on next page.



Ethanol (16 scans)

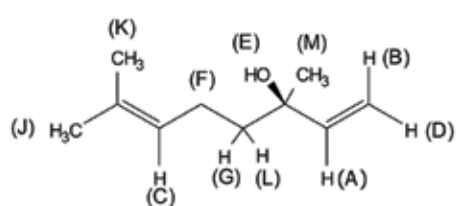


Ethanol

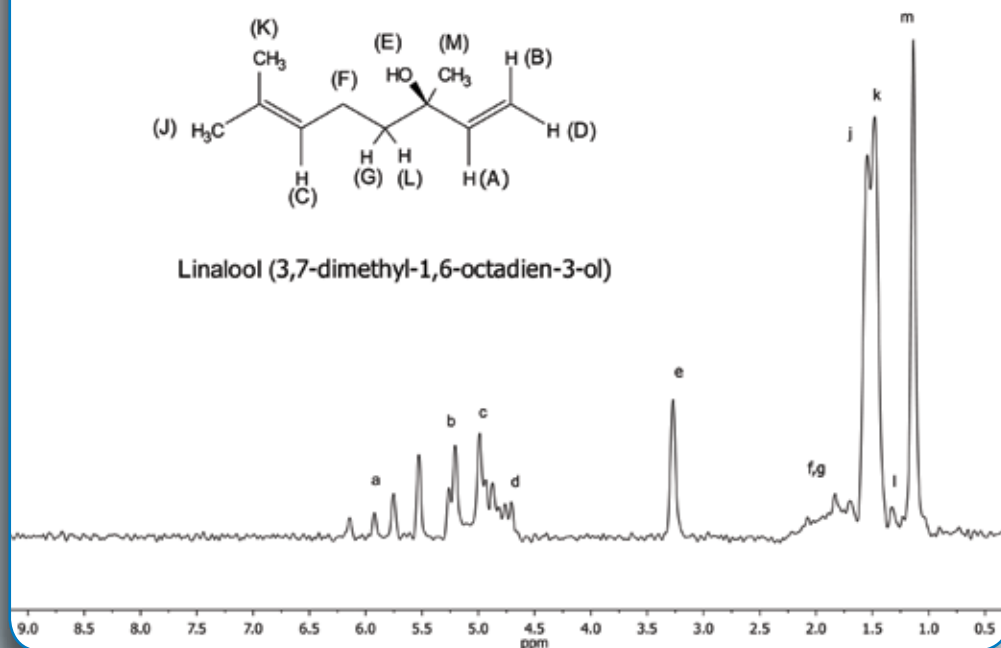


¹H NMR (44 MHz, Neat) 5.44 – 4.77 (t, J = 4.9 Hz, 1H), 4.07 – 3.03 (m, 2H), 1.49 – 0.72 (t, J = 7.0 Hz, 3H).

Linalool [3,7-dimethyl-1,6-octadien-3-ol]



Linalool (3,7-dimethyl-1,6-octadien-3-ol)



¹H NMR (44 MHz, Neat, 16 Scans) 6.40 – 5.84 (d, J = 9.7 Hz, 1H), 5.84 – 5.37 (d, J = 9.9 Hz, 1H), 5.38 – 4.90 (m, 1H), 4.93 – 4.62 (m, 1H), 3.54 – 3.09 (s, 1H), 2.25 – 1.62 (m, 4H), 1.66 – 1.36 (d, J = 3.0 Hz, 6H), 1.22 – 1.01 (s, 3H).

Please contact us for other available sample spectra.

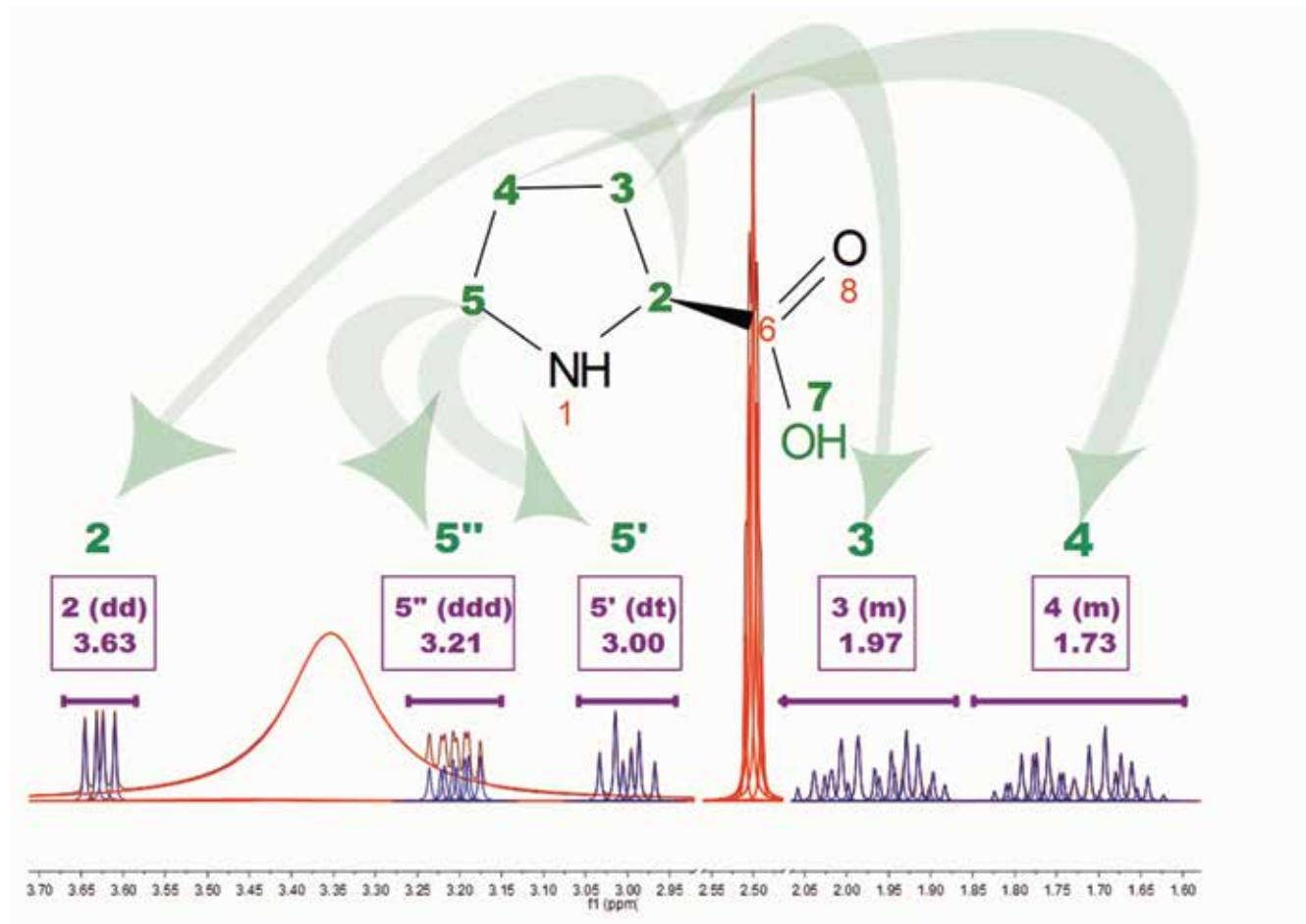
Mnova NMR Software

PREDICT 1-D, 2-D AND HSQC NMR SPECTRA FROM MOLECULAR STRUCTURES

Use Mnova software for NMR processing, analysis, and reporting for 1-D and 2-D NMR spectra. Software allows you to easily transfer your data into report or patent formats. Formatted much like PowerPoint®, software allows multipage interface and annotations with text and graphics. Software operates in Windows®, Mac®, and various Linux environments.

ANALYZE DATA EASILY AND ACCURATELY

- Verify your experimental spectra with prediction software
- Automatic solvent recognition and intelligent peak picking ensure optimal results
- Choose either annual or perpetual licensing depending on your requirements



When combining Mnova NMR software with Mnova NMRPredict, you can automatically assign your molecule.

MNOVA NMR SOFTWARE PACKAGE

NMR processing, analysis and reporting for 1-D and 2-D proton NMR spectra right at your fingertips. Ideal for both the expert user requiring advanced functionality and for organic or synthetic chemists focused on routine processing with maximum productivity. Using the algorithms built into the software, you will be able to create synthesized spectra using only the peaks of your interest.

MNOVA NMRPREDICT DESKTOP PLUG-IN

Generate 1-D and Heteronuclear Single Quantum Coherence (HSQC) spectra from molecular structures—ideal for the expert user looking for extensive or advanced functionality. Combined with the Mnova NMR software, it provides a very simple interface to automatically analyze spectra. Features such as peak picking, integration, and multiplet analysis allow your experiments to run smoothly. The plug-in allows you to assign 1-D and 2-D spectra, make notes and reports in various journal formats, and paste molecular structures into your document. Further automation is allowed and access to pre-made scripts and processing templates is available; contact our Application Specialists for more details.

Choose from either an annual or perpetual license. The annual license allows one year use of the licensed software, including updates and free technical support. Once the initial twelve months ends, the software will no longer function unless a new license is purchased. The perpetual license allows you to use the licensed software indefinitely. For the first year after purchase, you are entitled to download any updates to the software and will receive a full free year of technical support. Once the initial year ends, you can continue to purchase updates and support packages.

ORDERING INFORMATION FOR MNOVA SOFTWARE

Catalog number	Description
NMR Software	
ML-83090-74	Annual license
ML-83090-75	Perpetual license
NMRPredict Desktop plug-in	
ML-83090-76	Annual license
ML-83090-77	Perpetual license

In the US

625 E. Bunker Court
 Vernon Hills, IL 60061
 Call toll-free 800-323-4340
 Phone: 847-549-7600
 Fax: 847-247-2929
www.coleparmer.com

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 Fax: 514-355-7119
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In the United Kingdom

Free phone: 0500-345-300
 Phone: 020-8574-7556
 Fax: 020-8574-7543
www.coleparmer.co.uk

In India

Phone: 91-22-6716-2222
 Fax: 91-22-6716-2211
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 International Sales Department
 or contact your local dealer.



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APPLICATIONS

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- QA/QC
- Biofuels
- Petrochemical



Type/model	picoSpin-45 NMR proton benchtop spectrometer	picoSpin-45 NMR high-temperature benchtop spectrometer	picoSpin-45 NMR fluorine benchtop spectrometer
Catalog number	ML-83090-00	ML-83090-01	ML-83090-02
Larmor frequency	45 MHz ±1 MHz	45 MHz ±1 MHz	45 MHz ±1 MHz
Nucleus	Proton (¹ H)	Proton (¹ H)	Fluorine (¹⁹ F)
Sample form	Liquid	Liquid	Liquid
Resolution	60 ppb or better	60 ppb or better	60 ppb or better
Signal-to-noise ratio	Better than 500 for water, single pulse	Better than 500 for water, single pulse	Better than 500 for water, single pulse
Data format	JCAMP-DX	JCAMP-DX	JCAMP-DX
Magnet type	Permanent	Permanent	Permanent
Magnet temperature	8°C above ambient temperature to 45°C	8°C above ambient temperature to 60°C	8°C above ambient temperature to 45°C
Capillary	Quartz, 300 µm ID	Quartz, 300 µm ID	Quartz, 300 µm ID
Dimensions (W x H x D)	7" x 5¾" x 11½" (17.8 x 14.6 x 29.2 cm)	7" x 5¾" x 11½" (17.8 x 14.6 x 29.2 cm)	7" x 5¾" x 11½" (17.8 x 14.6 x 29.2 cm)
Weight	10.5 lb (4.75 kg)	10.5 lb (4.75 kg)	10.5 lb (4.75 kg)
Power	100/230 VAC, 50/60 Hz, 150 W	100/230 VAC, 50/60 Hz, 150 W	100/230 VAC, 50/60 Hz, 150 W

Note: Contact us for information on extended warranties; available to US customers only.

[ML-83090-50 Replacement capillary cartridge](#) for picoSpin-45 NMR spectrometer

What's included:

one-year license to Mnova NMR software.

picoSpin-45 NMR Spectrometer Accessory Kits

Classroom Accessory Kit is ideal for students in a typical chemistry laboratory class to practice injecting samples into the picoSpin-45 spectrometers. Contains syringes and filters, dispensing needles, and appropriate tubing, ferrules, nuts, and plugs.

[ML-83090-51 Classroom accessory kit](#) with ½" fittings
[ML-83091-51 Classroom accessory kit](#) with ¼" fittings

Laboratory Accessory Kit provides you with everything needed to inject a sample into the picoSpin-45 spectrometers in your lab. This convenient kit contains an RN syringe with needle, syringe port assembly, and appropriate tubing, ferrules, nuts, and plugs.

[ML-83090-52 Laboratory accessory kit](#) ½" fittings
[ML-83091-52 Laboratory accessory kit](#) with ¼" fittings