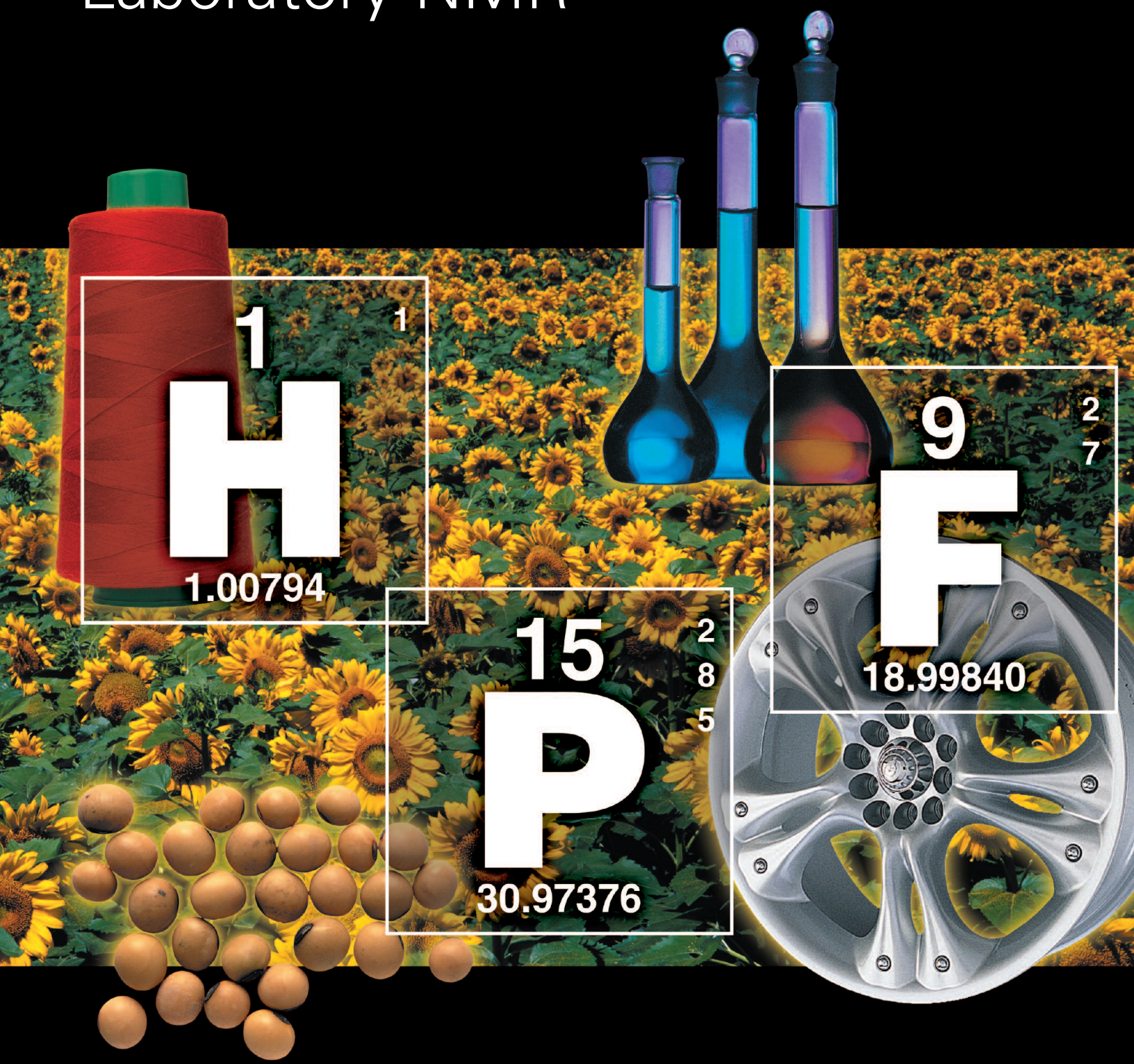
Laboratory NMR



LexMarGlobal

Analyze with Integrity®

CORPORATE PROFILE

LexMarGlobal Inc. is the leading provider of industrial Nuclear Magnetic Resonance (NMR) analyzers for use in polyolefins, thermoplastic materials, mining, fuels, and agricultural products. The company has an extensive background in the use and operation of process NMR and holds a broad intellectual property portfolio in the use and application of industrial NMR. In addition, the company provides two-phase mass flow monitors and electro-static charge measurement devices for various unit operations within the chemical process industry. Many of the world's largest companies utilize LexMar products every day.

BENEFITS

- Fast, non-destructive analysis
- Operator independent
- No sample preparation
- Safety—no hazardous chemicals
- Low cost of ownership

FEATURES

- Simple standardized calibrations
- LIMS Interface
- Automated sampling
- Advanced software and methods

SYSTEM CONFIGURATIONS

The MagStation series is available in multiple magnet and probe configurations to accommodate a wide variety of application needs.

HOW IT WORKS

NMR is a spectroscopy technique measuring the magnetic properties of selected nuclei, particularly that of Hydrogen, Fluorine or Phosphorus.

NMR signal amplitudes are proportional to the concentration of the selected nuclei making NMR perfectly suited for quantitative measurements. Moreover, solid state NMR signals are particularly sensitive to the physical environment in which the selected nuclei reside. Therefore signal characteristics from crystalline and amorphous phases are very different and techniques are available to separate the signals using sophisticated pulse techniques or mathematical analysis.

The heart of the NMR system is a stable permanent magnet with a measuring probe at the center. Precise radio frequency pulses are applied to the sample and the generated NMR signals are detected in a sensitive receiver, digitized and stored in a computer for analysis.

APPLICATIONS

NMR has found many uses in production, quality control, analytical labs, and education. The following are typical NMR applications:

Petroleum

- Wax content in oil
- Hydrogen content in fuel
- Viscosity measurements
- Molecular weight of oil

Food/Agriculture

- $P_2 0_5$ in fertilizer
- Solid fat content (SFC)
- Total fat
- Oil and moisture content in seeds

Industrial

- Oil content in wax
- Oil content in sulfur
- Fluorine content in toothpaste
- Fluorine in alumina

Polymers

- Density
- Crystalline properties
- Ethylene content
- Intrinsic viscosity
- Xylene solubles
- Rubber content
- Melt properties
- Fluorine analysis
- Mechanical properties
- Plasticizer content in PVC

ON-LINE NMR— WE INVENTED IT!

Lexmar is the world's leading supplier of on-line NMR systems. With more than 5 million hours of on-line NMR experience in 33 different countries, the team at LexMar knows what it takes to provide reliable reproducible performance in an industrial environment. This experience combined with excellence in NMR technology and support makes LexMar the perfect partner for your on-line industrial NMR applications.

WORLDWIDE SUPPORT

- Free customer telephone and email support
- Real-time online support for all products
- On-site and in-house customer training courses
- Global network of service and support resources

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