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**FOR IMMEDIATE RELEASE**

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**PITTCON® 1999  
Booth #6649**

**FIRST-EVER DIGITAL FIBEROPTIC PROBE  
REFRACTOMETER UNVEILED BY MISCO**  
*Revolutionary, New Handheld Instrument  
Eliminates Guess Work of Analog Readings*

CLEVELAND, OH, March 8, 1999 – MISCO unveiled today its revolutionary new line of Digital Fiberoptic Refractometers (DFR), the industry’s only family of digital probe refractometers to use MISCO’s patented fiberoptic sensor technology.

After extensive research, MISCO engineers have taken refractometry to a new level with an instrument that provides digital readouts simply by dipping the end of the device into a liquid solution and pressing a button. Featuring a large, easy-to-read LCD display and intuitive push-button function keys, the MISCO DFR delivers superior precision and accuracy.

*Eliminates Subjectivity Characteristic of Analog Scale Readings*

Most traditional hand-held refractometers require the user to bring body fluids and chemicals near the user’s face and eyes in order to take a reading. Readings from analog refractometers are subjective and may vary from one user to another. The MISCO DFR is a low-cost instrument that eliminates the guesswork by taking measurements with microprocessor-controlled precision and instantly displaying results digitally.

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*Quality You Can Measure™* . . . . .

“The DFR was designed to complement MISCO’s existing line of analog refractometers,” says Michael Rainer, Vice President of MISCO. “With the MISCO DFR, people don’t have to bring the instrument or undesirable liquids near the face and eyes, while squinting into a microscope-like eyepiece.

Our invention is as easy to use as a digital thermometer and processes precise digital read-outs instantly. There is no need to decipher small scale divisions.”

### ***Custom Programmability & Up to Five Scales per Instrument***

Each MISCO DFR comes equipped with up to five different scales, selected by the customer out of hundreds of possible options. The refractometer is specifically programmed for whatever liquids are being measured, whether the user is testing the concentration of sugar, blood plasma, urine, glycol, salinity, alcohol or virtually any other water-soluble fluid.

If the application requires a scale not found among those already developed, MISCO engineers will create a custom scale to measure the property of the particular fluid the user needs to test. Additionally, the instrument can be returned to MISCO for reprogramming if the customer’s needs change in the future.

Prior to the MISCO DFR, it was necessary to create arcane conversion tables in order to translate Brix or refractive index measurements into usable values. This new, groundbreaking instrument has the ability to directly read a liquid’s physical properties (refractive index, specific gravity, percent concentration by volume or weight, freezing point, etc.). Since the DFR offers a multitude of options, readings can be taken directly in the desired units of measure, without the need for a conversion table.

In addition, the DFR's exceptionally large refractive index (1.3280 to 1.4330 R.I.) and Brix range (0 to 56 Brix) accommodate virtually every type of fluid measurement.

"In setting the upper limit of the refractive index and Brix scales, we questioned customers and found that 1.4330 R.I. and 56 Brix limits would satisfy 99% of their measurement needs," said Rainer.

### ***Automatic Calibration and Temperature Compensation***

MISCO DFR's automatically calibrate themselves to water and are designed for immediate use without adjusting settings or turning screws. They also feature automatic, nonlinear temperature compensation from 32° to 122°F (0° to 50° C) and multiple temperature compensation channels.

Other key features and benefits include:

- **Traceable Instrument Calibration & Serial Number:** The calibration of each instrument is traceable through an unbroken chain to the National Institute of Standards. Each MISCO DFR also bears a unique, irremovable serial number that is laser-etched into the body of the device.
- **Protective Sapphire Window Covering Sensor:** The fiberoptic sensor is protected with an ultra-durable window made of sapphire, the second-hardest material next to diamond.
- **Custom Storage Case:** Each instrument comes in its own custom case, lined with foam padding. The case contains a screwdriver for changing the battery, compartment for a spare battery and quick reference guide adhered to the inside lid of the instrument case.
- **Detailed Instructions/One-Year Factory Warranty:** In addition to the quick reference guide, a comprehensive owner's manual, complete with diagrams, comes with each unit. Instructions also are listed on the rear label of the device itself. MISCO DFR's are made in the U.S.A at MISCO's Cleveland, OH headquarters, and have a one-year factory warranty.

- **High-Impact, Chemical-Resistant Plastic Body:** The MISCO DFR has a durable, plastic body that is resistant to water, splashes and chemicals, and is capable of standing up to harsh industrial environments.
- **Long Battery Life:** The unit operates on a 9-volt, transistor radio battery, good for up to 60 hours of use and is easy to replace. Each instrument comes with a battery already in the unit, as well as a spare battery in the instrument case. MISCO DFR features an automatic shut-off mechanism to conserve battery power.

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A world leader in the refractometer field, MISCO is headquartered in Cleveland, OH, home to the company for more than 55 years. MISCO designs, manufactures and sells a variety of refractometers, including: digital bench-top laboratory refractometers, inline process control refractometers, digital handheld refractometers, and traditional handheld instruments. For more information, or for technical assistance, please call (216) 831-1000, or access MISCO's new web site at [www.misco.com](http://www.misco.com).

*For more information, please contact:*

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