

CEM



ORACLE Technology Meets New International Standard

the only fat analysis standard without calibrations or solvents

Have you heard about **ISO 16756 | IDF 259**? Recently a new international standard was published giving guidance on the determination of total fat content in milk and milk-based products, such as milk, cream, yogurt, ice cream, processed dairy, cheese and dairy powders by Carr-Purcell-Meiboom-Gill (CPMG) pulsed time-domain nuclear magnetic resonance (TD-NMR) spectroscopy.

The **ORACLE™** system is **the only commercially available fat analyzer that utilizes this technology**, providing reference extraction method accuracy, without matrix specific calibrations or solvents, in under a minute. View the webinar to learn more about ISO 16756 and ORACLE's remarkable technology.

[Watch the Webinar](#)



Accurate

ORACLE delivers accurate results with better repeatability than wet chemical extraction techniques.

Versatile

Analyze any dairy product from 0.02-100.0% fat on the same instrument, regardless of composition.

Efficient

Calibration and solvent-free rapid analysis in seconds. Anyone can operate ORACLE with ease; trained chemist not required.

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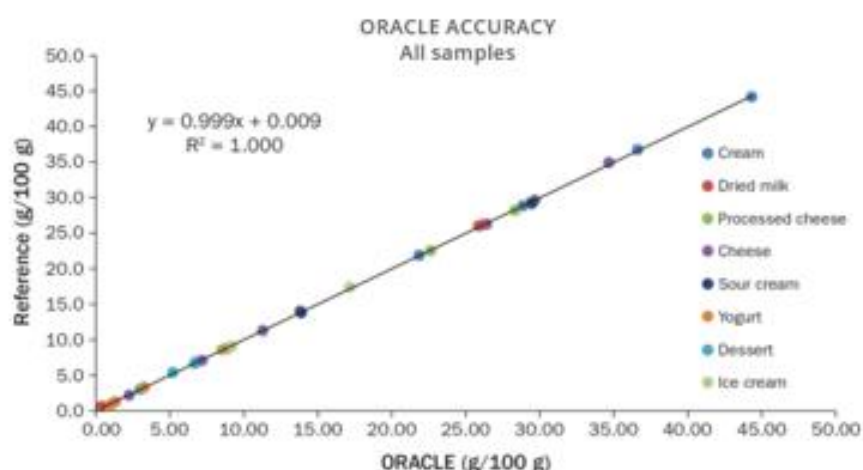
ISO 16756 | IDF 259



Discover the Only System Utilizing ISO 16756 | IDF 259 for Accurate Fat Analysis of Dairy Products

Recently published [ISO 16756 | IDF 259](#) provides comprehensive guidance for determining total fat content in milk and milk-based products using Carr-Purcell-Meiboom-Gill (CPMG) pulsed time-domain nuclear magnetic resonance (TD-NMR) spectroscopy. This advanced NMR technology used by **ORACLE™** completely isolates the detection of the proton signal in fat molecules from all other compositional proton sources (i.e. protein, carbohydrate, ash), making a universal fat analyzer possible.

ORACLE Excels in Independent Study by Actalia Cecalait



The ORACLE analyzed dairy matrices and compared each sample to fat values from wet chemical extraction techniques, all without any method development or calibration of the ORACLE system. The published independent study from Actalia demonstrated ORACLE vs. wet chemistry results achieved a **perfect linear coefficient of determination ($R^2 = 1.000$)** with no bias, and its repeatability **surpassed the reference chemistry limits for all samples.**

Ready the Study

Consistency from plant-to-plant, system-to-system, and operator-to-operator means suppliers, distributors, and parent companies can all test with confidence.

Variability from instrument to instrument has been eliminated.



Contact [CEM](#) today to schedule your free demo, in-person or virtually, to see ORACLE's remarkable technology live in action. Want to see how ORACLE performs on your samples? Let us know!

Request a Demo

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Boost your Bottom Line: The ORACLE Advantage

Investing in the most innovative technology solutions can help improve profit margins, boost production efficiency and ensure your product quality. With **ORACLE™**, the fat content of any sample can be determined in 30 seconds with no method development utilizing the newly published **ISO Standard 16756 | IDF 259**. This advanced TD-NMR technology selectively isolates fat without prior knowledge of the sample, saving you time and money.



Better process control for more savings

Accurate testing enables tighter product specs, leading to better yields and savings to the bottom line. Even a modest 0.10% improvement in precision can lead to hundreds of thousands of dollars in savings!

[Application Note](#)

Unmatched Repeatability vs. Wet Chemistry Techniques

During the validation process of ORACLE, an exhaustive list of sample types were examined spanning a range of ca. 0.01% - 100.0% fat. ORACLE was able to match reference chemistry and was more repeatable than the reference chemistry values for all samples.

Validation of Universal Fat Analysis Method using CRMs →

Test Method	Cost per Test	Analysis Time
Soxhlet	\$12 - \$14	4 hours
Majonnier	\$11 - \$13	90 minutes
ORACLE	<\$1	30 seconds

100 tests per day using ORACLE will result in:

- Savings of 16,000+ labor hours per year
- Reduced consumable costs of \$110-240k per year
- No more repeat testing due to out-of-spec results
- A savings of 3500 L of solvent usage



Do you have questions about the samples you test?

[Talk to Us](#)



Revolutionizing Fat Analysis for Dairy Products: ORACLE Meets ISO 16756 | IDF 259

ISO 16756 | IDF 259 was recently published, setting a new benchmark for dairy fat analysis using this advanced TD-NMR technology to selectively isolate fat without prior knowledge of the sample.

The **ORACLE™** fat analyzer by CEM stands out as the most accurate analyzer on the market, uniquely utilizing this technology to deliver unmatched precision and reliability. Unlike other systems, ORACLE requires no method development or calibration, ensuring consistent and bias-free results. With its rapid result time and ease of use, ORACLE is the go-to choice for industry professionals seeking the highest standards in food testing.

- ✓ Rapid results in 30 seconds
- ✓ No calibration development or maintenance
- ✓ Simple test; anyone can operate
- ✓ Analyze any sample from 0.02-100.0% fat
- ✓ No solvents are required



[Request a Quote](#)

SMART 6™

Moisture/Solids Analyzer



In the food industry, moisture affects texture, taste, and shelf life. With CEM's SMART 6, any sample type can be analyzed for moisture/solids 10 times faster than with traditional drying systems. The intuitive software and simple procedure guarantee straightforward operation, no chemistry degree or advanced training required.

Now you can pair the SMART 6 Moisture & Solids Analyzer with the ORACLE to deliver a complete analysis for any sample type in less than 5 minutes.

[Learn more](#)

Curious to learn more about ORACLE and the many different dairy sample types it can accurately analyze? Check out the application notes below or visit cem.com/fat-analysis-applications to view more!



Cream

Rapid Total Solids and Fat in Cream

[Read App Note →](#)



Dairy Powders

Rapidly Analyzing Moisture and Fat Content in Dairy Powders

[Read App Note →](#)



Cheese

Improved Process Control for Cheese Products

[Read App Note →](#)



ORACLE Technology Sets New Global Standard

The newly published **ISO 16756 | IDF 259** provides guidance on using Carr-Purcell-Meiboom-Gill (CPMG) pulsed time-domain nuclear magnetic resonance (TD-NMR) spectroscopy for determining fat content in milk and milk-based products.

The **ORACLE™** by CEM is the **only system** to leverage this advanced TD-NMR technology to ensure accurate fat measurement across various sample matrices, enhance efficiency, and set a new standard for reliability in food testing.



- ✓ **In Process** - fast, robust results in 30 seconds, no lab wait time
- ✓ **No Method Development** - simple and easy to use on any sample, no calibration required
- ✓ **Software** - easily connect to your LIMS system including barcode scanning
- ✓ **Quality Results** - 30 second standard tubes for verification whenever you want it

[Request a Quote](#)

Hear from our customers!

"The CEM ORACLE Fat Analyzer has demonstrated the ability to eliminate daily calibrations used with previous technology for a broad range of samples while maintaining high sample accuracy and precision. As one of the global leaders in food testing this is very beneficial for our testing needs."

Timothy Lumb

Chemistry Manager, Food & Pharmaceuticals ALS

As with all our products, ORACLE is backed by CEM's outstanding support.

No matter the question, large or small, we are there.



CEM's support doesn't end when your equipment is delivered; it begins. Our systems are backed by our award-winning service department, technical representatives, and experienced application chemists ready to go to work for you.

[Speak to a Rep](#)