

CEM

SMART 6™

Microwave + Infrared Moisture & Solids Analyzer

Analyze Any Sample Up To Ten Times Faster Than Traditional Drying Systems

The SMART 6 is the most technologically advanced rapid moisture/solids analyzer available. The system features two major benefits compared to other moisture analyzers: the ability to accurately analyze both wet and dry samples and a significant reduction in sample drying times. These benefits are possible through the development of a CEM patented drying technique.

This unique dual-frequency technique allows for analysis times up to ten times faster than traditional rapid drying systems. The combination of microwave and infrared energies allow for any sample to be analyzed on one system without sacrificing accuracy or precision.

Features

- Up to 10 times faster than halogen systems
- Analyze both dry and wet products on one system
- Pre-programmed methods for all sample types
- Compact and lightweight for easy at-line placement
- Analyze polar and non-polar solvents

Meets Requirements

- AOAC 985.14
- AOAC 2008.06
- AOAC PVM 1:2004
- Title 21 CFR Part 11 compliant

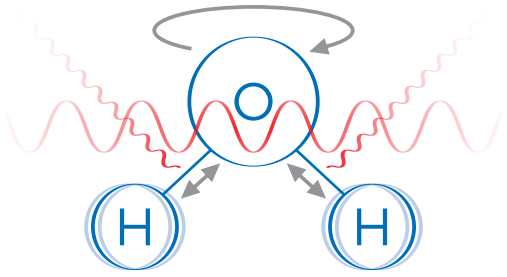


Dual Frequency Heating

Analyze wet and dry samples with unmatched speed.

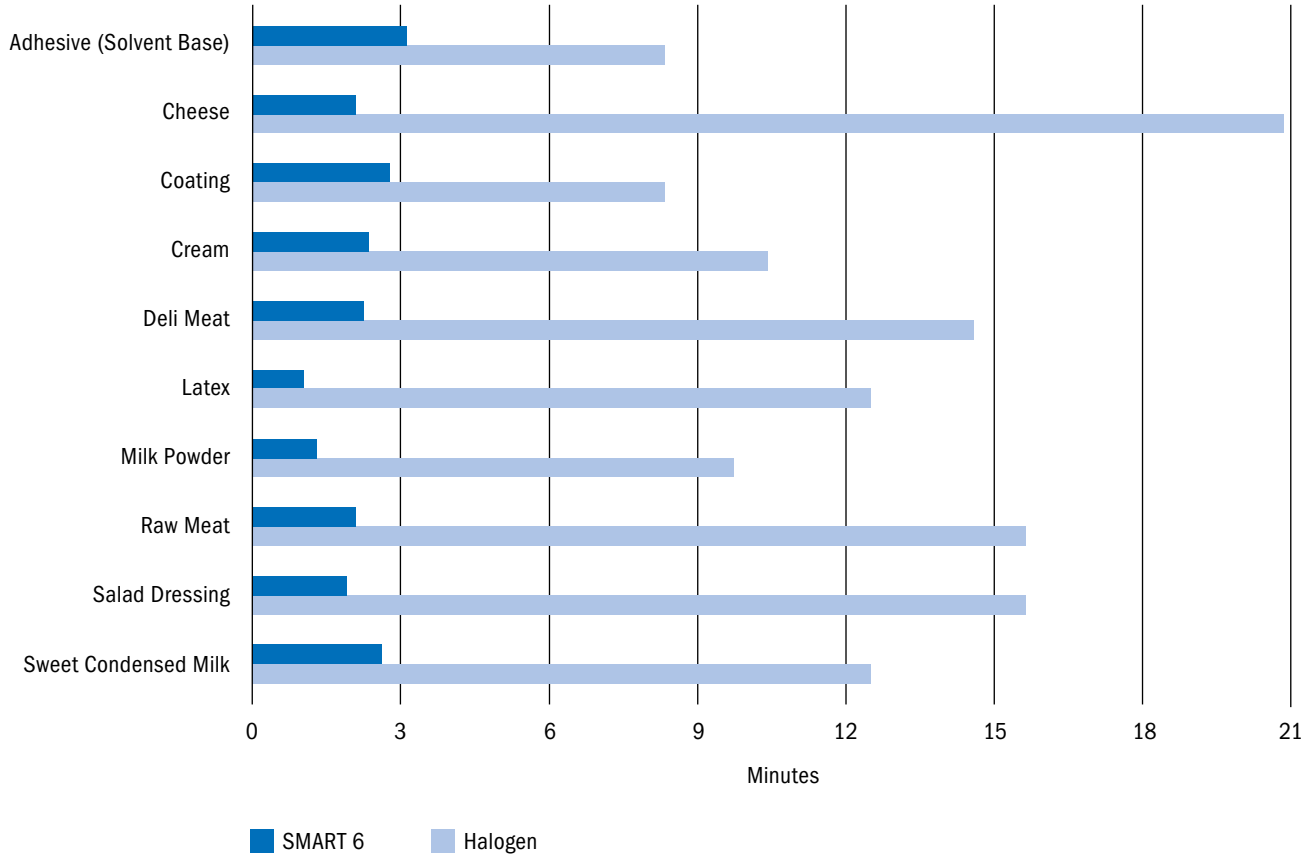
The SMART 6 utilizes an innovative heating process powered by dual-frequency energy. This prevents burning and incomplete drying, resulting in a rapid direct moisture/solids method for virtually any type of sample.

- Directly monitors sample temperature
- Eliminates surface burning
- Little to no “cool down” time between tests



Low frequency energy (microwave) penetrates the entire sample, rapidly removing free moisture and volatiles through dipole rotation. Higher frequency energy (infrared) generates an evenly heated environment to completely remove bound moisture and other non-polar components through molecular vibration.

Time Comparison of the SMART 6 vs Halogen Drying System

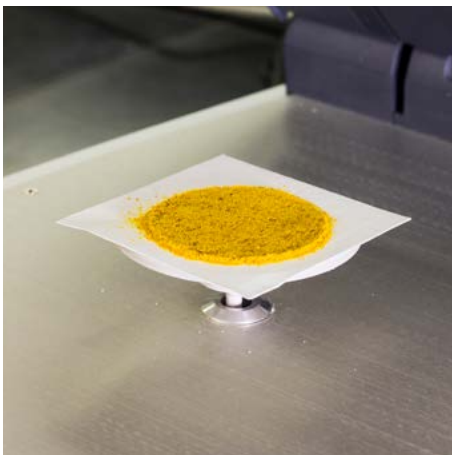


Easy Workflow



1

Tare Pads



2

Add Sample



3

Press *Start*

Convenient Technology



Unique Users

Compliant with 21 CFR Part 11 with password protection, auto log out, and more.



Training Videos

Easily train new technicians and limit user-to-user variability.



Method Import

Import from other units or CEM's method library from anywhere in the world.



Data Export

Connect directly into your LIMS or easily store, transfer, and review data via USB.

Accurate Moisture and Solids Analysis

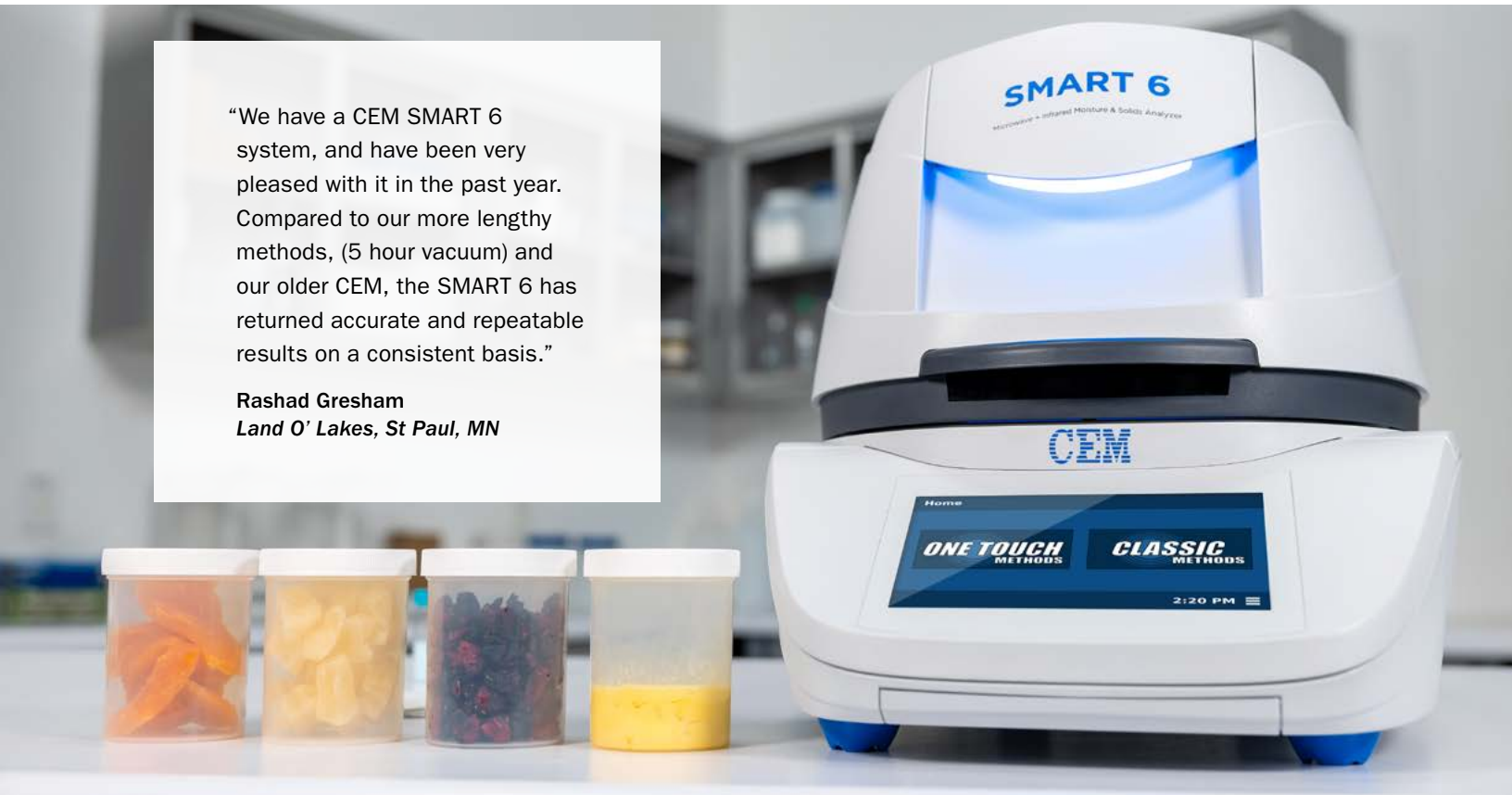
Moisture Results

Sample	SMART 6*	SD	Reference	Difference
Beef	56.08	0.16	55.91	0.17
Cheese	45.30	0.08	45.36	0.06
Chicken	66.84	0.19	66.86	0.02
Cream Cheese	53.94	0.07	53.94	0.00
Deli Meat	76.48	0.05	76.45	0.03
Hot Dog	52.80	0.24	52.89	0.09
Milk Powder	3.59	0.06	3.52	0.07
Pork	57.29	0.22	57.47	0.18
Potted Meat	70.03	0.05	70.38	0.35

Solids Results

Sample	SMART 6*	SD	Reference	Difference
Adhesive *Solvent Base*	63.46	0.08	63.17	0.29
Coating	55.52	0.10	55.41	0.11
Condensed Skim Milk	33.46	0.07	33.39	0.07
Cream	45.24	0.12	45.24	0.00
Ice Cream	40.58	0.13	40.54	0.04
Latex	56.79	0.05	56.80	0.01
Milk	11.95	0.02	11.91	0.04
Salad Dressing	49.57	0.05	49.46	0.11
Yogurt	23.38	0.07	23.25	0.13

*SMART 6 results represent the average of 5 replicates which were used to calculate SD.



"We have a CEM SMART 6 system, and have been very pleased with it in the past year. Compared to our more lengthy methods, (5 hour vacuum) and our older CEM, the SMART 6 has returned accurate and repeatable results on a consistent basis."

Rashad Gresham
Land O' Lakes, St Paul, MN

Expert Advice

Unlimited Applications

The applications team at CEM has developed an extensive library of method notes to help guide you in new method creation. To ensure the best experience for your team, we also offer method development services on-site and in-house.

Contact us at **process.support@cem.com** to work directly with one of our specialists.





Fast Support

Service If You Need It

With various CustomerCare plans, over the phone technical support, in-house depot services, and on-site service from Service Engineers, CEM offers a wide variety of options to meet your specific needs.

Contact us at **service@cem.com** to learn more.

System Comparison



SMART 6™



SMART Q™

	SMART 6™	SMART Q™
Suitable For	Free + Bound Moisture Polar + Non-Polar Solvents	Free + Bound Moisture Polar + Non-Polar Solvents
Energy Source	Microwave + Quartz Halogen Infrared	Quartz Halogen Infrared
Results	0.01 to 99.99%	0.01 to 99.99% Recommended 0.01 to 15.00%
Resolution	0.01% (Optional 0.001%)	0.001%
Balance	23 g Capacity 0.1 mg Readability (Optional 0.01 mg)	48 g Capacity 0.01 mg Readability
Data Analysis	Advanced Statistical Processing	Advanced Statistical Processing
Exhaust	15,600 RPM (Adjustable with speed control)	15,600 RPM (Adjustable with speed control)
Footprint	· 13 in (W) x 23 in (D) x 14.5 in (H) · 33 cm (W) x 58.5 cm (D) x 36.8 cm (H)	· 13 in (W) x 23 in (D) x 14.5 in (H) · 33 cm (W) x 58.5 cm (D) x 36.8 cm (H)
Weight	· 55 lbs · 25 kg	· 38 lbs · 18 kg

We Simplify Science

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