



CENTER FOR DAIRY RESEARCH

"Solution Based Research Backed by Experience, Passion and Tradition"

CDR Analytical Lab

The Center for Dairy Research analytical lab is capable of performing a number of tests ranging from rheology to flavor and composition analysis. The lab is primarily used for internal research, but companies partnering with CDR on a research project or troubleshooting have access to these services.

More than forty tests can be performed within the CDR labs, including several chemical, physical and microbiological tests, many of which are outlined below.

Micro



- ▶ **Biofilms**
- ▶ **Coliforms**
- ▶ **Yeast and Mold**
- ▶ **Gas-Formers Identification**

Texture



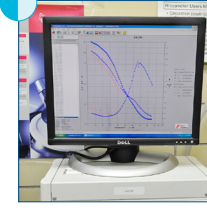
- ▶ **Texture Profile Analysis**
- ▶ **Uniaxial Compression**
- ▶ **Rheology** (Gelation, Yield Stress)
- ▶ **Sensory**

Fats



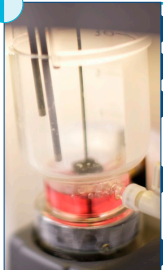
- ▶ **Total Fats**
- ▶ **FFA** (Free Fatty Acids)
- ▶ **FA** (Fatty Acid identification)
- ▶ **GC-MS** (Gas Chromatography-Mass Spectrometry)

Melt



- ▶ **Schreiber Test**
- ▶ **Oven Performance Tests**
- ▶ **Rheology** (Heating Profiles)

Proteins



- ▶ **Total N, CN, NCN** (Kjeldahl)
- ▶ **Proteolysis** (Soluble Nitrogen, Electrophoresis)
- ▶ **Individual Proteins/Peptides** (Reversed Phase High Pressure Liquid Chromatography {RP-HPLC}, Electrophoresis, Peptide Identification by Mass Spectrometry)
- ▶ **Size and Charge** (Size Exclusion Chromatography-Multi-Angle Laser Light Scattering {SEC-MALLS}, Zeta Potential, Light Scattering)
- ▶ **Functionality Tests** (Foaming, Solubility, Heat Stability, Clarity, Emulsification)



For Troubleshooting & Industry Samples: Gina Mode | gmode@cdr.wisc.edu | 608-262-2253
For Micro Testing Questions: Kristen Houck | houck@cdr.wisc.edu | 608-265-2271 | www.cdr.wisc.edu



CENTER FOR DAIRY RESEARCH

"Solution Based Research Backed by Experience, Passion and Tradition"

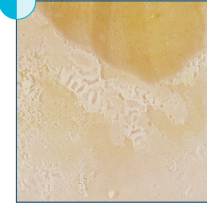
CDR Analytical Lab

Carbohydrates/Lactic Acid



- ▶ **High Performance Liquid Chromatography (HPLC)**
- ▶ **Enzyme Kits**
- ▶ **High Pressure Ion Chromatography (HPIC)**

Crystal Defects



- ▶ **Chemical Tests (Lactic Acid, Minerals, Amino Acids)**

Powders



- ▶ **Particle Size Distribution (Mastersizer)**
- ▶ **Bulk Density (Automated Tapping Device)**
- ▶ **Solubility (Including Accelerated Storage)**

Miscellaneous Tests



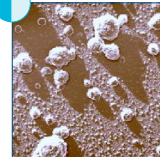
- ▶ **Water Activity**
- ▶ **Color**
- ▶ **Viscosity**

Minerals



- ▶ **Ash (Furnace)**
- ▶ **Total Mineral Analysis (Inductively-Coupled Plasma {ICP})**
- ▶ **Calcium Status {Bound vs. Soluble} (Titration, Cheese Juice)**

Microstructure



- ▶ **Epi-Fluorescence Microscopy**
- ▶ **Electron Microscopy (EM)**
- ▶ **Confocal Microscopy**

Determining performance, texture and flavor through analytical testing:

Due to the fact that CDR's lab focuses on research and troubleshooting, many of our tests are related to determining a product's composition, ability to perform, textural attributes and flavor. For example, if a company was interested in determining their product's ability to perform, CDR would offer rheology melt, and sensory testing in addition to any microstructural, chemical or other physical tests that may be required. If a company was interested in flavor ripening, CDR could offer GC-MS testing, grading experts, sensory evaluations, electrophoresis, proteolysis, HPLC and other tests depending on the specific requirements.

Please note that these services are only available to CDR research partners. **This is not a public lab.** If you have specific questions regarding our services or a specific test, we encourage you to contact:



For Troubleshooting & Industry Samples: Gina Mode | gmode@cdr.wisc.edu | 608-262-2253
For Micro Testing Questions: Kristen Houck | houck@cdr.wisc.edu | 608-265-2271 | www.cdr.wisc.edu