



**MICROBIOLOGY
AND
CHEMISTRY
TESTING**

PRICE LIST



- Phone: (651) 375-2207 or (800) 328-9687
- Fax: (651) 486-0837
- www.rtechlabs.com

Date: 04/01/2018

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About rtech laboratories

The Analytical Laboratory, as part of Land O' Lakes Dairy Foods Research and Development, has supported the Land O' Lakes cooperative system since its beginning in 1924. In 1989, Land O' Lakes, Inc. established a business unit, now known as *rtech laboratories*, to provide contract lab services to external clients.

The Laboratory's mission is "to provide timely, high quality food and feed testing and technical support services which meet or exceed customer expectations."

Rtech laboratories provides routine analysis, as well as specialty assays including vitamins, minerals, and pathogenic microbiology. This brochure lists our most commonly requested tests and their prices. Prices on these services are determined based on the project scope. A member of our staff would be happy to supply you with a quote based on your specific needs.

The Analytical Laboratory has an experienced staff of scientists, technicians, and support personnel with expertise in chemistry, microbiology and quality assurance, and a broad range of technical specialty areas. Customer questions and requests are handled by Customer Services staff with the knowledge and experience to address technical issues.

Quality Statement:

The Analytical Laboratory is committed to following the ISO 17025 Standard. The laboratory has been accredited to ISO 17025 since March 2001. The following statement is the Analytical Laboratory Quality Policy:

“We are committed to providing our customers technically valid chemical and microbiological results, as demonstrated by our technical expertise and adherence to the ISO 17025 quality standard. Our management and staff are committed to and trained in all aspects of the quality system, including the implementation of its policies and procedures. We will strive to continuously meet or exceed the expectations of our customers with respect to quality and service. We will actively pursue customer input and address presented concerns.”

Each individual in the Analytical Laboratory supports and complies with the quality policy and with the ISO 17025 standard.

We appreciate your business.

Alecia Dotterweich

Alecia W. Dotterweich
Technical Resources Director

CHEMISTRY

ACID DEGREE VALUE*	35.00
ANISIDINE VALUE*	52.00
AMINO NITROGEN	41.00
ASH, GRAVIMETRIC	17.00
ASH, ACID INSOLUBLE	32.00
ASH, ALKALINITY	40.00
ASH, SULFATED	40.00
BENZOIC ACID / SORBIC ACID	98.00
BRIX, REFRACTOMETER	20.00
CALCIUM	30.00
CASEIN; PRECIPITATED PROTEIN at pH 4.6	80.00
(Includes protein result)	
CHLORIDE, DIRECT TITRATION	22.00
CHOLESTEROL	134.00
COLOR, HUNTER L.A.B.	30.00
COPPER	30.00
DENSITY, NLEA	20.00
DENSITY, POURED BULK	20.00
DENSITY, TAP	20.00
DROPPING POINT*	41.00
FAT, ACID or BASE DIGEST (Mojonnier)	34.00
FAT EXTRACTION (If needed)	40.00
FAT, SOXTEC	17.00
FATTY ACID PROFILE (Includes trans)	175.00
FIBER, ACID DETERGENT (Feed Products)	25.00
FIBER, CRUDE (Feed Products)	15.00
FIBER, NEUTRAL DETERGENT (Feed Products)	25.00
FIBER, TOTAL DIETARY	148.00
FREE FATTY ACID* (Acid Value or % Oleic)	35.00
GALACTOSE, ENZYMATIC	46.00
GLUCOSE, ENZYMATIC	77.00
IODINE VALUE*	52.00
IRON	30.00
KOHMAN, BUTTER COMPOSITION	52.00
LACTIC ACID, ENZYMATIC	72.00
LACTOSE, ENZYMATIC (Includes galactose)	64.00
MAGNESIUM	30.00
MANGANESE	30.00

*Fat extraction additional, if needed

CHEMISTRY

MINERALS by ICP (Calcium, Copper, Iron, Magnesium, Manganese, Phosphorus, Potassium, Sodium, Zinc)	
Individual	30.00
2 Minerals by ICP	60.00
3 Minerals by ICP	90.00
4 Minerals by ICP	96.00
5 Minerals by ICP	112.50
6 Minerals by ICP	126.00
7 Minerals by ICP	136.50
8 Minerals by ICP	144.00
9 Minerals by ICP	148.50
MOISTURE, OVEN (Vacuum or Forced Air)	17.00
MOISTURE, KARL FISCHER	37.00
NATAMYCIN	113.00
NITRATE / NITRITE IN DAIRY	200.00
NITROGEN, NON-PROTEIN (NPN)	54.00
NITROGEN, AMINO NITROGEN	41.00
NITROGEN, COMBUSTION	20.00
NITROGEN, KJELDAHL	30.00
ORGANIC ACIDS, HPLC	148.00
(Acetic, Citric, Formic, Lactic, Propionic, Succinic)	
PARTICLE SIZE, ROTAP (Per Screen)	17.00
PEROXIDE VALUE*	36.00
pH	15.00
pH, BUTTER SERUM	22.00
pH, POWDERS	22.00
PHOSPHORUS	30.00
POTASSIUM	30.00
PROTEIN	
Total, Combustion	20.00
Total, Kjeldahl	30.00
True, Kjeldahl (Includes Protein and NPN)	84.00
Casein (Includes protein)	80.00
WPN, Kjeldahl (Includes NPN)	106.00
WPN, Spectrophotometric (NFDM)	65.00
NPN	54.00
PROTEIN PROFILE (Dairy Products), HPLC	180.00
(a-lactalbumin, b-lactoglobulin, IgG, BSA)	
REFRACTIVE INDEX / BRIX	20.00
SALT, DIRECT TITRATION	22.00

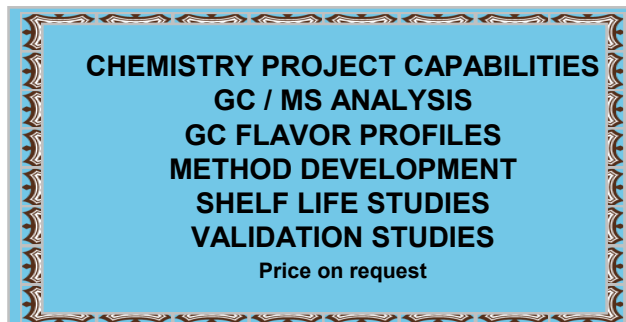
*Fat extraction additional, if needed

CHEMISTRY

SCORCHED PARTICLES	20.00
SODIUM	30.00
SOLID FAT CONTENT (SFC)*	200.00
SOLUBILITY INDEX	27.00
SORBIC ACID / BENZOIC ACID	98.00
SPECIFIC GRAVITY	27.00
SUGAR PROFILE	100.00
(Fructose, Lactose, Glucose, Maltose, Sucrose)	
TITRATABLE ACIDITY	24.00
TITRATABLE ACIDITY, CHEESE	32.00
TOTAL SOLIDS (Vacuum or Forced Air)	17.00
TOTAL SOLIDS, SUSPENDED	31.00
VITAMIN A (Retinol)	95.00
VITAMIN C	95.00
VITAMIN D	240.00
VITAMIN E (α -Tocopherol)	95.00
WATER ACTIVITY	30.00
WHEY PROTEIN NITROGEN, KJELDAHL	106.00
(Includes NPN result)	
WPN, SPECTROPHOTOMETRIC (NFDM)	65.00
ZINC	30.00

FEED TESTING

ASH, GRAVIMETRIC (600 deg C / 2 hr)	8.50
FAT, SOXTEC	17.00
FIBER, ACID DETERGENT	25.00
FIBER, CRUDE	15.00
FIBER, NEUTRAL DETERGENT	25.00
MOISTURE, OVEN (135 deg C / 2hr)	8.50
PHOSPHORUS	30.00
PROTEIN, COMBUSTION	20.00



*Fat extraction additional, if needed

**NUTRITION
LABELING****REQUIRED ASSAYS**

<u>PROXIMATES</u>	
ASH	17.00
MOISTURE	17.00
PROTEIN, KJELDAHL	30.00
<u>FATS</u>	
CHOLESTEROL	134.00
FATTY ACID PROFILE (includes trans)	175.00
<u>CARBOHYDRATES</u>	
TOTAL DIETARY FIBER	148.00
SUGAR PROFILE (HPLC)	100.00
TOTAL CARBOHYDRATES by difference (requires proximates and fatty acid profile)	NC
CALORIES BY 4-9-4 CALCULATION (requires proximates, fatty acid profile, and carbohydrates by difference)	NC
<u>VITAMINS</u>	
VITAMIN D	240.00
<u>MINERAL</u>	
CALCIUM	30.00
IRON	30.00
SODIUM	30.00
POTASSIUM	30.00
4 Element discount	-24.00
<u>MANDATORY LABEL ANALYSIS TOTAL</u>	<u>957.00</u>

OPTIONAL ASSAYS

<u>VITAMINS</u>	
VITAMIN E (α -tocopherol)	95.00
VITAMIN A	95.00
VITAMIN C	95.00
Other vitamins available on request	*POR
<u>MINERALS</u>	
MAGNESIUM	30.00
PHOSPHORUS	30.00
OTHER MINERALS	*POR

NUTRITION
LABELING

Nutrition Facts	
80 servings per container	
Serving size	1/4 cup (28g)
Amount per serving	
Calories	90
% Daily Value*	
Total Fat 6g	8%
Saturated Fat 3.5g	18%
<i>Trans</i> Fat 0g	
Cholesterol 15mg	5%
Sodium 180mg	8%
Total Carbohydrate 1g	0%
Dietary Fiber 0g	0%
Total Sugars 1g	
Includes 0g Added Sugars	0%
Protein 7g	14%
Vitamin D 0mcg	0%
Calcium 205mg	15%
Iron 0mg	0%
Potassium 25mg	0%
*The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2000 calories a day is used for general nutrition advice.	
Calories per gram: Fat 9 • Carbohydrate 4 • Protein 4	

Label Format with Display (with analytical) 75.00

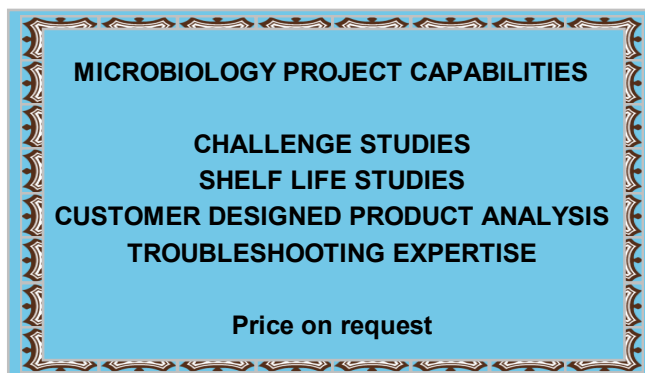
**MICRO-
BIOLOGY**

AEROBIC PLATE COUNT (Non-dairy, 35°C)	13.00
AEROBIC, USP TOTAL MICROBIAL COUNT	20.00
AMYLASE ACTIVITY	30.00
ANAEROBIC PLATE COUNT	20.00
ANTIMICROBIAL EFFECTIVENESS, USP or CTFA	*POR
BACILLUS CEREUS PLATE COUNT	25.00
BACILLUS CEREUS CONFIRMATION	70.00
BIFIDOBACTERIA	60.00
CLOSTRIDIUM PERFRINGENS	37.00
COLIFORM PLATE COUNT	13.00
COLIFORM, MPN	18.00
COLIFORM, FECAL MPN	18.00
E. COLI PLATE COUNT	13.00
E. COLI, MPN	18.00
E. COLI, MPN, Confirmation	20.00
E. COLI, USP	35.00
E. COLI O157:H7, RAPID DETECTION (25 gram sample)	25.00
E. COLI O157:H7, RAPID DETECTION (375 gram sample)	35.00
E. COLI O157:H7, CONFIRMATION	60.00
ENTEROBACTERIACEAE (Petrifilm®)	20.00
IDENTIFICATION - (Bacteria, Yeast, Mold)	*POR
Vitek (Biochemical)	
RiboPrint (DNA typing)	
KF STREP (Enterococcus)	20.00
LACTIC ACID BACTERIA	
Heterfermentors, MPN	29.00
Lactic Count, Ellikers	21.00
Lactic Count, M17	21.00
Lactobacillus, MRS	21.00
Lactobacillus, Rogosa	21.00
LISTERIA, ENVIRONMENTAL BAX	22.00
LISTERIA, PRODUCT BAX	25.00
LISTERIA MONOCYTOGENES, BAX (Dairy Products)	25.00
LISTERIA, CONFIRMATION	55.00
PLATE COUNT	
Aerobic (Non-dairy, 35°C)	13.00
Anaerobic	20.00
Psychrophilic	13.00
Standard (Dairy Products, 32°C)	13.00
Thermoduric	26.00
Thermophilic	13.00

* Price on request

**MICRO-
BIOLOGY**

PROPIONIBACTERIA	60.00
PROTEOLYTICS	29.00
PSYCHROPHILES	13.00
PSEUDOMONAS AERUGINOSA (USP)	36.00
RiboPrint (DNA typing)	180.00
SALMONELLA, ENVIRONMENTAL BAX	25.00
SALMONELLA, PRODUCT BAX	
Up to 375 Gram Sample	32.00
750 Gram Sample Composite	45.00
1500 Gram Sample Composite	58.00
Confirmation, FDA/BAM	60.00
SPORES	
Flat Sour and Total Thermophilic	38.00
Mesophilic, Aerobic	32.00
Mesophilic, Anaerobic	32.00
Thermophilic, Aerobic	32.00
STANDARD PLATE COUNT (Dairy Products, 32°C)	13.00
STAPHYLOCOCCUS AUREUS, ENTEROTOXIN	106.00
STAPHYLOCOCCUS AUREUS, DIRECT PLATE	13.00
STAPHYLOCOCCUS AUREUS, USP	35.00
THERMOPHILES	13.00
THERMODURICS (Lab Pasteurized Count)	26.00
VITEK (Bacterial ID)	POR*
YEAST AND MOLD	13.00
YEAST AND MOLD, RAPID Petrifilm® (3 Day)	20.00
YEAST AND MOLD, USP	20.00
YEAST, OSMOPHILIC	40.00



* Price on request

Sample Handling

The results of any analysis is dependent on the soundness of the sampling technique, uniformity of the sample and how representative the sample is in relation to the lot of product that the sample is taken from. In addition, maintenance of the sample condition during movement from where the sample is taken and the laboratory is critical to the accuracy of the data generated.

Recommendations:

- Use sample containers that will not leak upon shipment. It is advised that sealable capped containers be used for liquids. Taping down cap covers may be necessary.
- Use one and one half inch thick styrofoam cooler or equivalent to ship perishable samples.
- Use a minimum of two-twenty ounce cold packs for every 0.5 cubic feet of cooler space which is about the size of a 12" x 7" x 9" cooler.
- Pack perishable and non-perishable samples tightly in shipping container to avoid breakage that may be caused by movement of samples during transportation.
- Enclose the rtech sample analysis request form detailing the sample identification and analysis requested.

Request form available at:

www.rtechlabs.com

- Ship all perishable samples next day air to ensure delivery in less than 48 hours.

Shipping / Contact Information

SHIPPING ADDRESSES:

UPS, FedEx, Courier

**rtech laboratories
1150 West County Road F
Dock #2
Arden Hills, MN 55112**

US Postal Service Only

**rtech laboratories
1200 West County Road F
MS0075
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Fax: (651) 486-0837

www.rtechlabs.com

STANDARD TERMS AND CONDITIONS

Unless otherwise agreed to in a formal written contract, all services provided by rtech laboratories are expressly limited to the terms and conditions stated herein.

Confidentiality: All results and confidential client information are held in strict confidence. Written permission is required for information to be released to a third party, except for information required to be released to legal or regulatory authorities. No references to the services, the analyses, the results, rtech laboratories, or Land O'Lakes, Inc. in any form of advertising, news release, or other public announcement may be made without prior written consent of rtech laboratories and Land O'Lakes, Inc.

Discounts: Discounts are determined based on samples or dollar volume and type/nature of analysis requested. Price lists and quotations are provided upon request. Prices are subject to change without notice.

Payment Terms: Upon credit approval, terms are net 30 days from the invoice date. Without credit approval, payment may be required in advance. Finance charges at the maximum legal rate may be assessed on late payments.

Billing: All fees are charged and billed directly to the client, unless a third party has signed a statement of payment responsibility.

Reports: Reports may not be reproduced, except in full, without written approval of rtech laboratories. Rtech laboratories may retain electronic and/or paper copies of all reports and quality control/quality assurance information for a period of 5 years.

Sample Retention: All samples will be retained in storage upon completion of analysis report. The following retention schedule applies: raw perishable samples refrigerated for 10 days; other perishable samples refrigerated for 30 days; all other samples for 60 days unless otherwise specifically arranged through customer service.

Litigation: All costs associated with litigation or dispute, including compliance with subpoenas, production of documents or oral testimony, or any other purposes relating to work performed by rtech laboratories, in connection with work performed for the client, shall be paid by the client. Such costs include, but are not limited to, hourly charges, travel and accommodations, counsel, and all other expenses associated with said litigation or dispute.

Warranty and Limits of Liability: Rtech laboratories performs all work from written or published methods in accordance with the rtech laboratories Quality Assurance Policy. Warranty is limited to the accuracy of analyses of samples as received. NO OTHER REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, IS MADE OR INTENDED WITH RESPECT TO ANY MATTER WHATSOEVER, INCLUDING, WITHOUT LIMITATION, THE CONDITION, MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE OF ANY SERVICES, ANALYSES, OR RESULTS. Liability of rtech laboratories and Land O'Lakes, Inc. from all causes of action in the aggregate shall be limited to the fees paid by the client for the services. The client agrees to indemnify and defend rtech laboratories and Land O'Lakes, Inc. from all claims, liabilities, and expenses relating to the client's use of the services, analyses, and results. Placement of an order for analytical services constitutes the client's acceptance of the terms and conditions contained herein. The foregoing shall supersede any provision to the contrary stated in any purchase order or other order for work submitted by the client.



*We appreciate
your business*

rtech laboratories
from Land O'Lakes

