

Analytical Chemistry Laboratory Pricelist

Test	Description	Cost/ Sample
ICP	Standard Element List-Standard Preparation (Acid Digestion) Elements available include (any and all can be reported at the specified rate): Silver, Aluminum, Arsenic, Berillium, Bismuth, Calcium, Cadmium, Cobalt, Chromium, Copper, Iron, Potassium, Lithium, Magnesium, Manganese, Molybdenum, Sodium, Nickel, Phosphorous, Lead, Antimony, Selenium, Strontium, Thallium, Titanium, Vanadium and Zinc	\$130.00
	<i>All other elements and /or preparations must be quoted individually</i>	
GC	Standard PET preparation and analysis only*	\$115.00
	<i>*Any other GC analyses must be quoted individually and test methods provided where applicable</i>	
GC/MS	As required	Quote
DSC and DSCHS	Standard meltpoint/ heatset will be conducted unless alternate specific instructions are included in the request	\$100.00
HPLC/GPC	All work to be quoted on a per job basis including development expense and parts as required	Quote
PET Oligomers	Standard analysis by GPC/HPLC	\$300.00
NIR	Standard plaque analysis	\$75.00
UVVis	Quoted per request dependent on requirements	Quote
Ash		\$60.00
Moisture	Standard evaporative analysis of polymer moisture	\$75.00
Finish (extractables)	Polar and non-polar extraction using methanol/hexanes	\$75.00
Complete Finish	Finish extraction and analysis of residue by FTIR and EDX	\$210.00
Blend Analysis	Per polymer- i.e.- remove cotton = 1 sample, remove PET = 1sample	\$80.00
Dissolveout	Per polymer	\$65.00
CEG-Carboxyl End Groups	Standard PET test	\$100.00
FTIR	Normal prep- special handling will be quoted	\$50.00
Relative Dye	Standard PET method w/ HFIP	\$100.00
Surface Oligomers	Standard Method- UVVis	\$100.00
Total Oligomers	Standard Method- UVVis	\$100.00

****Note: All tests are n=2 unless otherwise specified***

Priority Assignment
Standard Service - completion within 10 working business days
Express Service - completion within 5 working business days 25% Surcharge
Rush Service - completion within 2-3 working business days 50% Surcharge

Prices subject to change without notice

**Please Contact Rick Stahl for Analytical Chemistry Laboratory Information
at 704-825-3737 x274 or stahl.rick@gaston.edu**

Microscopy Laboratory Pricelist

Test	Description	Cost
Hotstage Analysis	The lab has a Mettler hotstage. The hotstage can be thought of as Differential Scanning Calorimetry with images instead of a thermal analysis plot. A hotstage can be very useful in reverse engineering a multilayer laminated film (e.g. 6 layer shredded cheese package).	\$100/sample
Cross-section	Cross-section digital image of a fiber or multilayer film.	\$75/sample
Microscope Infrared Analysis	The lab has an IlluminatIR II for doing microscope transmittance infrared or microscope ATR (attenuated total reflectance) analysis.	\$100/sample
Fiber identification	The lab can identify unknown fibers by using a combination of microscope infrared and birefringence analysis.	\$125/sample
Fiber dpf	The microscopy lab can calculate fiber dpf by using image analysis to measure the fiber cross-sectional area. The dpf is calculated from the measured area and the material density. (n= 30 fibers are measured unless requested to do more) The microscopy lab is often asked to measure dpf when the fibers are too short for the Vibromat tester.	\$125/sample
Bicomponent Fiber dpf	Similar to determining fiber dpf but the weight percent of each component is also included. (n= 30 fibers are measured unless requested to do more) If the softening or melt point of the outer sheath needs to be determined there is an additional \$100 cost.	\$160/sample
Yarn Blend Analysis (2 fiber types)	Microscopy techniques are used to determine blend analysis when analytical techniques (e.g. dissolve out) cannot be used. Examples of when analytical techniques cannot be used are a heather blend of black and white polyester or a blend of cotton and rayon. Each additional fiber type adds \$120 to the cost.	\$240/sample
Optical Microscopy	Optical microscopy includes stereozoom microscopy with a Leica MZ12 or compound microscopy with an Aus Jena Pol-Scope.	\$75/hour
Scanning Electron Microscopy	The lab has two scanning electron microscopes (a Zeiss DSM 962 and an ElectronScan Environmental SEM). The advantage of the Zeiss is that it has EDXRA (energy dispersive x-ray analysis). EDXRA can be useful in identifying many contaminants (e.g. is the metal contamination stainless steel or aluminum?). The advantage of the ElectroScan ESEM is that polymeric samples can be imaged without an applied conductive coating. (e.g. imaging abrasion samples between tests).	\$150/hour
Nonwoven Reverse Engineering	The lab is skilled at reverse engineering nonwoven fabrics. The lab can identify each fiber type and the type of binder. The lab can usually provide a complete blend analysis, which includes the weight percent of each fiber type and the weight percent of the binder. Microscope infrared is used to identify the fiber and binder types. Cross-sections and image analysis are used to determine the blend percentages. ** = Typical cost for reverse engineering a 2 or 3 fiber nonwoven using a bicomponent fiber as the binder or a latex binder which can be removed by dissolve out.	\$600/sample**
Contamination Identification	The lab is skilled at contamination identification by combining sample manipulation, polarized light, microscope infrared, hotstage, and energy dispersive x-ray analysis techniques to identify contaminants. **** = This is a typical cost but there is no way to know the exact cost prior to beginning each contamination identification request.	\$600/sample****

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**Please Contact Stan Hovis for Microscopy Laboratory Information
at 704-825-3737 x277 or hovis.stan@gaston.edu**

Physical Testing Laboratory Pricelist

Fiber	
Test	Cost
AFIS	36.00
Cotton Maturity	56.00
Crimp per inch manual (n=25)	22.00
Dye Puffs/Fabric (60 grams max)	26.00
Favimat Fiber Tenacity (n=25)	32.00
Favimat w/crimp	40.00
Fiber Diameter Synthetic	34.00
Moisture Balance	75.00
Rotoring	28.00
Staple Length Manual (n=25)	22.00

Yarn	
Test	Cost
Boiling Water Shrinkage	42.00
Classifault (6 bobbins)	36.00
Coeffic. Friction (6 bobbins)	36.00
Hot Air Shrinkage	42.00
Spinning Process ID	15.00
Staff Shedding Test	28.00
Statimat (6 bobbins)	72.00
TPI Plied (5)	32.00
TPI Singles (5)	30.00
Uster Tensojet (6 bobbins)	72.00
Uster Tensorapid S.E. (6 bobbins)	72.00
Uster UT-4 %CV Sliver	40.00
Uster UT-4 %CV Yarn (6 bobbins)	72.00
Uster UT-4 %CV Roving	72.00
Yarn Breaks single end (n=10)	36.00
Yarn Number (90 meter skein)	12.00

Fabric	
Test	Cost
Absorbency AATCC 79	34.00
Ball Burst	42.00
Computer Color Measurement	18.00
Crocking	18.00
D.P. Rating	49.00
Elmendorf Tear (W&F)	35.00
Fabric Appearance (n=5)	46.00
Fabric Construction Analysis	24.00
Fabric Defect Analysis per hour	50.00
Flammability Vertical Burn	75.00
Grab Strength	42.00
Home Laundering 5-wash	100.00
Hose Leg Knits per running hour	72.00
Knit Extension	36.00
Lightfast (per hr per sample)	2.00
Martindale Abrasion per 15,000	75.00
pH determination	56.00
Plastic Replica	32.00
Random Tumble Pilling	42.00
Seam Slippage	42.00
Shrinkage 5 wash	90.00
Static Dissipation	24.00
Strip Strength	42.00
Tabor Abrasion per 15,000 cycles	75.00
Tongue Tear	42.00
TPI from fabric	45.00
Trapezoid Tear	42.00
Vertical Wicking - Strip Method	40.00
Washing accelerated	40.00
Weave Extension	36.00
Whiteness Measurement	18.00
Wrinkle recovery (n=5)	46.00
Wt. per Sq Yd	16.00
Wyzenbek per 15,000 rubs	75.00
Yarn Breaks from Fabric (n=10)	32.00
Yarn No. From Fabric	32.00

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Please Contact Teresa Morgan for Physical Testing Laboratory Information at 704-825-3737 x222 or morgan.teresa@gaston.edu

or

Please Contact Heather Darnell for Fabric Defect Analysis Information at 704-825-3737 x273 or darnell.heather@gaston.edu

Fabric Formation Pricelist

Formation Type	Description	Cost/ Sample	
Knitting	Knitting Machine (FAK Sampler) Knits sample sizes in tubular knit with one cone of yarn. The yarn can be any type.	\$72/hour	
	Heads		Cotton Count
	88		3.5- 11
	160		20-Oct
	220		20-40
	380	75+	
Knitting	Circular Knitting Machine Knits jersey material, and can run with as few as 24 packages. It is a 22 gauge that runs yarns from 15 to 24 Cotton Count. Runs spandex. Has double feeds.	\$72/hour	
Weaving	PICANOL PAT-A (Air jet loom) Loom is capable of handling yarns up to 6 Cotton Count, will run any dobby pattern that requires 14 or less harnesses. Capable of running at speeds up to 750 picks per minute	\$72/hour plus set up fees call for quote	
Weaving	CCI Sample Weaving System This is a set of 3 separate machines that are capable of sizing, warping, and weaving fabric from a single package. The machine is able to warp using up to 6 different packages. Any fiber type will work on this machine. Weaves any 18 body harness dobby design.	\$1,200	
Weaving	Sulzer Rapier Weaving System 40 yard broadcloth sample in any dobby weave.	\$1500 plus handling	

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**Please Contact John Fowler for Fabric Formation Information
at 704-825-3737 x240 or fowler.john@gaston.edu**

*Yarn Formation Pricelist

Hollingsworth Hopper Blend Line Opens bales of fiber, and weighs and blends to specific ratios. Used for both natural and synthetics.
Trutzschler Fine Opener Opens fiber and stores it for fiber regulation and control.
Trutzschler FBK 760 Card Cards short staple fibers. Has a single licker in.
Trutzschler DK 903 Card Cards short staple fibers. Has triple licker in.
Mini Card This card is capable of handling small quantities of fiber up to three and one half inches in length.
Rieter RSB 851 Drawframe with Autoleveller Used to draw sliver to improve evenness and achieve desired count size.
Warner and Swasey Servo –Drafter with Autoleveller pindrafter used for long staple fiber.
Saco-Lowell Rovomatic Transfers fibers from sliver form to bobbin.
Zinser Ro-We-Mat 680 Roving frame
Ring Spinning Frame Capable of producing most types of ring spun yarn.
Rieter RI Rotor Spinner Open end spinning frame
Long Staple Spinning Frame This eight spindle machine will ring spin long staple fiber into both fine and coarse yarn.
Muratec MVS Vortex spinning frame
Muratec MJS Jet spinning frame
SSM Doubler Plys together two to three packages.
Muratec Link Coner Winds ring spun yarn that is packaged on bobbins to larger packages.

***Please Contact Dan Rhodes for Yarn Formation Pricing Information
at 704-825-3737 x223 or rhodes.dan@gaston.edu**

*Riverside Melt Extrusion Pricelist

Description	Cost
Crystallizer heat sets chip which takes the chip from amorphous to crystalline	\$200/Process Hour*
Vacuum Solid State Polymerization (SSP) heats in a vacuum to a pre-determined temperature	\$200/Process Hour*
Melt Spinner single line multi-filament melt extruder	\$2360/Day**
Staple Draw Line processes filament fiber into cut staple 2 draw lines, crimper, drying oven, cutter	\$1360/Day**
Injection Molder produces plaques for color/clarity	\$75/Process Hour*
Rando Weber opens fiber	\$75/Process Hour*
Pillow Blower blows opened fiber into a pillowcase	\$75/Process Hour*

*four hour minimum

**includes two operators

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***Please Contact John Anderson for Yarn Formation Pricing Information
at 704-825-3737 x254 or anderson.john@gaston.edu**

Textile Testing Request Form



Customer Name: _____

Customer Address: _____

Billing Address: _____

Purchase Order #: _____

Contact Name: _____

Office Telephone Number: () _____

Mobile Telephone Number: () _____

Fax Number: () _____

Email Address: _____

Date Submitted: _____

Sample Identification: _____

Retain Samples: YES or NO

Testing Requested: _____

Notes/Comments: _____

Send Test Results to: _____