



# SIEBEL

## INSTITUTE OF TECHNOLOGY LABORATORY SERVICES



## Laboratory Services Catalog 2009

Serving the Brewing Industry  
For Over 135 Years

### Siebel Institute of Technology Laboratory Services

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*“Serving the Brewing Industry since 1872”*

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## Laboratory Services

The staff of the Siebel Analytical and Microbiology Testing Laboratories are looking forward to continuing to serve your analytical needs well into the new century. For the past century we have built up an impressive list of test services and products for all brewers and allied industry personnel. In view of rapid changes being made in technology, and the current needs of brewers and allied industries, we have revised our catalogue and services to offer your company the most accurate and relevant information possible to help you succeed in today's highly competitive world. Our technical staff includes qualified brewers who are trained in every phase of brewing operations, and a fully trained laboratory staff who take pride in the capabilities of our well-equipped facilities. A number of new technologies have recently been introduced into the lab to enable us to stay current with the industry.

### Laboratory Services General Policies

The prices listed in the following catalog are for single samples received during the calendar year. All reports and internal records pertaining to a report are held in strict confidence. Reports are submitted for the exclusive use of the client. Any reproduction of a report must be approved by the Siebel Institute of Technology.

**All samples sent in for analysis must include our Analysis Request Form (see last page) or a letter on your company letterhead, indicating type of sample**

### SHIPPING OF SAMPLES

For proper shipment, on the exterior packaging all samples should be CLEARLY labeled: **“SAMPLES FOR ANALYSIS ONLY. NOT FOR HUMAN CONSUMPTION”**

**Samples should be packaged securely using material that will not allow the bottles to touch so as to prevent any breakage.** The use of Styrofoam 'peanuts' or other material is required. If bottles are sent in their original package (i.e. twelve pack or case), fill the primary packaging then secondary packaging, with the use of more packaging material, as required.

The airway bill should state the name of our customs broker **FedEx** as they will assist with the customs clearance. Any additional custom clearance charges are they responsibility of the Company sending in the samples to analyze. Siebel's will send additional invoice of these charges if any are occurred.

**ALL packages should be addressed to our address and Attn: SIEBEL LABORATORY SERVICES**

If you have any questions, please contact us BEFORE shipping your samples.

### *Additional Services*

- ***Notarized reports on malt and hop specifications***
- ***Notarized reports on alcohol content in beer***
  - ***Many analyses not listed in the catalog***

#### **PLEASE NOTE:**

In the following pages we have only listed the analyses that are most frequently requested. However, we can perform many tests that are not listed in our catalog. Please call us to discuss how we may meet all your testing needs!! We always go the extra mile in helping you understand the implications of analytical values and how best you can apply such information. (Also, any listings as 'POR' means "Price on Request," therefore, call the Institute for more details.)

# ANALYTICAL SERVICES

## BEER ANALYSES

Cat#	Analysis	Price \$	Quantity Required	(12 oz bottles)
#0011	<b>Comprehensive – Non Packaging Breweries</b> ..... (Clarity and sediment; visual appraisal; color; foam by visual appraisal; specific gravity; real and apparent extract; alcohol; original extract; attenuation; protein; acidity; pH; SO <sub>2</sub> ; BU; microscopic examination)	161 .....	6	
#0021	<b>Comprehensive – Packaging Breweries</b> ..... (Clarity and sediment; visual appraisal; color; foam by visual appraisal; specific gravity; real and apparent extract; alcohol; original extract; attenuation; protein; acidity; pH; SO <sub>2</sub> ; BU; microscopic examination; air; CO <sub>2</sub> ; headspace;)	184 .....	6	
#0031	<b>Comprehensive - Flavor Profile</b> ..... (Diacetyl, 2,3 pentanedione, fusel alcohols and esters, DMS)	205 .....	4	
#0033	Acetaldehyde.....	61 .....	1	
#0040	Acidity (total).....	22 .....	1	
#0050	Alcohol, extract and calculated values..... (real extract, original extract, calories)	53 .....	1	
#0060	Anthocyanogens.....	108 .....	1	
#0070	Bitterness units.....	37 .....	1	
#0080	Calcium.....	34 .....	1	
#0090	Carbohydrates (total).....	50 .....	4	
#0091	Carbohydrates – sugar profile.....	126 .....	1	
#0100	Clarity and sediment (visual).....	32 .....	1	
#0110	Chill haze test (fresh and abused).....	23 .....	4	
#0120	CO <sub>2</sub> , air, headspace.....	45 .....	2	
#0130	Color.....	19 .....	1	
#0140	Diacetyl (G.C.).....	64 .....	1	
#0150	Dimethyl sulfide (DMS).....	81 .....	1	
#0160	Fill volume test.....	61 .....	6	
#0180	Foam, visual appraisal.....	16 .....	1	
#0190	Foam, sigma value.....	51 .....	2	
#0200	Free amino nitrogen (FAN).....	66 .....	1	
#0210	Higher (fusel) alcohols and esters (G.C.).....	125 .....	1	
#0220	Indicator time test (I.T.T.).....	25 .....	1	
#0230	Metals (see section on metals/minerals)			
#0240	Nitrosamines.....	578 .....	1	
#0250	Oxalates.....	65 .....	1	
#0260	Pasteurization efficiency, invertase activity, qualitative.....	34 .....	1	
#0270	pH.....	13 .....	1	
#0280	Polyphenols (total).....	66 .....	1	
#0291	Protein (total).....	23 .....	1	
#0310	Sulfate.....	61 .....	1	
#0320	Sulfur dioxide (SO <sub>2</sub> ) .....	36 .....	1	
#0340	Volatile acidity (acetic acid) .....	64 .....	1	
#0350	Yeast fermentable extract (Y.F.E.) .....	72 .....	1	

### CEREAL ANALYSES

Cat#	Analysis	Price \$	Quantity required
#1000	<b>Comprehensive</b> ..... (Includes general appearance, granulation, powder, color, odor, husks, germs, foreign seeds, insect infestation (visual) , moisture, fat, extract, conversion time, speed of filtration, wort clarity)	119	300-500 g
#1010	Extract yield and moisture.....	87	100 g
#1020	Fat (Soxhlet extraction).....	30	100 g
	All individual analysis / other analysis.....	POR	

### BARLEY ANALYSES

Cat#	Analysis	Price \$	Quantity required
#2000	<b>Comprehensive</b> ..... (Includes assortment, 1000 kernel weight, bushel weight, mealiness, foreign seeds, broken kernels) All individual analysis / other analysis.....	68	500 g
		POR	

### HOP ANALYSES

Cat#	Analysis	Price \$	Quantity required
#3000	Moisture (International method).....	22	100 g extract/ 200 g pellets
#3010	Alpha acids (spectrophotometric).....	42	100 g extract/ 200 g pellets
#3020	Alpha acids (conductometric).....	53	100 g extract/ 200 g pellets
#3030	Alpha and beta acids (HPLC).....	131	100 g extract/ 200 g pellets
#3060	Hop Oil Profile (G.C.).....	158	100 g extract/ 200 g pellets
#3070	Hop Tea Flavor Evaluation.....	89	100 g extract/ 200 g pellets
#3080	Humulene-2-ol.....	110	100 g extract/ 200 g pellets
#3090	Iso, tetra, dihydro, hexa- humulones.....	POR	100 g extract/ 200 g pellets
#3100	Nitrate (HPLC).....	POR	100 g extract/ 200 g pellets
#3110	Total Essential Oils.....	23	100 g extract/ 200 g pellets
#3120	Variety Profile (trueness to type).....	POR	100 g extract/ 200 g pellets
	All individual analysis / other analysis.....	POR	

### MALT ANALYSES

Cat#	Analysis	Price \$	Quantity required
#4000	<b>Comprehensive</b> ..... (Includes moisture, fine and coarse grind extract, conversion time, speed of filtration, color and clarity of wort, odor of mash, bushel weight, growth count, foreign seeds, broken seeds, diastatic power, alpha amylase, soluble and total protein, wort viscosity, wort pH.)	236	500 g
#4010	Diastatic power.....	72	200 g
#4020	Extract, fine and coarse grind and moisture.....	89	200 g
#4030	Alpha amylase.....	77	200 g
#4040	Protein (total) (International method).....	41	200 g
#4050	Protein (soluble) (as separate determination).....	83	200 g
#4060	Beta glucans.....	100	200 g
#4070	Dimethyl sulfide (DMS).....	81	200 g
#4080	Dimethyl sulfide, total, free, precursor.....	177	200 g
#4090	Nitrosamines, NDMA.....	578	200 g
#4100	Wort color (separate determination).....	77	200 g
	All individual analysis / other analysis.....	POR	

## WORT ANALYSES

Cat#	Analysis	Price \$	Quantity required (12 oz bottles)
#5000	Comprehensive..... (Includes extract, pH, iodine reaction, color, reducing sugars, iron, total nitrogen, acidity, free amino nitrogen)	98 .....	3
#0091	Carbohydrates, sugar profile.....	126 .....	1
#0150	Dimethyl sulfide (DMS).....	81 .....	1
#0200	Free amino nitrogen (FAN).....	66 .....	1
	All individual analysis / other analysis.....	POR	

## WATER ANALYSES

Cat#	Analysis	Price \$	Quantity required
#6000	Comprehensive..... (Includes color, odor, clarity, pH before and after boiling, solids, ignition loss and residue, free ammonia, nitrites, nitrates, free CO <sub>2</sub> , carbonates, chloride, sulfate, phosphate, silica, iron, calcium, magnesium, sodium, hardness, alkalinity)	313 .....	1 gal / 2 liters
	All individual analysis / other analysis.....	POR	

## MISCELLANEOUS ANALYSIS

Analysis	Price \$	Quantity required
Enzymes (e.g. amylases).....	POR	
Filter aids.....	POR	
Metals/minerals (e.g. copper, iron, lead, magnesium, sodium).....	POR	
Mycotoxins (e.g. aflatoxin, vomitoxin, ochratoxin).....	POR	100 g
Vitamins (e.g. B1, B2, pantothenic acid, biotin).....	POR	

## MICROBIOLOGICAL SERVICES

## DETECTION OF CONTAMINANTS

Cat#	Analysis	Price \$	Quantity Required
	<b><u>Standard Counts</u></b>		
#7000	Aerobic plate count.....	43 .....	100 ml / 100 g
#7010	Anaerobic plate count.....	43 .....	100 ml / 100 g
#7020	Aerobic and anaerobic plate count.....	77 .....	100 ml / 100 g
#7030	Coliform count.....	43 .....	100 ml / 100 g
#7040	Yeast and mold count.....	43 .....	100 ml / 100 g
#7050	Fecal coliform count.....	43 .....	100 ml / 100 g
#7060	Membrane filtration and aerobic plating.....	62 .....	500 ml
#7070	Membrane filtration and aerobic and anaerobic plating....	104 .....	1000 ml (liter)
#7080	Thermophiles and mash souring organisms.....	77 .....	100 ml / 100 g
	<b><u>Bacterial Identification</u></b>		
#7090	Microscopic examination, Gram stain.....	62 .....	100 ml / 100 g
#7100	Photomicrographs.....	45 .....	100 ml / 100 g
	<b><u>Sediments ( on wort, beer, etc.)</u></b>		
#7110	Microscopic examination.....	62 .....	100 ml / 100 g
#7120	Photomicrographs.....	45 .....	100 ml / 100 g

## YEAST AND BREWERY PROCESS SAMPLES

Cat#	Analysis	Price \$	Quantity required (minimum)
#8000	Microscopic examination..... (Includes color, morphology of cells, condition of protoplasm, amorphous matter, abnormal or foreign cells, presence of bacteria – gram stain if present, calcium oxalate)	59 .....	100 ml / 100 g (or blotter)
#8010	Flocculation test (modified Burns).....	77 .....	100 ml / 100 g
#8020	Giant colony morphology.....	77 .....	100 ml / 100 g
#8030	Gutstein staining.....	55 .....	100 ml / 100 g
#8040	Plating and microscopic examination.....	63 .....	100 ml / 100 g
#8050	Photomicrographs.....	43 .....	100 ml / 100 g
#8060	Respiratory deficient mutants (TTC overlay).....	77 .....	100 ml / 100 g
#8070	Viability (methylene blue).....	45 .....	100 ml / 100 g
	<b><u>Wild yeast examination and count</u></b>		
#8080	<i>Saccharomyces</i> wild yeast.....	77 .....	100 ml / 100 g
#8090	Non- <i>Saccharomyces</i> wild yeast.....	77 .....	100 ml / 100 g
#8100	<i>Saccharomyces</i> and non- <i>Saccharomyces</i> wild yeast.....	143 .....	100 ml / 100 g
#8291	Vitality (Glycogen Staining Qualitative).....	45 .....	100 ml / 100 g

### CRAFT BREWER SERVICES

Cat#	Analysis	Price \$	Quantity Required (12 oz. Bottles)
#0035	Beer Style Flavor Assurance..... (Original extract; apparent extract; alcohol; BU; color)	72 .....	4
#0050	Alcohol, extract and calculated values.....	53 .....	1
#0070	Bitterness Units.....	37 .....	1
#0090	Carbohydrates (total).....	50 .....	4
#0130	Color.....	19 .....	1
#0120	CO <sub>2</sub> , air, headspace.....	45 .....	2
#0140	Diacetyl (G.C.).....	64 .....	1
#0150	Dimethylsulfide (DMS).....	81 .....	1
#0190	Foam, sigma value .....	51 .....	2
#0210	Fusel alcohols and esters (G.C.).....	125 .....	1

We can tailor a specific analytical testing program for your individual needs.

Contact us for more information

**ANALYSIS REQUEST FORM**

**Please mark shipment as follows:  
Samples for Analysis Only, Not for Human Consumption.**

**Send to:** Siebel Institute Laboratory Services  
7564 Trade Street  
San Diego, CA 92121  
USA

Date sending your samples: \_\_\_\_\_

Name of person requesting analysis: \_\_\_\_\_  
(Please print clearly)

Telephone number: \_\_\_\_\_

E-mail address: \_\_\_\_\_

**NOTE**  
**All first time customers are required to pay in advance for the analysis.**  
**Please contact Siebel Institute for pricing at: 858-693-3441**

<b>Sample Description</b>	<b>Quantity</b>	<b>Catalog #</b>	<b>Analysis Description</b>
<i>eg: Beer</i>	<i>8 bottles</i>	<i>0010</i>	<i>Comprehensive-Non Packaging</i>

**Special Instructions:**

**BILLING INFORMATION**

**BILL TO:**

Company Name:	
Address:	
City, State, Zip Code	
Attention:	
Phone #	
Fax #:	
E-mail Address:	
Payment method / Purchase Order #	

*If paying by credit card, please fill in this section.*

Total Amount Enclosed	\$ _____
Visa / MasterCard # _____ - _____ - _____	Check #: _____
Cardholder Name (PLEASE PRINT): _____	Expiration Date: _____
If card is not in your name, please fill in this section:	3 Digit Security Code on Back: _____
Address _____ City _____	State _____ Zip Code _____
Cardholder Signature: _____	Phone # _____

**ANALYSIS REPORTING INFORMATION**

**SEND REPORTS BY: (CIRCLE ONE)**

**E-MAIL**

**FAX**

**SEND REPORTS TO:**

Company Name:	
Address:	
City, State, Zip Code	
Attention:	
E-mail address:	
Phone #	
Fax #:	

This information will insure that all our records are correct before performing your analysis. Please take the time to review this information before returning it to us with your samples. Thank you for taking this time to help us serve you better. All payments should go directly to:  
**7564 Trade Street, San Diego, CA 92121 USA**