15TH ANNIVERSARY EDITION

PURE YEAST AND FERMENTATION

15

WHITE LABS

1995-2010

BREWERY CATALOG

WHITE LABS

Our online ordering system makes it fast and easy to order yeast whenever you need it. The system is 100% live and tracks the growth of our yeast cultures so that you can see when the yeast will be available to ship.

Please visit **www.yeastman.com** to use this system.

Since 1995

WHITE LABS

PURE YEAST AND FERMENTATION

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15th ANNIVERSARY BREWERY CATALOG

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Started in 1995 as microbrewing took hold in the United States, White Labs, Inc. has a long history of helping brewers make better tasting beer. Over the years White Labs has expanded to providing pure yeast cultures to wine makers and distillers and now offers a wide range of fermentation products, such as enzymes and nutrients, as well as a plethora of testing options.

Brewers and others in more than 50 countries put their trust in White Labs to secure one of the most important ingredients in fermented products. Our specialty is providing pitchable quantities of certified pure liquid yeast. Our yeast is grown in small, controlled batches, and all work is done in our full-service laboratory. We have some of the strongest standards in the industry. The purity and performance of your yeast is checked at each stage of growth, and a Certificate of Quality is provided for your records.

Besides yeast, many professionals turn to White Labs for all their testing needs. Our full-service laboratory provides beer and microbial analysis, analytical testing, proprietary yeast banking, and is the home of Siebel Analytical Lab Services. White Labs offers quality fermentation enzymes, Siebel lab media, laboratory supplies, quality control test kits and brewing lab equipment. Our expert staff of microbiologists provides breweries with on-site and telephone laboratory consulting. Our mission is to provide the highest quality product at a fair price with unparalleled service.

Our goal is to be the best yeast company in the world.

White Labs, based in San Diego, CA, and now with an R&D facility in Davis, is celebrating its 15-year anniversary. Our company was founded by Chris White, PhD, following years of research and development of a library of brewers yeast strains from around the world. Chris White received an undergraduate degree in Biochemistry from U.C. Davis, where his interest in brewing was inspired by Dr. Michael Lewis and Brewing and Malting Science courses. He began homebrewing and relocated to San Diego for graduate studies in biochemistry. White's doctoral thesis focused on developing high cell density growth techniques for an industrial yeast strain. Because of his passion for craftbrewing, Chris began to experiment, using the same high cell density growth techniques on brewers yeast. Chris developed a process to grow pitchable quantities of brewers yeast. This innovation caught on quickly within the brewing community and White's yeast developed a strong word-of-mouth reputation. White Labs Yeast Cultures Collection currently has over 500 deep frozen strains from around the globe.

White Labs began providing one strain of yeast for one local homebrew shop. Today, we are privileged to provide hundreds of yeast strains to breweries, wineries, distilleries, and homebrew shops all over the world. We have expanded to carry fermentation enzymes, nutrients, bacterial cultures, and lab services that our brewers desire so they can attain the best fermentation results. As we look forward to the next 15 years, White Labs will continue to innovate and provide our customers the best, highest quality products.

Fermentation Cultures

Yeast Cultures

White Labs goal is to become the best yeast production company in the word. We guarantee that each White Labs Liquid Yeast culture supplied meets our strict quality control standards. These QC standards are outlined on the Certificate of Quality Assurance supplied with the yeast and can also be found on our website. The QC standards define our requirements for purity and viability. We want you to have the best fermentation every time. If not, please contact us and we will work with you to make it right. White Labs is not responsible for other ingredient costs, beer costs, labor, etc, but we stand behind our product and our promise to you is that each batch is rigorously tested before it is released to you.

Yeast Guarantee –This guarantee can be found on our QC sheet which is sent out with every order.

White Labs Yeast Culture Collection

All White Labs strains are put through a series of purity and performance tests, so you can be confident the yeast you receive will be free from bacteria, wild yeast or molds. We are so confident in our product we provide each slurry with its own Certificate of Quality.

Yeast Available in both
Pitchable sizes and Custom Count

PITCHABLE Yeast

White Labs was founded based on the concept of providing breweries with large quantities of pure liquid yeast at an affordable price. In 1995, the most popular brewpub fermentor size was 7bbl.. Today, the most common size is 15bbl. We offer a wide range of sizes to meet most breweries' needs, whether they desire a direct pitch or a propagation size.

CUSTOM COUNT™ Yeast

Custom cell counts. You tell us what batch size, starting gravity, and pitching rate you desire, and we will produce the culture for you. Customized testing, including fermentation trials, is also available. Perfect for regional breweries, microbreweries, and for specialty or lager production. Sold by the liter.

Ale Yeast

WLP001 California Ale Yeast

This yeast is famous for its clean flavors, balance and ability to be used in almost any style ale. It accentuates the hop flavors and is extremely versatile.
Attenuation: 73-80%
Flocculation: Medium
Optimum Fermentation Temperature: 68-73°F
Alcohol Tolerance: High

WLP002 English Ale Yeast

A classic ESB strain from one of England's largest independent breweries. This yeast is best suited for English style ales including milds, bitters, porters, and English style stouts. This yeast will leave a beer very clear, and will leave some residual sweetness.
Attenuation: 63-70%
Flocculation: Very High
Optimum Fermentation Temperature: 65-68°F
Alcohol Tolerance: Medium

WLP003 German Ale Yeast II*

Good for Kolsch, Alt, and German style Pale Ales. Strong sulfur component will reduce with aging. Clean, but with more ester production than WLP029.
Attenuation: 73-80%
Flocculation: Medium
Optimum Fermentation Temperature: 65-70°F
(Does not ferment well less than 62°F)
Alcohol Tolerance: Medium

WLP004 Irish Ale Yeast

This is the yeast from one of the oldest stout producing breweries in the world. It produces a slight hint of diacetyl, balanced by a light fruitiness and slight dry crispness. Great for Irish ales, stouts, porters, browns, reds and a very interesting pale ale.
Attenuation: 69-74%
Flocculation: Medium to High
Optimum Fermentation Temperature: 65-68°F
Alcohol Tolerance: Medium-High

WLP005 British Ale Yeast

This yeast is a little more attenuative than WLP002. Like most English strains, this yeast produces malty beers. Excellent for all English style ales including bitter, pale ale, porter, and brown ale.
Attenuation: 67-74%
Flocculation: High
Optimum Fermentation Temperature: 65-70°F
Alcohol Tolerance: Medium

WLP006 Bedford British Ale Yeast*

Ferments dry and flocculates very well. Produces a distinct ester profile. Good choice for most English style ales including bitter, pale ale, porter, and brown ale.
Attenuation: 72-80%
Flocculation: High
Optimum Fermentation Temperature: 65-70°F
Alcohol Tolerance: Medium

WLP007 Dry English Ale Yeast

Clean, highly flocculent, and highly attenuative yeast. This yeast is similar to WLP002 in flavor profile, but is 10% more attenuative. This eliminates the residual sweetness, and makes the yeast well suited for high gravity ales. It is also reaches terminal gravity quickly. 80% attenuation will be reached even with 10% ABV beers.
Attenuation: 70-80%
Flocculation: Medium to High
Optimum Fermentation Temperature: 65-70°F
Alcohol Tolerance: Medium-High

WLP008 East Coast Ale Yeast

Our "Brewer Patriot" strain can be used to reproduce many of the American versions of classic beer styles. Similar neutral character of WLP001, but less attenuation, less accentuation of hop bitterness, increased flocculation, and a little tartness. Very clean and low esters. Great yeast for golden, blonde, honey, pales and German alt style ales.
Attenuation: 70-75%
Flocculation: Medium to Low
Optimum Fermentation Temperature: 68-73°F
Alcohol Tolerance: Medium

WLP009 Australian Ale Yeast*

Produces a clean, malty beer. Pleasant ester character, can be described as "bready". Can ferment successfully, and clean, at higher temperatures. This yeast combines good flocculation with good attenuation.
Attenuation: 70-75%
Flocculation: High
Optimum Fermentation Temperature: 65-70°F
Alcohol Tolerance: Medium

WLP011 European Ale Yeast

Malty, Northern European-origin ale yeast. Low ester production, giving a clean profile. Little to no sulfur production. Low attenuation helps to contribute to the malty character. Good for Alt, Kolsch, malty English ales, and fruit beers.
Attenuation: 65-70%
Flocculation: Medium
Optimum Fermentation Temperature: 65-70°F
Alcohol Tolerance: Medium

WLP013 London Ale Yeast

Dry, malty ale yeast. Provides a complex, oakey character to your beer. Hop bitterness comes through well. This yeast is well suited for classic British pale ales, bitters, and stouts. Does not flocculate as much as WLP002 and WLP005.

Attenuation: 67-75%
Flocculation: Medium
Optimum Fermentation Temperature: 66-71°F
Alcohol Tolerance: Medium

WLP017 Whitbread Ale Yeast*

Traditional mixed yeast culture. British style character, slightly fruity, with a hint of sulfur production. This yeast can be used for many different beer styles. The most traditional choices would be English style ales including milds, bitters, porters, and English style stouts. North American style ales will also benefit from fermentation with WLP017. The beer will clear easily.

Attenuation: 67-73%
Flocculation: High
Optimum Fermentation Temperature: 66-70°F
Alcohol Tolerance: Medium

WLP022 Essex Ale Yeast*

Flavorful British style yeast. Drier finish than many British ale yeasts. Produces slightly fruity and bready character. Good top fermenting yeast strain, is well suited for top cropping (collecting). This yeast is well suited for classic British milds, pale ales, bitters, and stouts. Does not flocculate as much as WLP002 and WLP005.

Attenuation: 71-76%
Flocculation: Medium to High
Optimum Fermentation Temperature: 66-70°F
Alcohol Tolerance: Medium

WLP023 Burton Ale Yeast

Flavors like apple, clover honey and pear. Great for all English styles, IPA's, bitters, and pales. Excellent in porters and stouts.

Attenuation: 69-75%
Flocculation: Medium
Optimum Fermentation Temperature: 68-73°F
Alcohol Tolerance: Medium

WLP025 Southwold Ale Yeast*

From Suffolk county, England. This yeast produces complex fruit, citrus, and spicy flavors. Great for British bitters and pale ales. Slight sulfur is produced during fermentation, which will disappear with aging.

Attenuation: 68-75%
Flocculation: Medium
Optimum Fermentation Temperature: 66-69°F
Alcohol Tolerance: Medium

WLP026 Premium Bitter Ale Yeast*

From Staffordshire, England. Fermentation gives a mild, but complex, estery character. Ferments strong and dry. Good for high gravity beers. Best for all English style ales, including bitters, milds, ESBs, porters, stouts, and barley wines.

Attenuation: 70-75%
Flocculation: Medium
Optimum Fermentation Temperature: 67-70°F
Alcohol Tolerance: Medium

WLP028 Edinburgh Scottish Ale Yeast

Scotland is famous for its malty, strong ales. This yeast can reproduce complex, flavorful Scottish style ales. This yeast can be an everyday strain, similar to WLP001. Hop character is not muted with this strain, as it is with WLP002.

Attenuation: 70-75%
Flocculation: Medium
Optimum Fermentation Temperature: 65-70°F
(Does not ferment well less than 62°F)
Alcohol Tolerance: Medium-High

WLP029 German Ale/ Kolsch Yeast

From a small brewpub in Cologne, Germany, this yeast works great in Kolsch and Alt style beers. Good for light beers like blond and honey. Accentuates hop flavors, similar to WLP001. The slight sulfur produced during fermentation will disappear with age and leave a super clean, lager like ale.

Attenuation: 72-78%
Flocculation: Medium
Optimum Fermentation Temperature: 65-69°F
(Does not ferment well less than 62°F, unless during active fermentation.)
Alcohol Tolerance: Medium

WLP033 Klassic Ale Yeast*

Traditional English style, single strain yeast. Produces signature ester character, and does not mask hop character. Leaves ale with a slightly sweet malt character. Best for bitters, milds, porters, and stouts. Also good for Scottish style ales.

Attenuation: 66-74%
Flocculation: Medium
Optimum Fermentation Temperature: 66-70°F
Alcohol Tolerance: Medium

WLP036 Dusseldorf Alt Yeast*

Traditional Alt yeast from Dusseldorf, Germany. Produces clean, slightly sweet alt beers. Does not accentuate hop flavor as WLP029 does.

Attenuation: 65-72%
Flocculation: Medium
Optimum Fermentation Temperature: 65-69°F
Alcohol Tolerance: Medium

WLP037 Yorkshire Square Ale Yeast*

This yeast produces a beer that is malty, but well-balanced. Expect flavors that are toasty with malt-driven esters. Highly flocculent and good choice for English pale ales, English brown ales, and mild ales.

Attenuation: 68-72%
Flocculation: High
Optimum Fermentation Temperature: 65-70°F
(18-21°C)
Alcohol Tolerance: Medium-High

WLP038 Manchester Ale Yeast*

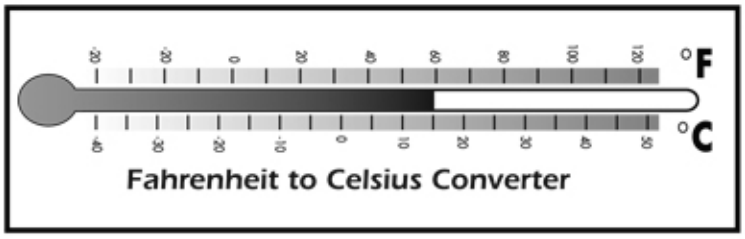
Top-fermenting strain that is traditionally good for top-cropping. Moderately flocculent with a clean, dry finish. Low ester profile, producing a highly balanced English-style beer.

Attenuation: 70-74%
Flocculation: Medium-High
Optimum Fermentation Temperature: 65-70°F
(18-21°C)
Alcohol Tolerance: Medium-High

WLP039 Nottingham Ale Yeast*

British style ale yeast with a very dry finish. Medium to low fruit and fusel alcohol production. Good top fermenting yeast strain, is well suited for top cropping (collecting). This yeast is well suited for pale ales, ambers, porters and stouts.

Attenuation: 73-82%
Flocculation: Medium to High
Optimum Fermentation Temperature: 66-70 °F
Alcohol Tolerance: Medium



Fahrenheit to Celsius Converter

WLP041 Pacific Ale Yeast
A popular ale yeast from the Pacific Northwest. The yeast will clear from the beer well, and leave a malty profile. More fruity than WLP002, English Ale Yeast. Good yeast for English style ales including milds, bitters, IPA, porters, and English style stouts.
Attenuation: 65-70%
Flocculation: High
Optimum Fermentation Temperature: 65-68 °F
Alcohol Tolerance: Medium

WLP051 California Ale V Yeast
From Northern California. This strain is fruitier than WLP001, and slightly more flocculent. Attenuation is lower, resulting in a fuller bodied beer than with WLP001.
Attenuation: 70-75%
Flocculation: Medium to High
Optimum Fermentation Temperature: 66-70 °F
Alcohol Tolerance: Medium-High

WLP060 American Ale Yeast Blend
Our most popular yeast strain is WLP001, California Ale Yeast. This blend celebrates the strengths of California- clean, neutral fermentation, versatile usage, and adds two other strains that belong to the same 'clean/neutral' flavor category. The additional strains create complexity to the finished beer. This blend tastes more lager like than WLP001. Hop flavors and bitterness are accentuated, but not to the extreme of California. Slight sulfur will be produced during fermentation.
Attenuation: 72-80%
Flocculation: Medium
Optimum Fermentation Temperature: 68-72 °F
Alcohol Tolerance: Medium High

WLP072 French Ale Yeast*
Clean strain that complements malt flavor. Low to moderate esters, when fermentation temperature is below 70°F. Moderate plus ester character over 70°F. Low diacetyl production. Good yeast strain for Biere de Garde, blonde, amber, brown ales, and specialty beers.
Attenuation: 68-75%
Flocculation: Medium High
Optimum Fermentation Temperature: 63-73 °F
Alcohol Tolerance: Medium High

WLP080 Cream Ale Yeast Blend
This is a blend of ale and lager yeast strains. The strains work together to create a clean, crisp, light American lager style ale. A pleasing estery aroma may be perceived from the ale yeast contribution. Hop flavors and bitterness are slightly subdued. Slight sulfur will be produced during fermentation, from the lager yeast.
Attenuation: 75-80%
Flocculation: Medium
Optimum Fermentation Temperature: 65-70°F
Alcohol Tolerance: Medium High

WLP085 English Ale Yeast Blend
A blend of British ale yeast strains, designed to add complexity to your ale. Moderate fruitiness and mineral-like with little to no sulfur. Drier than WLP002 and WLP005 with similar flocculation. Yeast is suitable for English Pale Ale, Bitter, Porter, Stout and India Pale Ale.
Attenuation: 69-76%
Flocculation: Medium High
Optimum Fermentation Temperature: 68-72 °F
Alcohol Tolerance: Medium

WLP099 Super High Gravity Ale Yeast
Can ferment up to 25% alcohol. From England. Produces ester character that increases with increasing gravity. Malt character dominates at lower gravities.
Attenuation: >80%
Flocculation: Medium
Optimum Fermentation Temperature: 65-69 °F
Alcohol Tolerance: Very High

Specialty / Belgian Yeast

WLP300 Hefeweizen Ale Yeast
This famous German yeast is a strain used in the production of traditional, authentic wheat beers. It produces the banana and clove nose traditionally associated with German wheat beers and leaves the desired cloudy look of traditional German wheat beers.
Attenuation: 72-76%
Flocculation: Low
Optimum Fermentation Temperature: 68-72 °F
Alcohol Tolerance: Medium

WLP 320 American Hefeweizen Yeast
Unlike WLP300, this yeast produces a very slight amount of the banana and clove notes. It produces some sulfur, but is otherwise a clean fermenting yeast, which does not flocculate well, producing a cloudy beer.
Attenuation: 70-75%
Flocculation: Low
Optimum Fermentation Temperature: 65-69 °F
Alcohol Tolerance: Medium

WLP351 Bavarian Weizen Yeast*
Former Yeast Lab W51 yeast strain, acquired from Dan McConnell. The description originally used by Yeast Lab still fits: "This strain produces a classic German-style wheat beer, with moderately high, spicy, phenolic overtones reminiscent of cloves."
Attenuation: 73-77%
Flocculation: Low
Optimum Fermentation Temperature: 66-70 °F
Alcohol Tolerance: Medium

WLP380 Hefeweizen IV Ale Yeast
Large clove and phenolic aroma and flavor, with minimal banana. Refreshing citrus and apricot notes. Crisp, drinkable hefeweizen. Less flocculent than WLP300, and sulfur production is higher.
Attenuation: 73-80%
Flocculation: Low
Optimum Fermentation Temperature: 66-70 °F
Alcohol Tolerance: Medium

WLP400 Belgian Wit Ale Yeast
Slightly phenolic and tart, this is the original yeast used to produce Wit in Belgium.
Attenuation: 74-78%
Flocculation: Low to Medium
Optimum Fermentation Temperature: 67-74 °F
Alcohol Tolerance: Medium

WLP410 Belgian Wit II Ale Yeast*
Less phenolic than WLP400. Will leave a bit more sweetness, and flocculation is higher than WLP400. Use to produce Belgian Wit, spiced Ales, wheat Ales, and specialty Beers.
Attenuation: 70-75%
Flocculation: Low to Medium+
Optimum Fermentation Temperature: 67-74 °F
Alcohol Tolerance: Medium

Alcohol Tolerance Table:

Very High: Over 15% *High: 10-15%*

Medium-High: 8-12% *Medium:5-10%* *Low: 2-5%*

WLP500 Trappist Ale Yeast
From one of the few remaining Trappist breweries in the world, this yeast produces the distinctive fruitiness and plum characteristics. Excellent yeast for high gravity beers, Belgian ales, dubbels and trippels.
Attenuation: 75-80%
Flocculation: Medium to low
Optimum Fermentation Temperature: 65-72 °F
Lower temperatures (under 65) will result in less fruity and earthier beers.
Alcohol Tolerance: High

WLP510 Bastogne Belgian AleYeast*
A high gravity, Trappist style ale yeast. Produces dry beer with slight acidic finish. More clean fermentation character than WLP500 or WLP530. Not as spicy as WLP530 or WLP550. Excellent yeast for high gravity beers, Belgian ales, dubbels and trippels.
Attenuation: 74-80%
Flocculation: Medium
Optimum Fermentation Temperature: 66-72 °F
Alcohol Tolerance: High

WLP515 Antwerp Ale Yeast*
Clean, almost lager like Belgian type ale yeast. Good for Belgian type pale ales and amber ales, or with blends to combine with other Belgian type yeast strains. Biscuity, ale like aroma present. Hop flavors and bitterness are accentuated. Slight sulfur will be produced during fermentation, which can give the yeast a lager like flavor profile.
Attenuation: 73-80%
Flocculation: Medium
Optimum Fermentation Temperature: 67-70°F
Alcohol Tolerance: Medium

WLP530 Abbey Ale Yeast
Used to produce Trappist style beers. Similar to WLP500, but is less fruity and more alcohol tolerant (up to 15% ABV). Excellent yeast for high gravity beers, Belgian ales, dubbels and trippels.
Attenuation: 75-80%
Flocculation: Medium to High
Optimum Fermentation Temperature: 66-72 °F
Alcohol Tolerance: High

WLP540 Abbey IV Ale Yeast*
An authentic Trappist style yeast. Use for Belgian style ales, dubbels, tripples and specialty beers. Fruit character is medium, in between WLP500 (high) and WLP530 (low).
Attenuation: 74-82%
Flocculation: Medium
Optimum Fermentation Temperature: 66-72 °F
Alcohol Tolerance: High

WLP545 Belgian Strong Ale Yeast*
From the Ardennes region of Belgium, this classic yeast strain produces moderate levels of ester and spicy phenolic character. Typically results in a dry, but balanced finish. This yeast is well suited for Belgian dark strongs, Abbey Ales, and Christmas beers.
Attenuation: 78-85%
Flocculation: Medium
Optimum Fermentation Temperature: 66-72°F
Alcohol Tolerance: High

WLP550 Belgian Ale Yeast
Saisons, Belgian Ales, Belgian Reds, Belgian Browns, and White beers are just a few of the classic Belgian beer styles that can be created with this yeast strain. Phenolic and spicy flavors dominate the profile, with less fruitiness then WLP500.
Attenuation: 78-85%
Flocculation: Medium
Optimum Fermentation Temperature: 68-78°F
Alcohol Tolerance: Medium High

WLP565 Belgian Saison I Yeast
Classic Saison yeast from Wallonia. It produces earthy, peppery, and spicy notes. Slightly sweet. With high gravity saisons, brewers may wish to dry the beer with an alternate yeast added after 75% fermentation.
Attenuation: 65-75%
Flocculation: Medium
Optimum Fermentation Temperature: 68-75 °F
Alcohol Tolerance: Medium

WLP566 Belgian Saison II Yeast*
Saison strain with more fruity ester production than with WLP565. Moderately phenolic, with a clove-like characteristic in finished beer flavor and aroma. Ferments faster than WLP565.
Attenuation: 78-85%
Flocculation: Medium
Optimum Fermentation Temperature: 68-78 °F
Alcohol Tolerance: Medium

WLP568 Belgian Style Saison Ale Yeast Blend
This blend melds Belgian style ale and saison strains. The strains work in harmony to create complex, fruity aromas and flavors. The blend of yeast strains encourages complete fermentation in a timely manner. Phenolic, spicy, earthy and clove like flavors are also created.
Attenuation: 70-80%
Flocculation: Medium
Optimum Fermentation Temperature: 70-80 °F
Alcohol Tolerance: Medium

WLP570 Belgian Golden Ale Yeast
From East Flanders, versatile yeast that can produce light Belgian ales to high gravity Belgian beers (12% ABV). A combination of fruitiness and phenolic characteristics dominate the flavor profile. Some sulfur is produced during fermentation, which will dissipate following the end of fermentation.
Attenuation: 73-78%
Flocculation: Low
Optimum Fermentation Temperature: 68-75 °F
Alcohol Tolerance: High

WLP575 Belgian Style Ale Yeast Blend
A blend of Trappist type yeast (2) and one Belgian ale type yeast. This creates a versatile blend that can be used for Trappist type beer, or a myriad of beers that can be described as 'Belgian type'.
Attenuation: 74-80%
Flocculation: Medium
Optimum Fermentation Temperature: 68-75 °F
Alcohol Tolerance: Medium High

Lager Yeast

WLP800 Pilsner Lager Yeast
Classic pilsner strain from the premier pilsner producer in the Czech Republic. Somewhat dry with a malty finish, this yeast is best suited for European pilsner production.
Attenuation: 72-77%
Flocculation: Medium to High
Optimum Fermentation Temperature: 50-55°F
Alcohol Tolerance: Medium

WLP802 Czech Budejovice Lager Yeast
Pilsner lager yeast from Southern Czech Republic. Produces dry and crisp lagers, with low diacetyl production.
Attenuation: 75-80%
Flocculation: Medium
Optimum Fermentation Temperature: 50-55 °F
Alcohol Tolerance: Medium

WLP810 San Francisco Lager Yeast
This yeast is used to produce the "California Common" style beer. A unique lager strain, which has the ability to ferment up to 65 degrees while retaining lager characteristics. Can also be fermented down to 50 degrees for production of marzens, pilsners and other style lagers.
Attenuation: 65-70%
Flocculation: High
Optimum Fermentation Temperature: 58-65 °F
Alcohol Tolerance: Medium-High

WLP820 Oktoberfest/Märzen Lager Yeast
This yeast produces a very malty, bock like style. It does not finish as dry as WLP830. This yeast is much slower in the first generation than WLP830, so we encourage a larger starter to be used the first generation or schedule a longer lagering time.
Attenuation: 65-73%
Flocculation: Medium
Optimum Fermentation Temperature: 52-58°F
Alcohol Tolerance: Medium-High

WLP830 German Lager Yeast
This yeast is one of the most widely used lager yeasts in the world. Very malty and clean, great for all German lagers, pilsner, oktoberfest, and marzen.
Attenuation: 74-79%
Flocculation: Medium
Optimum Fermentation Temperature: 50-55°F
Alcohol Tolerance: Medium

WLP833 German Bock Lager Yeast
From the Alps of southern Bavaria, this yeast produces a beer that is well balanced between malt and hop character. The excellent malt profile makes it well suited for Bocks, Dopplebocks, and Oktoberfest style beers. Very versatile lager yeast, it is so well balanced that it has gained tremendous popularity for use in Classic American style Pilsners. Also good for Helles style lager beer.
Attenuation: 70-76%
Flocculation: Medium
Optimum Fermentation Temperature: 48-55°F
Alcohol Tolerance: Medium-High

WLP838 Southern German Lager Yeast
This yeast is characterized by a malty finish and balanced aroma. It is a strong fermentor, produces slight sulfur, and low diacetyl.
Attenuation: 68-76%
Flocculation: Medium to High
Optimum Fermentation Temperature: 50-55°F
Alcohol Tolerance: Medium

WLP840 American Lager Yeast
This yeast is used to produce American style lagers. Dry and clean with a very slight apple fruitiness. Sulfur and diacetyl production is minimal.
Attenuation: 75-80%
Flocculation: Medium
Optimum Fermentation Temperature: 50-55°F
Alcohol Tolerance: Medium

WLP850 Copenhagen Lager Yeast
Clean, crisp north European lager yeast. Not as malty as the southern European lager yeast strains. Great for European style pilsners, European style dark lagers, Vienna, and American style lagers.
Attenuation: 72-78%
Flocculation: Medium
Optimum Fermentation Temperature: 50-58°F
Alcohol Tolerance: Medium

WLP862 Cry Havoc
Licensed from Charlie Papazian, this strain can ferment at ale and lager temperatures, allowing brewers to produce diverse beer styles. The recipes in both Papazian's books, The Complete Joy of Homebrewing and The Homebrewer's Companion, were originally developed and brewed with this yeast.

For Ales:
Attenuation: 66-70%
Flocculation: M-L
Optimum Fermentation Temperature: 68-74°F
Optimum Cellaring Temperature: 50-55°F
+ Alt beers can be cellared at lagering temperatures

For Lagers:
Attenuation: 66-70%
Flocculation: L
Optimum Fermentation Temperature: 55-58°F
Optimum Laagering Temperature: 32-37°F

WLP885 Zurich Lager Yeast*
Swiss style lager yeast. With proper care, this yeast can be used to produce lager beer over 11% ABV. Sulfur and diacetyl production is minimal. Original culture provided to White Labs by Marc Sedam.
Attenuation: 70-80%.
Flocculation: Medium
Optimum Fermentation Temperature: 50-55°F
Alcohol Tolerance: Very High

WLP920 Old Bavarian Lager Yeast*
From Southern Germany, this yeast finishes malty with a slight ester profile. Use in beers such as Oktoberfest, Bock, and Dark Lagers.
Attenuation: 66-73%
Flocculation: Medium
Optimum Fermentation Temperature: 50-55°F
Alcohol Tolerance: Medium-High

WLP925 HP Lager Yeast*
Use to ferment lager beer in one week! Ferment at room temperature 62-68°F) under 1.0 bar (14.7 PSI) until final gravity is obtained, generally in one week. Lager the beer at 35¡F, 15 PSI, for 3-5 days, to condition. Sulfur production is strong first 2 days, then disappears by day 5. Do not need to carbonate, since at 1 bar entire time.
Attenuation: 73-82%
Flocculation: Medium
Optimum Fermentation Temperature: 62-68°F
Alcohol Tolerance: Medium

WLP940 Mexican Lager Yeast
From Mexico City, this yeast produces clean lager beer, with a crisp finish. Good for Mexican style light lagers, as well as dark lagers.
Attenuation: 70-78%
Flocculation: Medium
Optimum Fermentation Temperature: 50-55°F
Alcohol Tolerance: Medium

Wine/Mead/Cider Yeast

WLP700 Flor Sherry Yeast
This yeast develops a film (flor) on the surface of the wine. Creates green almond, granny smith and nougat characteristics found in sherry. Can also be used for Port, Madeira and other sweet styles. For use in secondary fermentation. Slow fermentor.
Alcohol Tolerance: 16%
Attenuation: >80%
Flocculation: N/A
Optimum Fermentation Temperature: >70°F (21°C)

WLP705 Sake Yeast
For use in rice based fermentations. For sake, use this yeast in conjunction with koji (to produce fermentable sugar). WLP705 produces full body sake character, and subtle fragrance.
Alcohol Tolerance: 16%
Attenuation: >80%
Flocculation: N/A
Optimum Fermentation Temperature: >70° F (21°C)

WLP715 Champagne Yeast
Classic yeast, used to produce champagne, cider, dry meads, dry wines, or to fully attenuate barley wines/ strong ales. Can tolerate alcohol concentrations up to 17%. Neutral.
Attenuation: > 75%
Flocculation: Low
Optimum Fermentation Temperature: 70-75°F
Alcohol Tolerance: Very High

WLP718 Avize Wine Yeast
Champagne isolate used for complexity in whites. Contributes elegance, especially in barrel fermented Chardonnays.
Alcohol Tolerance: 15%
Attenuation: >80%
Flocculation: Low
Optimum Fermentation Temperature: 60-90°F
Alcohol Tolerance: Very High

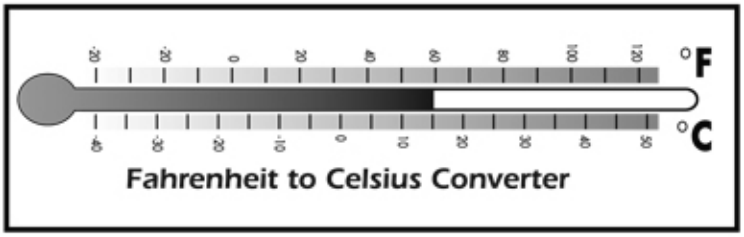
WLP720 Sweet Mead/Wine Yeast:
A wine yeast strain that is less attenuative than WLP715, leaving some residual sweetness. Slightly fruity and will tolerate alcohol concentrations up to 15%. A good choice for sweet mead and cider, as well as Blush wines, GewŸrztraminer, Sauternes, and Riesling.
Attenuation: < 75%
Flocculation: Low
Optimum Fermentation Temperature: 70-75°F
Alcohol Tolerance: Medium-High

WLP727 Steinberg-Geisenheim Wine Yeast
German in origin, this yeast has high fruit/ester production. Perfect for Riesling and Gewürztraminer. Moderate fermentation characteristics and cold tolerant.
Alcohol Tolerance: 14%
Attenuation:>80%
Flocculation: Low
Optimum Fermentation Temperature: 50-90°F
Alcohol Tolerance: High

WLP730 Chardonnay White Wine Yeast
Dry wine yeast. Slight ester production, low sulfur dioxide production. Enhances varietal character. WLP730 is a good choice for all white and blush wines, including Chablis, Chenin Blanc, Semillon, and Sauvignon Blanc. Fermentation speed is moderate.
Alcohol Tolerance: 14%
Attenuation: > 80%
Flocculation: Low
Optimum Fermentation Temperature: 50-90°F
Alcohol Tolerance: High

WLP735 French White Wine Yeast
Classic yeast for white wine fermentation. Slow to moderate fermentor and foam producer. Gives an enhanced creamy texture.
Alcohol Tolerance: 16%
Attenuation: >80%
Flocculation: Low
Optimum Fermentation Temperature: 60-90°F
Alcohol Tolerance: High

WLP740 Merlot Red Wine Yeast
Neutral, low fusel alcohol production. Will ferment to dryness, alcohol tolerance to 18%. Vigorous fermenter. WLP740 is well suited for Merlot, Shiraz, Pinot Noir, Chardonnay, Cabernet, Sauvignon Blanc, and Semillon.
Alcohol Tolerance: 18%
Attenuation: > 80%
Flocculation: Low
Optimum Fermentation Temperature: 60-90°F
Alcohol Tolerance: High



Fahrenheit to Celsius Converter

WLP749 Assmanshausen Wine Yeast
German red wine yeast, which results in spicy, fruit aromas. Perfect for Pinot Noir and Zinfandel. Slow to moderate fermentor which is cold tolerant.
Alcohol Tolerance: 16%.
Attenuation: >80%
Flocculation: Low
Alcohol Tolerance: High

WLP750 French Red Wine Yeast
Classic Bordeaux yeast for red wine fermentations. Moderate fermentation characteristics. Tolerates lower fermentation temperatures. Rich, smooth flavor profile.
Alcohol Tolerance: 17%
Attenuation: >80%
Flocculation: Low Optimum Fermentation Temperature: 60-90°F
Alcohol Tolerance: High

WLP760 Cabernet Red Wine Yeast
High temperature tolerance. Moderate fermentation speed.
Excellent for full-bodied red wines, ester production complements flavor. WLP760 is also suitable for Merlot, Chardonnay, Chianti, Chenin Blanc, and Sauvignon Blanc.
Alcohol Tolerance: 16%
Attenuation: > 80%
Flocculation: Low Optimum Fermentation Temperature: 60-90°F
Alcohol Tolerance: Very High

WLP770 Suremain Burgundy Wine Yeast
Emphasizes fruit aromas in barrel fermentations. High nutrient requirement to avoid volatile acidity production.
Alcohol Tolerance: 16%
Attenuation: >80%
Flocculation: Low
Optimum Fermentation Temperature: 60-90°F
Alcohol Tolerance: High

WLP775 English Cider Yeast
Classic cider yeast. Ferments dry, but retains flavor from apples. Sulfur is produced during fermentation, but will disappear in first two weeks of aging. Can also be used for wine and high gravity beers.
Attenuation: >80%
Flocculation: Medium
Optimum Fermentation Temperature: 68-75°F
Alcohol Tolerance: Medium-High

**These strains are subject to a longer turn around time. For more detailed information on all strains, including user reviews, visit www.whitelabs.com*

Siebel Institute Yeast Cultures

**** All Siebel Yeast Strains are offered as a 1-liter concentrate, or slant. To order, call (514) 496-6125.**

Ale Yeast

BRY96
Flocculent top fermenting from a brewery formerly operating on the east coast. It produces a clean ale flavor, which has been well accepted in a number of breweries.
Attenuation: 74-80%
Flocculation: Medium
Optimum Fermentation Temperature: 68-72°F
Alcohol Tolerance: High

BRY144
A top fermenting alt beer style yeast from Germany, which produces a very full, flavored but clean tasting beer, some-what estery flavor.
Attenuation: 66-73%
Flocculation: Medium
Optimum Fermentation Temperature: 65-69°F
Alcohol Tolerance: Medium

BRY204
A top fermenting Trappist type strain which ferments rapidly at relatively warm temperatures. It can be used to produce ales and wheat beers with a rather dry but estery flavor and a light clove-like spicy character.
Attenuation: 74-79%
Flocculation: Medium to high
Optimum Fermentation Temperature: 66-72°F
Alcohol Tolerance: High

BRY235
A traditional Bavarian weizen yeast, which is top fermenting and normally used at room temperature to give a very vigorous fermentation. Produces a very estery beer with a mild clove-like spiciness.
Attenuation: 74-81%
Flocculation: Low
Optimum Fermentation Temperature: 66-70°F
Alcohol Tolerance: Medium

BRY264
A flocculent, bottom fermenting strain from England. Produces a clean ale type product, with an estery and slightly nutty character.
Attenuation: 70-75%
Flocculation: Medium to High
Optimum Fermentation Temperature: 66-70°F
Alcohol Tolerance: Medium

BRY401
This is the most widely used yeast for brewing Kolsch beer in Germany. It is a non-flocculant yeast that ferments and settles very slowly. It is an ale yeast that ferments well at lower temperatures (55-59 degrees F or 13-15 degrees Celsius) and produces the mild flavors associated with Kolsch beer.
Attenuation: 72-79%
Flocculation: Medium
Optimum Fermentation Temperature: 64-69°F
Alcohol Tolerance: Medium

Lager Yeast

BRY118
A very, flocculent lager yeast. It has been used by a number of breweries in the US for many years. It shows good viability under a variety of brewing conditions and keeps its viability well under storage. This yeast produces a beer with a slightly fruity character, sometimes a little residual sugar is left because the yeast settles quickly. It tends to be a sulfur producer under some conditions.
Attenuation: 66-72%
Flocculation: High
Optimum Fermentation Temperature: 53-69°F
Alcohol Tolerance: Medium-High

BRY203
This yeast is a very popular and very flocculent lager strain from Northern Europe. It produces a beer with a good balance of flavors, particularly between the esters and higher alcohols, which makes a very drinkable beer. This yeast produces less sulfur compounds than most flocculent strains.
Attenuation: 74-80%
Flocculation: Medium
Optimum Fermentation Temperature: 50-55°F
Alcohol Tolerance: Medium

Alternative Fermentation Products

Brettanomyces & Bacteria

White Labs offers a number of bacteria and wild yeast cultures which are produced in our proprietary bacterial laboratory.
**All cultures available in 1-liter concentrate to inoculate a secondary fermentation.

WLP645 Brettanomyces Claussenii
Low intensity Brett character. Originally isolated from strong English stock beer, in the early 20th century. The Brett flavors produced are more subtle than WLP650 and WLP653. More aroma than flavor contribution. Fruity, pineapple like aroma. B. claussenii is closely related to B. anomalus.

WLP650 Brettanomyces Bruxellensis
Medium intensity Brett character. Classic strain used in secondary fermentation for Belgian style beers and lambics. One Trappist brewery uses this strain in secondary fermentation and bottling to produce their characteristic flavor.

WLP653 Brettanomyces Lambicus
High intensity Brett character. Defines the "Brett character": Horsey, smoky and spicy flavors. As the name suggests, this strain is found most often in Lambic style beers, which are spontaneously fermented beers. Also found in Flanders and sour brown style beers.

WLP655 Belgian Sour Mix 1
A unique blend perfect for Belgian style beers. Includes Brettanomyces, Saccharomyces, and the bacterial strains Lactobacillus and Pediococcus.

WLP677 Lactobacillus I
This lactic acid bacteria produces moderate levels of acidity and sour flavors found in lambics, Berliner Weiss, sour brown ales and gueze.

WLP675 Malolactic Bacteria
Used to convert malic acid to lactic acid which decreases wine acidity and helps to soften final flavors in wine.

www.yeastman.com
888-5-YEAST-5

Yeast Nutrients & Enzymes

White Labs Yeast Nutrient

Used to increase the health of yeast. Improves fermentation and re-pitching performance. Contains diammonium phosphate, essential vitamins and cofactors, nitrogen (amino acids, proteins, and peptides) and minerals. Effective boost for first and/or late generation yeast slirry. If grist is not 100% malt, then yeast nutrient will help make up for lack of nutrients. Each vial contains 1.0oz, enough for 5bbls.

Servomyces (from Lallemand)

Servomyces is a nutritional yeast supplement that was originally developed for German brewers by Weihenstephan and the Munich University. It conforms to the restrictions of Reinheitsgebot. Servomyces enables any yeast strain's ability to incorporate essential nutrients into its cellular structure. Tested in breweries around the world it has been proven to:

- Cut down fermentation time
- Increase flocculation
- Greatly reduce harsh sulfur notes
- Improve the health and viability of yeast
- Reduce levels of diacetyl at the end of primary fermentation
- Produce faster, more complete attenuations
- Increase yeast production for a better harvest
- Improve the quality of the finished product

Servomyces is packaged dry in 10-gram packets and a 500-gram bulk package. Each 10-gram packet services 10-bbls/10hl.

Fermaid K (from Lallemand)

Fermaid K is a blended complex yeast nutrient that supplies ammonia salts (DAP), alpha amino nitrogen (derived from yeast extract), sterols, unsaturated fatty acids, key nutrients (magnesium sulfate, thiamin, folic acid, niacin, biotin, calcium pantothenate) and inactive yeast. Fermaid K should be hydrated before adding to an active fermentation to avoid CO_2 release and overflowing of tanks or barrels. Available in 2.5kg bags & 10kg boxes. 10-gram packet services 10bbl/hls.

White Labs Fermentation Enzymes

Made with Technology from DSM™

WLN4000 Clarity-Ferm A highly specific endo-protease that prevents chill haze in beer by hydrolyzing haze-active polypeptides where the hydrogen bonding that causes chill haze occurs. For use at the beginning of fermentation Made with Brewer's Clarex, by DSM™.

WLN4100 Ultra-Ferm A liquid amyloglucosidase that completely hydrolyzes dextrins into fermentable glucose. This enzyme can be added to the brewhouse or the fermenter.

WLN4200 Amino-quik A liquid cysteine protease that degrades the proteins responsible for chill haze, thus preventing haze formation. For use during maturation of the beer.

WLN4300 Opti-Mash A thermostable alpha-amylase especially useful in mashes that use adjuncts. Ensures starch liquefaction and improves extract yield

WLN4400 Visco-Buster A liquid bacterial endo-beta 1,3-1,4 glucanase designed to hydrolyze beta glucans and precent blockage of beer filters and increase brewhouse capacity.

White Labs Propagation System

Frings

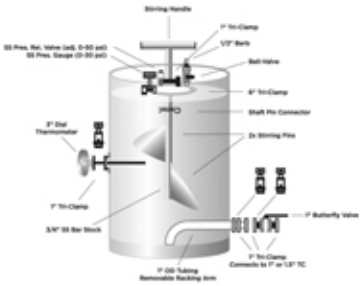
with Frings Technology

Need multiple pitches per week? White Labs' propagation system is designed for brewers with high demand for frequent, fresh yeast slurries. Our low maintenance system is easy to use, clean and re-fill. You can achieve high cell counts quickly.

Basic Package Includes: 20bbl/20hl operating volume in 40bbl/40hl tanks with minimum controls -temperature, DO; Pressurized discharge capabilities & SIP & CIP capabilities.

Options Include: pH Control, Alcohol Control, Mechanical Defoamer, Up to 400bbl operating volume & Automation. Nutrients and Yeast packages to support the system are also available.
Contact White Labs for more details.

White Labs Ferm Flask



LW2000 - Ferm Flask Without stirrer

LW2010- Ferm Flask With stirrer

This vessel is modified after the Carlsberg Flask that was invented with the 1st Pure Yeast Culture in 1883 by Emil Christian Hansen. With the White Labs Ferm Flask, you'll be able to add Nutrients while the yeast is in storage. In the same way, you'll also be able to charge your yeast prior to pitching. The special mixing arm will help you to avoid hot spot build up and will also allow you to homogenize the slurry prior to sampling or pitching. The White Labs Ferm Flask is the best way to ensure a consistently healthy pitch of yeast every time!

Consulting Services & Customized Seminars

White Labs offers expert, affordable on-site assistance for all of your fermentation needs, including:

- Laboratory Staff Training
- Laboratory Set-Up, including protocol and procedure manuals
- Contamination Risk Assessment/Clean-Up
- New Product and/or Fermentation Method Assistance
- Yeast Handling
- Yeast Propagation
- Cellar Training

For more information and to discuss your individual needs please contact:
info@whitelabs.com

Laboratory Supplies & Products

QC Day

Big QC Day, which began in 2007, is the independent testing of craft beer on a large scale. Brewers learn about their beers and quality control practices at an affordable cost. The tests provide a picture of the status of craft beer in general and allow breweries to compare their tests against the overall results of the test group. Testing includes VDK's, IBU's, alcohol, calories and more.The cost includes shipping for domestic clients. Visit www.whitelabs.com for more information on the next upcoming QC DAY, or to view past results.

Beer Twin Test (LS6565)

Compare how similar 2 beers are from different production facilities, different batches, contract brewed, brewed on new equipment, packaged on new equipment, fresh vs. old beer, draft vs. bottled beer, and many more options. Complete package includes:IBU,Color,Alcohol by Volume,Density, Real & Apparent Extract, Real & Apparent Attenuation, pH, Calories, and Total VDK. Optional add-ons: Total Esters & Fusel Alcohols, Dissolved Oxygen, Microbiological Assessment.

Shipping to White Labs included in the price (US only), and White Labs provides the box and materials for sample collection.

White Labs MiniFerment™ Fermentation Trials (LS3500)

Test fermentation speed, flavor profile, new ingredients, and new recipes-easily. White Labs' MiniFerment process can utilize as little as 2 liters of wort, and replicate large scale batches. We can even use your own wort. Basic trial, monitoring fermentation speed, starts at $100 per sample. Beer analysis, including gas chromatography, can be added to the trials.

For more information, contact our sales staff at 1-888-5-YEAST-5 or www.whitelabs.com

Laboratory Test Kits & Media

TK3000 White Labs SDA Test Kit

Detect the presence of both aerobic and anaerobic bacteria found in beer and/or yeast slurry. Kit will test 5-6 samples, and includes specialized pouches for proper anaerobic incubation.

TK3100 White Labs HLP Test Kit

Test for anaerobic beer spoilage organisms (lactobacillus & peddiococcus). Requires use of a microwave. Will test 5 samples and one control.

TK3250 White Labs Wild Yeast Test Kit

Test for the presence of Saccharomyces wild yeast using Lins Wild Yeast Media (LWYM). Should be used with 48 hours of receipt to obtain best results. Will test 5 samples and one control.

TK3275 White Labs Test Kit Bundle

Bundle includes the following test kits: TK3000, TK3100, TK3250. Use all three kits to ensure the brewery is clean. Requires use of microwave. SAVE by ordering the bundle.

TK3400 WLN/WLD Test Kit

Test for the presence of aerobic yeast and bacteria. Kit contains plates of Wallerstein media, both with and without cycloheximide. Cycloheximide inhibits the growth of brewers yeast & mold, isolating the bacterial and wild yeast encountered in brewing. 6 plates of each included.

TK3400AP WLN/WLD Test Kit with Anaerobic Pouches

Same kit as TK3400 but includes anaerobic pouches to test for anaerobic beer spoilage organisms.

www.whitelabs.com ▪ 888-5-Yeast-5

Plates

TK3300-20- Nutrient Agar Plates
20 plates of media to propagate and maintain yeast. Plates contain yeast peptone nutrient.

TK3410-20 Wallerstein Plates w/o cycloheximide
20 plates of nutrient media for growth of brewer's yeast, mold, and bacteria. 4 week shelf life

TK3420-20 Wallerstein Plates with cycloheximide
20 plates of selective media that inhibits brewer's yeast and allows growth of bacteria and some wild yeast. 4 week shelf life.

TK3500-20 Wild Yeast Plates
20 plates of Lins Wild yeast media for detection of Saccharomyces wild yeast. 2 week shelf life.

TK3501-20 LCSM Media Plates
20 plates of Lins Cupric Sulfate media for detection of non-Saccharomyces wild yeast. 2 week shelf life.

TK3600-20 SDA Media Plates
20 plates of selective media that detects growth of most brewery microorganisms. Plates contain cycloheximide which inhibits brewer's yeast growth..

Dry Media

TK3305 YPD Agar (500GR)
Nutrient agar base for the cultivation and maintenance of yeast. Autoclave required.

TK3340 Universal Beer Agar
Use for cultivation of microorganisms significant in brewing. Media requires addition of commercial beer and use of autoclave.

TK3450 WLN Media Wallerstein Media without cycloheximide **(500GR)** Nutrient agar base that allows brewers yeast, wild yeast and aerobic bacteria to grow.

TK3455 WLD Media Wallerstein Media with cycloheximide **(500GR)** Use to test for wild yeast and bacteria encountered in the brewing process. Inhibits the growth of brewers yeast.

TK3495 Lysine Media (500GR)
Contains glucose, vitamins, inorganic salts and L-lysine as the sole nitrogen source. For detection of non-Saccharomyces wild yeast. For best results, yeast should undergo several washings by centrifugation. Media preparation requires potassium lactate and pH adjustment.

TK3505 Lins Wild Yeast Media (LWYM) (200GR)
Detect & quantify Saccharomyces wild yeast populations. Media suppresses growth of culture yeast.

TK3507 Lee Multi Differential Agar/Schwarz Differential Agar (LMDA/SDA) (500GR)
Detect most bacterial organisms commonly encountered in a brewery. Cycloheximide (actidione) may be added to suppress growth of culture yeast.

TK3701 Lin Cupric Sulfate Media (LCSM) (200GR)
Detect & quantify non-Saccharomyces wild yeast populations in normal culture yeast.

TK3800 HLP Media (500GR)
HLP isolates anaerobic bacteria and comes in powdered form to be used in production of tubes. Hazardous material. Requires use of microwave.

Petri Dishes/Misc.

TK3610 Petri plates, Large (100x150mm)

TK3620 Petri plates, Small (60x150mm)
Plates are empty and sterile. Contains 20 plates.

TK3710 Cycloheximide, 50ml (1mg/ml)
Kills brewers yeast and used as an ingredient in plates. Requires use of protective gloves and eyewear.

TK3955 pH test paper
Intermediate range (0-6 pH)
Alcohol Tolerance: Medium

Laboratory Services

White Labs, Inc. provides the following services to brewers who want professional lab specialists to analyze their samples and provide them with detailed reports and professional advice. We analyze cool aerated wort samples, finished beer as well as samples from fermentors and/or heat exchangers in our state-of-the-art laboratory using American Society of Brewing Chemists approved methods. All results are strictly confidential.

Testing Services

Microbiological Tests

LS6110 WLN Test (Wallerstein without cycloheximide)
Wallerstein media allows for the cultivation of yeast, molds and bacteria.

LS6120 WLD Test (Wallerstein with cycloheximide)
Allows for the cultivation wild yeast and bacteria. The addition of cycloheximide kills the growth of cultured yeast and molds, isolating the other micro-organisms encountered in brewing.

LS6200 LWYM Test
This test is designed to inhibit brewers yeast and allow growth and detection of Saccharomyces wild yeast.

LS6210 LCSM Test
This test is designed to detect the presence of non- Saccharomyces wild yeast.

LS6300 HLP Test
This anaerobic test detects lactic acid bacteria Lactobacillus and Pediococcus. Both of these are known beer contaminants.

LS6500 Microscope Analysis
Includes: analysis of sample viability, dead cell count, detection of abnormal cells, description of cell morphology, condition of cell membrane, detection of amorphous matter and condition of protoplasm.

LS6110 Complete Sample Analysis for Breweries
(Micro) Includes: WLN, WLD, LWYM, HLP, SDA, LCSM and microscope analysis. (LS6500)

LS6644 Complete Sample Analysis for Breweries
(Nutritional) Includes: Alcohol, % extract, protein, carbohydrates and calories.

LS6750 Private Strain Setup
Preparation of yeast culture for proprietary housing. Includes LS6610 Sample Analysis Micro, fermentation performance analysis, optimal culture selection, and Respiratory/Petite Mutant testing.

LS6800 Private Strain Housing
Annual yeast banking and deep freeze storage of culture.

LS6900 Ale vs. Lager Test
Accurate test to differentiate ale yeast from lager yeast. Results take approximately 10 days.

LS7000 Respiratory/Petit Mutant Test
This test selectively detects respiratory deficient yeast in a given population by triphenyl-tetrazolium chloride (TTC) overlay technique.

Analytical Tests

LS6620 Complete QC Analysis
Includes LS6610-Complete Sample Analysis Micro, LS6640-Complete Beer Analysis, LS6655-IBU, and LS3200-Total VDK

LS6640 Complete Beer Analysis
Includes alcohol, extract, attenuation, density, calories, pH & color

LS3100 Alcohol (includes extract and attenuation)

LS6645 Calories

LS6646 Alcohol by Volume (%V/V)

LS6655 IBU

LS6658 Beer Color

LS6565 Beer Twin Test

LS3500 MiniFerment Fermentation Trial

Tests by Gas Chromatography

LS3050 Complete Beer Analysis
Includes Acetaldehyde, Fusel Alcohols, and Esters

LS3000 Acetaldehyde

LS3200 Total VDK(Diacetyl)
Beer sample is heated to drive all precursors into diacetyl, to determine total potential diacetyl.

LS3250 VDK (Diacetyl), As Is

LS3300 Dimethylsulfide (DMS)

LS3400 Fusel Alcohols and Esters

Laboratory Supplies & Equipment

(Please allow a minimum of two weeks for delivery of the following items. Items in stock may arrive sooner.)

Microscopes & Accessories

MB1100 Microscope
Objectives 4X, 10X & 40X. Allows for examination of yeast but is not capable of bacteria detection (needs 100X objective, see item MB1200). Monocular, separate coarse and fine focusing controls, built-in 20 watt incandescent light and no mechanical stage.

MB1200 Microscope
Objectives 4X, 10X, 40X and 100X. (100X needs immersion oil, see item MA1400 or MA1450). Meets the craft brewer's needs. Monocular head (rotatable 360°), mechanical stage with dual controls, separate coarse and fine focus, built-in 20 watt incandescent light and stain resistant enamel finish.

MB1250 Advanced Microscope
Same as MB1200, but binocular.

MB1300 Digital Balance
Features: top loading with 600g capacity, readable to .01g., auto calibration button. Platform is 5.25 by 5.25 stainless steel. This is a good brewery balance as it is easy to use and enables a brewer to prepare plates, malt media and test vials.

MA1400 Microscope Kit
Contains all parts necessary to do routine microscope analysis: Hemacytometer, methylene blue stain, microscope slides, cover slips, immersion oil, lens paper and counter. Save almost 10% by ordering complete kit.
Individual items: MA1410 - MA1470

MA1410 Hemacytometer (counting chamber)
Excellent for yeast cell counts and viability counts. Each chamber consists of an H shaped moat that forms 2 counting areas. Each counting area contains double Neubauer rulings with 400 small squares in central 1mm square. Each hemacytometer comes with two 0.4mm cover glasses. Does not come with pipettes.

MA1420 Methylene Blue Stain
Stain essential for viability testing. Dead yeast cells stain bright blue. Contains 50ml (Must be refrigerated).

MA1422 Alkaline Methylene Violet (AMV) stain
Improve the accuracy of viability test with AMV. (Must be refrigerated).

MA1430 Frosted Premium Microscope Slides
High purity microscope slides. Allows viewing of specimens without distortion. Slides are packaged in a handy dispenser box which contains 72 premium slides. Frosted edge allows for convenient specimen marking.

MA1440 Cover slips
Durable, clear plastic cover slips. 22X22mm. Box contains 100 cover slips.

MA1415 Cover slip - Hemacytometer Individual

MA1445 Microscope Slides and Cover Slips (12 each)

MA1450 Type B Immersion Oil
This oil is a high viscosity oil used in biomedical microscopy. Allows your high powered objectives to increase their light gathering power.
Essential for viewing bacteria.

MA1470 Hand Held Counter
Helps to count cells under a microscope.

MA1500 Gram Stain Kit
Includes one 50ml bottle of crystal violet, Grams iodine, decolorizer and Safranin, which enables one to test for the presence of gram negative and gram positive bacteria. Kit also contains 2 gram check slides with controls. Please specify glove size needed (S, M & L). We highly recommend Type B immersion oil for best viewing under the microscope (see MA1450).

MA1600 Gram Check Slides
The slides found with the gram stain kit. Each slide contains one gram negative and one gram positive control square. Slide also has 6 sample squares for testing. 5 slides/pack.

MA1700 Lens Paper (4" x 6": x50 sheets per book)

Flasks

LW2110 1000ml Erlenmeyer Glass Flask

LW2110-S Size 9 Stopper for 1000ml Flask

LW2120 500 ml Erlenmeyer Glass Flask

LW2120-S Size 7 Stopper for 500ml Flask

LW2125 50 ml Erlenmeyer Glass Flask

Beakers

LW2200 1000ml Glass Beaker, graduated every 50ml

LW2310 100ml Graduated Cylinder-Autoclaveable, polypropylene

LW2320 500ml Graduated Cylinder (plastic)
For use with large brewery hydrometers.

Pipettes

Sterile disposable pipettes. Pipettes allow sterile liquid transfers. We suggest obtaining corresponding bulb to facilitate intake and expulsion of fluids.

LW2510 25 ml Sterile Pipettes (50/pk)

LW2520 1 ml Sterile Pipettes (100/pk)

LW2530 10 ml Sterile Pipettes (10/pk)

LW2600 Glass Pasteur Pipettes (144/box)

LW2800 Sterile Disposable Transfer Pipettes
(Graduated 3ml, bulb draw, 10/pack)

Rubber Bulbs

Easy to grip bulbs assist in pipette transfers

LW2700 Red Silicone Bulb
Chemical resistant silicone bulb fits 1 ml to 25ml pipettes. Glass valves control vacuum for precise filling and delivery of liquid.

LW2710 30ml Capacity Bulb
Works with 25ml pipettes. (LW2510)

LW2720 3ml Capacity Bulb
Works with 1ml sterile pipettes (LW2520) and glass Pasteur pipettes. (LW2600)

Tubes / Bottles

LW2910 Sterile Disposable 50 ml Vials, With Cap

LW2920 Bag of 25 Vials

LW2930 Sterile Disposable 15ml vials, With Cap

LW2940 Tray of 50 vials

LW2928 Nalgene 125ml PET Bottle

LW2928CASE Nalgene 125ml PET Bottle (Tray of 25)

LW2803 Sterile Sampling Bags (25/pk)

LW2400 Glass Culture Tube with Threaded Cap
Reusable, autoclavable tubes. Perfect as small volume yeast starters, growing Slants and HLP tube preparation.

Test Tube Racks

Styrofoam, fits most glass test tubes

LW2950 Rack for 50ml Tubes (holds 25)

LW2960 Rack for 15ml Tubes (holds 50)

Sterile Cotton Swabs

Use to check for contamination. Swab surfaces of brewery, such as fermentors, hosing and fittings. Either streak sample onto Wallerstein plates without cyclohexamide or send to White Labs for analysis.
LM4110 10 Sterile Swabs

Distillation Yeast & Supplies

Yeast- Liquid

Cultured by White Labs from our private yeast bank. Liquid strains are delivered fresh and pure. The freshness and diversity of liquid yeast can enhance the flavor of spirits, especially with rum, whiskey and brandies. Available in sizes for 50, 200 & 400 gallons.

WLP001 California Ale Yeast
Suitable for vodka, gin and all neutral spirits

WLP028 Edinburgh Scottish Ale Yeast
Suitable for Scotch style whiskeys and bourbon.

WLP050 Tennessee Whisky Yeast
Suitable for American style whisky and bourbon.

WLP720 Sweet Mead Yeast
Suitable for rum and brandies.

WLP760 Merlot Yeast
Suitable for vodka, gin, grappa and neutral spirits.

WLP775 English Cider Yeast
Suitable for fruit brandies.

Yeast - Dried

Superstart (from Ethanol Technology)
Active dry yeast for use in fuel ethanol and beverage fermentations. It contains a selected strain of saccharomyces cerevisiae distillers yeast in a highly concentrated and stable form. Available in 400 gram packages & 20kg box.

Danstil EDV 493 (from Lallemand)
Active dried yeast which was isolated and selected by INRA Guadeloupe on cane molasses. For use in beverage fermentations. Available in 400g package.

Danstil EDV 46 (from Lallemand)
Active dried strain, selected in France from a beet molasses fermentation, is also suited to fermentations of others by-products of the sugar industry. It is a fast starter, has high osmotolerance (up to 20%), and an exceptional aptitude for alcohol conversion. Available in 400g package.

K1
Lalvin V1116 (K1) is an active dried yeast for use in rum, brandy and fruit brandies. Isolated in 1972 by Pierre Barre of the INRA Montpellier. K1 is also used in white wines, ice wines, roses and basic red wines. Available in in 500 gram packages.

71B
Lalvin 71B is an active dried yeast recommended for use in vodka, gin, and neutral spirits. Also used in nouveau wines, 71B was isolated by the INRA (National Agricultural Research Institute) in Narbonne, France. Available in 500 gram bags.

EC-1118
EC-1118 is an active dried yeast for use in whiskey and bourbons. It has been isolated in Champagne and its use validated by the Comité Interprofessionnel du Vin de Champagne (CIVC). Sold in 500 gram bags.

White Labs Team visiting Mountain Sun Brewery in Boulder, CO Dec. 2009

Liz Strohecker at the 2009 Mammoth Bluesapalooza

White Labs' Neva Parker and Lisa White at NHC "Mining for Beers" Night, Denver, CO

Innoculating Loops

Perfect for small specimen transfers to plates, media and microscope slides. Loops are available in one time use sterile disposable version or a metal loop that can be sterilized with flame.

LM4210 Metal Innoculation Loop
LM4220 Sterile Disposable Loops (10/pk)
LM4260 Steril Disposable L-shaped

Cell Spreader (10/pk)
Spreader does not require flaming or autoclaving. Minimize cross-contamination when applying samples to media plates.

LM4300 – Alcohol Lamp
Flame from alcohol lamp provides a small clean area in which to perform many microbiological techniques.

LM4400 – Sterile Filters for In-Line Aeration
Autoclavable high quality filters have a long life for aerations of wort.

LM43-500 – Parafilm (12" strip)
Stretchable laboratory wrap has many uses. Great for wrapping media plates and reducing the probability of contamination and dehydration.

LM4605 – QC Data Sheets (25/pack)

Laboratory Gloves / Masks (x100/box)

LM4710 Small
LM4720 Medium
LM4730 Large
LM4700 X-Large

LM4740 Face masks, anti-fog (50/pk)
Recommended when preparing testing media such as HRM and HLP.

Laboratory Coats

LM4810 X-Small
LM4820 Small
LM4830 Medium
LM4840 Large
LM4850 X-Large
LM4860 XX-Large
LM487 XXX-Large

White Labs Shirts/Hats

GST T-shirt with White Labs Logo.
Colors: Lake Blue, Galaxy Blue,Athletic Blue, Black. Sizes: S - XXL

GSTW Womens T-shirt with White Labs Logo.
Color: Ultra-violet, Lake Blue, Athletic Blue. Sizes: S - XXL

GSTSWEAT Hooded Sweatshirt with White Labs Logo
Colors: Black, Grey Sizes: M - XXL

GSHAT Hats with White Labs Logo
Colors: Black, Tan Sizes: S/M –L/XL

Hats with Servomyces Character
Colors: Grey, Hunter Green Size:s S/M –L/XL

GS100Brewmaster: The Craft Beer Game

Educational Materials

The Alcohol Textbook (4th Edition)
The reference for the beverage, fuel ethanol industrial alcohol industries.

Making Corn Whiskey
The Compleat Distiller
LM5010 Brewing Book
LM5020 Brewing Microbiology
LM5025 Studies on Fermentation
LM5027 The Alcohol Textbook
LM5030 Wine Microbiology
LM5040 Principals and Practices of Winemaking
LM5050 Wine Analysis and Production
LM5060 Fermented Beverage Production
LM5070 Malts and Malting
LM5080 Malting and Brewing Science Vol. I
LM5090 Malting and Brewing Science Vol. II
LM5091 Making Corn Whiskey
LM5092 The Compleat Distiller

WLCDROM Compendium of Brewing Research- YEAST CD-Rom

Technical Information

Visit **www.whitelabs.com** for articles and presentations on the following topics:

Dissolved Oxygen in Brewers Wort
Propagation Instructions
Repitching Rates
Brettanomyces Fermentations
Common Ways to Eliminate Diacetyl
A Guide to Using Multiple Strains
Troubleshooting Fermentation
Fermentation Timeline
How Yeast Nutrients Make Fermentations Better
Yeast Storage and Maintenance

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We are a full service fermentation science laboratory, and are constantly looking at new technologies to assist our customers. Ask us about our new ventures with wine, distillation and ethanol fuel production.

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www.twitter.com/whitelabs

got hops?

KNOW YOUR BEER

WE TEST:

- ALCOHOL
- CALORIES
- ATTENUATION
- VDK
- IBU
- COLOR

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- Ultra-Ferm
- Amino-Quik

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Made with Technology from DSM

"We walk because we must. We are strong because the journey demands it. Together in body and united in spirit we walk to see a world without breast cancer."

We, at White Labs, find it very addicting to try and cure cancer. We just can't seem to give up the fight, as long as the enemy exists. Team Beer for Boobs 2010 has already started to form. If you are looking to be a part of something fantastic, please join us. This November, we will walk the 60 mile, 3-day journey around our beautiful San Diego to put an end to breast cancer. If you cannot walk, we would appreciate other forms of support. We can always use walker stalkers, t-shirt sponsors, hosts for fundraising events, and wonderful donations for our silent auction event. We would love to host an event at your brewery or beer festival as well! This year we are even brewing some pink beer for our team to serve. Please contact me directly at lisa@whitelabs.com or look for our team at www.the3day.org. The money we raised will help Susan G. Komen for the Cure and the National Philanthropic Trust Breast Cancer Fund.

Tap the Cure with Me

Sincerely,
Lisa White
(2010 Beer for Boobs Captain)

To get involved Visit: www.the3day.org