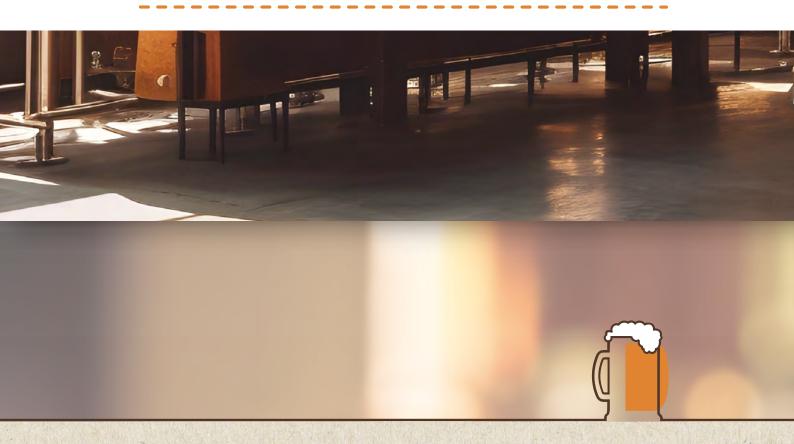


# BICEVIERS SOLUTIONS FOR BREWERS



### Brewline SOLUTIONS FOR BREWERS

### **BREWLINE**

Brewline® develops solutions tailored to each step of the brewing process and works on the creation of a wide range of products.

### **OUR VALUES**

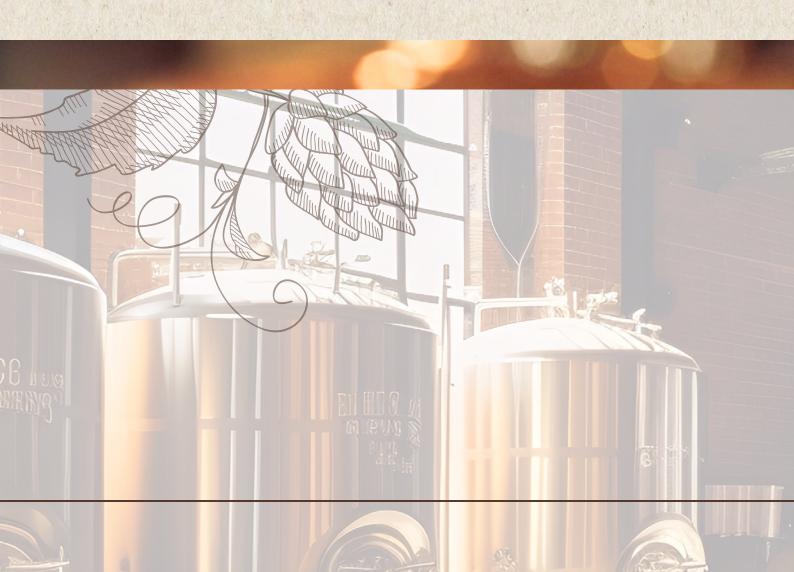
**Human values** based on **sharing**, seeking **excellence**, **responsiveness**, and **precision**.

### A DEDICATED TEAM

Renowned brewers & technicians develop and offer the ideal solutions tailored to breweries. Our priorities are the satisfaction and success of our partners through unique and privileged human exchanges.

### THE INNOVATION OF AN ANCIENT PROCESS

Rich in our brewing heritage, our research & development laboratories rely on scientific and regulatory advancements to offer sustainable technological innovations.







### Dear Brewer Friends,

Producing and promoting an ever-expanding range of beers to meet consumer expectations suggests the use of numerous raw materials that can sometimes create constraints or issues during the manufacturing process or later when the finished product is on the market.

Technological aids address themes of **yield** and **stability**, reproducible with each batch.

Always attentive to your needs, the technical team at BREWLINE passionately supports you in identifying optimization opportunities and selecting tools that meet the challenge of Quality, in order to offer pleasant, well-balanced, and stable beers over time.

See you soon at your production site!

Philippe CARIO

**Business Unit Manager** 

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Enzymes play an essential role during brewing. Brewline® offers a range of enzymatic preparations for process optimization and beer quality.

### **OUR ENZYMES**

### BREWING ENZYMES

### AMYLIZ

### Thermostable Alpha-amylase

**Amyliz** liquefies starch into fermentable sugars and soluble dextrins, reduces wort viscosity, and ensures standardization of brewing yield. Used during mashing.

Dose	150 - 350 g/ton of unmalted cereals
Dose	200 g/ton of malt
Optimale T°C	40 - 90°C
Optimale pH	4,5 - 7,5
Packaging	1 kg & 20 kg drums

### OPTIFLOW

### Thermostable Beta-glucanase

**OptiFlow** hydrolyzes the beta-glucans from the wort, optimizes and reduces filtration time regardless of malt quality, and facilitates clarification in the Whirlpool.

Added at the start of mashing.

Dose	150 - 250 g/ton of malt
Optimale T°C	40 - 90°C
Optimale pH	4,0 - 7,0
Packaging	1 kg & 20 kg drums

### OPTIBREW

### Complexe enzymatique optimal au Brewing

**OptiBrew** is an enzymatic complex that hydrolyzes both structural polysaccharides (glucans, xylans) and fermentable polysaccharides.

Such a formulation ensures compliance with wort filterability and viscosity, and thus attenuation according to the standards sought by the brewer. Added at the beginning of mashing.

	250 - 500 g/ton of malt
Dose	250 - 750 g/ton of unmalted cereals and specialty malts
Ontimala T°C	40 - 90°C for main activities
Optimale T°C	40 - 65°C for secondary activities
Optimale pH	4,0 - 7,0
Packaging	20 kg drums

### AMYLIZ MAX

### Glucoamylase

**Amyliz Max** is an enzymatic preparation concentrated in glucoamylase. It is a starch-degrading enzyme that also hydrolyzes dextrins and amylopectin into fermentable sugars.

Dose	Increased saccharification dose during the brewing process:  0.2 to 2.5 kg/ton of malt to calibrate residual attenuation up to 5%
	Dose to reduce the extract during the fermentation process:
	5 - 10 g/hL for attenuation > 95%
Ontimala T°C	≤ 65°C during brewing
Optimale T°C	12 - 25°C during fermentation
<b>Optimale pH</b> 3,8 - 7,0	
Packaging	1 kg & 20 kg drums

### COLD BLOCK ENZYMES

### AMYLIZ FINISHER

### Fungal Alpha-amylase

**Amyliz Finisher** ensures the hydrolysis of starch still present in cold wort transferred to the fermenter.

Fungal amylase does not impact beer attenuation (does not affect limit dextrins) and naturally degrades over time.

Dose	1 - 5 g/hL
Optimale T°C	12 - 30°C
Optimale pH	3,5 - 5,5
Packaging	10 kg drums

### AMYLIZ ATTENU PLUS

### **Amyloglucosidase**

**Amyliz Attenu Plus** is an enzymatic preparation concentrated in pullulanase and glucoamylase that degrades all polysaccharides into fermentable sugars.

Ideal for the production of Light beers or those with a high alcohol content.

Dose	2 - 5 g/hL
Optimale T°C	12 - 25°C during fermentation
Optimale pH	3,8 - 5,5
Packaging	20 kg drums

### OPTIFAN

### Endopeptidase

**OptiFan** is an enzyme that degrades cold-sensitive proteins responsible for haze ( $\leq 50$ kDa).

Ideal for the production of gluten-free beers (<20ppm).

Added during fermentation, OptiFan releases amino acids and peptides favorable for yeast nutrition.

Dose	1,5 - 5 g/hL
Optimale T°C	12 - 65°C
Optimale pH	3,5 - 6,0
Packaging	1 kg & 10 kg drums



OPTIFAN, an adequate response to modern production constraints.

Colloidal stabilization of beer is traditionally achieved through long cold storage (0°C to -2°C), or by using powdered stabilizers that adsorb polyphenols and unstable proteins.

The cost, losses, and ecological footprint must be considered and can sometimes lead us to consider an enzymatic alternative.

OPTIFAN, a non-GMO and non-self-cloning protease, is a technological aid that cuts sensitive proteins, including gluten, into small fractions during fermentation. This reduces the aging time, leaving the brewer only to be vigilant about the unstable polyphenols in their beer.

Discussing with the technical team at BREWLINE can help you evaluate its interest!



## YEASTS

Brewline® develops and offers both top and bottom fermenting yeasts. Their profiles provide all options for the Brewer, from the classicism of a blonde or wheat beer to distinct strains in esters and higher alcohols for composing beers under optimal and reproducible fermentation conditions. The characterization of the main strains was carried out in collaboration with the Brewing Sciences and Fermentation Technology department at the Meurice Institute in Brussels

### OUR BOTTOM FERMENTATION YEASTS (500G)



Classic Lager is a true "must" for producing Helles, Pilsner, Schwarzbier, Bock, India Pale Lager, and Dopplebock. A delicate strain, capable of highlighting the organoleptic qualities of the malts and hops selected by the brewer.

It presents excellent alcohol tolerance (HGB up to 18°P) and excellent flocculation.

### CLASSIC LAGER HIP-HOP LAGER



Hip-Hop Lager is a flexible yeast, ideal for standardizing production in the brewery. It is capable of fermenting at different temperatures.

- From 12 to 15 degrees: round beers with a neutral Berliner-type profile.
- From 15 to 17 degrees: Altbier, Kölsch, Steam Beer.
- From 18 to 22 degrees: perfectly accommodates beers with cold hopping (IPA, NEIPA).

### **OUR TOP FERMENTATION YEASTS (500G)**





Pop Ale is the ideal yeast for producing various styles of topfermented beer. It ensures respect and expression of the brewer's recipe thanks to its neutrality and slight fruity notes.

It brings **harmony** to your beer. Ideal for producing Golden Ale, Bitter Ale, Amber Ale, IPA, APA, Porter, and Stout....



Rock Ale is a fast-fermenting yeast that has already won over many Craft brewers with its great aromatic intensity and fruity, floral, and spicy notes.

Its aromatic profile, good attenuation, and low sedimentation make it ideal for producing light and refreshing beers such as Wheat, Saison...



Folk Ale is a strain suitable for Belgian-style beers. It produces floral and spicy esters. Its authentic profile and average attenuation guarantee the smoothness and roundness of your beers.

Conçue pour la production de bières spéciales.



**Jazz Sour** (*Lachancea Thermotolerans*) is a yeast that enables the production of sour beers.

It is capable of fermenting your wort to produce lactic acid and alcohol. Lactic acid production mainly occurs during the first days of fermentation.

This lactic acid brings the typical freshness of these beer styles while limiting the risks of contamination.

Jazz Sour can also be used in secondary fermentation, after a classic first fermentation (bottom with Classic Lager and top with Pop Ale or Rock Ale).



**Excellence**® **E2F** is a re-fermentation yeast highly appreciated by brewers.

Its characteristics of tolerance to high concentrations of alcohol and  $CO_2$ , combined with its great aromatic neutrality, strong sedimentation, and resistance to low pH, make it an indispensable tool for the re-fermentation of your beers.

Excellence® E2F is used with the addition of sugar, before packaging.

### **CHARACTERISTICS**

YEASTS	FLOCCULATION / SEDIMENTATION	LIMIT ATTENUATION	ALCOHOL TOLERANCE (% VOL. ALC.)	DIACETYL PRODUCTION	FERMENTATION KINETICS	DOSAGE
CLASSIC LAGER	High	82 %	11 %	Low	Rapid (5 days*)	
HIP-HOP LAGER	High	10 - 16 °C : 70 - 75 %	8,5 %	Low	Rapid	80 - 120 g/hL
IIII -IIOI LAGEK	Tilgii	16 - 22 °C : 80 - 85 %	0,5 %	LOW	(4 - 7 days*)	
POP ALE	High	78 - 82 %	8,5 %	Low		
ROCK ALE	Low	85 %	7,5 %	Low	Rapid (4 - 7 days*)	50 - 100 g/hL
FOLK ALE	High	75 - 80 %	11 %	Low		
JAZZ SOUR	High	75 %	7 %	Low	Slow (> 10 days*)	80 - 120 g/hL
EXCELLENCE® E2F	High	85 - 90 %	17 %	Low	Depending on T°C conditions (2 - 5 days)	2 - 10 g/hL

<sup>\*</sup>Test conditions: 12°P wort, inoculated at 80 g/hL and primary fermentation at 20°C

### NUTRIENTS



Just as the choice of raw materials, brewing technology, and the brewer's imprint are important, managing yeast nutrition plays a fundamental role in beer production. Optimal fermentation requires perfect nutrition.

### **OUR NUTRIENTS**

### CRAFT ACTIVE

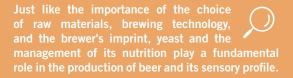
### **Specific Nutrient**

**Craft Active** promotes yeast multiplication and limits fermentation risks.

Craft Active is a specific nutrient made from ammonium salt and vitamin B1 (thiamine) directly assimilable by yeast.

Dose	20 - 30 g/hL
Packaging	1 kg packets





Adding a specific nutrient during yeast rehydration significantly improves fermentation kinetics and enhances the aromatic expression, freshness, and complexity of the beer, thus allowing the production of beers that meet today's consumer preference criteria.

These are beers with very expressive noses, elegant and fruity, with a fresh, full, complex, intense, and generously long palate

An improved yeast metabolism due to the addition of a nutrient also allows a greater synthesis of acetates and esters, essential components of beer aroma.



### STABILIZATION



Every detail is important to ensure the beer remains as close to its bottled quality until the moment of tasting. Work on stability throughout the manufacturing process is essential to guarantee a quality product that is consistent with each batch produced. Brewline® provides tools to address all these issues and ensure good long-term beer preservation.

### AROMATIC STABILIZATION: COMBATING OXIDATION

### MASH REDOX

### **Antioxidant for Brewing**

Mash Redox effectively protects the wort against lipid oxidation in the mash tun. It significantly reduces the action of lipoxygenase (LOX), responsible for most off-flavors in the finished product. Thus, flavors of stale bread or cardboard (E-2 nonenal) no longer appear. Mash Redox is completely eliminated during the boiling phase and does not impact fermentation.

Dose	5 - 10 g/hL of wort depending on °P
Packaging	1 kg packets

### BEER REDOX

### **Antioxidant for Beer**

**Beer Redox** provides protection against oxidation and preserves the aromatic potential of the beer, with an addition just before bottling. Very useful for reducing dissolved oxygen in the finished product, it is not recommended for bottle-conditioned beers. Undoubtedly increases the longevity of the beer's organoleptic qualities. It can also be added during mashing, in the mash tun.

Dose	1 - 2 g/hL (1g of Beer Redox releases 2.5ppm of $SO_2$ in the beer)
Packaging	1 kg packets



### MASH REDOX NATURE

### **Antioxidant for Brewing ORGANIC Beer**

**Mash Redox** protects the wort just as effectively by inhibiting lipoxygenase. The composition of this technological aid, free of  $SO_2$ , allows its use in brewing to produce organic beer, ensuring optimal aromatic freshness in the finished product. A scientific publication, conducted in collaboration with the University of Louvain-la-Neuve, is available from the Brewline R&D Department.

Dose	5 - 10 g/hL of wort depending on °P
Packaging	1 kg packets



"The use of Mash Redox in brewing is essential, as it prevents lipid oxidation by inhibiting lipoxygenase (LOX). Such action enhances the freshness of beers, by a strong reduction of off-flavors, including cardboard notes (E-2-nonenal).

It also offers brewers the opportunity to start their mashing at lower temperatures, to benefit from the endogenous enzymatic activities of malt, without affecting the organoleptic qualities of the beer!

A publication made with UCLouvain-la-Neuve, Unit of Brewery and Food Sciences at the European Brewery Convention, is available on request."



Guillaume DESPORT • R&D Brewline by Lamothe-Abiet

### ACIDE ASCORBIQUE

**Acide Ascorbique** is an antioxidant for non-refermented beer before bottling.

Effective in reducing the presence of dissolved oxygen.

Dose	1 - 5 g/hL
Packaging	1 kg packets & 25 kg drums

### PYROSULFITE DE POTASSIUM

**Pyrosulfite de Potassium** in liquid solution for non-refermented beer before bottling.

1 g/hL provides 5 ppm of free SO<sub>2</sub> in the finished product.

Dose	0,5 - 1,5 g/hL
Packaging	1 kg packets & 25 kg bags

Brewline® supports you by offering multiple solutions tailored to your production tools and the beer produced. You decide on the technological aid for clarification and colloidal stabilization. All solutions using PVPP, Silica Sol, and Silica Gel are permitted under the **Reinheitsgebot** purity law.







### SILICA SOL (LIQUID)

**Silica Sol** is a colloidal silica suspension. It enables beer clarification by connecting with sensitive beer proteins:

- At the end of boiling during brewing, the trub will be more compact, ideal for unfiltered beers or production above 14°P.
- In storage, the molecular weight of sensitive proteins coagulated with Silica Sol clarifies and accelerates yeast sedimentation.

Dose	20 - 40 g/hL of wort in the boiling tank
	Same dosage at the beginning of storage
Packaging	6 kg & 24 kg drums

### GALLOTAN BEER

**GalloTan Beer** is a gallic tannin used:

- In the mashing tank to protect the wort from lipid oxidation, primarily by eliminating most soluble metals, thereby reducing metallic notes in the beer.
- In the boiling tank to optimize wort clarification: GalloTan Beer connects to some of the sensitive proteins, sedimenting with the trub or at the latest at the beginning of fermentation, removed during the first purge.

Dose	5 - 10 g/hL
Packaging	1 kg packets

### POLYSTAB

### Silica gel & PVPP

**PolyStab** is a colloidal stabilizer composed of polyvinylpolypyrrolidone - PVPP and  $SiO_2$  - Silica Gel.

It acts by combined adsorption of polyphenols (proanthocyanidins or anthocyanidins), catechins (flavonoids), and sensitive beer proteins.

Its optimal formulation offers the choice of use during brewing or in beer filtration, depending on the equipment and type of beer.

Dose to brewing	5 - 20 g/hL at the end of saccharification or boiling
	20 - 60 g/hL in storage or during beer filtration
Packaging	10 kg bags

### PVPP

### Micro-granulated Polyvinylpolypyrrolidone

**PVPP** is made of pure micro-granulated polyvinylpolypyrrolidone - PVPP.

The stabilizer allows brewers to focus on stabilizing polyphenols, in cases where their proportion is too high, potentially affecting the beer with a risk of oxidation and/or colloidal instability.

Dose	10 - 30 g/hL during brewing and/or beer filtration
Packaging	1 kg packets & 19.96 kg bags

### SILICA GEL (POWDER)

**Silica Gel** is the most effective SiO<sub>2</sub> - silica gel for stabilizing beers produced by adsorption of sensitive proteins responsible for colloidal haze, the infamous "chill haze."

Selective protein adsorption preserves color properties, pH, organoleptic qualities, and foam retention.

Silica Gel can be used during beer filtration.

	10 - 30 g/hL in storage
Dose	20 - 60 g/hL during beer filtration, depending on the initial protein load and the chosen shelf life of the finished product
Packaging	15 kg bags

### COLLE DE POISSON

**Colle de poisson** is particularly recommended for combined action of yeast sedimentation when it is slow or absent, as well as protein stability.

It quickly connects with yeast proteins to form a flocculating ensemble, promoting a compaction that optimizes losses.

Isinglass does not impact the organoleptic quality of the beer.

Dose	1 - 4 g/hL
Packaging	250 g packets





### MICROBIAL STABILIZATION

### LACTICIDE

**Lacticide** is an endo-glucanase based on lysozyme (E1105), specific to Gram-positive bacteria (*Leuconostoc, Lactobacillus*, and *Pediococcus*).

Its use inhibits the activity of lactic acid bacteria. Lacticide serves as an alternative to sterile filtration or pasteurisation.

Dose	1 - 20 g/hL, depending on whether it is used as a preventive or curative treatment
Packaging	1 kg packets

### SORBASOL

A yeast inhibitor, Sorbasol is composed of potassium sorbate (E202).

This preservative has antifungal properties that prevent yeast growth, which is particularly responsible for gushing in kegs and bottles.

Not recommended for bottle-conditioned beers.

Dose	1 - 4 g/hL
Packaging	1 kg packets & 25 kg cartons

### **GUMS & ACIDITY CORRECTORS**



### OUR GUM ARABICS

A wide selection based on your needs for foam stabilization. Brewline by Lamothe-Abiet's gum arabic is one of the historical products of our group. From the selection of raw materials in sub-Saharan Africa to the processing in our production facilities.

### GOMME L.A.

### Liquid

**Gomme L.A.** ensures the stability of a suspended haze and foam, with a target of  $\geq 320$  seconds (Nibem method), even when the foam-promoting protein content of the malts is low.

The stability of the foam will consistently be accompanied by a more intense and regular carbonation.

Dose	5 - 20 g/hL
Packaging	1.1 kg / 5.5 kg / 22 kg containers

### GOMME L.A. BIO

### Powder



For the production of organic beer, the use of certified organic gum arabic is available in powder form. It is recommended to dilute the gum in hot water ( $+65^{\circ}$ C) at a ratio of 1:10 to ensure good homogenisation and to deliver a sterile solution into the beer. **Gomme L.A. BIO** can be used during foam formation (bottle-conditioned beer).

	5 - 10 g/hL
Dose	20 - 30 g/hL in the case of seeking a better beer volume
Packaging	2,5 kg packets

### EXCELGOM

### Micro-granulated

Excellence for both blonde beers and specialty beers seeking a more stable and intense foam. Added after the filtration of the beer or before bottling, ExcelGom is diluted in hot water  $(+65^{\circ}\text{C})$  at a ratio of 1:10 to ensure good homogenisation and to deliver a sterile solution into the finished product. It can be used during foam formation (bottle-conditioned beer).

Dose	5 - 10 g/hL
Dose	20 - 30 g/hL in the case of seeking a better beer volume
Packaging	1 kg / 5 kg packets & 25 kg bags

### **OUR ACIDITY CORRECTORS**

### ACIDE LACTIQUE

Controlling pH is a key parameter in beer production.

**Acide Lactique** allows for pH correction in the wort during the various stages of brewing.

Dose	Depending on the desired pH for the wort
Packaging	6 kg containers

### ACIDE CITRIQUE

**Acide Citrique** is used in brewing to correct the pH and add fresh notes to the wort and the beer.

Recommended for the production of alcohol-free beer, in combination with another acid to avoid any buffering.

Dose	Depending on the desired pH for the wort
Packaging	1 kg packets & 25 kg bags



Brewline® offers a complete range of carefully selected French and American oak chips to meet your production goals. This bespoke approach, with specific woods and repeatable profiles, allows for the enhancement of aromatic expression to reveal the character of your beers.

The French oak selected for Brewline® Chips comes exclusively from French forests and the species *Q. Robur* and *Q. Petraea*. The traceability established by Brewline® ensures the precise origin of the oak used, as well as the natural air-drying of the oak wood for a minimum of 24 months.

### **OUR FR & US CHIPS**

CHIPS		AROMATIC PROFILE				
		Respect & fruit enhancer	Coconut notes & whisky lactone	Vanilla & indulgent notes	Toasted & spicy notes	Contribution to structure
	FRESH	•	•			•
	LIGHT	•	•			•
표 (	TOFFEE	•	•	•		•
	MEDIUM			•	•	•
	MEDIUM +			•	•	•
SN	MEDIUM			•	•	•
	MEDIUM +			•	•	•

Our chips are available in 12 kg bags containing 2 nylon infusion nets of 6 kg each.



Discover the new TOFFEE chip: a 100% French wood chip that is medium toasted.

### **TOFFEE**

TYPE OF TOASTING















nilla Sweetness

The Toffee chip imparts very intense aromatic notes of fresh vanilla pods as well as intense notes of fresh coconut. On the palate, the Toffee will bring a great deal of sweetness.

- Packaging:
- 1 bag of 12 kg in PE lined with PET containing 2 nylon infusion nets of 6 kg each.

### PRODUCTS CATALOG



ENZYMES		BENEFITS	APPLICATION
	$\begin{array}{c} \textbf{AMYLIZ} \\ (\text{Thermostable } \alpha\text{-amylase}) \end{array}$	Reduces the viscosity of the wort and increases browning atticiancy	
NING	<b>OPTIFLOW</b> (Thermostable β-glucanase)	Reduces filtration time regardless of malt quality and facilitates clarification in the whirlpool.	• Brewing
IN BREWING	OPTIBREW	Enzymatic mix that combines the degradation of fermentable and structural polysaccharides.	Brewing
	AMYLIZ MAX	Degrades hydrolyzed starch, as well as dextrins and amylopectins, into fermentable	Brewing
	(Glucoamylase)	sugars for optimized yields. Attenuation of up to 95%.	<ul> <li>Fermentation</li> </ul>
LOCK	AMYLIZ FINISHER  Fungal amylase to complete the degradation of starch during fermentation in the case of a non-compliant wort during transfer to the cold block.  AMYLIZ ATENU PLUS (Amyloglucosidase)  Enzymatic activity aimed at achieving the maximum attenuation of a beer (≥100%).		<ul> <li>Fermentation</li> </ul>
COLD			<ul> <li>Fermentation</li> </ul>
IN THE	OPTIFAN (Protease)	Prevents the formation of haze related to sensitive cereal proteins and degrades gluten.	• Fermentation

YEASTS		BENEFITS	TYPES OF BEERS
ENTATION	CLASSIC LAGER	A delicate strain for the production of Bavarian-style lagers or Pilsners. Excellent alcohol tolerance.	Helles, Pilsner, Schwarzbier, Bock, India Pale Lager, Dopplebock
BOTTOM FERMENTATION	HIP-HOP LAGER	Originally developed for lager production, this strain creates an ideal balance between esters and higher alcohols, including for ales fermented above 20°C.	Depending on the fermentation level: Altbier, Kölsch, Steam Beer, India Pale Ale, American Pale Ale
	POP ALE	For your finest ales, the Pop Ale yeast offers subtle fruity notes and brings true harmony to your beer.	Golden Ale, Bitter Ale, Amber Ale, IPA, APA, Porter et Stout
TOP FERMENTATION	ROCK ALE	Great aromatic intensity with fruity, floral, and spicy notes. This yeast has been consistently awarded medals thanks to the excellent recipes created by brewers.	Belgian specialty beer, Saison, NEIPA
	FOLK ALE	Floral and spicy esters, between Trappist and abbey profiles. It pairs ideally with Pop Ale or Rock Ale yeast to ensure a residual attenuation of $> 25\%$ .	Tripel, Belgian Strong Ale, Blonde
	JAZZ SOUR	Lachancea Thermotolerans yeast for producing tart and refreshing beers.	Sour beers, such as: Berliner Weisse, Gose, Sour IPA, Stout
	EXCELLENCE® E2F	Yeast for bottle conditioning beers. Selected for its resistance to pressure and alcohol, as well as its aromatic neutrality and ability to flocculate.	Bottle conditioning for all types of beers.

NUTRIENTS	BENEFITS	FUNCTION
CRAFT ACTIVE	Promotes yeast multiplication and limits fermentation risks.	Specific nutrient

STABILIZATION		BENEFITS	APPLICATION
	MASH REDOX	Antioxidant that facilitates lipid oxidation (LOX), reducing the presence of off-flavors in beer and ensuring better drinkability.	Brewing
ATIQUE	MASH REDOX NATURE	Antioxidant for organic wort.	Brewing
STABILISATION AROMATIQUE	BEER REDOX	Complex antioxidant for beer, designed to reduce dissolved oxygen and extend freshness.	Post-fermentation
STABILISA <sup>-</sup>	ACIDE ASCORBIQUE	Vitamin C used to protect beer. It is recommended to combine it with sulfites to optimize its performance.	Post-fermentation
	PYROSULFITE DE POTASSIUM	Metabisulfite for aromatic protection of the finished product, even at low dosages.	Post-fermentation
	SILICA SOL	Clarification by protein adsorption: - Improved protein break and better	Brewing
	(Liquid)	compacting of the trub.  - A clear beer and better yeast compacting.	Maturation
Z	GALLOTAN BEER	Protects the wort from lipid oxidation. Contributes to the clarification of the wort.	Brewing
COLLOIDAL STABILIZATION		Colloidal stabilizer through combined adsorption of polyphenols and unstable proteins in beer.	Brewing
STABIL	POLYSTAB (Gel de silice & PVPP)		<ul> <li>Maturation</li> </ul>
LOIDAL			• Filtration
Too	PVPP	Halma stabiling the beau and suband its abolf life	<ul><li>Maturation</li></ul>
	(Polyvinylpolypyrrolidone)	Helps stabilize the beer and extend its shelf life.	• Filtration
	SILICA GEL	Stabilization by adsorption of sensitive proteins.	<ul> <li>Maturation</li> </ul>
	(Powder)	Stabilization by adsorption of sensitive proteins.	• Filtration
	COLLE DE POISSON	Beer clarification through accelerated sedimentation of yeast, post-fermentation.	<ul><li>Maturation</li></ul>
MICROBIAL	LACTICIDE	Lysozyme for antibacterial protection.	Maturation
MICR	SORBASOL	Potassium sorbate, ideal for keg treatment.	• Bottling

GUMS	BENEFITS	APPLICATION
GOMME L.A.	Liquid gum arabic.	Bottling
GOMME L.A. BIO	Powdered gum arabic for organic beer.	Bottling
EXCELGOM	Powdered gum arabic.	Bottling

ACIDS	BENEFITS	APPLICATION
ACIDE LACTIQUE	Acidification of the wort.	Brewing
ACIDE CITRIQUE	Acidification of the wort or beer.	Brewing
		Maturation



### BICWING SOLUTIONS FOR BREWERS

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