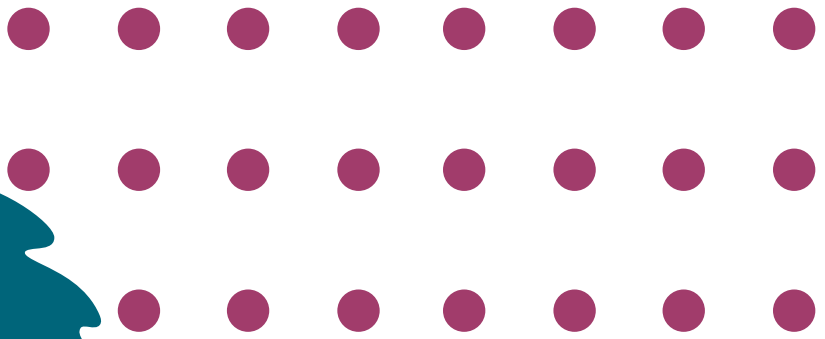


H A N D B O O K



enartis

Inspiring innovation.



ABOUT US



Founded in 2003, Enartis has grown into a global network built on strong relationships within the winemaking community—relationships that are key to our success. Through strategic vision and a proactive approach to new opportunities, we have expanded our reach beyond wine to serve the broader fermented beverage industry.



Enartis offers over 300 specialized products, including yeasts, tannins, enzymes, fermentation nutrients, bacteria, and a wide range of stabilization, clarification, and fining aids. We also provide cutting-edge technologies that integrate seamlessly into production processes, backed by expert technical support and dedicated customer service.



With more than 230 employees, three specialized divisions (ENARTIS ENGINEERING, Enartis Technical Team, and Enartis Labs), and six enological laboratories across Italy, Spain, the USA, Argentina, Australia, and South Africa, we ensure global support tailored to local market needs. Our 12 strategically located branches and close collaborations with universities and international wineries further strengthen our ability to deliver real-time insights and solutions.



Innovation is at the heart of our mission. Each year, we invest in research and development to meet the evolving demands of the market. Our openness to new technologies, including artificial intelligence, has led to the creation of advanced digital tools and automation solutions for modern wineries.



Sustainability and environmental stewardship are core values that guide our continuous improvement in both production and process management.



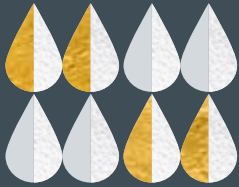
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INDEX

ENZYMES	04
YEASTS	09
NUTRIENTS	23
POLYSACCHARIDES	30
FINING AGENTS	35
MALOLACTIC FERMENTATION	45
OAK ALTERNATIVES	49
TANNINS	54
STABILIZING AGENTS	63
WINEMAKING BASICS	73
SULFITING AGENTS	75
ENGINEERING	78
ORGANIC PRODUCTS	86
INDEX	88

NEW PRODUCTS

- 06 Enartis EnartisZym COLOR FRUIT
- 18 EnartisFerm Q GRACE
- 19 EnartisFerm Q MCK
- 33 SURLÌ FRESH
- 36 PLANTIS L
- 38 CLARIL OX
- 50 INCANTO BLACK SPICE
- 60 EnartisTan UNICO #1 XO
- 68 ZENITH MEGA
- 74 CRYSTALGRAPESUGAR.RED
- 74 CRYSTALGRAPESUGAR.BIO



ENZYMES

Developed through a deep understanding of individual enzymatic functions and hands-on winemaking experience, the EnartisZym Range represents a comprehensive line of specialized enzyme preparations. Each product is carefully formulated to deliver maximum effectiveness across both traditional and modern winemaking applications.



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Clarification

- Liquid pectolytic enzyme preparation, rich in cellulosic and hemicellulosic side activities.
- Breaks down “hairy zone” of pectins and hemicelluloses in grape cell walls, improving juice release.
- Intense clarification and fast depectinization.
- Ideal for wines that are difficult to clarify, improving both clarity and filterability.

APPLICATION

Settling of difficult-to-clarify musts; varieties rich in pectins; improve wine clarification and filterability; flotation


DOSAGE

In must: 1-3 mL/hL
(38-113 mL/1,000 gal)
In wine: 2-5 mL/hL
(75-190 mL/1,000 gal)

PACKAGING

1 kg
10 kg

Flotation trial with EnartisZym RS



Flotation Trial - Mendocino County (California) 2022			
	% Solids	Yield	NTU
Control	9%	-	61.1
EnartisZym RS, 3 mL/hL	2%	93%	11.6

EnartisZym AROM MP

- Micro-granulated pectolytic enzyme preparation developed to increase aromatic compound extraction, press yield, and improve juice clarification.
- Rich in cellulosic, hemicellulosic, and proteasic side activities.

APPLICATION

Maceration of white grapes; production of fruity white wines

DOSAGE

20-40 g/ton

PACKAGING

0.25 kg
1 kg

Maceration of White Grapes



This is the reason why I chose to use EnartisZym AROM MP for my Sauvignon Blanc or for any of my thiol varieties. With this enzyme, I get excellent results not only from an aromatic point of view but also in terms of regarding extraction yield. By letting it act even for only the minimum contact time necessary, the enzyme allows complete depectinization of the must. I don't even have to do lengthy pressing. Product wonderful. **Philip Viljoen, Winemaker at Bon Courage Cellar - Robertson, South Africa**

Maceration of Red Grapes

NEW

EnartisZym COLOR FRUIT



- Liquid pectolytic enzyme formulated for red grape maceration.
- Enables rapid extraction of color and aromatic precursors.
- Ideal for unevenly ripe grapes to maximize extraction of color and fruity aromas during short maceration.
- Improve clarification and filterability thanks to cellulase activity.

APPLICATION

Specific for the vinification of red grapes with intense color and aromas; for red grapes characterized by uneven ripening; accelerate and increase the extraction of phenolic compounds and aroma precursors

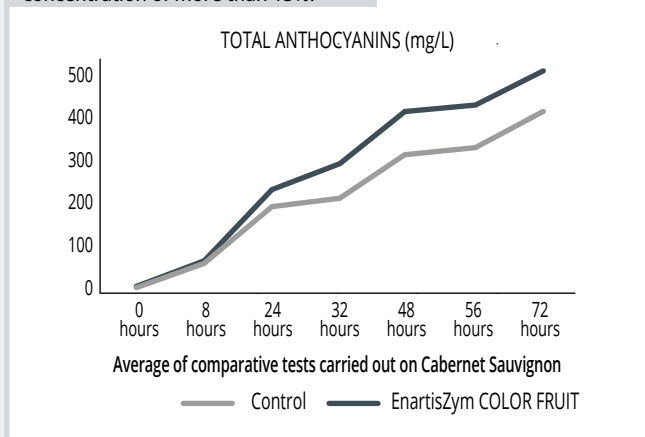
DOSAGE

2-5 mL/hL
(75-190 mL/1,000 gal)

PACKAGING

1 kg

After 3 days of maceration, EnartisZym COLOR FRUIT extracts an anthocyanin concentration of more than 15%.



EnartisZym COLOR PLUS

ENHANCE COLOR

- Micro-granulated enzyme preparation designed for red grape maceration.
- Accelerates and enhances extraction of phenolic compounds, polysaccharides, and aromatic precursors from grape skins.
- Improves color stability and intensity.
- Hydrolyzes proteins and reduces precipitation of tannins and pigments.
- Rich in cellulosic and hemicellulosic side activities.

APPLICATION

Extraction and stabilization of color from red grapes; production of expressive and structured wine

DOSAGE

20-40 g/ton

PACKAGING

0.25 kg
1 kg



I use EnartisZym COLOR PLUS for better color extraction during maceration of red wines on the skins. We add it during crushing. I found that wines treated with this product had better color stability over time during ageing. Color intensity in red wines are also better when using EnartisZym COLOR PLUS vs a control.

Louwritz Louw, South Africa

- Liquid enzymatic preparation with primary pectolytic and betaglucanase activities, and secondary rhamnosidase and hemicellulase activities.
- Improves clarification and filterability by hydrolyzing polysaccharides, such as pectins and glucans, derived either from grapes or unwanted microorganisms.
- Accelerates the release of mannoproteins both in fermentation and during maturation on lees, improving mouthfeel and stability.

APPLICATION

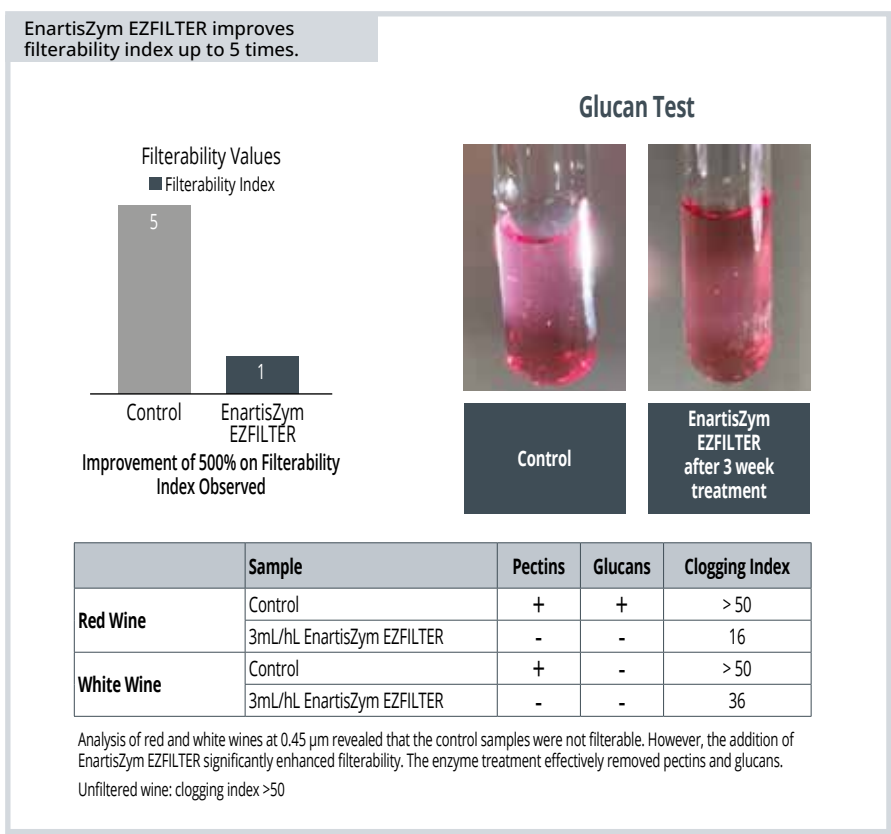
Improve filterability and clarification in wines from *Botrytis* infected grapes; accelerate mannoprotein extraction; improve wine stability; flotation

DOSAGE

2-4 mL/hL
(75-150 mL/1,000 gal)

PACKAGING

1 kg
10 kg



EnartisZym Characteristics

	Clarification/ Flotation	Difficult to Clarify Juice	Maceration of White Grapes	Maceration of Red Grapes	Color Stability	Flash Détente/ Thermovinification	Aromatic Enhancement	Yeast Lysis	Improve Filtration	<i>Botrytis</i>
EnartisZym RS	●●●	●●●							●	●
EnartisZym AROM MP	●●		●●●				●●●			
EnartisZym COLOR FRUIT				●●●	●●	●●	●●		●●	
EnartisZym COLOR PLUS				●●●	●●●	●●				
EnartisZym EZFILTER	●●●	●●●						●●●	●●●	●●●

About Enological Enzymes

WHY USE ENOLOGICAL ENZYMES?

Enological enzymes play a vital role in winemaking by enhancing various aspects of the process and final product. They help:

- Increase press yield
- Improve clarification and flotation
- Enhance wine filterability
- Boost aroma and polyphenol extraction
- Elevate aromatic expression and mouthfeel
- Contribute to protein stability
- Aid in color stabilization

WHAT ARE ENZYMES MADE FROM?

Most enological enzymes are derived from specific fungal species such as *Aspergillus*, *Rhizopus*, and *Trichoderma*. An exception is lysozyme, which is extracted from egg whites.

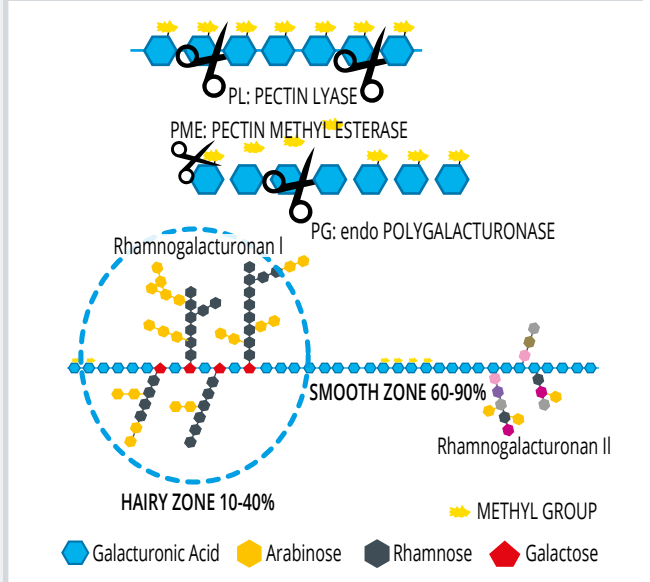
WHY ARE THERE SO MANY PECTOLYTIC ENZYMES?

Pectolytic enzymes (Figure 1) target different components of pectin, a complex polysaccharide found in grape cell walls. Their combined action is essential for efficient juice extraction, clarification, and filtration. These enzymes include:

- **Pectin Lyase (PL):** Randomly cleaves pectin chains, releasing mid-sized polymers. This leads to rapid depectinization and viscosity reduction.
- **Polygalacturonase (PG):** Breaks down galacturonic acid chains, but only when they are not esterified.
- **Pectin Methyl Esterase (PME):** Removes methyl groups from galacturonic acids, enabling PG to act effectively.
- **Rhamnogalacturonase, Arabinanase, and Galactanase:** Break down "branched pectins," commonly referred to as the "hairy zone," which is crucial for clarifying and filtering difficult juices.

The specific balance of these enzymatic activities determines the overall effectiveness of the enzyme preparation.

Figure 1: Representation of main pectolytic activities on pectin chains.



WHAT ARE THE DIFFERENCES BETWEEN POWDERED AND LIQUID ENZYMES?

Powdered Enzymes

- Easy storage
- Long shelf life
- Low risk of contamination
- No need for preservatives

Liquid Enzymes

- Convenient to dose and use
- Require cold storage
- Shorter shelf life
- Higher risk of microbiological contamination after opening

HOW LONG DO POWDERED OR GRANULAR ENZYMES REMAIN ACTIVE AFTER REHYDRATION?

Once rehydrated, powdered or granular enzymes should be used within a few hours if kept at room temperature. Prolonged storage in liquid form can lead to a loss of activity.

HOW DOES TEMPERATURE AFFECT ENZYMATIC ACTIVITY?

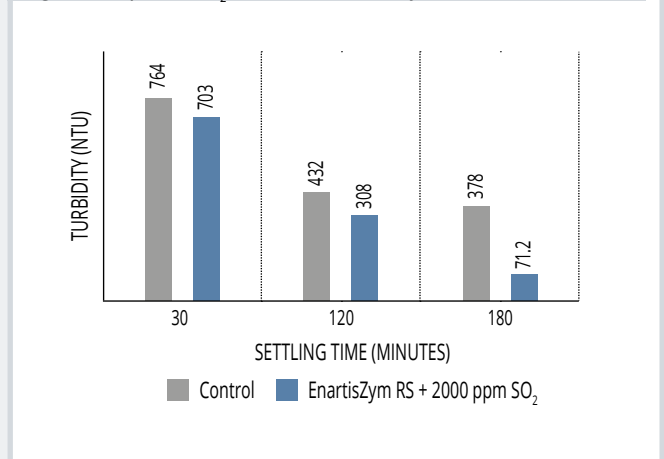
- Enzymes are **denatured** at temperatures above **60°C (140°F)**.
- Enzymes are **inactivated** at temperatures below **5°C (41°F)**.
- The **optimal temperature** for enological enzyme activity is around **40°C (104°F)**.

DOES SO₂ AFFECT ENZYME ACTIVITY?

Generally, SO₂ does not significantly inhibit enzyme activity. For example, **EnartisZym RS** retains its activity even with SO₂ levels as high as **2000 ppm** (Figure 2). However, **timing is crucial:**

- Do **not** add SO₂ and enzymes simultaneously.
- Add enzymes **after** SO₂ has been properly dispersed, or vice versa.

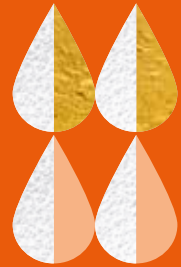
Figure 2: Impact of SO₂ addition on EnartisZym RS.



HOW DO I DETERMINE THE CORRECT ENZYME DOSAGE?

Dosage depends on the desired effect, contact time, temperature, and the presence of inhibiting factors.

Lower temperatures, shorter contact times, and the presence of alcohol can reduce effectiveness. To compensate for these conditions, a higher dosage may be required.



YEASTS



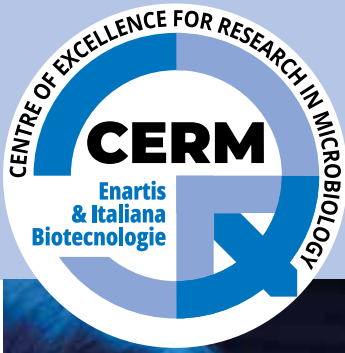
One of the most critical attributes yeast must have is the ability to ensure healthy **and complete fermentations**—the essential first step in producing high-quality wine.

Through a deep understanding of microbial characteristics, combined with decades of practical experience, Enartis has developed a keen insight into the needs of winemakers. This expertise allows Enartis to recommend the most suitable yeast strains for each application, helping winemakers achieve their desired wine style and meet quality expectations.



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Centre of Excellence for Research in Microbiology (CERM)

The **Centre of Excellence for Research in Microbiology (CERM)** was established in 2024 with the aim of enhancing research, development, and innovation standards in the field of enological biotechnology. This initiative is the result of a long-standing collaboration between Enartis and Italiana Biotechnologie Srl, a company also within the Esseco Group and a leading name in biotechnology research in Italy. Enartis has always been synonymous with innovation and quality in the alcoholic beverage sector, particularly in wine. With a strong legacy of scientific commitment, Enartis actively invests in and promotes a wide range of R&D initiatives, continuously developing solutions that address the evolving needs of the global wine market.

MISSION

Excellence and Quality CERM Solutions

CERM represents both qualitative and operational excellence, backed by deep expertise in biotechnology. Many of Enartis' yeasts and nutrients, renowned for their efficiency and reliability, proudly have the CERM mark of excellence. Developed through advanced research in collaboration with Italiana Biotechnologie, these products are widely recognized for their significant contributions to enhancing winemaking processes and improving the overall quality of wine.

“CERM is committed to innovation, research, and the development of advanced biotechnology products designed for enology.”

CERM will focus mainly on the study of yeast (*S. cerevisiae* and *non-Saccharomyces*), yeast derivatives, activators, and nutrients using cutting-edge methodology and technology to explore new frontiers in detail. The goal is to thoroughly understand the behavior of these products under various operational conditions to enhance their effectiveness and efficiency in winemaking.

WATCH
THE VIDEO



Discover our CERM products!
You will find them next to the CERM logo in this catalog.

Yeast Inoculum: different strategies

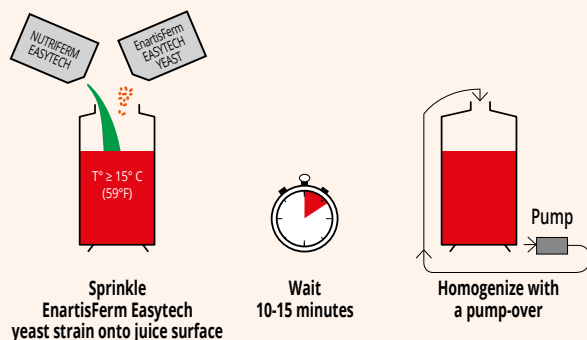
EASYTECH: DIRECT INOCULATION



NO REHYDRATION REQUIRED!

Easytech is a certified range of Enartis yeasts and nutrients that can be added directly to juice rather than requiring typical rehydration and acclimatization steps. This innovative range simplifies cellar operations and reduces the risk of making mistakes at inoculation, saving wineries time and money. The Enartis Easytech range was developed to make winery operations **more sustainable** by reducing resources needed to adequately prepare inoculations, including equipment, energy, water, and staff. The use of Easytech nutrients in the application of these **yeasts** maximizes their adaptation under stress conditions. Easytech yeasts ensure optimal fermentation performance in juices with temperatures above 15°C.

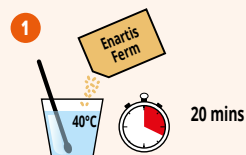
Simply sprinkle the product in before a pump-over or punch down:



Enartis Easytech range is also suitable for traditional yeast rehydration.

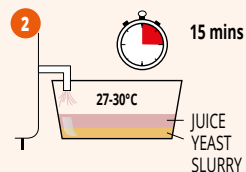
Discover our Easytech yeasts!
You will find them next to the Easytech logo in this catalog.

TRADITIONAL INOCULATION



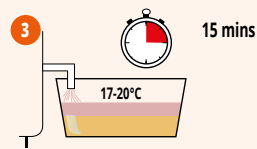
Rehydrate 20-40 g/hL of active dry yeast in 10 times its weight of chlorine-free water at 35-40°C.

Stir gently to break up any clumps. Wait 20-30 minutes.

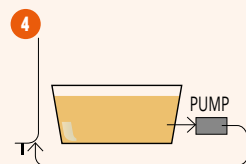


Slowly add some juice/must to yeast suspension to drop temperature: temperature drop should not be more than 10°C.

This helps yeast acclimate to cool temperature of the juice and avoid cold shock. Let stand for 15 minutes.



Repeat (2) until the temperature difference between the tank and yeast slurry is below 10°C.



Add yeast slurry to the bottom of the fermentation vessel and mix the tank.

This protocol applies to all EnartisFerm yeast strains in Active Dry Yeast (ADY) form, with the exception of non-Saccharomyces yeasts.

WHITE AND ROSÉ VINIFICATION

EnartisFerm AROMA WHITE

- Yeast strain recommended for producing young white wines with an intense aromatic profile.
- Suitable for both neutral and aromatic grape varieties.
- Fermentation at 14-16°C (57-61°F) favors fresh citrus notes; 17-20°C (62-68°F) favors tropical and thiolic sweet white fruit aromas.
- Low producer of riboflavin: reduced risk of light-struck defect.
- Exhibits β-lyase activity, enhancing thiol expression such as fresh citrus and tropical fruit aromas in thiol-rich grapes.
- In neutral grapes, promotes mineral notes and white fruit aromas with excellent complexity on the palate.
- Moderate speed fermenter.
- Medium/high nutrient requirements.

APPLICATION

Ideal for thiolic varieties such as Sauvignon Blanc, Pinot, Riesling, and Gewurztraminer; ester and acetate production; direct inoculation

DOSAGE

20-40 g/hL
(1.7-3.4 lb/1,000 gal)

PACKAGING

0.5 kg
10 kg





I have been using EnartisFerm ES181 for more than 10 years. Without fail it has been a reliable companion helping me produce quality white wines my clients have become accustomed to. **Henri Swiegers, Production Manager & Winemaker at Badsberg Wine Cellar - South Africa**

EnartisFerm VINTAGE WHITE

- Enhances varietal aromas, produces delicate wines with round and complex mouthfeel.
- Releases high levels of polysaccharides, contributing to texture and stability.
- Forms lightly-compacted lees reducing the number of *bâtonnage* and pump-overs needed for *sur lie* effect.
- Moderate speed fermenter.
- Medium/high nutrient requirements.

APPLICATION

Varietal expression; barrel fermentation; lees ageing; increased volume on the palate

DOSAGE

20-40 g/hL
(1.7-3.4 lb/1,000 gal)

PACKAGING

0.5 kg
10 kg

EnartisFerm ES123

- Blend of two *S. cerevisiae* yeasts selected for enhancing varietal aroma expression in white wines.
- Produces fresh and long-lasting aromas of white fruit, flowers, and citrus fruit.
- Excellent for neutral and aromatic varieties and ideal for second fermentations with *Charmat* method.
- Medium speed fermenter.
- Medium/high nutrient requirements.

APPLICATION

Fresh and easy-to-drink wines; fruity white wines obtained from neutral grapes; ester and acetate production; fresh sparkling wines; sweet wines

DOSAGE

20-40 g/hL
(1.7-3.4 lb/1,000 gal)

PACKAGING

0.5 kg

EnartisFerm ES181

- Ideal for fermenting at low temperatures and under hyper-reductive conditions.
- Enhances varietal aroma expression in white wines.
- Produces wines with aromatic complexity, featuring white and tropical fruit notes without overpowering the grape's natural characters.
- Results in wines that are soft, well-balanced, and expressive on the palate.
- Suitable for base wine and refermentations, especially when high aromatic intensity is desired.
- Fast fermenter.
- Low nutrient requirements.
- Low VA, H₂S, and SO₂ production.

APPLICATION

Intense aromas; thiol production; varietal expression; ester and acetate production

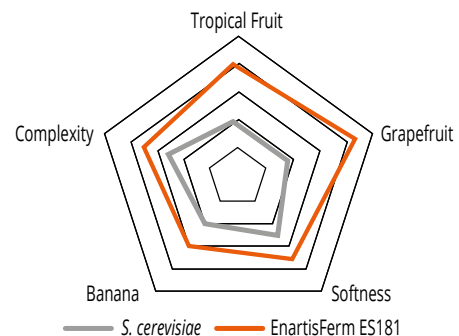
DOSAGE

20-40 g/hL
(1.7-3.4 lb/1,000 gal)

PACKAGING

0.5 kg
10 kg

EnartisFerm ES181 aromatic expression comparison to other *Saccharomyces cerevisiae*.



EnartisFerm Q9

- Selected for producing young white wines from both neutral and aromatic grape varieties.
- High capacity to produce esters and release varietal aromas such as thiols, terpenes, and norisoprenoids.
- Wines fermented with this yeast exhibit an intense aromatic profile of white-fleshed fruit (e.g., peach, apricot), green apple, mineral, and varietal notes.
- Delivers wines with good structure on the palate.
- Excellent choice for fermenting terpene-rich varieties like Muscat and Gewürztraminer.

APPLICATION

Thiol production (minerality); varietal expression; ester and acetate production; intense aromas

DOSAGE

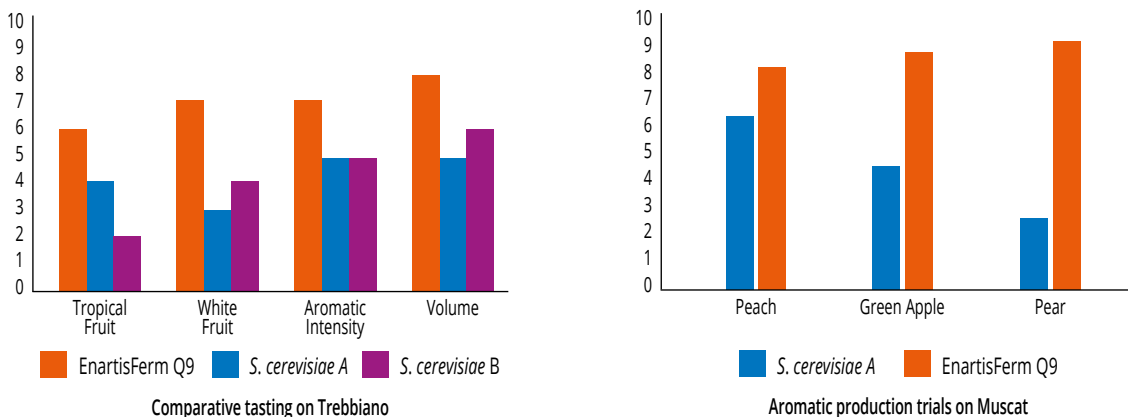
20-40 g/hL
(1.7-3.4 lb/1,000 gal)

PACKAGING

0.5 kg



EnartisFerm Q9 aromatic expression comparison to other *Saccharomyces cerevisiae*.



EnartisFerm Q4

- Enhances aromatic characteristics of thiolic varieties.
- This strain carries a complete, long version of the IRC7 gene, enabling production of a unique β -lyase enzyme responsible for releasing thiols, particularly 4-MMP, by breaking bonds with cysteine.
- Expresses varietal aromas and enhances notes of box tree, gooseberries, tomato leaf, citrus, and blackcurrant associated with 4-MMP.
- Moderate speed fermenter.
- High nutrient requirements.
- Produces very low levels of SO₂ and acetaldehyde, supporting cleaner fermentation profiles.

APPLICATION

Production of complex white wines; thiolic varieties

DOSAGE

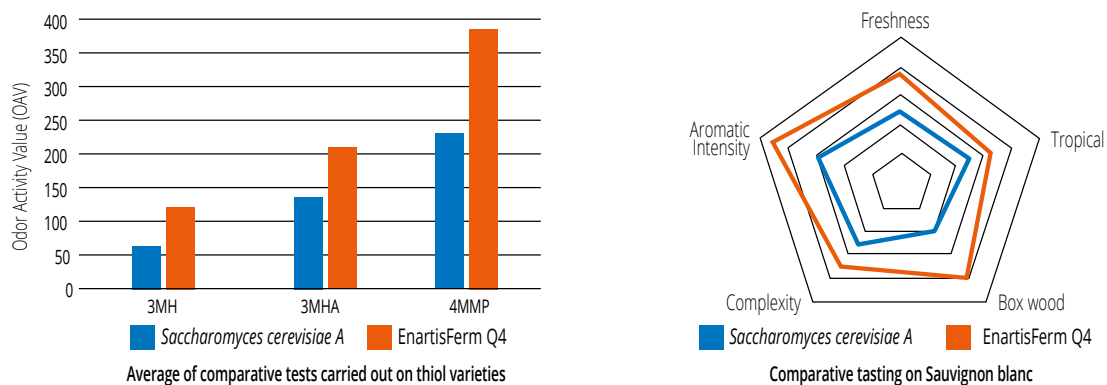
20-40 g/hL
(1.7-3.4 lb/1,000 gal)

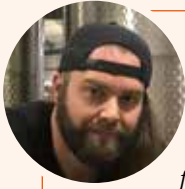
PACKAGING

0.5 kg



EnartisFerm Q4 aromatic expression comparison to other *Saccharomyces cerevisiae*.





EnartisFerm Q CITRUS gave my wines incredible aromatics and massive sensory expression. We frequently perceive distinct notes of pineapple, orange and guava. EnartisFerm Q CITRUS reminds me of landing in Hawaii! **Lucas Meeker, Winemaker at The Meeker Vineyards - California, USA**

EnartisFerm Q CITRUS

- Selected to express terpenes, norisoprenoids, and thiols through β -glucosidase activity.
- Produces white wine with intense aromatic expression.
- At lower fermentation temperatures (10–13°C or 50–55°F), it enhances zesty citrus (grapefruit), tropical fruit (guava, passion fruit, pineapple), and floral notes (jasmine, lime blossom).
- At higher temperatures (16–20°C or 60–68°F), it intensifies tropical and white fruit aromas (peach, pear).
- Fast fermenter with medium nutrient requirements.
- Good glycerol production, contributing to volume and roundness on the palate.
- Produces low levels of VA and H₂S for cleaner fermentations.

APPLICATION

Varietal expression; fresh and citrus aromas; thiol production; ester and acetate production

DOSAGE

20-40 g/hL
(1.7-3.4 lb/1,000 gal)

PACKAGING

0.5 kg
10 kg

RED VINIFICATION



EnartisFerm RED FRUIT

- Popular strain known for producing intense, desirable aromas.
- Highlights berry notes (blueberry, blackberry, cherry, raspberry) and violet.
- With its β -glucosidase activity, it enables the release of terpenes and norisoprenoids.
- When used with INCANTO NC CHERRY during fermentation, it boost glycerol production while maintaining acidity.
- Produces wines that are both soft and fresh on the palate.
- Fast fermenter with high nutrient requirements.

APPLICATION

Rosé wines; fruity, young or moderately aged red wines; ester production

DOSAGE

200-400 g/ton

PACKAGING

0.5 kg
10 kg



EnartisFerm VINTAGE RED

- Ideal for crafting age-worthy red wines.
- Produces elegant, complex wines with rich red fruit and spice aromas.
- Delivers round, full-bodied mouthfeel with excellent structure.
- High production of glycerol and mannoproteins, enhancing texture and stability.
- Medium nutrient requirements.
- Wide fermentation temperature range (18–35°C or 65–95°F).

APPLICATION

Varietal expression; medium to long ageing; premium red wines; oak ageing; structure and roundness

DOSAGE

200-400 g/ton

PACKAGING

0.5 kg

EnartisFerm ES488

- Reduces herbaceous notes in unripe grapes.
- Enhances thiol aromas in red wines, adding freshness with notes of violet, black berries, and licorice.
- Moderate speed fermenter.
- High nutrient requirements.
- High extraction capacity, resulting in wines with great structure and intense color.
- Low VA, SO₂ and H₂S production.

APPLICATION

Thiol production; reduce herbaceous notes; unripe grapes; medium to long ageing

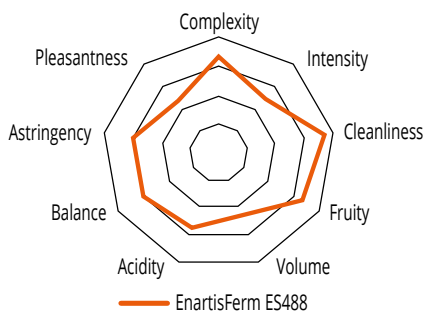
DOSAGE

200-400 g/ton

PACKAGING

0.5 kg
10 kg

Average of tasting on Italian red wines fermented with EnartisFerm ES488.



EnartisFerm WS

ZINFANDEL ISOLATE FROM WILLIAMS SELYEM WINERY, CALIFORNIA

- A very robust yeast, enhances structure and tannins while preserving varietal character.
- Produces elegant, clean, fresh, fruity and spicy wines with round and smooth mouthfeel.
- Fast fermenter.
- High alcohol tolerance (up to 18%).
- Suitable for riboflavin reduction.
- Low production of vinylphenol and vinylguaicol.

APPLICATION

Wide spectrum of red varieties; high °Brix grapes; structured and elegant wines

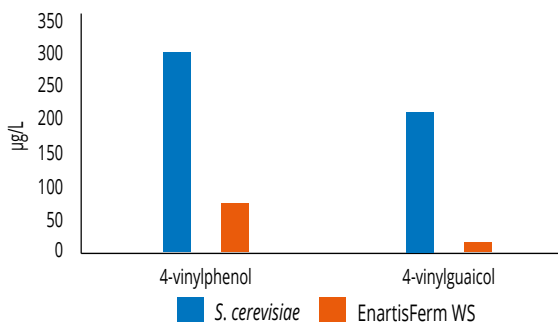
DOSAGE

200-400 g/ton

PACKAGING

0.5 kg
10 kg

EnartisFerm WS comparison to *S. cerevisiae*: Average production of phenols in white wine.





EnartisFerm D20

HEAT TOLERANT

CABERNET SAUVIGNON ISOLATE FROM DAOU VINEYARDS & WINERY, CALIFORNIA

- Produces powerful, complex, and structured red wines with long ageing potential.
- Ideal for Bordeaux varieties, emphasizing black fruit, floral, and spice aromas while minimizing herbaceous notes.
- Enhances varietal and terroir expression, delivering wines with rich, dense, and stable color.
- High polyphenol extraction capacity, contributing to excellent mouthfeel and color stability.
- High alcohol tolerance (up to 17%) and resistant to high temperatures (up to 38°C or 101°F).
- Moderate speed fermenter.
- Medium nutrient requirements.

APPLICATION

High °Brix grapes; varietal expression; high temperature fermentation; white, rosé and red wines; fruity aromas; ester and acetate production

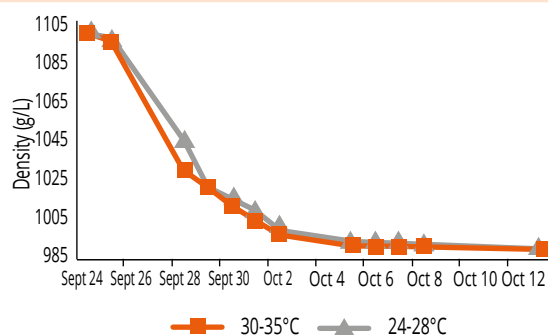
DOSAGE

200-400 g/ton

PACKAGING

0.5 kg
10 kg

EnartisFerm D20 fermentation with and without temperature control.



ENARTIS California Premium Vineyards Collection

The California Premium Vineyards Collection celebrates Enartis' long-term collaboration with leading California wineries and vineyards. It features yeast strains isolated from iconic sites and recognized for their reliability, fermentation performance, and ability to enhance varietal character and regional identity.

EnartisFerm WS: OVER 30 YEARS OF EXCELLENCE

First isolated from Zinfandel grapes at William Selyem Winery in California, EnartisFerm WS has been a benchmark yeast for more than three decades. Renowned for its reliability and versatility, it consistently delivers complete fermentations and is valued by winemakers around the world seeking to preserve varietal character and produce balanced, expressive wines.

ENARTISFERM D20: A PROVEN STRAIN OF QUALITY AND CONSISTENCY

In 2013, winemaker Daniel Daou partnered with Enartis to isolate a yeast capable of thriving under high fermentation temperatures while ensuring stable color and balanced tannins. The project began with Cabernet Sauvignon grapes from the top block of DAOU Mountain in Paso Robles' Adelaida District. After extensive trials and isolate selection, EnartisFerm D20 was introduced in active dry form in 2015. Today, it is recognized worldwide for delivering reliability, structure, and quality across a wide range of wines.



EnartisFerm Q7

- *S. cerevisiae* yeast strain isolated from Primitivo, ideal for freshening overripe or jammy fruit profiles typical of warm climate regions.
- Produces pleasant fresh fruit aromas including plum, dark cherry, and ripe berries.
- Suitable for fermenting both young wines and those intended for medium to long-term ageing.
- Medium nutrient requirements.

APPLICATION

Hot climates freshen overripe grapes; high °Brix grapes

DOSAGE

200-400 g/ton

PACKAGING

0.5 kg

MULTIPURPOSE YEASTS

EnartisFerm EZFERM 44

- Fructophilic *S. bayanus* yeast strain, ideal for preventing or restarting sluggish or stuck fermentations.
- Alcohol tolerant (up to 17.5%).
- Low nutrient requirements.
- Fast fermenter.
- Wide fermentation temperature range (12-34°C).
- Low VA, H₂S and SO₂ production.

APPLICATION

Restart stuck fermentations; hot climate grapes and drought areas

DOSAGE

20-40 g/hL
(1.7-3.4 lb/1,000 gal)

PACKAGING

0.5 kg
10 kg

EnartisFerm PERLAGE

- Ideal for sparkling wines, recommended for both *Champenoise* and *Charmat* methods.
- Produces clean, elegant, delicate, and complex wines with round and balanced mouthfeel.
- Fast fermenter.
- Alcohol tolerant (up to 17%), resistant to SO₂ and low pH.
- Wide range of fermentation temperatures (10-30°C or 50-86°F).
- Low nutrient requirements.
- Low VA, H₂S and SO₂ production.

APPLICATION

High quality sparkling base wines; traditional method; *Charmat* method; white and rosé wines

DOSAGE

20-40 g/hL
(1.7-3.4 lb/1,000 gal)

PACKAGING

0.5 kg

EnartisFerm Q RHO

- *Saccharomyces uvarum* strain selected for enhancing freshness and acidity in white, red, and rosé wines.
- Produces high amounts of glycerol by reducing sugar/alcohol yield.
- Good producer of acetates and 2-phenylethanol (rose aroma).
- Low temperature tolerance.
- Preserves and increases total acidity enhancing wine freshness.
- Low alcohol yield.
- Low production of volatile acidity.

APPLICATION

White, red and rosé wines for blending or wine adjustments; increase acidity; reduce sugar/alcohol yield; increase aroma complexity and softness

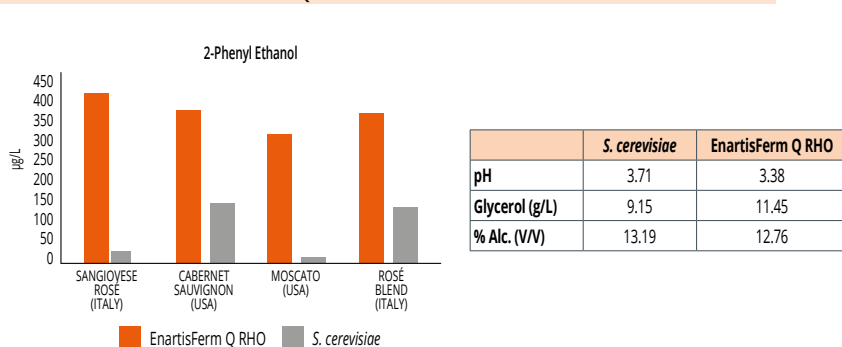
DOSAGE

20-40 g/hL
(1.7-3.4 lb/1,000 gal)

PACKAGING

0.5 kg

An increase in glycerol with a consequent reduction in alcohol yield is observed in fermentations with EnartisFerm Q RHO.



NEW EnartisFerm Q GRACE



- Developed through CERM research, designed to enhance finesse in wines from cold climate regions.
- Particularly suitable for Chardonnay and Pinot Noir, it emphasizes aromatic complexity and elegance.
- Distinctive for its high production of 3-ethoxypropanol, a stable, superior alcohol that ensures bouquet persistence and long-term aromatic stability, especially in wines destined for extended ageing in wood.
- Highlights varietal sensory profile, balancing ester production with delicate and persistent notes. Contributes to overall aromatic complexity, while maintaining balance and freshness.
- Low VA and SO₂ production.
- Ideal for winemakers seeking refined aromatic profiles and long-lasting sensory impact.

APPLICATION

Chardonnay; Pinot Noir; preserve delicate aromas; oak ageing; refined aromatic profiles; long-lasting sensory impact and balance

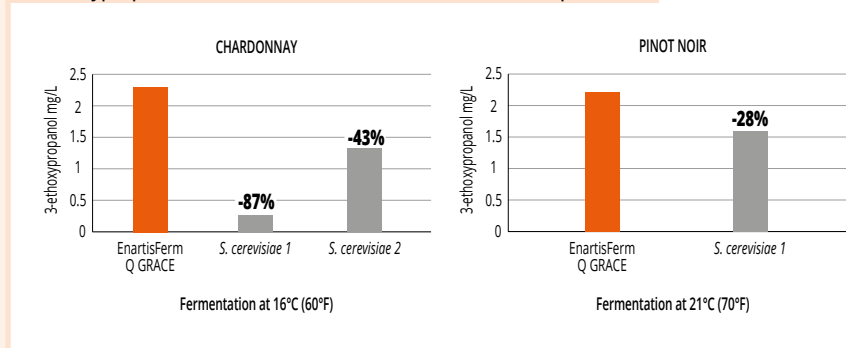
DOSAGE

20-40 g/hL
(1.7-3.4 lb/1,000 gal)

PACKAGING

0.5 kg

3-Ethoxypropanol Production at Different Fermentation Temperatures.



NON-SACCHAROMYCES YEAST

EnartisFerm Q TAU

- Freeze-dried strain of *Torulaspora delbrueckii*.
- Produces wines with high levels of esters and terpenes, for increased aromatic intensity, fruitiness, complexity, and mouthfeel.
- Suitable for sequential inoculation with *Saccharomyces* strains, or solo use up to 12% potential alcohol.
- Slow fermenter.
- Low nutrient requirements.
- Very low VA, H₂S and SO₂ production.

APPLICATION

Fruity wines; increases volume, softness, and complexity

DOSAGE

20-30 g/hL
(1.7-2.5 lb/1,000 gal)

PACKAGING

0.5 kg

NEW

EnartisFerm Q MCK



- *Metschnikowia pulcherrima* yeast strain, specifically selected for bioprotection in white, red, and rosé must.
- Bioprotection from microbial contaminants during grape harvest and pre-fermentation stages.
- Acts as a natural alternative to sulfur dioxide.
- Non-fermentative strain. Requires co-inoculation with *Saccharomyces cerevisiae* to complete alcoholic fermentation.

APPLICATION

Mechanical or hand harvesting; white, red, and rosé must; bioprotection during pre-fermentation stages; cold stabulation

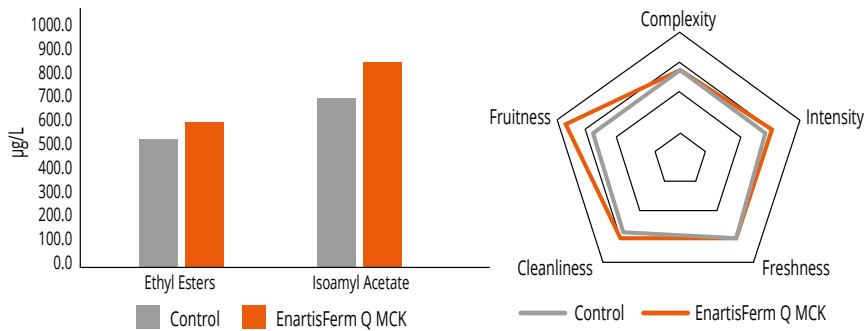
DOSAGE

5-15 g/hL
(0.4-1.3 lb/1,000 gal)

PACKAGING

0.5 kg

Gas chromatograph analysis shows that ethyl esters and isoamyl acetate are higher with EnartisFerm Q MCK during stabulation and, as shown in the graph below, have a positive impact on sensory characteristics.



Easu tech
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**ALSO AVAILABLE****EnartisFerm SB**

A fast-fermenting yeast with short lag phase and suitable across a broad temperature range. Produces clean wines with low volatile acidity and H₂S.

EnartisFerm ES454

Produces elegant, complex, varietal wines with spicy and red fruit aromas and a balanced structure. Ideal for expressing terroir, using high-quality grapes, and achieving medium to long ageing.











EnartisFerm Q5

Yeast for bold, fruit-forward red wines, enhancing terpene/norisoprenoid aromas and producing intense color, smooth structure, and high glycerol.

Yeast/Wine Style Recommendations

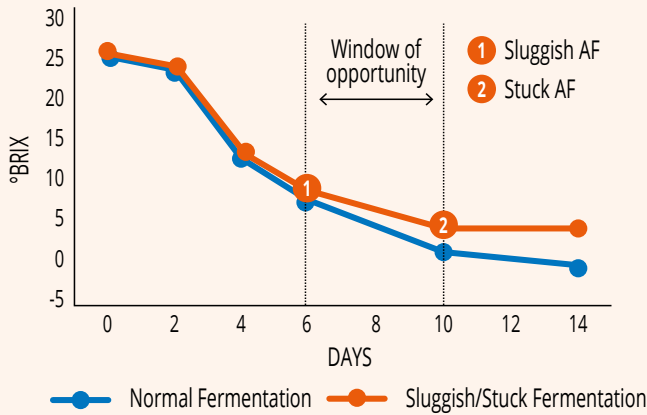
	Varietal Expression	Thiol Expression	Ester And Acetate Production	High Aromatic Impact	Young Whites	Aged Whites	Rosés	Young Reds	Reserve Reds	Late Harvest	Sparkling Base Wines	Stuck Fermentations
EnartisFerm AROMA WHITE	🔥	🔥	🔥	🔥	🔥	🔥	🔥					
EnartisFerm VINTAGE WHITE	🔥				🔥	🔥	🔥					
EnartisFerm ES123	🔥		🔥		🔥	🔥	🔥				🔥	
EnartisFerm ES181	🔥	🔥	🔥		🔥	🔥	🔥				🔥	
EnartisFerm Q9	🔥	🔥	🔥	🔥	🔥	🔥	🔥					
EnartisFerm Q4	🔥	🔥		🔥	🔥		🔥					
EnartisFerm Q CITRUS	🔥				🔥		🔥				🔥	
EnartisFerm RED FRUIT	🔥		🔥	🔥			🔥	🔥			🔥	
EnartisFerm VINTAGE RED	🔥								🔥			
EnartisFerm ES488	🔥	🔥					🔥	🔥	🔥			
EnartisFerm WS	🔥						🔥	🔥	🔥	🔥	🔥	🔥
EnartisFerm D20	🔥		🔥	🔥		🔥		🔥	🔥	🔥		
EnartisFerm Q7	🔥							🔥	🔥			
EnartisFerm Q GRACE	🔥					🔥			🔥			
EnartisFerm EZFERM 44	🔥									🔥		🔥
EnartisFerm PERLAGE	🔥										🔥	
EnartisFerm Q RHO			🔥	🔥	🔥		🔥	🔥		🔥		
EnartisFerm Q TAU			🔥	🔥	🔥	🔥	🔥	🔥	🔥			
EnartisFerm Q MCK					🔥	🔥	🔥	🔥	🔥	🔥	🔥	

Enartis Yeast Characteristics

	Easytech	Temperature	Lag Phase	Fermentation Speed	Alcohol Tolerance	Killer Factor	Compatibility with MLF	Nitrogen Needs
EnartisFerm AROMA WHITE <i>S. cerevisiae</i>		14-24°C (57-75°F)	Short	High	15%	Killer	Neutral	Medium-High
EnartisFerm VINTAGE WHITE <i>S. bayanus</i>		14-24°C (57-75°F)	Short	Medium-Slow	15.5%	Killer	Good	Low
EnartisFerm ES123 <i>S. cerevisiae</i> + <i>S. bayanus</i>		15-25°C (59-77°F)	Medium	Medium-Slow	15%	Killer	Low	High
EnartisFerm ES181 <i>S. cerevisiae</i>		10-20°C (50-68°F)	Medium	High	16.5%	Killer	Low	Low
EnartisFerm Q9 <i>S. cerevisiae</i>		14-20°C (57-68°F)	Medium	Medium-Slow	14.5%	Neutral	Neutral	Medium
EnartisFerm Q4 <i>S. cerevisiae</i>		14-18°C (57-64°F)	Medium	Medium	15%	Killer	Neutral	High
EnartisFerm Q CITRUS <i>S. cerevisiae</i>		10-20°C (50-68°F)	Medium	Medium-Slow	15%	Neutral	Low	Medium
EnartisFerm RED FRUIT <i>S. cerevisiae</i>		15-30°C (59-86°F)	Medium	Medium-Slow	15%	Neutral	High	Medium
EnartisFerm VINTAGE RED <i>S. cerevisiae</i>		15-32°C (59-90°F)	Short	High	16%	Killer	High	Low
EnartisFerm ES488 <i>S. cerevisiae</i>		15-28°C (59-82°F)	Medium	Medium-Slow	16%	Killer	High	High
EnartisFerm WS <i>S. cerevisiae</i>		16-30°C (61-86°F)	Short	Medium-Slow	18%	Neutral	Neutral	Medium
EnartisFerm D20 <i>S. cerevisiae</i>		18-38°C (64-100°F)	Short	Medium-Slow	17%	Neutral	Neutral	Low
EnartisFerm Q7 <i>S. cerevisiae</i>		16-30°C (61-86°F)	Short	Medium-Slow	16.5%	Neutral	Neutral	Low
EnartisFerm Q GRACE <i>S. cerevisiae</i>		16-30°C (61-86°F)	Medium	Medium-Slow	16%	Neutral	High	Medium-Low
EnartisFerm EZFERM 44 <i>S. bayanus</i>		15-30°C (59-86°F)	Short	Medium-Slow	17.5%	Neutral	Neutral	Low
EnartisFerm PERLAGE <i>S. cerevisiae</i>		10-30°C (50-86°F)	Short	Medium-Slow	17%	Killer	Neutral	Low
EnartisFerm Q RHO <i>S. uvarum</i>		8-25°C (46-77°F)	Medium	Slow	13%	Neutral	Low	Medium
EnartisFerm Q TAU <i>Torulasporea delbrueckii</i>		17-25°C (63-77°F)	Medium-Long	Slow	11.5%	-	-	Medium-High
EnartisFerm Q MCK <i>Metschnikowia pulcherrima</i>		4-20°C (40-68°F)	-	-	4%	-	Neutral	Medium

Protocols to Restart and Complete Sluggish or Stuck Fermentations

The successful restart of a sluggish or stuck fermentation depends on an accurate diagnosis and fast intervention with the correct treatment.



PROTOCOL 1 : Sluggish Fermentation

The moment a fermentation becomes sluggish, seize the 'window of opportunity'. Quick intervention may help restore yeast vitality and avoid a full restart later.

1. Maintain temperature >20°C (68°F).
2. Press off skins or rack off lees (recommended).
3. Treat must or juice with 10-15 g/hL of EnartisStab MICRO M. Keep EnartisStab MICRO M in suspension for 30-60 minutes by mixing the must.
4. Rack off lees 24 hours after treatment (recommended).
5. Treat with 30 g/hL of NUTRIFERM NO STOP.
6. Track fermentation rate ($\Delta^\circ\text{Brix}/\text{day}$) and volatile acidity for the next few days.
7. If fermentation rate increases, monitor until desired dryness is achieved.

In some circumstances, low viability and difficult conditions can prevent a sluggish fermentation from completing. In this scenario, proceed to Protocol 2.

PROTOCOL 2 : Stuck Fermentation

The yeast population is no longer viable. It is necessary to acclimatize and add a new population of yeast to the wine.

STEP 1: Preparing the starter

In a sanitized tank capable of holding the full volume of stuck wine, prepare a solution consisting of the following.

- 250 L of stuck wine (2.5 percent of the total volume of wine to be treated).
- 250 L of water (equal to the volume of wine to be diluted). 1 kg (10 g/hL) of NUTRIFERM ULTRA.
- Add concentrated must or sugar to bring the sugar content of the solution to 50 g/L or 5° Brix
- Adjust the sugar level to 50 g/L (5°Brix).
- Keep the temperature at 20-23°C (68-73°F).

STEP 2: Yeast rehydration

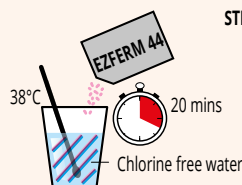
In 40 L of water at 35-38°C (95-100°F), being careful not to exceed 40°C (104°F), add 3 kg (30 g/hL) of EnartisFerm EZFERM 44 yeast while stirring gently. Wait 20 minutes.

STEP 3: Acclimate yeast and start fermentation

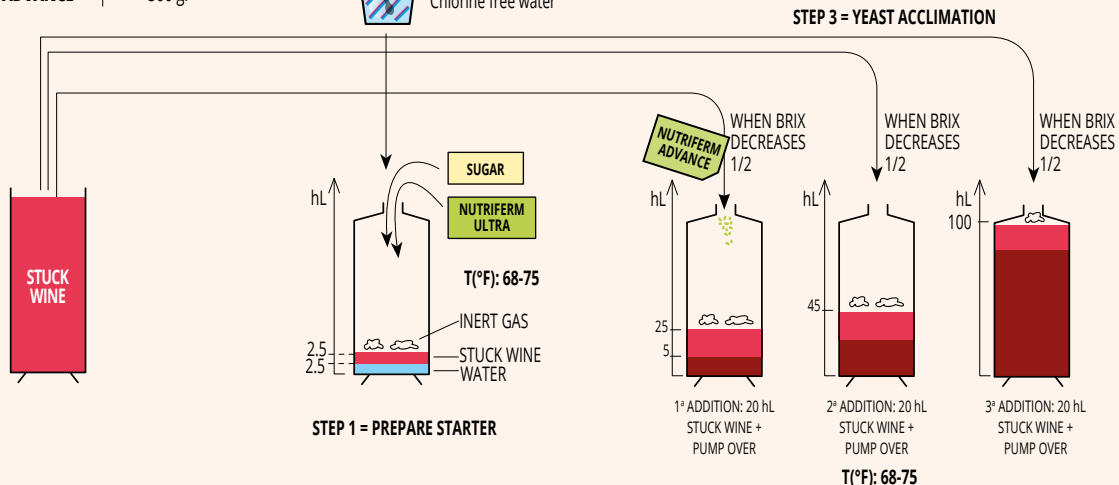
- Add the rehydrated yeast to the water/wine solution prepared in STEP 1 and stir. Keep the temperature at 20-23°C and monitor the sugar content. Caution: before proceeding with inoculation, make sure the temperature difference between the yeast suspension and the solution is less than 10°C (18°F).
- Monitor the sugar content of the starter. Do not let it go dry!
- When the sugar content is reduced by half (<2.5°Brix), add 20 hL of stuck wine (equal to 20% of the total volume of arrested wine) + 500 g of NUTRIFERM ADVANCE (equal to 25 g per 20 hL of stuck wine) to the starter.
- When the sugar content of this fraction is also halved, add another 20 hL of stuck wine (equal to 20% of the total volume).
- Repeat the operation described in the previous step (addition of the remaining 60 hL of stuck wine in fractions of 20 hL each) until the mass is exhausted.

PRODUCT NEEDS FOR 100 hL:

WINEMAKING PRODUCT	QUANTITY (kg)
EnartisStab MICRO M	1.5 kg
NUTRIFERM NO STOP	3 kg
EnartisFerm EZFERM 44	3 kg
NUTRIFERM ULTRA	1 kg
NUTRIFERM ADVANCE	500 gr



STEP 2 = YEAST REHYDRATION



STEP 1 = PREPARE STARTER

STEP 3 = YEAST ACCLIMATION

1st ADDITION: 20 hL STUCK WINE + PUMP OVER

2nd ADDITION: 20 hL STUCK WINE + PUMP OVER

3rd ADDITION: 20 hL STUCK WINE + PUMP OVER

T(°F): 68-75

BACK



NUTRIENTS



Understanding the nutritional requirements of yeast is essential for achieving consistent, complete fermentations and avoiding stuck or sluggish fermentations. Proper nutrient management not only supports healthy yeast activity but also enhances the sensory quality of the final wine.

Enartis offers a comprehensive range of nutrients designed to meet diverse fermentation conditions and winemaking goals, providing targeted solutions for optimal performance and quality.



enartis

Inspiring innovation.

EASYTECH NUTRIENTS

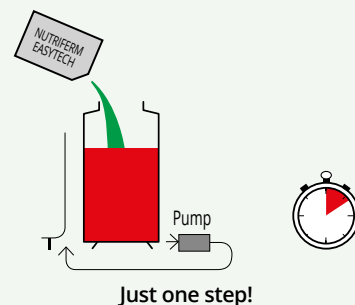
Easytech
CERTIFIED BY ENARTIS

No prior dissolution required!

Easytech is a certified range of Enartis yeasts and nutrients designed for direct addition to juice, eliminating the need for traditional rehydration steps. This innovative solution simplifies cellar operations and helps wineries save time, labor, and money. Enartis offers two fermentation activators:

- NUTRIFERM ULTRA
- NUTRIFERM AROM PLUS

Easytech **nutrients** are micro-granulated, making them less powdery and safer to handle. Their fine texture allows for easy dissolution directly in must, without clumping, and their high solubility ensures nutrients are immediately available to support yeast activity and fermentation performance.



Easytech
CERTIFIED BY ENARTIS

NUTRIFERM AROM PLUS

IMPROVE AROMATICS

- Granulated nutrient providing all essential nutritional factors for yeast.
- Contains autolyzed yeast with high levels of free amino acids, survival factors, and thiamine (Vitamin B1).
- Enhances yeast viability and supports successful fermentations.
- Selected amino acids serve as precursors for aromatic compounds.
- Increase aroma intensity and complexity.
- **Easytech** formulation: to be added directly to juice, without prior dissolving.

APPLICATION

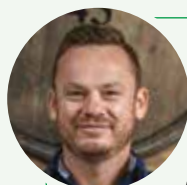
Ensure optimal yeast growth; enhance secondary aroma production

DOSAGE

15-30 g/hL
(1.3-2.4 lb/1,000 gal)

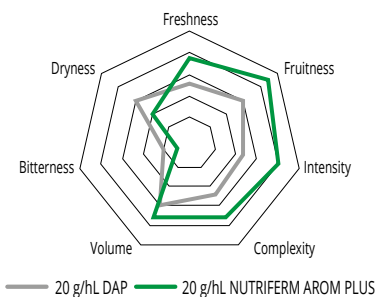
PACKAGING

1 kg
10 kg

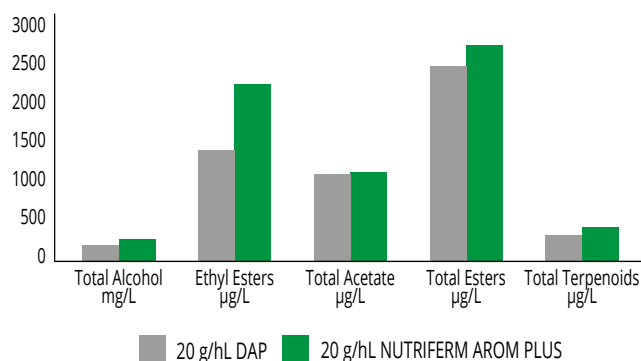


NUTRIFERM AROM PLUS is far and away the best performing complex yeast nutrition on the market! When added during rehydration of the yeast, it ensures a complete and steady fermentation, assisting yeast in fermentation to produce a complex flavor profile in any wine style. **Rianco van Rooyen, Winemaker at Robertson Winery - South Africa**

Tasting comparison of white wine with inorganic nutrition (DAP) vs pure organic nutrition (NUTRIFERM AROM PLUS).



Gas chromatograph analysis at the end of fermentation. The wine fermented with NUTRIFERM AROM PLUS has higher levels of aromatic compounds.



NUTRIFERM ULTRA

- Granular organic nutrient providing all essential nutritional factors for yeast.
- Contains easily assimilable amino acids, thiamine (Vitamin B1), long-chain fatty acids, sterols, and vitamins.
- Promotes regular, complete fermentations, leading to wines free of defects with clean aromas and flavors.
- **Easytech** formulation: to be added directly to juice, without prior dissolving.

APPLICATION

Promotes a regular and complete fermentation; enhance the varietal expressions

DOSAGE

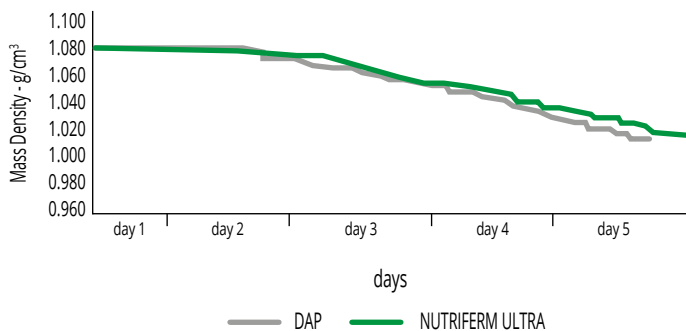
10-30 g/hL
(0.8-2.4 lb/1,000 gal)

PACKAGING

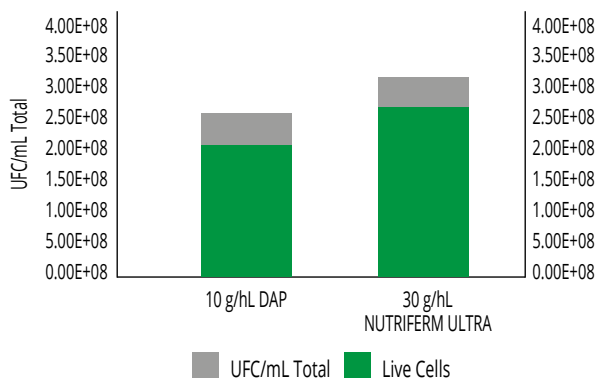
1 kg
10 kg



Fermentation kinetics analyzed by Winegrid. Mass density comparison of inorganic nutrition (DAP) and organic nutrition (NUTRIFERM ULTRA).



Total cells and live cells are higher with organic nutrition (NUTRIFERM ULTRA).



NUTRIFERM ADVANCE

- Complex nutrient containing ammonium phosphate (DAP), inactivated yeast, and cellulose.
- Formulated to prevent irregular kinetics and fermentation issues, keeping the yeast functional until complete sugar depletion.
- Improves yeast alcohol tolerance, prevents H₂S formation, and detoxifies must.

APPLICATION

Nutrient correction at 1/3 sugar depletion; prevention of off-flavors and stuck or sluggish fermentations

DOSAGE

20-40 g/hL
(1.7-3.4 lb/1,000 gal)

PACKAGING

1 kg
10 kg



NUTRIFERM NO STOP

DON'T GET STUCK!

- Inactivated yeast, autolyzed yeast and thiamine hydrochloride (vitamin B1).
- Helps maintain yeast membrane integrity.
- Prevents and corrects fermentation anomalies; effective without requiring new yeast inoculation in case of a stuck fermentation.

APPLICATION

Nutrient correction at 1/2 sugar depletion; prevent and treat stuck fermentations

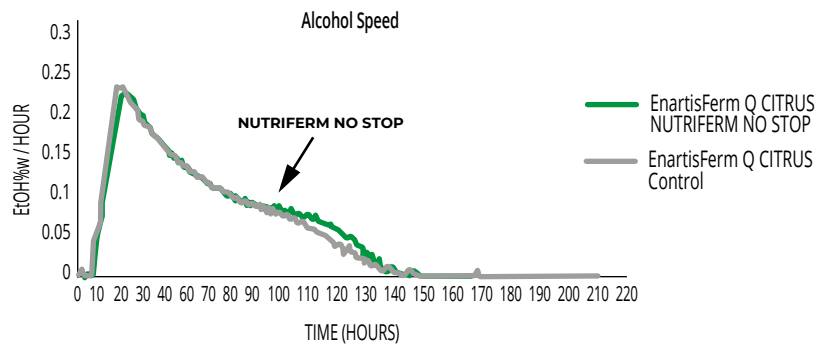
DOSAGE

20-40 g/hL
(1.7-3.4 lb/1,000 gal)

PACKAGING

1 kg
10 kg

Effect on the speed of alcohol production during the fermentation of a white wine (Trebiano, Italy) after the addition of NUTRIFERM NO STOP.



NUTRIFERM TIRAGE

- Complex nutrient containing DAP, autolyzed yeast, and survival factors.
- Provides survival factors needed for second fermentation.
- Ensures a complete and regular fermentation in both traditional and *Charmat* methods.

APPLICATION

Supplies yeast with essential nitrogen elements and survival factors needed for second fermentation

DOSAGE

5-20 g/hL
(0.4-1.7 lb/1,000 gal)
in base wine

PACKAGING

1 kg

NUTRIFERM CONTROL

- Yeast cell walls.
- Removes toxins and promotes clean and complete fermentations.
- Reduces the risk of sulfur compound formation.
- Ensures aromatic cleanliness.

APPLICATION

Supports yeast during alcoholic fermentation: detoxifies must; helps restart fermentations

DOSAGE

20-40 g/hL
(1.7-3.4 lb/1,000 gal) during primary and sluggish/stuck fermentation

PACKAGING

25 kg

ALSO AVAILABLE

CELFERM

Pure cellulose that removes fermentation toxins, supports yeast growth by providing solids, and helps reduce H₂S formation for cleaner, healthier fermentations.

NUTRIFERM SPECIAL

A complex nutrient blend of DAP, thiamine, and inactivated yeast that supports yeast vitality and helps prevent stuck fermentations.

NUTRIFERM ENERGY

An autolyzed yeast rich in free amino acids and thiamine that shortens the lag phase and reduces the risk of H₂S and acetic acid formation.

DIAMMONIUM PHOSPHATE (DAP)

It's Not Only a Matter of YAN

Balanced nutrition is essential to ensure complete and consistent alcoholic fermentations. The proper ratio of various amino acids to ammonium allows for managing fermentation performance and improving the sensory profile of wine. It also avoids sluggish fermentations that can lead to sensory imbalances or, even worse, stuck fermentations. Enartis has studied what influences yeast growth and has developed solutions to improve nutrition management protocols.

WHY IS BALANCED NUTRITION IMPORTANT?

1

Provide **quality, essential** elements to support yeast growth

2

Improve the **sensory profile** by promoting the synthesis of secondary aromas

3

Maintain healthy **fermentation metabolism** throughout the process

4

Prevent stuck or **sluggish fermentations** and ensure clean fermentative activity

5

Easu tech
CERTIFIED BY ENARTIS

Easy-to-use microgranulated formulation that allows for direct addition to must

6

Adaptable to any winemaking protocol, technology, or style

A NEW CONCEPT OF BALANCED NUTRITION

Nitrogen is essential for yeast metabolism and can be assimilated in the form of ammonium or amino acids.

Ammonium requires more time and energy to be converted into usable forms, making amino acids a more efficient nitrogen source during fermentation. **Amino acids** are easily assimilated by yeast with minimal energy expenditure, allowing for efficient protein and enzyme synthesis or storage for later use.

Given the same initial levels of YAN, balanced nutrition promotes greater production of elements essential for yeast survival, including:

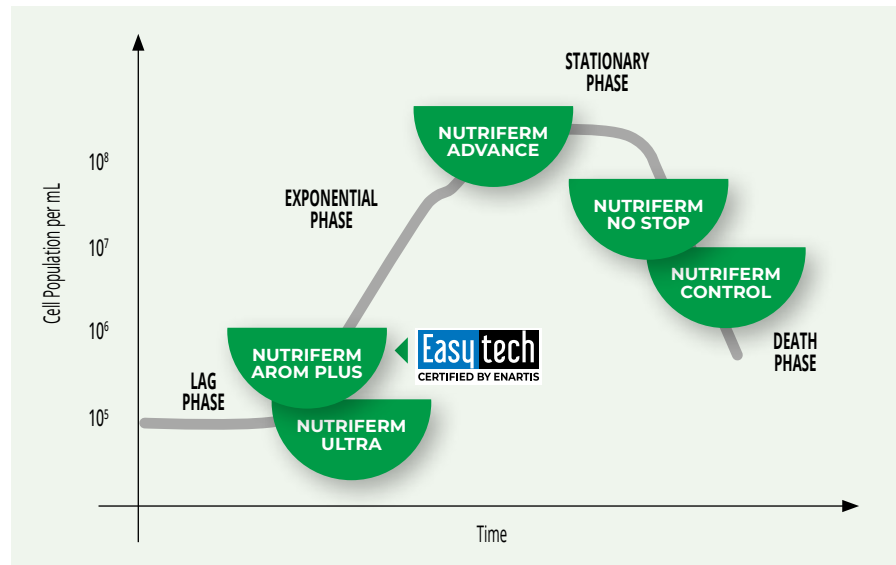
1. **Phospholipids** improve the fluidity and permeability of yeast membranes.
2. **Unsaturated fatty acids** promote yeast survival under stressful conditions.
3. **Carbohydrates** serve as energy reserves, enhancing the yeast's adaptability to varying fermentation conditions.

Enartis Nutrient Recommendations for Balanced Nutrition

NUTRIFERM AROM PLUS	Rich in aromatic amino acid precursors to promote ester synthesis and enhance aromatic expression.
NUTRIFERM ULTRA	Rich in essential amino acids to ensure optimal yeast growth and fermentation performance.
NUTRIFERM ADVANCE	Maintains yeast vitality until complete sugar depletion and detoxifies juice for a healthier fermentation environment.
NUTRIFERM NO STOP	Contains survival factors that regenerate yeast cell membranes, detoxifies juice, and helps prevent or treat sluggish and stuck fermentations.

A balanced supply of essential nutrients during fermentation enables yeast to fully express their metabolic characteristics.

Quality Over Quantity



Enartis Nutrient and Fermentation Aid Main Features

	Application	Organic Nitrogen	Inorganic Nitrogen	Aromatic Precursors	Sterols & Fatty Acids	Minerals	Vitamins	Absorptive Effect	Timing of Addition
NUTRIFERM AROM PLUS	Supply precursors for the synthesis of fermentation aromas	●●●●●●		●●●●●●	●●●	●●●	●●●		Yeast inoculation
NUTRIFERM ULTRA	Reinforce fermentation capacity of yeast	●●●●●●		●●●●	●●●●	●●●	●●●●		Yeast inoculation
NUTRIFERM ADVANCE	Helps for a complete and clean fermentation		●●●			●●●	●●●		1/3 sugar depletion
NUTRIFERM NO STOP	Prevention and treatment of stuck fermentations				●●●●●●	●●	●●●	●●●●●●	Second half of fermentation and in cases of sluggish or stuck fermentations
NUTRIFERM TIRAGE	Helps for a complete and clean fermentation in both traditional and Charmat methods	●●●	●●●	●●	●●	●●●	●●●		Secondary fermentation
NUTRIFERM CONTROL	Detoxify must							●●●●●●	In cases of sluggish or stuck fermentations



POLYSACCHARIDES

Every day, more is understood about the role of polysaccharides in enhancing wine stability and quality. Many winemakers now use techniques such as pre-fermentation cold maceration, macerating enzymes, and sur lie aging to increase polysaccharide content, improving both sensory characteristics and wine stability. However, practical limitations—such as time constraints, limited tank space, or off-aromas in the lees—can make these practices unfeasible. For winemakers unable to fully utilize the natural polysaccharides from grapes and lees, Enartis offers EnartisPro and SURLI: specialized polysaccharide preparations designed to support fermentation and wine maturation.



enartis

Inspiring innovation.

EnartisPro BLANCO

- Inactivated yeast with high content of immediately soluble mannoproteins and sulfur amino acids with antioxidant activity.
- When added at inoculation, the released mannoproteins bind with anthocyanins and aromas, protecting them from oxidation and precipitation.
- Results in wines with younger, more intense color, fresher aroma, and improved stability.
- The sulfur amino acids with antioxidant activity preserve thiolic aromas, producing fresher wines with exotic fruit notes and a more intense and lasting bouquet.
- Softens astringency and balances bitterness.
- Improves color, protein, and tartrate stability.

APPLICATION

Enhance volume; increase aromatic freshness and complexity; improve wine overall stability

DOSAGE

10-30 g/hL
(0.8-2.4 lb/1,000 gal)

PACKAGING

1 kg

EnartisPro FT

- Inactivated yeast and PVI-PVP (polyvinylimidazole and polyvinylpyrrolidone).
- Rich in free mannoproteins and thiolic group-containing peptides with antioxidant properties.
- Improves resistance to oxidation by removing metals, such as copper, and limiting the activity of oxidase enzymes (tyrosinase and laccase).
- Produces fresh wines more resistant to oxidation and premature ageing.
- Enhances aromatic compound expression and fresher, more vibrant color.
- Recommended for the vinification of age-worthy wines rich in thiols.

APPLICATION

Enhance thiols; antioxidant protection; extension of wine shelf life; increase aromatic intensity and stability

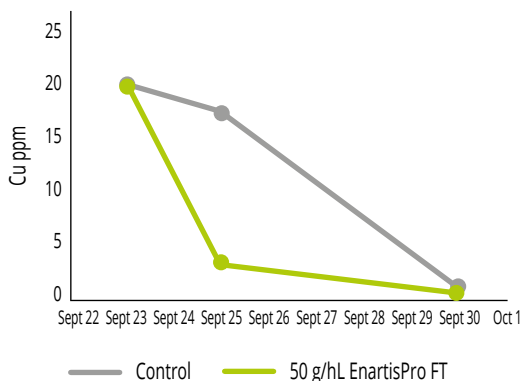
DOSAGE

30-50 g/hL
(2.4-4.2 lb/1,000 gal)

PACKAGING

1 kg

Copper monitoring during alcoholic fermentation.



Where there was a high copper value during the first few days of alcoholic fermentation, an increase in volatile acidity and total sulfur dioxide is observed.

	Acetic Acid g/L	So ₂ Total ppm
Control	0.4	61.8
EnartisPro FT 50 g/hL	0.33	47.6

Fermentation wine with EnartisPro FT results in lower sensitivity to pinking and browning.

End of Alcoholic Fermentation	Control	EnartisPro FT 50 g/hL
D.O. 420 nm	0.267	0.256
D.O. 520 nm	0.107	0.109
Pinking sensitivity	20	11
Browning sensitivity	33	18

EnartisPro Range



EnartisPro PERLAGE

- Yeast cell walls rich in antioxidant sulfur peptides. Releases a large quantity of readily soluble mannoproteins.
- Ensures antioxidant protection and protects aroma and color.
- Promotes colloidal, protein, and tartrate stability. Improves foaming properties.
- Increases shelf life of base wines and protects wine during storage before second fermentation.
- Produces fresh, round, and balanced sparkling base wines.

APPLICATION

Antioxidant; aroma protection; improve mouthfeel; improve foaming properties; protect base wine during storage

DOSAGE

20-50 g/hL
(1.7-4.2 lb/1,000 gal)

PACKAGING

1 kg

EnartisPro UNO

- Inactivated yeast rich in immediately soluble mannoproteins.
- When added at inoculation, the released mannoproteins bind with anthocyanins and aromas, protecting them from oxidation and precipitation.
- Improves aroma persistence, color stability, and wine shelf life.
- Softens astringency, balances bitterness, and increases roundness.

APPLICATION

Red, white, and rosé juice; improve wine overall quality and stability

DOSAGE

10-40 g/hL
(0.8-3.4 lb/1,000 gal)

PACKAGING

1 kg

EnartisPro TINTO



- Inactivated yeast rich in immediately soluble mannoproteins and ellagic and grape seed tannins.
- Specifically designed to favor anthocyanin/tannin condensation during fermentation, it increases color intensity and stability.
- Promotes bright and clean aromas, builds mid-palate, softens astringency, and balances mouthfeel.
- The best choice for color stabilization and sensory optimization of wine.

APPLICATION

Color stability; fruit aromas; softness; improved balance and complexity

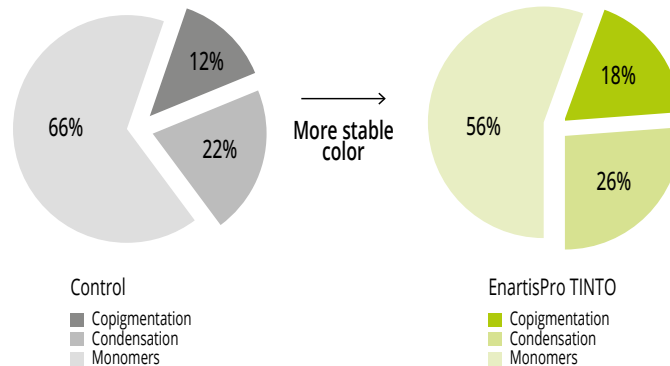
DOSAGE

15-40 g/hL
(1.25-3.4 lb/1000 gal)

PACKAGING

1 kg
10 kg

The addition of EnartisPro TINTO increases the stable color form by reducing the presence of free anthocyanin.



At Hope Family Wines, EnartisPro TINTO is a key part of our tannin strategy. We use it during flash and pre-inoculation as a reliable tool to support

and elevate our premium Cabernets. When paired with EnartisTan FERMCOLOR and EnartisZym COLOR PLUS, it becomes part of a thoughtful blend that helps us fine-tune color, structure, and balance. **Samantha C Taylor, Assistant Winemaker at Hope Family Wines, Paso Robles - CA, USA**

SURLÌ ONE

- Inactivated yeast.
- Mimics lees ageing (*sur lies*) as an alternative to or in combination with fine lees from alcoholic fermentation, with the security of microbial stability.
- Contributes to protein, tartaric, and polyphenol stabilization. Improves wine longevity.
- Imparts great aromatic complexity, volume, and roundness, softens astringency, builds mid-palate, and improves wine length.
- In red and rosé wines, it contributes to color stabilization by copigmentation.

APPLICATION

Volume and roundness; improve mouthfeel and complexity; lees ageing; white, rosé, and red wines

DOSAGE

20-50 g/hL
(1.7-4.2 lb/1,000 gal)

PACKAGING

2.5 kg

SURLÌ ELEVAGE

- Inactivated yeast rich in free and immediately available mannoproteins.
- Enhances stability, complexity, and aromatic persistence.
- Produces wines that are softer and more voluminous on the palate.
- Releases all mannoproteins within 24–48 hours, replicating effects of ageing on fine lees.

APPLICATION

Improve mouthfeel; volume and roundness; softness; increase wine length; lees ageing; white, rosé, and red wines; pre-bottling

DOSAGE

5-30 g/hL
(0.4-2.5 lb/1,000 gal)

PACKAGING

1 kg
20 kg

NEW

SURLÌ FRESH

BACK

- Pure inactivated yeast and tannins formulated to preserve wine freshness and aromatic purity.
- Protects color and aroma from oxidation, retaining freshness throughout winemaking.
- Enhances taste with a crisp, harmonious, and vibrant profile.
- Promotes long-term sensory stability and balance during ageing and storage.
- Suitable for white, rosé, and sparkling base wines, ensuring freshness from production to release.

APPLICATION

White, rosé, and sparkling base wine; preserve youthful, lively characters; support sensory stability and freshness even after extended ageing

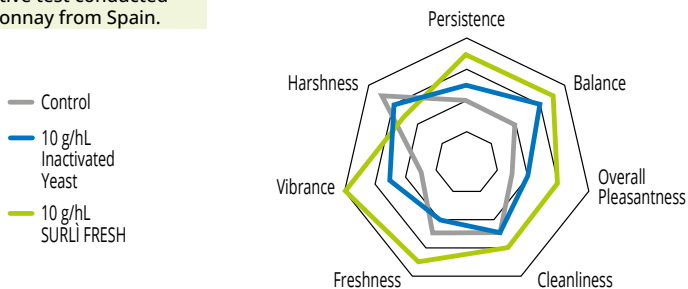
DOSAGE

10-20 g/hL
(0.8-1.7 lb/1,000 gal)

PACKAGING

1 kg

Comparative test conducted on Chardonnay from Spain.



ALSO AVAILABLE

EnartisPro AROM

Yeast derivative with strong antioxidant activity that protects aroma compounds when added before or during fermentation, improving freshness and aromatic intensity. Ideal for thiol-rich or oxidation-sensitive varieties.

EnartisPro R

Inactivated yeast rich in soluble mannoproteins that soften astringency, improve color stability, and enhance mouthfeel.

SURLÌ KPA

Inactivated yeast rich in mannoproteins and potassium polyaspartate. Helps preserve natural acidity and freshness while enhancing mouthfeel, volume, and aromatic persistence.

SURLÌ VELVET PLUS

A mannoprotein-rich product with antioxidant properties which enhances mouthfeel, improves colloidal stability, and adds smoothness to wine.



🍷 SURLÌ VELVET

- Completely soluble yeast mannoproteins.
- Enhances aromatic complexity and intensity, increases volume and roundness.
- In red wine, it reduces the sensation of astringency.
- Improves chemical-physical stability of wine.
- Fully soluble and filterable, it can be used immediately before microfiltration.

APPLICATION

Improve overall wine quality and stability prior to bottling

DOSAGE

0.5-10 g/hL
(0.04-0.8 lb/1,000 gal)

PACKAGING

0.5 kg

🍷 SURLÌ VITIS

- Completely soluble white grape skin tannins and plant-derived polysaccharides.
- Improves aromatic cleanliness, imparts volume and smoothness, and enhances the sensation of sweetness.
- At the recommended dosage, it is filterable and can be added to wine just before microfiltration.
- Increases antioxidant properties of wine.

APPLICATION

Improve overall wine quality and stability prior to bottling

DOSAGE

2-20 g/hL
(0.2-1.6 lb/1,000 gal)

PACKAGING

1 kg

EnartisPro and SURLÌ Ranges

To determine the most suitable SURLÌ product and dosage, perform the following rapid taste test:

1. **Rehydrate 1** gram of SURLÌ in 50 mL of water at 38°C for 2 hours.
2. **Prepare a solution** of 50 mL by mixing 13 mL of 95% alcohol with 37 mL of water.
3. **After 2 hours**, add the alcohol-water solution to the SURLÌ suspension and allow it to cool at room temperature, mixing periodically.
4. **Maintain the solution** at a minimum of 20°C and mix 2–3 times daily for at least 3 days.
5. The solution is now ready for tasting or direct addition to wine.
 - **Dosage reference:** 1 mL of solution in 100 mL of wine corresponds to 10 g of SURLÌ per 100 L.

Note: *SURLÌ VITIS* and *SURLÌ VELVET* can simply be dissolved in a water solution containing 13% alcohol (1 g of SURLÌ in 100 mL of water solution) and can be used immediately.

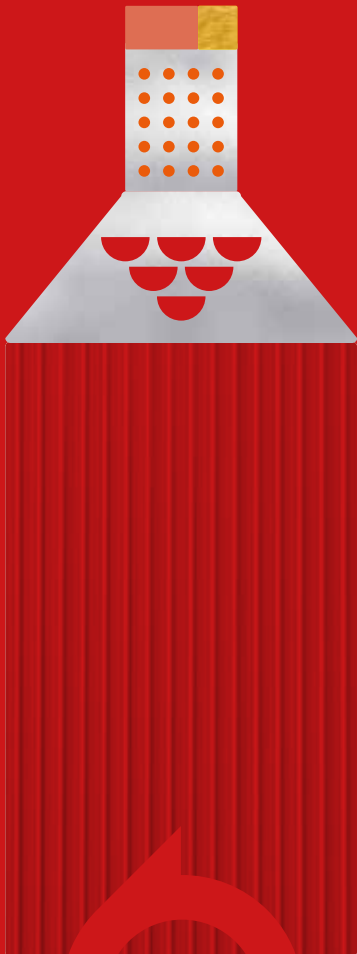
EnartisPro and SURLÌ Range Characteristics and Effects

		Composition	Benefits	Antioxidant Protection	Aroma Enhancement	Volume	Mouthfeel Improvement	Shelf-life
Fermentation	EnartisPro BLANCO	Yeast derivative	Mouthfeel improvement	●●●	●●●	●●●●	●●●	●●●
	EnartisPro FT	Inactivated yeast - PVI-PVP	Antioxidant protection	●●●●	●●●	●●	●●	●●●●
	EnartisPro PERLAGE	Inactivated yeast	Foam stability	●●●●	●	●●●●	●●	●●●
	EnartisPro UNO	Inactivated yeast	Volume and silkiness	●	●	●●●	●●●	●
	EnartisPro TINTO	Inactivated yeast Grape seed tannins Ellagic tannins	Color protection and stabilization	●●	●●	●●●●	●●●	●●
Pre-Bottling	SURLÌ ONE	Inactivated yeast	Volume improvement	●●	●	●●●	●●●	●●
	SURLÌ ELEVAGE	Inactivated yeast	Structure and persistence	●●	●	●●●●	●●●●	●
	SURLÌ FRESH	Inactivated yeast and tannins	Freshness and sensory stability	●●	●●	●●●	●●●●	●●●
	SURLÌ VELVET	Mannoproteins	Softness and mouthfeel	●	●	●●●●	●●●●	●
	SURLÌ VITIS	White grape skin tannins Arabic gum	Organoleptic improvement	●●	●●●	●●●	●●●	●●



FINING AGENTS

Fining agents serve multiple purposes in winemaking, including clarification, improving filterability, preventing haze and sediment formation, enhancing the sensory profile and color, and removing undesirable compounds from wine.



enartis

Inspiring innovation.

PLANT-BASED FINING AGENTS

PLANTIS Range

Range of plant-based fining agents for producing high-quality wines which meet the demands of the most discerning consumers. PLANTIS plant-based fining agents ensure fast clarification, reduced color oxidation, decreased presence of metals, and improved balance of the wine.

PLANTIS AF-Q

- Allergen-free preparation made of hydrolyzed pea protein and activated chitosan.
- Ensures effective clarification by increasing flocculant efficacy and forming small, compact lees.
- Improves juice and wine resistance to oxidation by removing pro-oxidant metals and low molecular weight polyphenols.
- Helps preserve young color, increases aromatic cleanliness and freshness, reduces bitterness and astringency, and increases wine longevity.

APPLICATION

Flotation and clarification; prevent and treat oxidation and pinking; reduce bitterness and astringency

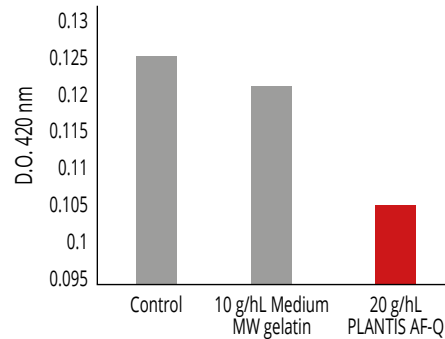
DOSAGE

5-30 g/hL
(0.4-2.5 lb/1,000 gal)

PACKAGING

1 kg
10 kg

Reduction of 420nm absorbance comparing PLANTIS AF-Q with traditional fining treatment.



NEW PLANTIS L



- Liquid, plant-based fining agent made of pea protein (*Pisum sativum*).
- Designed to optimize flotation.
- Produced through a unique process that enhances rehydration and surface charge of the protein.
- Improved clarification performance for clean must and compact lees.
- Removal of oxidized and easily oxidizable phenolic substances.
- Decreases metals content involved in oxidation.

APPLICATION

Juice clarification and flotation

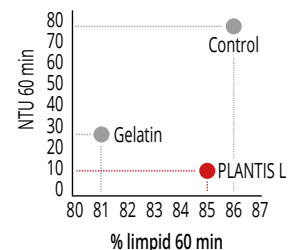
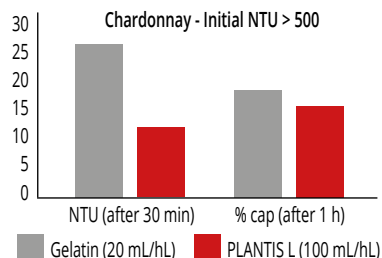
DOSAGE

30-120 mL/hL
(1.1-4.5 L/1,000 gal)

PACKAGING

20 kg

NTU reduction during flotation with PLANTIS L.



PLANTIS PQ

- Plant-based fining agent made of potato protein and activated chitosan.
- Used mainly in red wines, it reduces the perception of astringency and dryness.
- Improves wine clarification, filterability, and aromatic cleanliness.

APPLICATION

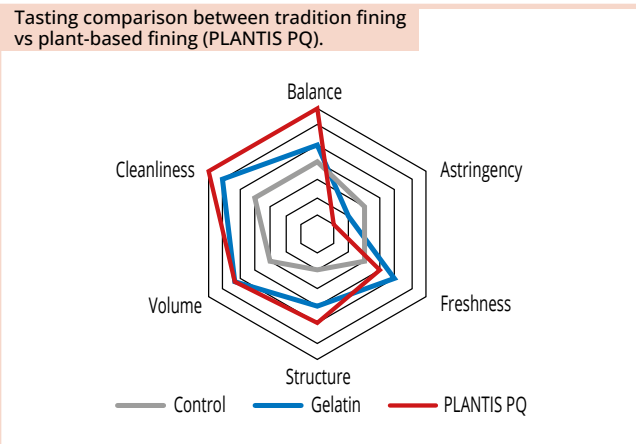
Wine clarification; reduce astringency and dryness; elimination of unstable color

DOSAGE

4-10 g/hL
(0.3-0.8 lb/1,000 gal)

PACKAGING

1 kg



PLANTIS AF-Q



Must
Static clarification
Flotation
Wine



- Fast and efficient clarification
- Metal removal and increased shelf-life
- Increased aromatic cleanliness and freshness

PLANTIS L



Must
Flotation



- Easy-to-use
- Improves yield, aids in rapid clarification

PLANTIS PQ



Wine



- Decreases astringency and bitterness

SELECTIVE FINING AGENTS

CLARIL Range

Selective fining agents designed to achieve specific enological goals, such as reduce potentially oxidizable polyphenols and metals, prevent and treat undesirable sensory compounds, and protein and color stabilization. The specificity of these fining agents achieve the desired result in a simple and targeted way, respecting and enhancing the sensory authenticity of the final wine.

CLARIL AF

- Complex fining agent based on bentonite, PVPP, and pea protein.
- Ideal in must and wine to eliminate the phenolic compounds responsible for oxidation, pinking, and bitterness.
- The presence of bentonite increases protein stability and ensures good clarification.
- Effective in reducing iron content, it can be used as an alternative to potassium caseinate.

APPLICATION

Prevent and treat oxidation and pinking; remove bitterness; improves protein stability

DOSAGE

30-150 g/hL
(2.4-12.6 lb/1,000 gal)

PACKAGING

1 kg
10 kg

NEW CLARIL OX



- Plant-based and allergen-free fining agent made of plant-proteins, chitosan, and bentonite.
- Selective removal of potentially oxidizable compounds.
- Treats oxidized must and prevents browning.
- Prevents premature ageing by targeting compounds involved in oxidation reactions.
- Preserves sensory qualities of the final wine.

APPLICATION

White and rosé must during settling and/or fermentation

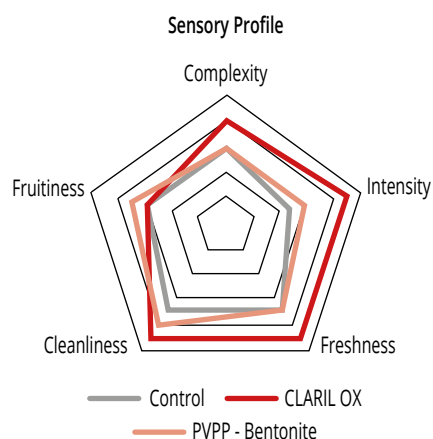
DOSAGE

30-80 g/hL
(1.7-6.7 lb/1,000 gal)

PACKAGING

2.5 kg
10 kg

Sensory evaluation of CLARIL OX vs. traditional fining agents.



Significant reduction in pinking and browning sensitivity is observed when fermenting with CLARIL OX, compared to the commercially available reference PVPP.

End of Alcoholic Fermentation	Control	CLARIL OX	PVPP and Bentonite
D.O. 420 nm	0.267	0.192	0.203
D.O. 520 nm	0.108	0.062	0.067
Pinking Sensitivity	20	8	10

CLARIL SMK

- Activated carbon, pea protein, and chitosan.
- Removes aroma defects in must and wine: volatile phenols, smoke taint, geosmin, molds, and other off-flavors.
- Restores aromatic cleanliness, fruity character, and freshness.
- Negligible impact on color and phenolic content, even at high addition rates.

APPLICATION

Aromatic cleanliness in must and wine

DOSAGE

25-300 g/hL
(2.1-25 lb/1,000 gal)

PACKAGING

1 kg
10 kg

CLARIL HM

- Co-polymer of PVI-PVP (polyvinylimidazole polyvinylpyrrolidone) and pre-activated chitosan.
- Adsorbs heavy metals (Cu, Fe, Al) and removes hydroxycinnamic acids and low molecular weight catechins.
- Prevents oxidation, browning, and oxidized aromas.

APPLICATION

Prolong wine shelf life; prevent oxidation

DOSAGE

30-50 g/hL
(2.5-4.2 lb/1,000 gal)

PACKAGING

2.5 kg

CLARIL ZR

- Plant-based and allergen-free fining agent made from plant protein, chitosan, and bentonite.
- Designed for the clarification of red wine intended for tartrate stabilization with colloid addition of ZENITH.
- Removes unstable color compounds, improves wine clarification and filterability, and reduces sulfur off-flavors.

APPLICATION

Clarification of red wine intended to be tartrate stabilized with ZENITH; elimination of unstable color

DOSAGE

20-40 g/hL
(1.7-3.4 lb/1,000 gal)

PACKAGING

2.5 kg
10 kg

CLARIL ZW



- Plant-based and allergen-free fining agent made from plant protein, chitosan, and sodium activated bentonite.
- Designed for the clarification of white and rosé wines intended for tartrate stabilization with colloid addition (ZENITH and CMC).
- Improves protein stability and eliminates unstable colloids that can affect wine clarification and filterability.

APPLICATION

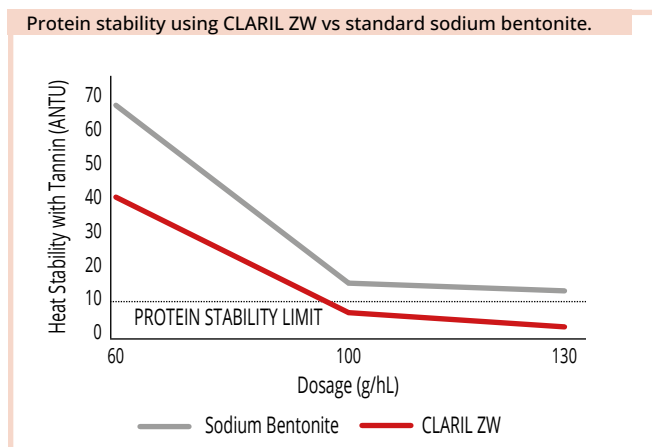
Clarification of white and rosé wine intended to be tartrate stabilized with ZENITH; protein and colloid stability

DOSAGE

20-80 g/hL
(1.7-6.7 lb/1,000 gal)

PACKAGING

2.5 kg
10 kg



We wanted to say thanks for the great service and friendly staff. We are very happy with all your products from yeast to stabilization. You have a great team indeed! Looking forward to many years of business to come! **Nicholas Husselman, Winemaker at Koelenhof - South Africa**



ENOBLACK PERLAGE



Applied to must or wine, these wine fining agents serve to remove unwanted substances, and positively influence the organoleptic characteristics of the finished product. Enartis has developed a range of carbon-based fining agents capable of meeting specific needs, including the treatment of wines contaminated by *Brettanomyces*, the decolorization of musts and base wines with excessive pigments, and the treatment of oxidized white wines.

ENOBLACK PERLAGE

- Active carbon in pellet form.
- Strong decolorizing ability.
- Easy to use and rehydrate thanks to dust-free format.
- Removes ochratoxin A (OTA).

APPLICATION

Discoloration of juice and wine; treat oxidation; color adjustment in rosé wine

DOSAGE

5-100 g/hL
(0.4-8.3 lb/1,000 gal)

PACKAGING

1 kg
15 kg

FENOL FREE

- Activated carbon in powder form.
- Good deodorizing ability.
- Removes volatile phenols related to *Brettanomyces*, smoke taint, and other off-flavors, even at low dosages.
- Negligible impact on wine color.

APPLICATION

Treatment for wines contaminated with *Brettanomyces* or smoke taint; deodorizing

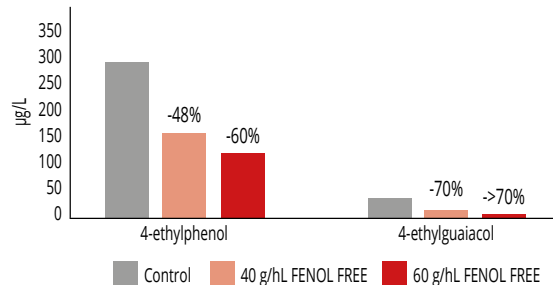
DOSAGE

20-40 g/hL
(1.7-3.4 lb/1,000 gal)

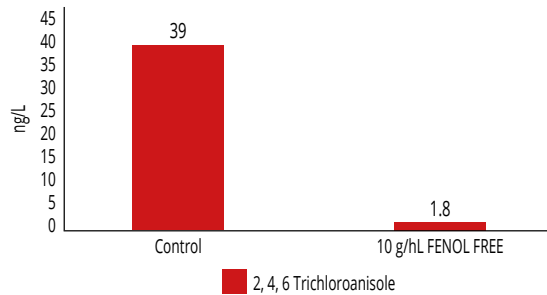
PACKAGING

1 kg
10 kg

Reduction of volatile phenols produced by *Brettanomyces* after treatment with FENOL FREE.



Reduction of 2,4,6-Trichloroanisole molecule responsible for "cork taint" defect after addition of FENOL FREE.



2.0 ng/L threshold of perception of 2,4,6-Trichloroanisole
4.2 ng/L recognition threshold of 2,4,6-Trichloroanisole

ALSO AVAILABLE

CLARIL SP

Bentonite, PVPP, and potassium caseinate. Prevents and treats oxidation, browning, and pinking. Improves aromatic cleanliness.

ENOBLACK DECOLOR

Activated carbon with high decolorizing capacity. Removes oxidated compounds in must and wine. Its damp form reduces the spread of carbon dust.

Bentonite is a natural mineral traditionally used as a fining agent for all types of wines, including red, white, and rosé. Due to its negative charge, bentonite attracts and binds positively charged compounds, such as unstable proteins in wine, which can cause turbidity or unwanted precipitations.

PLUXCOMPACT

- Granulated calcium bentonite, sodium activated.
- Special activation process imparts deproteinizing capacity comparable to sodium bentonite, while maintaining the compact lees formation typical of calcium bentonite.
- Offers effective clarification and stabilization with minimal wine loss.
- In red wines, it selectively removes unstable color fractions while preserving overall wine structure.

APPLICATION

Protein stabilization; removal of unstable color; clarification; prevent "light-struck" defect

DOSAGE

10-200 g/hL
(0.8-16.7 lb/1,000 gal)

PACKAGING

1 kg
20 kg

CLAIRBOUTEILLE P

- Selected bentonite specifically designed for traditional method sparkling wine.
- Promotes fast and efficient sedimentation and riddling thanks to its mineral and colloidal composition.
- Reduces the time required for both manual and automatic riddling, ensuring the formation of a deposit that slides easily during the process.
- Minimizes lees adhesion during ageing.

APPLICATION

Rapid clarification during riddling in traditional method sparkling wine production

DOSAGE

3-5 g/hL
(0.25-0.4 lb/1,000 gal)

PACKAGING

0.5 kg

TRADITIONAL FINING AGENTS

Enartis offers a range of traditional fining agents to perform various functions, including the removal of polyphenols and astringent tannins.

HYDROCLAR 45

- 45% liquid solution of food grade gelatin.
- Extremely hydrolyzed gelatin and low charge density.
- Designed to remove undesirable polyphenols and harsh tannins.

APPLICATION

Reduce excessive astringency; reduce dryness; pressed wines

DOSAGE

7-40 mL/hL
(0.27-1.5 L/1,000 gal)

PACKAGING

5 kg
20 kg

Bentonite

ALSO AVAILABLE

PLUXBENTON N

Granular sodium bentonite designed for efficient protein removal and improved clarification.

BENTOLIT SUPER

Powdered, activated calcium sodium bentonite offering excellent clarification and strong protein removal.

PHARMABENT

Powdered, activated calcium sodium bentonite selected from the purest natural sources. Removes proteins and stabilizes color.



Gelatin

ALSO AVAILABLE

STABYL MET

A blend of PVI-PVP and silica, effectively removes metals, hydroxycinnamic acids, and low molecular weight catechins. Prevents turbidity and limits oxidation.

STABYL G

Pure polyvinylpyrrolidone in granular form. Highly effective at removing oxidized and oxidizable polyphenols, reducing bitterness, and avoiding pinking. The granular form helps dispersion in water, avoiding clumps and dust.

Know More about Fining

WHY FINING?

Fining agents can be used for many purposes in winemaking including clarification, filterability improvement, prevention of haze and sediment formation, sensory and color improvement, and removal of undesirable elements from wine.

HOW DOES FINING WORK?

Each fining agent has specific properties and reacts with various wine molecules depending on their origin, density of charge, molecular weight and chemical properties.

Fining is based on two main principles:

- Flocculation: molecular interactions based on charge, chemical bonds, absorption or adsorption of compounds and formation of flocculates.
- Sedimentation: since the flocculates formed are not soluble and heavier than wine/juice, they settle.

WHAT ARE THE MAIN FACTORS THAT INFLUENCE FINING EFFECTIVENESS?

Product preparation and addition, temperature, pH, wine redox potential, and previous fining treatments are factors that can influence the effectiveness of fining.

CAN PLANT-BASED FINING AGENTS BE EFFECTIVE AS THOSE FROM ANIMAL PROTEIN?

Enartis has developed adjuvants of plant origin, made of pea and potato proteins, which replace animal proteins such as gelatin, casein, and egg albumin. They achieve comparable results while better respecting quality and sensory characteristics of the wine. At the same time, they adhere to labeling standards and the needs of consumers who are becoming increasingly demanding throughout the world.

BENEFITS:

- Faster clarification, reduction of suspended solids and elimination of undesirable compounds that can alter wine quality.
- Decrease in oxidized or easily oxidizable polyphenols that give brown color, dull appearance, and bitter taste.
- Efficacy in reducing oxidized color (DO 420nm), mainly with pea protein products.
- Decreased concentration of heavy metals involved in oxidation reactions.
- Improved sensory quality through cleanliness and aromatic freshness, as well as increased preservation of young and bright colors with less oxidized tones.

How to Choose the Correct Plant-Based Fining Agent

EFFECT	TRADITIONAL FINING AGENT	PLANT-BASED FINING AGENT
Treat Oxidized Color	CASEINATE - PVPP - CARBON	CLARIL OX - CLARIL AF
Clarification	GELATIN - EGG ALBUMEN	CLARIL ZR - CLARIL ZW - PLANTIS L - PLANTIS AF-Q
Reduce Astringency	GELATIN - EGG ALBUMEN	PLANTIS PQ
Reduce Bitterness	ISINGLASS - PVPP - CASEINATE	CLARIL AF
Treat Off-Flavors	CASEINATE - CARBON	CLARIL ZR - CLARIL SMK

HOW CAN UNSTABLE COLOR BE REMOVED WITHOUT AFFECTING COLOR INTENSITY?

To ensure color stability in red and rosé wines with high color intensity, the unstable color can be removed with fining. CLARIL ZR and PLANTIS PQ are the best plant-based fining agents for removing unstable colloids and color compounds, preserving color intensity.

HIGHER PERFORMANCE DURING FLOTATION:

After standard enzymatic treatment with pectinase (EnartisZym RS), use PLANTIS L to achieve greater efficiency in the formation of floccules that retain gas bubbles, ensure fast clarification, and achieve excellent lees compaction. Due to the nature of pea protein, it helps decrease the metal content and in the removal of oxidized and easily oxidizable phenolic substances, resulting in extended wine shelf-life.

Flotation is a fast and effective clarification method utilized prior to fermentation. Flotation has many benefits such as improving clarification efficiency while respecting quality and sustainability, but it requires more extensive technical know-how to implement it correctly and efficiently, as well specialized equipment.

How Does Flotation Work?

Flotation relies on specialized equipment which disperses micronized gas bubbles into juice or must via a flotation pump. These micronized bubbles will slowly rise to the top of the tank and bring grape solids and particulates up with them, forming a floating lees cake or “flees” at the top. The clarified juice is then racked from the floating lees cake, leaving the flees in the tank.

1



How to prepare the juice

Add enzymes **EnartisZym RS** or **EnartisZym EZFILTER**, when juice is transferred to tank. Check for the presence of pectins, and proceed with flotation as soon as the results are negative. Do not wait overnight!

2



Connect the flotation pump

Connect the flotation pump to the tank. Make sure that the delivery hose is short (3 m/10 ft) and connected to the bottom valve, while the suction hose is connected to the racking valve. **Start mixing the tank**, keeping the gas off for now.

3



Add flotation aids

Slowly add flotation aids through the flotation pump while tank is mixing. Make sure the whole volume of juice is well homogenized with the appropriate **fining agents**.

4



Start floating

It's time to inject gas and start floating. Open the gas injection valve and adjust the inlet pressure according to the flotation pump manufacturer instructions.

5






End of flotation and waiting time

Make sure that at least 1/3 of the volume of the tank goes through the flotation pump. Afterwards, disconnect the pump and wait 30 min per every meter of tank height containing juice. Then, **rack off immediately**.

BEST PRACTICES AND TIPS TO IMPROVE JUICE FLOTATION

Lab Parameters to Check

- ✓ After adding the enzyme, perform a pectin test every 2 hours until results are negative.
- ✓ Check turbidity before and after flotation. The target NTU depends on the winemaker's preference for conducting alcoholic fermentation.
- ✓ Measure % solids before performing flotation. If the solid % is >8, flotation would be very difficult and static settling is recommended.
- ✓ Keep temperature between 15-20 °C (59-68 °F) throughout the process.

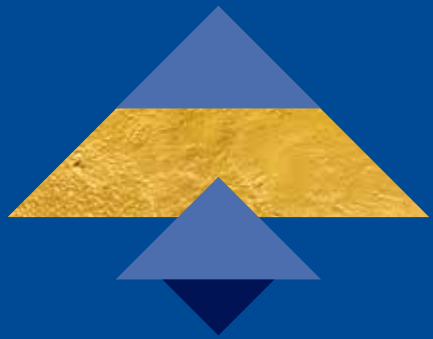
	 Enartis Recommendation	 Purpose	 Dosage
ENZYMES	EnartisZym RS Liquid pectolytic enzyme	Fast depectinization and difficult-to-clarify varieties	2-4 mL/hL
PLANT-BASED FINING AGENTS	PLANTIS L Liquid preparation of pea protein	Highly reactive protein to ensure optimum speed and compaction of lees	40-100 mL/hL
	PLANTIS AF-Q Allergen-free preparation made of pea protein and activated chitosan	Fast and clean clarification, preserving young color and extending wine shelf life	5-30 g/hL
SELECTIVE FINING AGENTS	CLARIL OX Bentonite, pea and potato proteins, activated chitosan	Reduce the risk of must oxidation and preserve the fresh character	30-50 g/hL
	CLARIL SMK Activated carbon, pea protein and chitosan	Great in removing off-flavors such as smoke taint, volatile phenols, molds, etc.	20-40 g/hL

Additional Considerations

- ✓ Flotation pump and tank must have appropriate size and shape. For optimal flotation do not use conical or egg-shaped tanks, but rather use tall and small diameter tank
- ✓ Fill the tank 70-80% of total volume to ensure space for cap formation
 - ✓ Ensure the juice has not started fermenting
 - ✓ Juice must be free of glucans



MALOLACTIC FERMENTATION



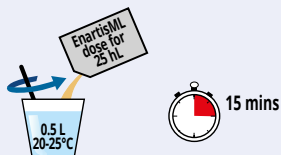
Malolactic fermentation is the process of converting malic acid into lactic acid through the action of *Oenococcus oeni* bacteria. When the appropriate bacterial strain is used, this step becomes a final opportunity to refine the wine's sensory profile—reducing herbaceous notes, enhancing fruit aromas, increasing aromatic complexity, and improving overall balance and structure. Enartis offers a comprehensive range of bacteria and nutrients designed to support successful malolactic fermentation, even under challenging conditions.



Protocol for ML Bacteria Preparation and Inoculation

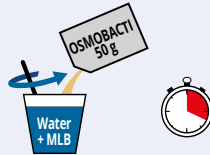
Direct Addition, 25 hL

1



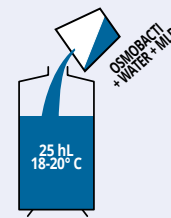
Rehydrate 25 hL package of EnartisML bacteria in 500 mL of chlorine-free water at 20-25°C (68-77°F). Stir gently and wait 15 minutes.

2



Add NUTRIFERM OSMOBACTI to the EnartisML bacteria slurry in order to improve survival rate and activate EnartisML bacteria. Stir gently and let stand for 4 hours at 18-20°C (64.5-68°F).

3



Stir the suspension gently and add to wine during pump-over or mixing.

Malolactic Bacteria



How to Choose ML Bacteria Strains

Each strain of bacteria performs best within specific environmental parameters. When selecting the appropriate ML bacteria strain, it is important to consider the relative stress conditions of the wine such as pH, SO₂, and alcohol content. ML bacteria can be selected for their effects on wine aroma and mouthfeel. The Enartis bacteria range does not produce biogenic amines.

EnartisML MCW

- Selected strain of *Oenococcus oeni*, in freeze dried form for direct addition after rehydration.
- Isolated from Sonoma County, California.
- Resistant to extreme conditions such as high alcohol and low pH.
- Produces high diacetyl and contributes to creamy, “buttery” characters in wine.

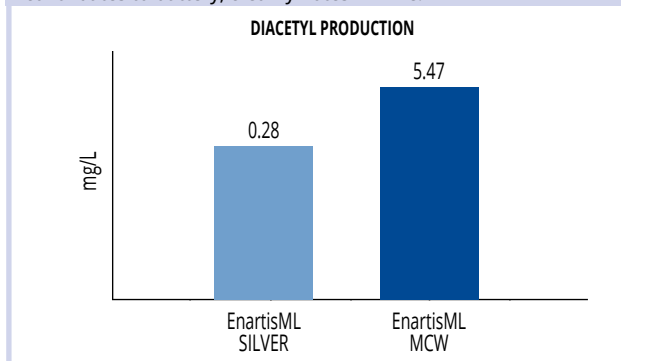
APPLICATION

Sequential inoculation; co-inoculation; very difficult conditions; increase creamy notes

PACKAGING

2.5 hL (66 gal)
25 hL (660 gal)
250 hL (6,600 gal)

EnartisML MCW produces high amounts of diacetyl which contributes to buttery, creamy notes in wine.



EnartisML SILVER

- Selected strain of *Oenococcus oeni* in freeze dried form for direct addition after rehydration.
- Fast and complete malolactic fermentation even under difficult conditions, such as high alcohol ($\leq 16\%$), low pH (≥ 3.2), and high polyphenol content.
- Contributes to aromatic cleanliness and complexity. Increases fruitiness and decreases herbaceous notes.
- Preserves color intensity in red wines.

APPLICATION

Sequential inoculation; co-inoculation; difficult conditions; increase fruitiness

PACKAGING

2.5 hL (66 gal)
25 hL (660 gal)
250 hL (6,600 gal)
1,000 hL (26,400 gal)

ALSO AVAILABLE

EnartisML UNO

Selected *Oenococcus oeni* strain ensuring fast, complete malolactic fermentations. Respects color and varietal aroma while offering excellent alcohol and pH stress tolerance.

NUTRIFERM ML

- Specific nutrient for malolactic fermentation.
- Rich in polysaccharides, amino acids, micronutrients, and vitamins.
- Stimulates bacterial growth, ensures domination of inoculated strain over natural flora, improves cell division, and shortens malolactic fermentation time.
- Promotes complete fermentation in difficult conditions or in case of stuck fermentation.

APPLICATION

Nutrition for malolactic bacteria; prevent stuck/sluggish MLF; difficult conditions; increase MLF speed

DOSAGE

20-40 g/hL
(1.7-3.4 lb/1,000 gal)

PACKAGING

1 kg

Malolactic Bacteria Nutrients

ALSO AVAILABLE

NUTRIFERM OSMOBACTI

Specialized nutrient that enhances ML bacteria survival during rehydration and difficult fermentations. Promotes faster fermentation onset and improved bacterial vitality.

Know More about ML Bacteria

MALOLACTIC FERMENTATION BENEFITS

The main role of lactic acid bacteria (LAB) in wine is to conduct malolactic fermentation (MLF): the conversion of malic acid to lactic acid. Additionally, LAB improve wine microbial stability, aroma complexity, mouthfeel, and color stabilization. They also reduce total acidity and bentonite and SO₂ additions due to their ability to break down proteins and degrade acetaldehyde.

WHAT ARE THE PRINCIPAL FACTORS INFLUENCING THE DEVELOPMENT OF LACTIC ACID BACTERIA (LAB)?

At certain levels, factors such as pH, temperature, alcohol, and SO₂ (free and total) can have a negative synergistic effect when combined, making the completion of MLF difficult. Additionally, vineyard sprays, initial malic acid content, yeast strain used for alcoholic fermentation, and wine polyphenol content can be stress factors. Problems can arise when 3.8 > pH < 3.2, alcohol > 14.5%, malic acid < 1 g/L, wine temperature < 18°C or > 27°C, total SO₂ > 30 mg/L and/or free SO₂ > 10 mg/L.

WHAT HAPPENS IF WINE HAS A LOW CONCENTRATION OF MALIC ACID?

Wines with a malic acid content below 1.0 g/L face greater difficulties starting MLF because there is not enough “food” for the ML bacteria to grow and produce the necessary enzymes to degrade malic acid. The addition of **NUTRIFERM OSMOBACTI** helps start MLF by activating bacteria’s enzymes and improving conditions (higher pH and malic acid concentration) to increase the survival rate.

WHAT ARE THE RISKS OF SPONTANEOUS MLF?

Uncontrolled, spontaneous MLF may increase the risk of spoilage organisms such *Brettanomyces* sp., as well as the production of undesirable compounds. Volatile acidity, excess of diacetyl, acrolein (bitter), and ropiness are the most common negative sensory characters expected in spontaneous MLF by wild LAB. Spoilage LAB also produce metabolites which are toxic to human health such as ethyl carbamate and biogenic amines (BA). Inoculation with selected *Oenococcus oeni* ensures a rapid onset of MLF and better control over the production of aromas and wine mouthfeel. Enartis bacteria are safe in avoiding BA production.

WHAT ARE BIOGENIC AMINES?

BA are a group of compounds primarily formed by LAB via decarboxylation of amino acids, mostly during ageing. The most common found in wine are putrescine, cadaverine, tyramine, and histamine. Known as a human health threat, BA causes headaches and allergy issues which are enhanced by the alcohol content in wine. Also, they produce irreversible damage to the wine due to the negative sensory impact. Their formation can be prevented by inhibiting indigenous lactic acid bacteria and other spoilage microbes with EnartisStab **MICRO M** and then treat the wine with selected LAB.

HOW TO MANAGE A SUCCESSFUL SEQUENTIAL FERMENTATION IN UNFAVORABLE BACTERIA CONDITIONS

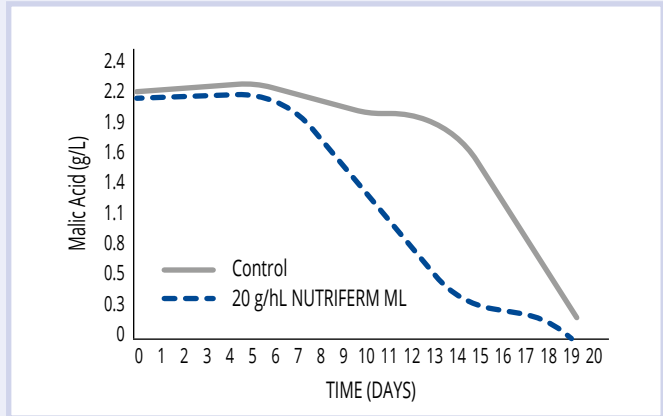
In difficult conditions, it is recommended to add an activator developed to promote the growth of bacteria with necessary nutritional requirements to ensure the total completion of MLF. **NUTRIFERM ML** addition is advised to shorten the length of MLF. It is also useful in cases of stuck MLF as it promotes restart.

DOES THE YEAST STRAIN USED FOR ALCOHOLIC FERMENTATION AFFECT MLF?

Yes. Some yeast strains can negatively impact lactic acid bacteria development by producing toxins and SO₂. All Enartis bacteria have been validated for sequential fermentation and co-inoculation, and none are affected by Enartis yeast strains.

WHEN TO PERFORM CO-INOCULATION

Co-inoculation is the best strategy to shorten MLF duration and obtain a microbiologically stable wine. It is strongly recommended when sequential MLF is compromised by high alcohol content or pH > 3.8 or cellar temperatures are low. The selected bacteria are



added 24-48 hours after yeast inoculation or SO₂ addition, taking advantage of alcoholic fermentation conditions: better temperature and nutrition, acclimatizing slowly with the increase of ethanol content. Wines subjected to co-inoculation are fruitier and have a lower diacetyl content, as diacetyl is suppressed by the sugar content during this phase.

HOW TO MONITOR MLF

The most common way to monitor MLF is by tracking malic acid degradation. MLF is considered complete when malic acid is below 200 mg/L.

ABOUT THE PRODUCTION OF DIACETYL

Diacetyl is a compound characterized by buttery notes produced by yeast, but mainly it is LAB during MLF that modulate its final concentration. LAB are responsible for its biosynthesis through citric acid metabolism. EnartisML **MCW** is the bacteria with the highest capacity to produce diacetyl, followed by EnartisML **UNO** and EnartisML **SILVER**. Selected bacteria along with the entire winemaking process impacts the production of diacetyl. A slower MLF speed (with low inoculation rate and/or low temperature) and slightly oxidative environment will increase diacetyl production, while yeast lees contact will break down diacetyl. Furthermore, SO₂ can bind diacetyl, thus reducing its content in wine, and co-inoculation practices also can lead to less diacetyl content due to the reductive conditions.

Restart and/or Complete a Stuck ML Fermentation - 100 hL

The successful restart of a stuck ML fermentation depends upon three critical factors:

1. Diagnosis of the fermentation arrest causes.
2. Appropriate wine treatment.
3. Proper acclimation of ML bacteria.

1. DIAGNOSIS

Use in-house or outside laboratories to determine the cause(s) of the problem(s) and the degree of fermentation completion.

2. TREAT STUCK WINE BEFORE RESTART - 24 HOURS PRIOR TO ML BACTERIA PREPARATION

- Adjust pH and alcohol.
- Remove spoilage microbes with EnartisStab **MICRO M** (5 g/hL).
- Absorb toxins with 20 g/hL **NUTRIFERM CONTROL**.
- Rack off lees 24 hours after treatment.

3. PREPARE AND ACCLIMATE ML BACTERIA

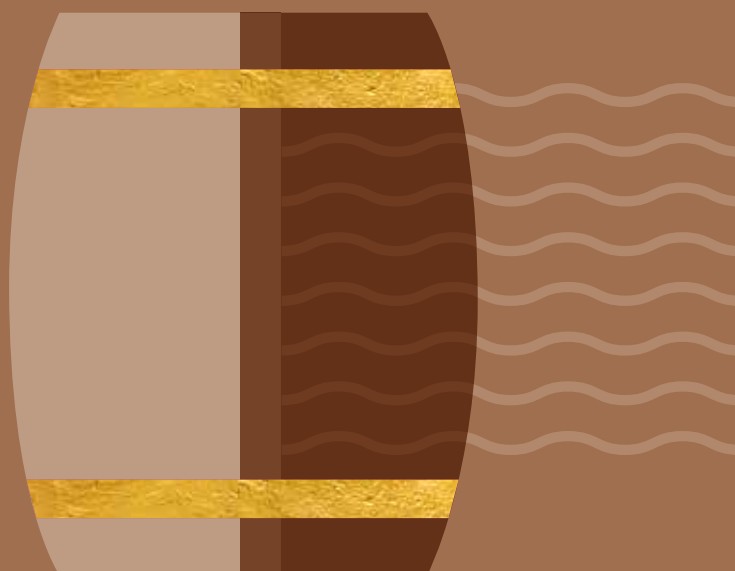
- Rehydrate 4x25 hL pack of EnartisML **SILVER** in chlorine-free water at 20-25°C (68-77°F) and wait 15 minutes.
- Add 200 g of **NUTRIFERM OSMOBACTI** to the suspension and wait 2-4 hours.
- Prepare 50 L of wine + 50 L water + 1 kg **NUTRIFERM ML** and rehydrated ML bacteria.
- At ½ of malic acid depletion, add 200 L of wine to the bacteria culture + 1 kg **NUTRIFERM ML**.
- At ½ malic acid depletion, add the ML bacteria culture to the remaining wine volume.



OAK ALTERNATIVES

When properly dosed, oak alternatives can significantly enhance the aroma and flavor of wine, making it more appealing to international and emerging consumer markets.

Enartis offers a comprehensive portfolio of oak chips and soluble oak products designed to meet the diverse needs and expectations of winemakers. With INCANTO oak alternatives, winemakers gain precise control over their oak program, allowing them to craft a distinctive signature that reflects their brand or label identity.



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INCANTO Range

Crafted from carefully selected French and American oak, the INCANTO range is toasted using a unique and original process featuring a progressive heating technique. This method ensures a deep, uniform toast that enhances the complexity and consistency of the oak profile.

INCANTO CHIPS

SIZE

2-4 mm

DOSAGE

1-4 g/L white wines;
1-6 g/L red wines

CONTACT TIME

minimum
of 4 weeks

PACKAGING

10 kg

INCANTO CREAM

- French oak, medium toasted.
- Enhances notes of custard, coconut, butter, and licorice.
- Increases smoothness, volume, and sweetness perception, without imparting excessive tannins.

INCANTO VANILLA

- American oak, medium toasted.
- Enhances sweetness perception with notes of vanilla, coconut, Bourbon, honey, and tropical fruit.
- Increases smoothness, volume, and freshness.

INCANTO CARAMEL

- French oak, medium toasted.
- Enriches wine with notes of caramel, cappuccino, butter, spices.
- Significantly increases sweetness perception and smoothness.

INCANTO SPECIAL FRUIT

- French oak, medium toasted.
- Enhances elegance, fruitiness, and complexity with notes of spices, chocolate, and caramel.
- Increases volume and structure, without imparting excessive tannins.

INCANTO TOFFEE

- French oak, medium-plus toast.
- Enhances notes of cappuccino, toasted bread, dried fruit, and vanilla.
- Significantly increases smoothness, sweetness perception, and complexity.

INCANTO DARK CHOCOLATE

- French oak, medium-plus toast.
- Contributes notes of dark chocolate, coffee, spices, and toasted nuts.
- Increases volume, structure, and tannins.

NEW

INCANTO BLACK SPICE



- French oak, heavy toast.
- Notes of black pepper, cocoa, licorice, spices, red fruit, dried fruit, and vanilla.
- Increases smoothness and sweetness perception.
- White and red wine ageing.

ALSO AVAILABLE

INCANTO NATURAL

Untoasted French oak that enhances freshness and fruit expression during fermentation or ageing. Improves balance, smoothness, and structure while softening herbaceous notes.

INCANTO SLI

Untoasted American oak. Enhances varietal characteristics and increases freshness, longevity of aromas, and ageing potential.

INCANTO SPICE

French and American oak chips that add complex spice, coffee, and roasted notes, enhancing aromatic richness, softness, and structure.

INCANTO COMPLEXITY

Heavy-toast French oak. Coffee and toasted notes increase complexity along with sweeter aromas of vanilla, coconut, and caramel.

The INCANTO NC products are completely soluble formulations containing just the active molecules that make oak powder application during fermentation interesting:

- Tannins for antioxidant protection, color stabilization, and structure enhancement.
- Polysaccharides which increase volume sensations, soften wine tannins, stabilize color, and indirectly protect aromas from oxidation.
- Aromatic substances from wood and toasting which bring aromatic complexity to the final wine.

GOALS

- Increase aromatic complexity
- Highlight fruit and floral notes
- Prevent reduction during fermentation
- Minimize herbaceous notes in underripe grapes
- Improve color stabilization
- Increase volume and structure

Why use the INCANTO NC range?

INCANTO NC products provide the efficacy of oak powder while offering additional advantages:

- Precise dosages
- Consistent quality
- No burnt or green wood notes
- No solids that can damage the mechanical parts of harvest machinery or make cleaning difficult
- No antimicrobial contamination
- Ease of use for winery staff
- Zero loss of color by solids absorption
- Low dosages

Since INCANTO NC products only contain the active molecules that are extracted from wood, dosages are 10 times smaller than typical oak powder. This makes the work of winery staff easier and reduces waste.



INCANTO NC

SENSORY OPTIMIZATION

- Inactivated yeast, oak tannin, and condensed tannin extracted from exotic wood.
- During alcoholic fermentation and ageing.
- Alternative to oak adjuncts with medium toasted oak characteristics.
- Improves color stability, aromatic complexity, and balance.
- Adds notes of vanilla and custard, enhances volume, structure, and smoothness.

APPLICATION

Medium-toasted oak; color stability; complexity; volume and structure

DOSAGE

10-50 g/hL for red must;
5-15 g/hL for white and rosé juice

PACKAGING

2.5 kg
10 kg

INCANTO NC WHITE

- Inactivated yeast, oak tannin, and acacia tannin.
- Alternative to oak adjuncts with untoasted oak characteristics.
- Protects juice from oxidation and prevents the appearance of reductive odors.
- Provides light floral and vanilla notes, increases fresh fruit aromas and enhances softness and volume.

APPLICATION

Untoasted oak; increase fruit aroma; reduce green notes; increase volume and structure

DOSAGE

5-50 g/hL
(0.4-4.2 lb/1,000 gal)

PACKAGING

2.5 kg
10 kg

INCANTO NC DARK CHOCOLATE

- Oak tannin and inactivated yeast rich in polysaccharides.
- Alternative to oak adjuncts with heavy toasted French oak characteristics.
- Enhances toasted oak aromas and masks herbaceous notes from unripe grapes.
- Improves volume, structure, balance, and color stability.

APPLICATION

Heavy-toasted oak; reduce herbaceous notes; color stability; complexity; volume and structure

DOSAGE

10-50 g/hL
(0.8-4.2 lb/1,000 gal)

PACKAGING

2.5 kg
10 kg

INCANTO NC CHERRY

- Inactivated yeast, oak tannin, and condensed tannin extracted from exotic wood.
- Alternative to oak adjuncts, contributing oak characteristics.
- Promotes color stabilization, prevents oxidation, and increases volume, structure, and length.
- Contributes cherry and fresh red fruit notes.

APPLICATION

Fruity and spicy aromas; color stability; antioxidant; complexity; increase volume and structure; freshen overripe fruit

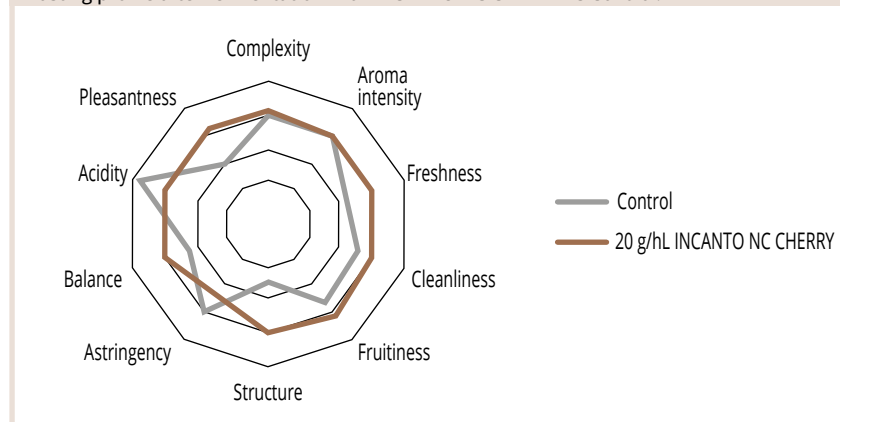
DOSAGE

5-50 g/hL
(0.4-4.2 lb/1,000 gal)

PACKAGING

2.5 kg
10 kg

Tasting profile after fermentation with INCANTO NC CHERRY vs Control.



I have been using the INCANTO NC range on all red wine fermentation tanks since 2009.

Sometimes with oak chips and other times with tannin. INCANTO is, for me, a perfect balance between a tannin and an oak powder. I believe it contributes greatly to mouthfeel, color intensity and stability. **Alicia Rechner, Winemaker at Backsberg Estate Cellars - Paarl, South Africa**

We have been using INCANTO NC CHERRY for several years now and apart from adding structure, we appreciate the contribution to fruit purity. When used in larger scale wineries, there is a cost saving benefit too, with no disposal of product later, as with other oak alternatives. **Chris Kelly, Winemaker - Escapades - Stellenbosch**

INCANTO NC RED

- Oak tannin and inactivated yeast.
- Alternative to oak adjuncts with medium-plus toasted oak characteristics.
- Ideal for red wine vinification, it decreases green aromas of unripe grapes, prevents reduction, and increases color stability.
- Contributes toasted oak notes, and enhances structure, volume, and sweetness perception.

APPLICATION

Medium-plus toasted oak; reduce herbaceous notes; complexity; increase volume and structure

DOSAGE

10-50 g/hL
(0.8-4.2 lb/1,000 gal)
for red must

PACKAGING

2.5 kg
10 kg

Know More about Oak Ageing

WHAT DOES OAK BARREL AGEING DO TO MY WINE?

There are two main reactions that happen during oak ageing: the extraction of oak compounds and oxygen diffusion. During oak ageing, wine aroma complexity increases, color stability is enhanced, astringency is reduced, and overall structure becomes softer.

WHY THERE IS SO MUCH VARIATION IN OAK AROMAS?

There are many causes of variation and many of them interact to form a wide array of potential aroma profiles.

- Source of the oak: oak species, geographic origin, growing conditions and age can strongly affect wood structure and composition.
- Staves position on a trunk has been shown to influence its aroma composition.
- Staves seasoning and drying: Kiln drying or air drying, time, humidity...
- Cooperage processes add a considerable layer of variability.

WHAT IS THE EFFECT OF TOASTING?

Toasting oak during barrel processing modifies the structure and chemical properties of wood. Increasing temperature and length of toasting will:

- Reduce oak lactone content that contributes to “fresh oak” and coconut aromas.
- Increase “vanilla”, “caramel-like” and “roasted coffee” aromas associated with vanillin, furfural, 4-methylfurfural and maltol. At heavy toast levels these compounds decrease and are replaced by “spicy” (eugenol, isoeugenol, 4-methylguaiacol) and “smoky” characters (4-methylguaiacol, guaiacol, 2-methylphenol).

WHY USE BARREL ALTERNATIVES?

- Cost is the most common reason of using barrel alternatives. Using barrel alternatives reduces ‘oak’ investment (at least 10 times lower), cellar work, storage space and microbiological risks.
- Timing can be reduced. Contact time: 4 weeks for Enartis INCANTO Chips.
- Consistent and qualitative product for enological expectations and requirements.

HOW TO FIND THE RIGHT OAK ALTERNATIVE?

Define the targeted wine profile, the time available for ageing and the budget. Enartis offers trial kits containing small bags of oak chips to soak in wine for 3 weeks to run bench trials to help find the right product or blend for you.

WHAT ABOUT STORAGE AND REUSE OF OAK ALTERNATIVES?

Oak alternatives should be treated with care and stored in a clean, dry warehouse in its original packaging. Reuse is not recommended: the extraction and result will be different and risk microbial contamination.

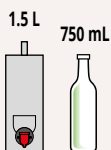
OAK CHIP TRIALS

A WIDE RANGE OF OAK ALTERNATIVES

The extraction of oak compounds (oak aromas, polyphenols, polysaccharides,...) as well as the sensory impact on wine depends on many variables including the physicochemical characteristics of wine (pH, alcohol, titratable acidity, volatile acidity and SO₂), wine buffer capacity, storage temperature, contact time, etc. When deciding which oak chips to use, we always recommend setting up trials. This way, winemakers can base their oak derivatives decision on accurate data and tasting.

TRIAL SET-UP

1



Use a 1.5 L wine bag or 750 mL bottle.

2



Weigh the selected oak chips (dosages recommended for trials = 2-5 g/L).

3



Add chips to bag or bottle.

4



Write the date, wine lot, oak chip name, and dosage on the label. Also prepare a control sample, without oak chips.

5



Fill bag/bottle with wine. Be cautious of oxygen input and head space during filling. We suggest an addition of 5 ppm SO₂ to protect wine from oxidation.

6



Taste after three weeks contact time.



TANNINS

Many wines benefit from the addition of tannins, provided that the treatment is carried out at the optimal stage of the winemaking process. Because tannins vary widely in origin and properties, selecting the right type is essential to achieving the desired result.

In collaboration with leading research institutions, Enartis has conducted extensive studies on exogenous tannins and their effects.

These efforts have led to the development of a comprehensive range of the highest quality tannins for winemaking.



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HARVEST TANNINS

EnartisTan CIT

- Blend of gallic tannins and condensed tannins extracted from exotic wood species.
- Specific production process at cold temperatures ensures the preservation of aromatic compounds from the wood, contributing to floral, citrus, and fresh fruit aromas in the wine.
- Ideal when used in combination with high β -glucosidase activity yeast for enhanced varietal expression.
- Improves protein stability.
- Increases antioxidant protection.

APPLICATION

Enhancement of floral and fruit aromas; improve protein stability; increase antioxidant protection

DOSAGE

2-15 g/hL
(0.17-1.3 lb/1,000 gal)

PACKAGING

1 kg

EnartisTan FERMCOLOR

- Blend of condensed tannins extracted from exotic wood species and ellagic tannins from chestnut trees and tara.
- High antioxidant activity, protects color and aromatic compounds from oxidation, and contributes to color stabilization.
- Enhances aromatic complexity, softens structure, and improves length and ageing potential.

APPLICATION

Antioxidant protection; color stabilization; reds intended for ageing

DOSAGE

200-400 g/ton

PACKAGING

1 kg
10 kg

EnartisTan V

- Highly reactive condensed tannin extracted from unfermented white grape seeds.
- Reacts quickly with free anthocyanins to protect them from oxidation and promote long-lasting color stability.
- Promotes color stabilization in red wines during fermentation.
- Improves protein stability of white and rosé wines.
- Reduces the action of oxidase enzymes (tyrosinase and laccase) and the chemical oxidation of wine.
- Enhances fruity notes, smoothness, and structure, decreases herbaceous notes, and increases shelf-life.

APPLICATION

Long-term color stability; thermovinification; phenolic unripe grapes

DOSAGE

10-30 g/hL
(0.8-2.5 lb/1,000 gal)

PACKAGING

1 kg

EnartisTan XC

- Low molecular weight monocatechins and condensed tannins extracted from exotic wood species and untoasted oak.
- Its high reactivity promotes co-pigmentation.
- Increases color stability in young red and rosé wines.

APPLICATION

Color stabilization through co-pigmentation; young to medium aged red wines; rosé

DOSAGE

100-400 g/ton on red grapes; 5-15 g/hL
(0.4-1.3 lb/1,000 gal)
in rosé juice

PACKAGING

1 kg

White Wine Fermentation



Red Wine Fermentation

*We have been using EnartisTan FERMCOLOR and ROUGE as sacrificial tannins pre and post flash détente. We saw an impressive impact on color stability, mid-palate and wine structure, especially on our Bordeaux varieties and Zinfandels. **Megan McCollough, Winemaker at Hahn Family Wines - California, USA***

TECHNICAL TANNINS

EnartisTan ANTIBOTRYTIS

- Blend of gallic tannins and ellagic chestnut tannin.
- Limits color and aroma loss caused by *Botrytis cinerea*.
- Intense antioxidant, antiradical, and antioxidasic properties.
- Protects color and aromatics compounds from oxidation, limits oxidasic enzyme activities (laccase), and strengthens the protective action of SO₂.

APPLICATION

Moldy grapes; antioxidant protection of aroma and color compounds

DOSAGE

3-20 g/hL
(0.25-1.7 lb/1,000 gal)

PACKAGING

1 kg
10 kg

EnartisTan E

- Micro-granulated condensed tannin obtained through a process of extraction and purification of unfermented white grape seeds.
- Use early in the vinification process and during micro-oxygenation.
- Promotes anthocyanin-tannin complex formation via acetaldehyde bridges.
- Contributes to long-lasting color and the elimination of unstable proteins.
- Increases wine structure, aromatic complexity, and prevents premature oxidation.
- Helps eliminating unstable proteins.

APPLICATION

Color stabilization by condensation; micro-oxygenation; enhance body and structure

DOSAGE

50-200 g/ton during maceration; 3-15 g/hL
(0.25-1.3 lb/ 1,000 gal)
during micro-oxygenation

PACKAGING

1 kg

EnartisTan MAX NATURE

- Condensed tannin extracted from exotic wood species.
- Designed to increase the cleanliness and complexity of white and red wines.
- Moderate structure contribution with no astringency.
- Ideal for the treatment of young and easy to drink wines; restores aromatic cleanliness without losing natural characteristics.

APPLICATION

Remove reductive and herbaceous notes; increase fruit and floral characters

DOSAGE

3-15 g/hL
(0.25-1.3 lb/1,000 gal)

PACKAGING

1 kg

EnartisTan SLI

- Tannin extracted from untoasted American oak at low temperature.
- Extraordinary capability to scavenge oxygen and radicals, chelate metals, and reduce wine redox potential.
- Binds to mercaptans and eliminates other sulfur off-aromas.
- Protects from oxidation, strengthens action of SO₂, and improves wine shelf life.

APPLICATION

Antioxidant protection; improve the shelf life of wine; treat reduction; natural and allergen-free alternative to SO₂

DOSAGE

0.5-2 g/hL
(0.04-0.17 lb/1,000 gal)
as antioxidant; 2-15 g/hL
(0.17-1.3 lb/1,000 gal)
to improve sensory profile

PACKAGING

0.5 kg



HIDEKI

DECREASE SO₂ USE



- Micro-granulated tannin made of molecular fractions obtained through the selection and purification of the most effective gallic, ellagic, and condensed tannins in terms of antioxidant and antimicrobial activity.
- Used prior to bottling as a natural and allergen-free replacement for SO₂.
- Protect wine from oxidation and prevent spoilage by unwanted microorganisms.
- This combination of different microbiostatic tannins makes HIDEKI a valuable tool for wines over a wide pH range.

APPLICATION

Natural and allergen-free alternative to SO₂; antioxidant protection of wine; prevention of the growth of unwanted microorganisms

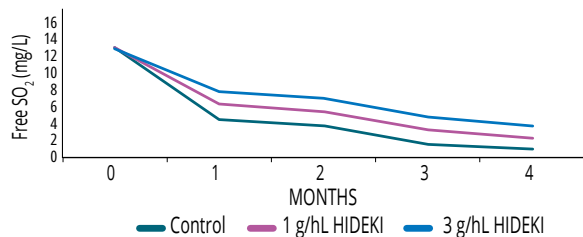
DOSAGE

1-3 g/hL
(0.08-0.25 lb/1,000 gal)
as an antioxidant;
5-10 g/hL
(0.4-0.8 lb/1,000 gal)
as microbiostatic

PACKAGING

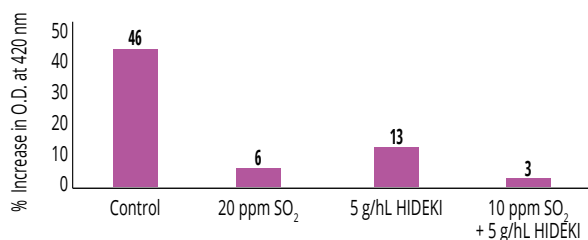
1 kg

White wine with pH 3.5 exposed to air for 10 days. Lower optical density (O.D.) at 420 nm shows that HIDEKI aids with SO₂ management.



Free SO₂ Preservation Over Time

Bottling simulation: White wine into 0.5 L bottles at pH 3.5. HIDEKI is effective in protecting free SO₂ (FSO₂) concentration over time.



Effect on Oxidized Color

OAK TANNINS

EnartisTan CDC

- Premium ellagic tannin extracted from toasted oak.
- Extends barrel life and boosts oak characters in neutral barrels.
- Contributes elegant and delicate aromas of vanilla, caramel, and spices.
- Balances mouthfeel and improves length, softness, and oak integration.
- Control and prevention of reductive aromas.

APPLICATION

Finishing; extend the life of barrels

DOSAGE

3-10 g/hL
(0.25-0.8 lb/1,000 gal)

PACKAGING

1 kg

EnartisTan DC

- Tannin extracted from medium-toasted French oak.
- Reinforces or mimics the impression of ageing in fine barrels.
- Enhances dark chocolate, roasted coffee, and spice aromas, as well as structure and softness.
- Softens astringency and increases wine length and complexity.
- Prevents and treats reductive notes.

APPLICATION

Finishing; extend barrel life

DOSAGE

0.5-15 g/hL
(0.04-1.3 lb/1,000 gal)

PACKAGING

0.5 kg

EnartisTan ELEVAGE

- Tannin extracted from seasoned, lightly-toasted French oak.
- Binds with mercaptans and eliminates sulfur off-aromas.
- Contributes to elegant vanilla, caramel, and licorice notes.
- Recommended for wines intended for long-term ageing on lees.

APPLICATION	DOSAGE	PACKAGING
Increase structure; prevent and treat reductive characters	2-15 g/hL (0.17-1.3 lb/1,000 gal)	1 kg

EnartisTan NAPA

- Tannin extracted from toasted American oak.
- Extends barrel life and boosts oak aromas in neutral barrels.
- Enhances aromas of vanilla, caramel, coconut, coffee, and cocoa.
- With its strong antioxidant power, it can be used in barrels which have already been used three or more times to reintegrate the tannins and improve their stabilizing effect on color.
- Increases wine structure and “sweetness”, balances astringency, and improves color stabilization.

APPLICATION	DOSAGE	PACKAGING
Finishing; increase aroma complexity and structure	3-15 g/hL (0.25-1.3 lb/1,000 gal)	1 kg

EnartisTan TOF

- Tannin extracted from medium-plus toasted French oak.
- Increases antioxidant protection and improves wine ageing potential.
- Enhances the aromatic notes of oak (coffee, caramel) when used in barrel-aged wines.
- Provides structure, increases color stability, and helps to soften astringent and bitter sensations.

APPLICATION	DOSAGE	PACKAGING
Finishing; extend barrel life	1-15 g/hL (0.08-1.3 lb/1,000 gal)	0.5 kg

EnartisTan VNL

- Tannin extracted from medium and toasted French oak.
- Increases antioxidant protection, improves wine stability and ageing potential.
- Enhances aromatic notes of oak (vanilla, custard, coconut) when used in barrel-aged wines.
- Provides structure and helps to soften astringent and bitter sensations.

APPLICATION	DOSAGE	PACKAGING
Finishing; extend barrel life	1-15 g/hL (0.08-1.3 lb/1,000 gal)	0.5 kg

EnartisTan TFT

- Blend of condensed tannins extracted from exotic wood species and unfermented white grape skins.
- Ideal on red and rosé wines during ageing or pre-bottling, it enhances freshness, fruitiness, structure, softness, and antioxidant protection.

APPLICATION	DOSAGE	PACKAGING
Enhances red fruit notes; increase softness; red and rosé wines	0.5-20 g/hL (0.04-1.7 lb/1,000 gal)	1 kg

ALSO AVAILABLE

EnartisTan COLOR

Tannin blend designed to protect anthocyanins and aromatic compounds from oxidation. Stabilizes and enhances color in red wines. Contributes spicy and dark fruit aromas.

EnartisTan ROUGE

Micro-granulated blend of gallic, ellagic, and condensed tannins. Protects color and aroma, inhibits oxidation, and tabilizes color. Enhances structure and balance.

EnartisTan EXTRA

Improves mouthfeel balance and aromatic complexity, contributing elegant vanilla, caramel, cocoa, and toasted oak notes.

EnartisTan AROM

Contributes to protein stabilization and protects aromas and color due to its antioxidant properties. Enhances thiols and reduces herbaceous notes.

EnartisTan ELEGANCE

Designed to create a smoother palate, improving balance, structure, and integration in wines. Increased antioxidant protection.

GRAPE TANNINS

EnartisTan FF

- Blend of condensed tannins extracted from exotic wood species and unfermented white grape skins.
- Use at cold temperature to preserve aromatic precursors from wood.
- High antioxidant capacity.
- When used during ageing or pre-bottling, it freshens wine aromas, reduces overripe fruit notes and increases wine softness and length.

APPLICATION

Freshen wine aroma; increase antioxidant protection; white and rosé wines

DOSAGE

0.5-10 g/hL
(0.04-0.8 lb/1,000 gal)

PACKAGING

1 kg

EnartisTan SKIN

- Microgranulated, high molecular weight condensed tannin obtained from unfermented white grape skins.
- For a wide range of wines, it strengthens antioxidant protection and increases structure, volume, and complexity.
- Enhances fruitiness and aromatic cleanliness, especially when used in must.
- Contributes to color stability.

APPLICATION

Antioxidant protection; increase structure and fruit notes

DOSAGE

3-20 g/hL
(0.25-1.7 lb/1,000 gal)

PACKAGING

1 kg

EnartisTan UVASPEED

- Microgranulated, condensed tannins extracted from unfermented white grape skins.
- Softens bitterness and astringency, enhances varietal fruit notes.

APPLICATION

Decrease astringent and bitter sensations; increase softness and structure

DOSAGE

3-20 g/hL
(0.25-1.7 lb/1,000 gal)

PACKAGING

1 kg



ALSO AVAILABLE

EnartisTan FT

Protects anthocyanins from oxidation, improving color stability. Reduces herbaceous notes, improves structure, enhances fruit characters, and freshens aromas.

EnartisTan RF

Provides aromatic precursors responsible for berry, red fruit, and floral notes in wine. Improves color stability.

EnartisTan BLANC

High antioxidant and antimicrobial activity. Protects wine from browning, "light-struck" defects, and oxidation.

EnartisTan UVA

Condensed tannin from white grape seeds that enhances color stability, balances astringency, and improves structure, mouthfeel, and fruity notes.



EnartisTan UNICO Range

ELEGANCE & STRUCTURE

UNICO #1

- Ellagic oak tannin, selected for its high quality.
- Extracted at low temperature and low pressure to preserve the noble characteristics of fine oak.
- Enhances complex and delicate aromas of vanilla, chocolate, and toasted oak aromas.
- Contributes to volume and structure of wine.

APPLICATION

Finishing; enhance aroma complexity

DOSAGE

1-15 g/hL
(0.08-1.2 lb/1,000 gal)

PACKAGING

0.25 kg
1 kg

BRIGHT, RED FRUIT

UNICO #2

- Condensed tannin extracted from exotic wood species.
- Significantly enhances red fruit aromas such as cherry, fresh berries, and black currant.
- Successful on white, red, and rosé wines.
- It increases softness, structure, and sweetness perception.

APPLICATION

Finishing; enhance aroma complexity

DOSAGE

1-15 g/hL
(0.08-1.2 lb/1,000 gal)

PACKAGING

0.25 kg

ENHANCE FRESHNESS

UNICO #3

- Blend of hydrolyzable and condensed tannins extracted from exotic wood species.
- Formulated to reveal aromas in wine and increase its complexity.
- It enhances citrus, botanical, and floral notes.
- Excellent for treating wines with slightly oxidized and overripe aromas.

APPLICATION

Increase aromatic freshness and complexity

DOSAGE

1-10 g/hL
(0.08-0.8 lb/1,000 gal)

PACKAGING

0.25 kg

DISTINCT, OPULENT

NEW



UNICO #1

XO



- Unique ellagic tannin extracted from aged French oak.
- The specific cold extraction technique prevents the oxidation of aromatic compounds from the oak, and careful oak selection ensures top quality.
- Selected for its impact on elegance and improved aromatic profile.
- Ideal for ultra-premium wines, it enhances complexity and oak-aged characteristics.

APPLICATION

Finishing tannin; enhance structure in aged white and red wines

DOSAGE

1-15 g/hL
(0.08-1.2 lb/1,000 gal)

PACKAGING

0.25 kg

Tannins Effects on Wine Profile

	Color Stabilization	Antioxidant Effect	Increase of Aromatic Cleanliness	Structure	Astringency	Softness	Aroma
FERMENTATION TANNINS							
EnartisTan CIT	▲▲▲	▲▲▲▲	▲▲	▲▲	▲▲	▲▲	▲▲▲▲▲
EnartisTan FERMCOLOR	▲▲▲▲	▲▲▲▲	▲▲▲	▲▲▲▲	▲▲	▲▲▲	▲▲▲▲
EnartisTan V	▲▲▲▲▲	▲▲	▲▲	▲▲▲▲▲	▲▲▲▲	▲▲	▲▲▲
EnartisTan XC	▲▲▲▲	▲▲	▲▲	▲▲	▲▲▲	▲▲▲	▲
OAK TANNINS							
EnartisTan CDC	▲▲	▲▲	▲▲	▲▲	▲▲	▲▲▲	▲▲▲▲
EnartisTan DC	▲▲	▲▲▲	▲▲	▲▲▲	▲	▲▲▲▲	▲▲▲▲▲
EnartisTan ELEVAGE	▲▲	▲▲▲	▲▲▲	▲▲▲	▲▲▲	▲▲	▲▲▲
EnartisTan NAPA	▲▲	▲▲▲	▲▲	▲▲▲	▲	▲▲▲▲	▲▲▲▲▲
EnartisTan TOF	▲▲	▲▲▲	▲▲▲	▲▲▲▲	▲▲	▲▲▲	▲▲▲▲
EnartisTan VNL	▲▲	▲▲▲	▲▲▲	▲▲▲▲	▲▲	▲▲▲	▲▲▲▲
EnartisTan TFT	▲▲	▲▲▲	▲▲	▲▲▲	▲▲	▲▲▲▲	▲▲▲▲▲
TECHNICAL TANNINS							
EnartisTan ANTIBOTRYTIS	▲	▲▲▲▲▲	▲▲	▲▲	▲▲	▲	▲
EnartisTan E	▲▲▲▲▲	▲▲	▲▲	▲▲▲▲	▲▲▲▲	▲▲	▲▲▲
HIDEKI	▲▲	▲▲▲▲▲	▲▲▲▲	▲▲	▲	▲▲▲▲	▲
EnartisTan MAX NATURE	▲▲▲	▲▲	▲▲▲▲	▲	▲	▲▲▲▲▲	▲
EnartisTan SLI	▲▲	▲▲▲▲▲	▲▲▲▲	▲▲	▲	▲▲▲▲	▲▲▲▲
GRAPE TANNINS							
EnartisTan FF	▲	▲▲▲	▲▲	▲▲	▲	▲▲▲▲	▲▲▲▲
EnartisTan SKIN	▲▲▲▲	▲▲▲	▲▲	▲▲	▲▲	▲▲	▲▲▲▲
EnartisTan UVA	▲▲▲▲	▲▲▲	▲▲	▲▲▲	▲▲▲▲	▲▲	▲▲▲▲▲
EnartisTan UVASPEED	▲▲▲▲	▲	▲	▲▲	▲	▲▲▲▲▲	▲▲▲▲
UNICO TANNINS							
EnartisTan UNICO #1	▲▲	▲▲	▲▲	▲▲▲▲	▲	▲▲▲▲	▲▲▲▲▲▲
EnartisTan UNICO #2	▲▲▲	▲▲▲	▲▲	▲▲▲▲	▲	▲▲▲▲	▲▲▲▲▲▲
EnartisTan UNICO #3	▲	▲▲▲▲	▲▲▲▲	▲▲	▲	▲▲▲▲	▲▲▲▲▲▲
EnartisTan UNICO #1 XO	▲	▲▲▲▲	▲▲▲▲	▲▲	▲	▲▲▲▲	▲▲▲

Know More about Polyphenols in Winemaking

DIFFERENT CATEGORIES OF POLYPHENOLS:

Grape polyphenols:

- **Non-flavonoids:** The major non-flavonoid phenolic compounds in grapes are hydroxycinnamates. They are the preferred substrate for polyphenol oxidase and usually the first compounds involved in the oxidation of grape juice.
- **Flavonoids:** One of the major classes of phenolic compounds in grapes. They are localized in skins and seeds. Flavonoids include three main groups: tannins, flavonols and anthocyanins.
 - The tannin group contains complex combinations of catechins (also Flavan-3-ols) found in grape seeds and skins, correctly described as condensed tannins.
 - Anthocyanins are mostly found in grape skins and are the main source of color pigments in red wine.
 - Flavonols: found in grape skins, they are known as co-factors for the color-enhancing phenomenon known as co-pigmentation.

Hydrolyzable tannins: Derived from wood, they are oligomeric forms of gallic acid and can be specified as gallotannins or ellagitannins whether they are constituted of gallic acid or ellagic acid moieties.

COLOR STABILIZATION IN RED WINES

Enartis continually develops color stabilization strategies and technology to achieve stability during maceration. Color stability has to be managed as soon as possible, starting in the vineyard. Most red grape varieties have more anthocyanins than tannins, which can lead to color stability issues.

Winemaking Stage	Reactions	Enartis Products
HARVEST	Prevent oxidation of color/phenolic compounds with antioxidant protection.	100-150 g/ton of AST
COLD SOAK	"Sacrificial" tannins reinforce SO ₂ antioxidant effect and eliminate proteins that would react with grape polyphenols, thus protecting grape tannins.	150-200 g/ton, EnartisTan ROUGE or EnartisTan FERMCOLOR
	Maceration enzymes improve grape skin tannin extraction, favoring anthocyanin/tannin reactions and stabilizing color pigments. The protease activity decreases protein capacity to precipitate grape tannins.	30 g/ton of EnartisZym COLOR PLUS
YEAST INOCULATION	At the first stage of alcoholic fermentation, anthocyanins are extracted much faster than tannins. To encourage the stabilization of anthocyanins via co-pigmentation and condensation, increase the concentration of grape tannin and use mannoproteins.	Co-pigmentation: 100 g/ton of EnartisTan XC
		Condensation: 100 g/ton of EnartisTan V
		Condensation & co-pigmentation: 200 g/ton EnartisPro TINTO or INCANTO NC range
AFTER AF, BEFORE MLF	At this stage, short macro-oxygenation encourages the formation of stable color compounds produced by condensation between free anthocyanins and tannins through acetaldehyde bridges.	10 g/hL EnartisTan E

WHAT DOES A "SACRIFICIAL" TANNIN DO?

When grapes are crushed, proteins are released, bound to tannins and precipitated. The first tannins released in wine and lost by precipitating with proteins are skin tannins, the most interesting tannins for future wine structure and mouthfeel. "Sacrificial" tannins are added to crushed grapes in order to bind with grape proteins and precipitate instead of freshly extracted skin tannins.

A LITTLE BIT ABOUT COLOR IN WINE...

The initial color of red wine is mainly due to anthocyanins, extracted from grapes during the winemaking process. In their cationic form, anthocyanins are highly reactive with any nucleophile. In the presence of SO₂ and H₂O, this reaction can lead to color loss. Stabilization of wine pigments can occur via co-pigmentation or condensation.

Co-pigmentation is the enhancement of color due to formation of complexes between anthocyanins and cofactors such as flavonols, hydroxycinnamates and/or colloids via a weak electrostatic bond. The desirable feature of a co-factor is its planarity, which allows the stacking of anthocyanins, thus keeping them stable and soluble. Co-pigmentation has hyperchromic and bathochromic effects, which initially lead to higher intensity and darker colored wines. These molecules, important in young red wines, are considered "semi-stable" pigments.

Condensation leads to more stable pigments. They can be formed via direct bonds between anthocyanins and tannins or in oxidative environments via acetaldehyde bridges.

WHY IS CO-PIGMENTATION IMPORTANT?

Co-pigmentation protects pigments from oxidation during the early stages of winemaking and limits color loss. Furthermore, it improves anthocyanins solubilization in hydroalcoholic environment.

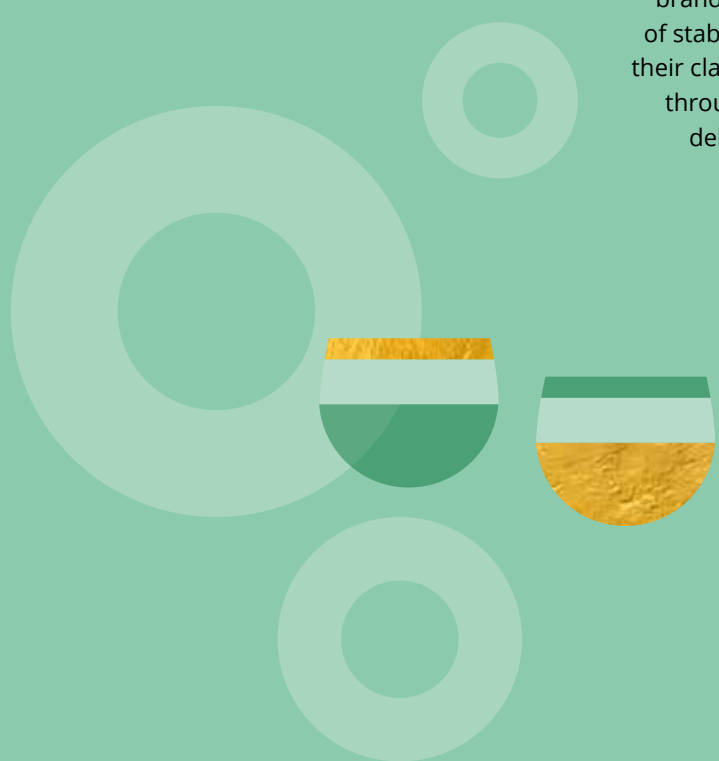
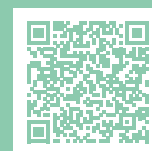
CAN I USE TANNINS IN WHITE MUSTS AND WINES?

In white musts, the addition of tannin prevents the formation of off-odors, improves clarification and antioxidant protection, inhibits laccase produced by *Botrytis*. Tannins can be used in white wines to improve their structure, softness and antioxidant protection.



STABILIZING AGENTS

In today's wine market, it is crucial for wines to be visually appealing to consumers. Any haze or precipitate is unacceptable and can damage brand reputation. The careful and timely use of stabilizing agents ensures that wines retain their clarity and sensory qualities from bottling through to consumption, helping producers deliver consistently high-quality products.



enartis

Inspiring innovation.

Microbial Stabilization

Starting from a no-SO₂ trial, using EnartisStab MICRO M has now become a part of my winemaking protocol on all of my red wines. It not only helps me to control spoilage organisms proactively, but also helps to reduce my SO₂ addition with a better protection than SO₂ on its own. **Matthieu Finot, Winemaker at King Family Vineyards - Virginia, USA**

EnartisStab MICRO M

BEST MICROBIAL COVERAGE

- Preparation of pre-activated chitosan from *Aspergillus niger* and inactivated yeast.
- Provides complete microbial control. Suitable for grapes, must, and wine.
- Interacts with a wide spectrum of microorganisms, such as *Brettanomyces*, non-*Saccharomyces* yeasts, lactic acid bacteria, reducing their activity and growth, and precipitates them.
- Protects wine from oxidation and inhibits oxidative enzymatic activity in compromised grapes.
- Reduces sulfide defects, volatile phenols, VA, and off-flavor production.
- Improves clarification and filterability.
- Allergen-free, vegan alternative to lysozyme and SO₂.
- During alcoholic fermentation, it helps detoxify must in cases of fermentation arrest.
- Prevents or postpones malolactic fermentation.

APPLICATION

Vegan, allergen-free antimicrobial; grapes, must, and wine; delay MLF; alternative to lysozyme

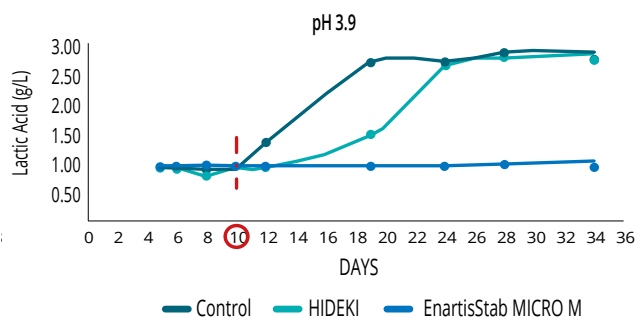
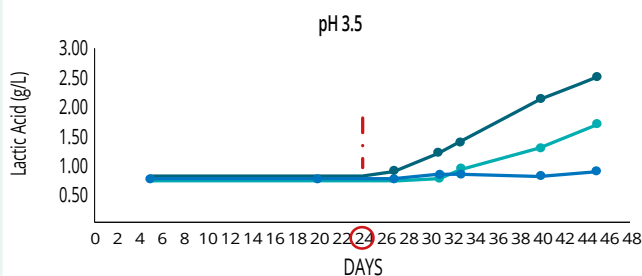
DOSAGE

200-400 g/ton,
5-20 g/hL
(0.4-1.7 lb/1,000gal)

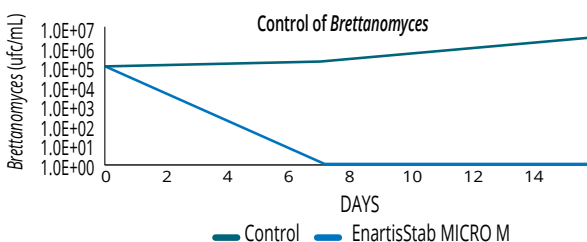
PACKAGING

1 kg
10 kg

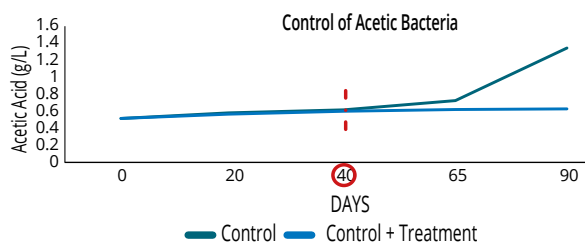
Effect of 10 g/hL EnartisStab MICRO M and 5g/hL HIDEKI on white wines at different pH with <0.1 mg/L of molecular SO₂ and inoculated with 1 g/hL (10⁶ CFU/mL) of a highly resistant *Oenococcus oeni* strain.



Effect of 10 g/hL EnartisStab MICRO M on red wine at pH 3.55 and 0.36 mg/L of molecular SO₂. The wine was inoculated with 10⁵ CFU/mL of *Brettanomyces*.



Effect of combined treatment with 5 g/hL EnartisStab MICRO M followed by 5 g/hL HIDEKI on a white wine at pH 3.4 and 0.12 mg/L of molecular SO₂. The wine was inoculated with 10³ CFU/mL of *Acetobacter*.



ALSO AVAILABLE

EnartisStab MICRO

Chitosan-based stabilizing agent, serving as a vegan alternative to lysozyme and SO₂. Removes spoilage organisms and enhances microbial stability. Recommended after fermentation in low turbidity wines.

Ongoing climate change is causing a significant imbalance in grape ripening. This is reflected with must with higher pH values, which are more susceptible to microbiological contamination, exacerbated by the reduced effectiveness of SO₂ at high pH values. Under these conditions, it is essential to adopt a strategy of prevention and microbiological control throughout the winemaking process to prevent deterioration in quality.

Alternative Bioprotection Solutions

Enartis Bioprotective Solutions are a viable alternative to sulfur dioxide, providing natural protection against a wide range of contaminating micro-organisms. Allergen-free and unaffected by pH, these solutions are easily adapted to all winemaking steps.

1



Antimicrobial protection and cleanliness at an early stage

The use of **EnartisFerm Q MCK** beginning at grape harvest and during pre-fermentation stages helps to limit the proliferation of contaminating microorganisms and improve the sensory cleanliness of final wines.

2



All-around prevention and treatment of contaminants

EnartisStab MICRO M eliminates and prevents the development of contamination bacteria and yeast in must and wine. It prevents the development of indigenous non-*saccharomyces* and oxidative yeast, controls the development of *Brettanomyces*, and reduces lactic and acetic bacteria.

3



Controlling unwanted malolactic fermentation

EnartisStab MICRO M effectively inhibits the development of lactic acid bacteria and stops unwanted malolactic fermentations in progress.

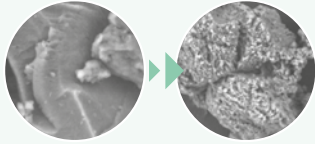
4



Pre-bottling microbiological control

The use of **HIDEKI**, a blend of tannins with powerful antioxidant effects and high bacteriostatic action, provides complete protection against bacterial proliferation. It is recommended in synergy with chitosan treatment.

TOOLS AND SUGGESTIONS FOR IMPROVING MICROBIOLOGICAL STABILIZATION



Why is Enartis Chitosan More Efficient?

Enartis has developed a unique chitosan activation process obtained from *Aspergillus niger* that aims to increase the positive molecular charge and enlarge the contact surface of the chitosan. This process increases the spectrum of action on contaminating microorganisms, making the product more effective and faster acting than traditional chitosan.

A Focus on Microbiological Stabilization

	EnartisFerm Q MCK <i>Metschnikowia pulcherrima</i> <small>See pg. 19</small>	EnartisStab MICRO M Activated chitosan Inactivated yeast	HIDEKI Gallic, ellagic, and condensed tannins
Enartis Recommendation			
Purpose	Tool for bioprotection; control contamination microorganisms in pre-fermentation stages	Broad-spectrum antimicrobial for must and wine	Bacteriostatic and antioxidant
Dosage	5 - 15 g/hL (0.4-1.3 lb/1,000 gal)	5 - 20 g/hL (0.4-1.6 lb/1,000 gal)	5 - 10 g/hL (0.4-0.8 lb/1,000 gal)

What Are the Microbiological Risks During Winemaking?

During the life of wine, it is possible to encounter various microbiological hazards. These can occur from grape harvest to bottling. The presence of contaminants such as non-*Saccharomyces* and oxidative yeast, acetic or lactic acid bacteria, or numerous others (e.g. *Brettanomyces*, *Oenococcus*, *Pediococcus*, *Acetobacter*, *Lactobacillus*, *Zygosaccharomyces*, *Schizosaccharomyces*) can generate considerable problems that impact final wine quality.

Poorly managed contamination can lead to:

- ✓ Stuck fermentations
- ✓ Increased volatile acidity
- ✓ Production of undesirable sensory compounds (e.g. volatile phenols)
- ✓ Oxidation leading to loss of color and aroma
- ✓ Production of high quantities of acetaldehyde

TARTARIC STABILIZATION

EnartisStab CELLOGUM LV20

- Solution of carboxymethyl cellulose (CMC) with low viscosity and high concentration.
- Ideal for white, rosé, and sparkling wines, it stabilizes against tartrate precipitation long-term.
- Low impact on wine filterability.
- Alternative to physical stabilization treatments such as cold stabilization and electro dialysis (lower energy costs and processing times).

APPLICATION

Tartrate stabilization; white, rosé and sparkling wines

DOSAGE

25-100 mL/hL
(0.95-3.8 L/1,000 gal)

PACKAGING

20 kg

The use of stabilizing colloids decreases energy consumption and the environmental impact of tartaric stabilization, while making it easier to manage. The ZENITH range represents the pinnacle of this technique.

ZENITH UNO



- Potassium polyaspartate (KPA) solution.
- Rapid and highly effective for tartrate stabilization in red, white, and rosé wines.
- Completely filterable and organoleptically neutral.
- Environmentally sustainable alternative to cold stabilization and other physical treatments.
- Long-lasting stabilizing effect even in wines highly unstable, practical, easy-to-use, and respectful of wine quality.

APPLICATION

Tartrate stability

DOSAGE

100 mL/hL
(3.8 L/1,000 gal)

PACKAGING

5 kg
20 kg
1,000 kg



At Four Feathers Wine Services, consistency and quality are at the core of everything we do for our clients. ZENITH UNO has been an outstanding addition to our winemaking toolkit. It provides reliable, long-lasting stability without compromising the flavor, aroma, or integrity of the wines we produce. We appreciate how easy it is to integrate into our process, and the peace of mind it gives us knowing our wines will remain stable all the way to the customer's glass.

Casey Cobble, White and Sparkling Winemaker at Four Feathers Wine Services - Washington, USA

ZENITH Range

ALSO AVAILABLE

ENOCRISTAL SUPERATTIVO

Blend of neutral and acidic potassium tartrate and filtering aids. Rapid crystallizer for cold stabilization of tartrates. Accelerates potassium bitartrate crystal formation and precipitation during cold treatment, without affecting wine pH.

ZENITH UNO is easy to use while saving us time and energy costs associated with chilling wines. It delivers reliable results with no sensory or color impacts. Most importantly, it gives us peace of mind for the life of the wine. This is the top stability innovation we've ever incorporated into our white and rosé programs!

**Mickey French, Winemaker
Barnard Griffin, Winery
Richland - WA, USA**



There have been very few products that I have looked forward to as much as the ZENITH line. Cold stability can be very expensive, time intensive and inexact. Both ZENITH UNO and ZENITH COLOR offer cost-effective alternatives to traditional cold stabilization methods. **Matthew Iaconis, Winemaker at Brick & Mortar Wines - California, USA**

ZENITH COLOR



- Solution of potassium polyaspartate (KPA) and Arabic gum from Acacia Verek.
- Rapid and highly effective for tartrate and color stabilization in red and rosé wines.
- Environmentally sustainable alternative to cold stabilization.
- Long-lasting stabilizing effect even in wines highly unstable, practical, easy-to-use, and respectful of wine quality.
- Increase roundness, wine length, and volume.
- Unique Verek gum makes the product completely filterable.

APPLICATION

Tartrate stability; color stability

DOSAGE

200 mL/hL
(7.6 L/1,000 gal)

PACKAGING

5 kg
20 kg



ZENITH COLOR fits in with our vision of sustainability at Perdeberg. It allows me quick and cost effective stabilization of my red wines without compromising quality. It also gives us a quicker route to market.

**Albertus Louw, Cellar Master
at Perdeberg Group - South
Africa**



ZENITH PERLAGE

- Solution of potassium polyaspartate (KPA) and mannoproteins.
- Rapid and highly effective for tartrate stabilization and improved *perlage* in sparkling wine.
- Does not react with riddling agents or yeast proteins. Maintains efficacy over time without causing clarification issues during riddling.
- Mannoproteins helps *perlage* quality and stability.
- Applicable to different sparkling methods.
- Completely filterable, even at low temperatures.
- Environmentally sustainable, long-lasting effect, practical, easy-to-use, and respectful of wine quality.

APPLICATION

Tartrate stability; perlage stability; sparkling wine

DOSAGE

100 mL/hL
(3.8 L/1,000 gal)

PACKAGING

20 kg



The ZENITH line has dramatically improved process and quality for my wines. The sustainability gains alone should be reason

enough to seriously consider replacing dated methods of stabilization. We're no longer spending months putting considerable amounts of energy and labor into the chilling and seeding of our tanks. With ZENITH, there's no pH shift either; the wine's finished right after the addition. Any winery serious about the environment and costs should consider this product.

Karl Weichold, Estate Winemaker at Stoller Wine Group - Oregon, USA

NEW ZENITH MEGA

- Solution of potassium polyaspartate (KPA), Arabic gum from Acacia Verek, and mannoproteins.
- Highly effective in tartaric and color stability in red wines, while improving the sensory profile.
- Environmentally sustainable alternative to cold stabilization.
- Improves overall wine quality by enhancing volume, smoothness, flavor, and aromatic freshness, thanks to yeast derivatives.
- Long-lasting stabilizing effect, practical, easy-to-use, and respectful of wine quality.

APPLICATION

Tartrate stability; color stability; sensory improvement

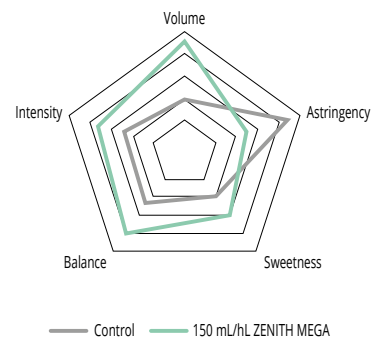
DOSAGE

200 mL/hL
(7.6 L/1,000 gal)

PACKAGING

20 kg

Comparison tasting of red wine from La Rioja before and after addition of ZENITH MEGA. Due to the mannoproteins and Verek gum Arabic, ZENITH MEGA is highly effective in reducing astringency and softening wines with high polyphenol content.



Red wine from La Rioja
Cold test 6 days -4°C.

Know More about ZENITH

What is potassium polyaspartate?

Potassium polyaspartate (KPA) is a polyamino acid produced from L-aspartic acid, an amino acid present in grapes. Enartis has used its expertise in wine stabilization to create a revolutionary range of products that harnesses the synergy and power of potassium polyaspartate and colloids for both tartaric and color stabilization.

What does ZENITH represent?



SUSTAINABILITY

Significant reduction in energy consumption, water usage, and CO₂.



CONFIDENCE IN RESULTS

Guaranteed stability of KHT and color over time.



QUALITY

Respects sensory characteristics of wine.



FILTERABILITY

Negligible impact on pre-bottling filtration.



OPTIMIZATION

Process speed and labor reduction.



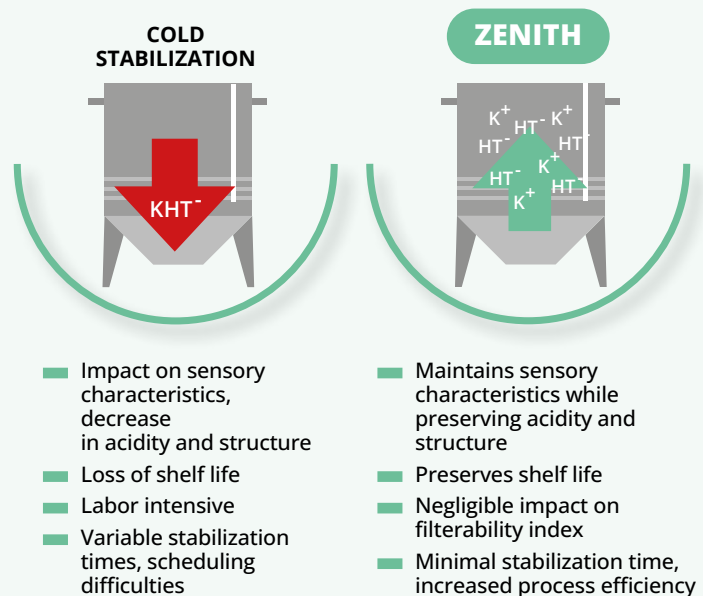
EXPERIENCE

Used worldwide in all types of wine.

Why use ZENITH?

The revolution in colloid stabilization for all wines and all levels of instability!

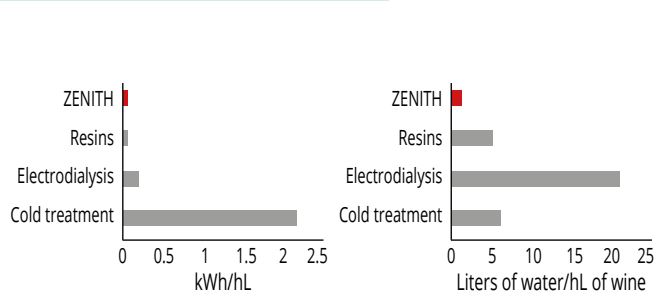
Suitable for all wineries currently using cold stabilization that want to reduce production costs and increase their sustainability standards, while simultaneously achieving ultimate stability. Enartis, the market leader in stabilization products, provides a cutting-edge, cost-effective and eco-friendly product range allowing you to switch off your cooling system and dramatically reduce production costs and gas emissions, while maintaining the organoleptic aspects of your wine and ensuring the best color and tartaric stabilization over time and under temperature stress.



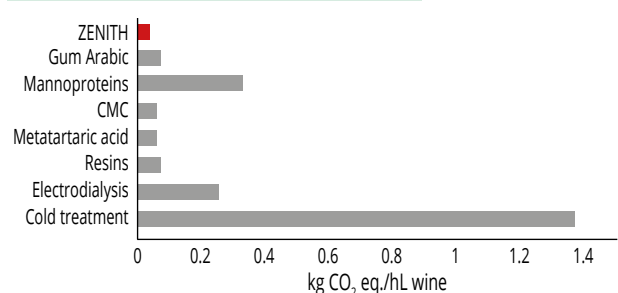
Environmental and Economic Benefits

ZENITH, when compared to other commonly used stabilization techniques, drastically lowers electricity consumption, potable water consumption, and CO₂ emissions.

Up to 80% savings in energy and water consumption. (Source: www.stabiwine.eu)

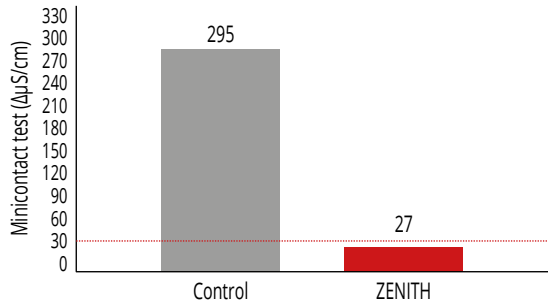


90% reduction on CO₂ emissions. (Source: www.stabiwine.eu)





The best stabilization performance up to 300 $\Delta\mu\text{S}$ over time and under temperature stress.



Millions of hL of wine stabilized with ZENITH



Thousands of tons of CO_2 not emitted into the atmosphere



Millions of liters of water saved

Enartis' Commitment to Sustainability

Enartis is committed to sustainability. We have performed The Life-Cycle Assessment (LCA) study on ZENITH's production process. This international method evaluates the environmental impacts associated with a product by considering resource consumption and emissions, from raw materials to finished the product. The results showed that ZENITH's environmental impact is minimal. The use of ZENITH saves approximately **two kilowatt hours of electricity** and **six liters of water** per hectoliter of wine produced, avoiding the emission of **1.2 kilograms of CO_2** equivalent. This makes ZENITH an environmentally friendly and efficient solution for the tartaric stabilization of wine.

2 kw/h
electricity

6 L
water

1.2 kg
 CO_2

ZENITH is the ideal solution for those looking for a sustainable, efficient and high-quality method for tartaric stabilization, reducing the environmental impact.

Did you know?

If all wineries in Europe used potassium polyaspartate for wine stabilization, it is estimated that CO_2 emissions produced during the phase before bottling would be reduced by 95.5% per year. The same applies to water use: drinking water consumption would be reduced by 93%. All this without placing an economic burden on producers who would actually face considerable financial savings.

Source: Stabiwine project.

CITROSTAB rH

- Citric acid, ascorbic acid, potassium metabisulfite, and gallic tannins.
- Adjuvant for the bottling stage.
- Designed to stabilize wine redox potential and prevent post-bottling oxidation reactions.
- Protects bottled wine from oxidation alterations such as pinking, metal casse, atypical or premature ageing.

APPLICATION

Bottling; prevent oxidation; prevent pinking; stabilize redox potential; wine shelf life improvement

DOSAGE

10-50 g/hL
(0.8-4.2 lb/1,000 gal)

PACKAGING

1 kg

Gum Arabic, extracted from Acacia Verek or Acacia Seyal, is widely used in food, beverages, pharmaceutical industries to assist the formation and stabilization of emulsions and for the encapsulation of flavors. The major applications for gum Arabic in winemaking are to stabilize wine against tartrate precipitation, stabilize young red wines against color pigment precipitation and to improve mouthfeel. In keeping with its philosophy of meeting different winemaking needs with appropriate products, Enartis has developed a complete range of gum Arabic preparations to meet all winemaking needs.

CITROGUM

- Solution of gum Arabic from Acacia Seyal with low calcium content and high hydrolysis.
- Prevents precipitation of colloids, pigments, and tartrates.
- Improves wine balance, enhances aroma, reduces bitterness and astringency perception, and increases softness and volume.
- The most filterable gum on the market: no filter membrane clogging even at high dosages.

APPLICATION

Tartrate stabilization; reduce astringency; soften mouthfeel

DOSAGE

50-200 mL/hL
(1.9-7.6 L/1,000 gal)

PACKAGING

20 kg
1,000 kg

CITROGUM PLUS

- Solution of gum Arabic from Acacia Seyal and yeast mannoproteins.
- Prevents precipitation of colloids, pigments, and tartrates.
- Increases sweetness perception, softness, volume. Balancing aromas while reducing bitterness and astringency.
- Completely filterable.
- In sparkling and semi-sparkling wines, it improves the perlage quality.

APPLICATION

Tartrate stability; reduce astringency perception; increase sweetness; soften mouthfeel; improve foaming capacity; white, rosé, red and sparkling wines

DOSAGE

100-300 mL/hL
(3.8-11.3 L/1,000 gal)

PACKAGING

20 kg



	GUM ARABIC SEYAL		GUM ARABIC VEREK	
	CITROGUM	CITROGUM PLUS	MAXIGUM F	MAXIGUM PLUS
Tartaric Stability	♦♦	♦♦		♦
Color Stability		♦	♦♦♦♦	♦♦♦♦
Filterability	♦♦♦♦	♦♦♦♦	♦♦♦♦	♦♦♦♦
Sensory Effect	♦♦♦ + Volume	♦♦♦♦ + Volume + Softness - Bitterness	♦♦♦ + Structure	♦♦♦♦ + Volume + Softness - Astringency

Broad-Spectrum Stabilizers

Gum Arabic



ALSO AVAILABLE

SORBOSOL K

Preparation of potassium sorbate, potassium metabisulfite, and L-ascorbic acid. Use pre-bottling or during storage to prevent oxidation and ensure antimicrobial protection.

MAXIGUM F

- Gum Arabic solution from Acacia Verek.
- Highly effective in preventing color compound precipitation in red and rosé wines ready for bottling.
- Decreases astringency while respecting wine structure and sensory profile.
- The gum Arabic undergoes an innovative production process which makes it totally filterable, allowing for addition before microfiltration.

APPLICATION

Tartrate stability; color stability

DOSAGE

200 mL/hL
(7.6 L/1,000 gal)

PACKAGING

20 kg

MAXIGUM PLUS



- Solution of gum Arabic from Acacia Verek and mannoproteins.
- Highly effective in preventing color compound precipitation in red and rosé wines ready for bottling.
- The mannoproteins reinforce gum stabilization effect and, due to their interaction with aromatic and polyphenolic compounds, soften astringency, reduce dryness, and improve aroma complexity.
- The gum Arabic undergoes an innovative production process which makes it totally filterable, allowing for addition before microfiltration.

APPLICATION

Color stability; increase structure and mouthfeel; microfilterable

DOSAGE

50-100 mL/hL
(1.9-3.8 L/1,000 gal)

PACKAGING

20 kg

BACK

WINEMAKING BASICS



enartis

Inspiring innovation.

Don't Forget Winemaking Basics

ASCORBIC ACID POWDER, Food Grade

PACKAGING

1 kg

CITRIC ACID, Food Grade

PACKAGING

1 kg, 25 kg, 50 lb

DISACIDIFICANTE BIANCONEVE

- Blend of potassium bicarbonate and neutral potassium tartrate.
- Reduces acidity of overly acidic wines making them smoother and more pleasant.

PACKAGING

1 kg, 25 kg

L-MALIC ACID, Food Grade

PACKAGING

25 kg

PULVICLAR S

- Granulated food-grade gelatin, highly effective for clarification by flotation. Enhances balance and reduces astringency without affecting wine structure.

PACKAGING

20 kg

SIL FLOC

- Pure silicon dioxide in solution. When used with protein fining agents, it enhances their clarification performance.

PACKAGING

25 kg

TARTARIC ACID, Food Grade

PACKAGING

1 kg, 25 kg

NEW crystalGRAPESUGAR.Red

- Crystallized sugars from grapes and red grape polyphenol extract to add sweetness and body without introducing any unwanted microbes or flavors.

**PACKAGING**

5 kg

NEW crystalGRAPESUGAR.Bio

- Organic crystallized sugars from grapes to add sweetness and body without introducing any unwanted microbes or flavors.

**PACKAGING**

20 kg

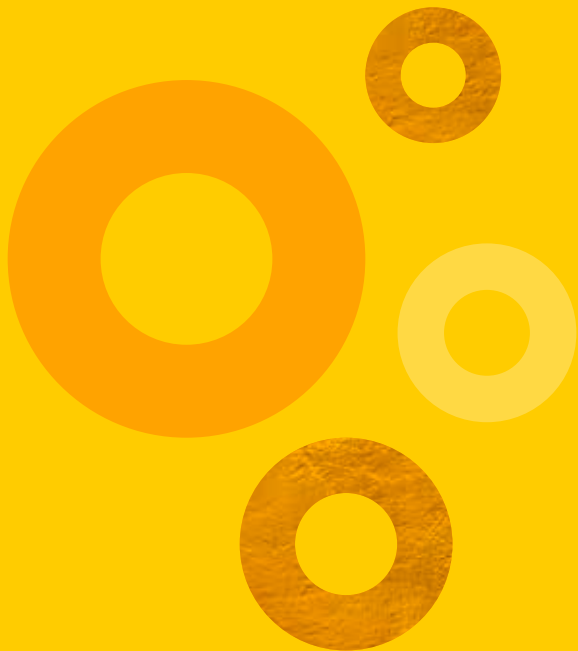


SULFITING AGENTS

Enartis is proud to offer WINY — the highest purity potassium metabisulfite (KMBS) available on the market.

Widely used in winemaking, potassium metabisulfite plays a crucial role in preserving wine quality. WINY effectively scavenges oxygen radicals that cause oxidation, binds with oxidation byproducts such as acetaldehyde, and inhibits oxidasic enzymes to prevent browning.

Additionally, it helps reduce spoilage by suppressing the growth of microorganisms that can negatively impact wine.



enartis

Inspiring innovation.



Wonderful product with regards to getting some good protection out in the vineyards, the tractor drivers throw it onto the trailers as soon as the machine offloads. Juice keeps its green color for very long periods due to good protection against oxygen. What I have noticed is how well the ascorbic acid first binds the oxygen then after that the sulfur binds. I gather info from my analyses once the juice arrives in the cellar. I use a drum filter (oxidative) to filter my lees and even then the juice is still green with minimal browning. **Philip Viljoen, Winemaker at Bon Courage Cellar - Robertson, South Africa**

AST

EARLY PROTECTION

- Complete antioxidant and antiseptic composed of potassium metabisulfite, L-ascorbic acid, and gallic tannin.
- Reduces overall SO₂ needs and limits its macerative effects.
- Ideal for mechanically-harvested grapes, varieties rich in phenolic compounds, and sparkling base must.
- When used on aromatic varieties, it promotes the production of intense varietal aromas.
- Very effective in preventing "atypical ageing" defect.

APPLICATION

Antioxidant protection of grapes and juice; aromatic grapes; must for base wine for sparkling wines; prevention of atypical ageing

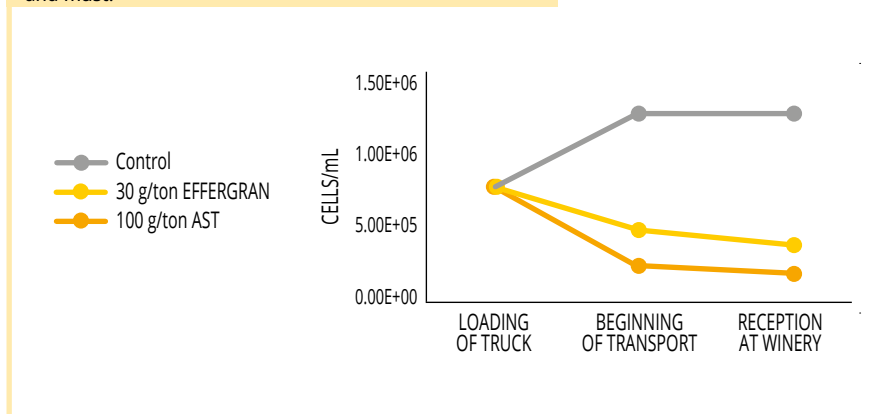
DOSAGE

100-200 g/ton of grapes
15-20 g/hL (1.2-1.7 lb/1,000 gal)
in juice 10 g/hL (0.8 lb/1,000 gal)
of AST contains approximately 28 ppm SO₂ and 30 ppm ascorbic acid

PACKAGING

1 kg

Antimicrobial action of EFFERGRAN and AST effect on grapes and must.



Calculation for addition of WINY

$$\frac{(\text{ppm Total SO}_2 \text{ desired}) \times (\text{Liters of Wine})}{(0.56 \times 1,000)} = \frac{\text{grams}}{\text{WINY to add}}$$

WINY

- Pure and high quality potassium metabisulfite.
- Almost odorless (less irritation), easy to dissolve, low clumping formulation, and purity of more than 99%.
- Scavenges oxygen and oxidation byproducts.
- Prevents juice browning by inhibiting oxidasic enzymes.
- Functions as an antiseptic and wide-spectrum antimicrobial.
- Accelerates extraction of phenolic compounds and color matter from grapes.

APPLICATION

Sulfiting grapes, juices and wines

DOSAGE

1 g of WINY contains approximately 0.56 g of SO₂

PACKAGING

1 kg
25 kg

EFFERGRAN/EFFERGRAN DOSE 5/EFFERBARRIQUE

- Effervescent, granulated potassium metabisulfite designed to be added directly to wine and grapes.
- Quick dissolution on the surface of juice or wine, ensuring targeted antioxidant protection where it's needed most.
- Homogenous and rapid distribution of the released SO₂ without requiring pump-overs in tank up to 50,000 liters.
- When added to the bottoms of picking bins, it ensures a rapid release of SO₂, minimizing oxidation during transport from vineyard to winery.
- Practical, efficient, and ideal for streamlining sulfur additions during harvest and throughout vinification.

APPLICATION

Sulfiting wines, grapes and juice; homogeneous release of SO₂

DOSAGE

1 package of EFFERBARRIQUE releases 2 g of SO₂
1 package of EFFERGRAN DOSE 5 releases 5 g of SO₂

PACKAGING

EFFERBARRIQUE (40 packs)
EFFERGRAN DOSE 5 (25 packs)
EFFERGRAN 125 g
EFFERGRAN 250 g
EFFERGRAN 1 kg

Calculation for addition of EFFERGRAN/EFFERBARRIQUE

$$\frac{(\text{ppm Total SO}_2 \text{ desired}) \times (\text{Liters of Wine})}{(0.56 \times 1,000)} = \frac{\text{grams}}{\text{EFFERGRAN to add}}$$

POTASSIUM METABISULFITE ADDITION GUIDELINES

		SO ₂ addition (mg/L)	g/hL	g/barrel	g/1,000 gal	lbs/1,000 gal						
WINE		5	0.9	2	33	0.07	EFFERGRAN / EFFERBARRIQUE	SO ₂ addition (mg/L)	g/hL	g/barrel	g/1,000 gal	lbs/1,000 gal
		10	1.8	4	65	0.14		5	1.25	2.7	46	0.10
		30	5.4	12	196	0.43		10	2.4	5.4	93	0.21
		50	8.9	20	326	0.72		30	7.1	16.1	278	0.63
		60	10.7	24	392	0.86		50	11.9	26.8	463	1.04
									60	14.3	32.1	556



ENGINEERING

Technological innovation plays a vital role in enhancing wine quality. ENARTIS ENGINEERING manages innovative tools that support wineries throughout the entire vinification process. Leveraging the Engineering team's extensive expertise, wineries can optimize their production processes through the integration of sophisticated equipment, sensors, and advanced monitoring systems. This technological interconnection increases operational efficiency while ensuring rigorous, consistent quality control.



DISCOVER ENARTIS ENGINEERING

ENARTIS ENGINEERING (EE) offers support and assistance for technical applications throughout the winemaking process: prior assessment of facilities, technical product advice, and safety training and equipment management for personnel. EE also provides advice on the most suitable machinery for dosing, filtration, extraction, flotation, gas management, microoxygenation, cleaning, and laboratories. By collaborating closely with winemakers and leveraging state-of-the-art technology, ENARTIS ENGINEERING provides tailored solutions that improve production efficiency, sustainability, and quality.



INNOVATIVE
TECHNOLOGY



TECHNICAL
CONSULTING



EXPERIENCE



SAFE
AND RELIABLE

ENARTIS ENGINEERING supports wineries throughout every phase of production, customizing equipment based on specific needs. The department offers ongoing personalized consultation, ensuring that proposed solutions deliver optimal results. The team boasts in-depth engineering and enological skills, while understanding customer needs and expert support.

Daily, EE strives to provide conscientious assistance from a sustainability perspective, finding the best solutions to achieve processes with the least impact on the environment and associated labor and/or energy costs, while maintaining the highest sensory and physical qualities of wine.

- ▶ **By integrating cutting-edge technology, ENARTIS ENGINEERING equips wineries with tools that blend tradition with innovation and efficiency.**

TECHNOLOGIES

🍷 Eco Flot

- Flotation pumps that improve the juice clarification process.
- Faster and more energy-efficient than static cold settling.
- More consistent than cold settling or centrifugation.
- Optimized, precise fining treatments and timing.
- Different pump sizes for medium to large winery throughput.

🍷 MicroOX

- Customizable micro-oxygenation system that guarantees high precision oxygen dosing at low flow levels with easy handling and data management.
- Minimum working pressure: oxygen is dispensed at the minimum pressure required to minimize bubble diameter and improve oxygenation effects.
- Ensures a linear and constant supply as it does not use dosing chambers, but instead uses sensors that measure gas flow in real-time.

🍷 Colloidal Dosing System EE CDS01

- Customized system for precise dosing of nutrients, fining agents, and stabilizing agents at different winemaking stages – from fermentation to bottling.
- Maximum safety and dosing precision due to real-time controls and self-regulation.
- Coordination with the bottling system and large, exportable data storage.

🍷 Tartarcheck Plus

- Provides rapid determination of tartaric stability using simple, intuitive software.
- Complete and compact with an LCD display and optional thermal printer. No auxiliary devices needed so the instrument can be placed anywhere in the laboratory.
- Offers two analytical methods determined by the electric conductivity of the wine in different thermal conditions: isothermal test and TS test.

🍷 Yeast Propagator

- Automated system for yeast multiplication, ensuring consistent and reliable inoculum preparation.
- Thermal regulation and sterile air addition maximize yeast vitality and fermentation reliability.
- Adaptable to any sugar source, with programmable clean-in-place (CIP) for safety and efficiency.



Comprehensive Technical Engineering Support

A Commitment to Sustainability and Quality

Equipment



Beyond Individual Equipment — Integrated Process Control

ENARTIS ENGINEERING also offers advanced process control systems that link temperature management, pump-overs, air mixing, automated dosing, and more into a single, programmable platform — reducing manual intervention and delivering repeatable results at scale.

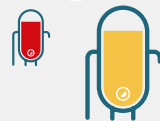
BEST PRACTICES AND TIPS TO IMPROVE COLLOIDAL STABILIZATION

Colloidal stabilization is a critically important step in ensuring the clarity and stability of wine over time. This process aims to prevent the formation of colloidal aggregates that could precipitate, causing cloudiness and sediment in the bottle. This phenomenon results in a loss of aromatic quality and creates a negative impact for the consumer.

Inline Stabilization: Precision and Safety for the Stabilization of Your Wine

Colloidal stabilization using stabilizing colloids (ZENITH made from KPA and gums) represents an increasingly popular and sustainable strategy to achieve and guarantee wine stability over time, while respecting sensory characteristics. To ensure precise dosing and sufficient homogenization of stabilizing colloids in wine, ENARTIS ENGINEERING has developed EE CDS01, a dosing system integrated with the bottling line that ensures a continuous, safe and precise stabilization process. At each step during winemaking, it is important to act in a targeted and timely manner.

1



Clarification

Eliminate proteins that cause cloudiness and unstable color. The use of **CLARIL ZR** in red wines and **CLARIL ZW** on whites prepares wine for subsequent stabilization with **ZENITH**.

2



Microfiltration

Once a pump is connected to the bottling line and a continuous, uninterrupted flow is generated, cartridges ensure maximum microbiological protection after filtration.

3



Dosing

The **EE CDS01** dispenser automatically takes the exact amount of stabilizer needed and injects it directly into the wine stream, ensuring accurate and consistent dosing even when flow rates change.

4



Bottling

The wine, completely microfiltered and stabilized, is transferred directly to the bottling machine without interruption, thus minimizing risks of oxidation and contamination by external agents.

Wine Stability Parameters

Prior to colloidal stabilization, it is necessary to carry out predictive stability tests and, if needed, to remove protein and unstable color through targeted clarification.



WHITE AND ROSÉ WINES

- ✓ Protein stability
- ✓ KHT tartaric stability
- ✓ Colloidal stability



RED WINES

- ✓ Color stability
- ✓ KHT tartaric stability

Why use Inline Stabilization with Protective Colloids

The use of stabilizing colloids makes it possible to drastically lower energy consumption and the environmental impact of the stabilization process, making it easier and more economical.

ZENITH (KPA)

- ✓ Reduction of energy consumption, drinking water and CO₂ emissions
- ✓ Respects sensory characteristics and maintains acidity and structure

GUM ARABIC

- ✓ Stabilization of color matter
- ✓ Improved sensory balance

The EE CDS01 metering pump enables safe and accurate dosing, reducing the risk of human error and labor costs. Inline stabilization is the winning strategy for an agile, accurate and sustainable process.

A Focus on Stabilizing Colloids

Enartis Recommendation	Purpose	Dosage
ZENITH MEGA Potassium polyaspartate, Verek gum Arabic, and mannoproteins	Sensory improvement and tartaric stabilization of very unstable red wines	Up to 200 mL/hL
MAXIGUM PLUS Verek gum Arabic	Stabilization of color matter in red and rosé wines and decrease bitterness	50 - 100 mL/hL
CITROGUM PLUS Seyal gum Arabic and mannoproteins	Increase sensation of sweetness and volume and decrease astringency	100 - 300 mL/hL

Discover more
on Winegrid
technologies



TECHNOLOGIES

The Answer to Digital Transformation You've been Waiting for

WINEGRID technology, a brand of Enartis, provides winemakers with advanced remote monitoring systems. These tools offer real-time insights into fermentation kinetics, liquid levels, temperature, and density. By identifying potential issues early, such as fermentation delays, WINEGRID enables proactive solutions, ensuring process optimization and reducing waste. Its dashboard simplifies record-keeping, making it invaluable during critical periods like harvest.



Sensors



Tank Alcoholic Fermentation

Two precise and accurate systems that measure liquid height, temperature and density while monitoring fermentation kinetics and yeast behavior.

WINEPLUS Premium

Stainless steel casing with an innovative RGB LED visual alarm.



WINEPLUS

Polycarbonate casing.



Barrel Alcoholic Fermentation

BARRELPLUS

Measures temperature and density for better management of fermentation progress and yeast requirements.



Second Fermentation

Solutions for monitoring sparkling wine production that allow winemakers to monitor the evolution of pressure and, as a result, to achieve a consistent and traceable secondary fermentation. This proactive approach prevents pressure fluctuations, avoiding a reduction in quality.

E-APHROM

Designed for Champenoise method, measures temperature, pressure and detects bottle movement.



E-CHARMAT

Designed for Charmat method, monitors temperature and pressure in tanks.



Barrel Maturation

E-BUNG

Monitors temperature, headspace, and detects bung movement, optimizing the management of top-offs. Better control of headspace reduces the potential presence of oxygen, and helps prevent the development of microorganisms (*Brettanomyces* and/or *Acetobacter*), and therefore, SO₂ losses.



Winery Environment

SMARTCELLAR

Allows winemakers to monitor the temperature, humidity and CO₂ levels in the winery, offering movement detection as well. It helps provide a healthy and safe environment for the operator, while also controlling the environmental conditions that play an important role in ensuring final wine quality.

Better Knowledge of Your Fermentation Kinetics: Forget about Stuck and Sluggish Fermentations!

Global warming is one of the most important aspects of climate change that has a negative impact on the wine industry and beyond. Today's producers face multiple challenges: high temperatures combined with high variability of rainfall and extreme events such as hail, fires, floods, and long periods of drought. This inevitably lead to an imbalance in ripeness, higher alcohol potential and inconsistent grape characteristics, leading to increasingly difficult fermentations.

Wineplus and Barrelplus sensors can help to control fermentation kinetics through real-time monitoring and traceability.

Through WINEGRID dashboard information, winemakers can always be updated on wine status, which allows for better management of the entire process. Reduced kinetics indicate delayed fermentation, which can lead to stuck fermentations translating into high production costs. With the Fermentation Monitoring System and by monitoring the evolution of kinetics, it is possible to completely avoid stuck fermentations, maximizing fermentative activity.

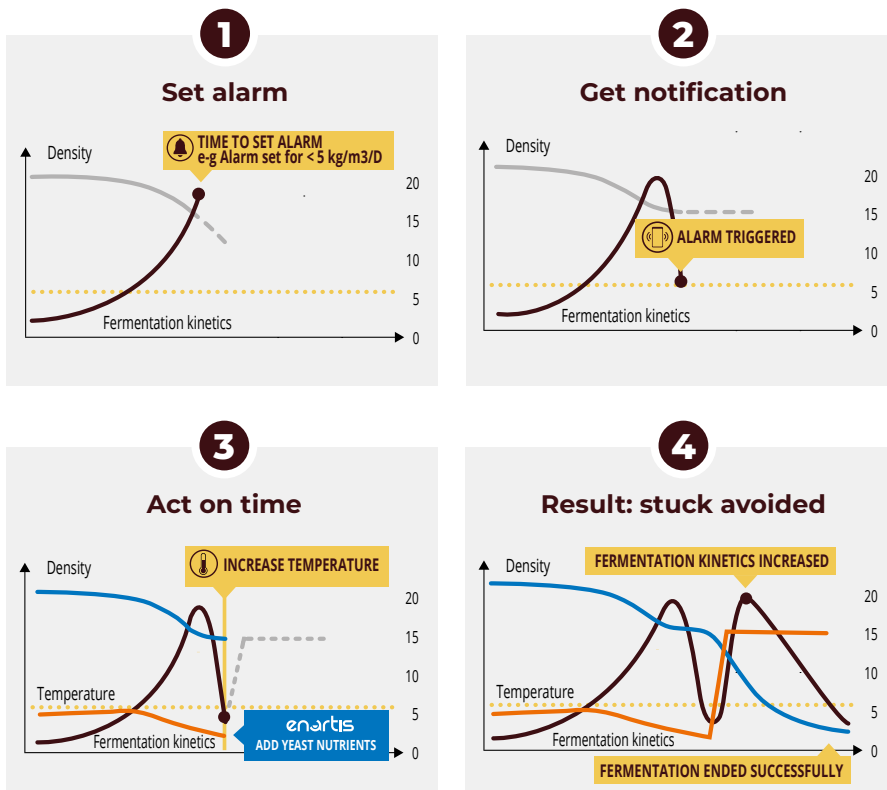
And finally, all additions and actions can be logged into the WINEGRID Dashboard for easy access and comparison, even during harvest.

The Importance of Maximizing Results through Nutrition Timing

Improve alcoholic fermentation efficiency to ensure a successful end of fermentation and high-quality wine production.

This can now be achieved due to the knowledge of yeast nutritional needs at each stage of alcoholic fermentation with balanced nutrition and the continuous monitoring of fermentation parameters with WINEGRID sensors, both in tanks and barrels.

- ✓ Improvement of wine sensory profile depending on the type of nutrition chosen.
- ✓ Optimal status and biomass production leading to good yeast health and growth, preventing sluggish and stuck fermentations and the issues they can provoke (off-flavors, re-starting AF, labor, quality loss, etc.).
- ✓ Easy to manage, control and take the necessary measures at the required time, even remotely.
- ✓ Adaptable to any winemaking protocol, technology, and type of wine.
- ✓ Sustainable due to better fermentation temperature management.



DIGITAL ALCOHOLIC FERMENTATION MANAGEMENT

TIPS AND TOOLS FOR IMPROVING ALCOHOLIC FERMENTATION

Alcoholic fermentation is a crucial stage in the winemaking process, as it plays a key role in shaping the final characteristics of the wine. This process is influenced by numerous factors, making it essential for winemakers to closely monitor key analytical parameters of must, such as temperature, density, pH, and fermentation kinetics. The careful selection of yeast strains, along with a balanced supply of nutrients, is critical to ensuring a smooth fermentation process. Proper management helps prevent slowdowns or, worse, stuck fermentations, which can compromise the quality of the final product.

Advantages of a Monitoring System

1



Setting Fermentation Parameters and Alerts

Winemakers can customize fermentation parameters and alerts to suit specific needs and winemaking protocols.

2



Automatic Event Detection

The system continuously monitors fermentation parameters and sends real-time alerts when values exceed thresholds, allowing for timely intervention.

3



Notifications for Adding Enological Products

The system suggests nutrient additions when fermentation kinetics show significant slowdowns. **NUTRIFERM** solutions ensure balanced nutrient supply throughout each fermentation phase.

4



End-of-Fermentation Alerts

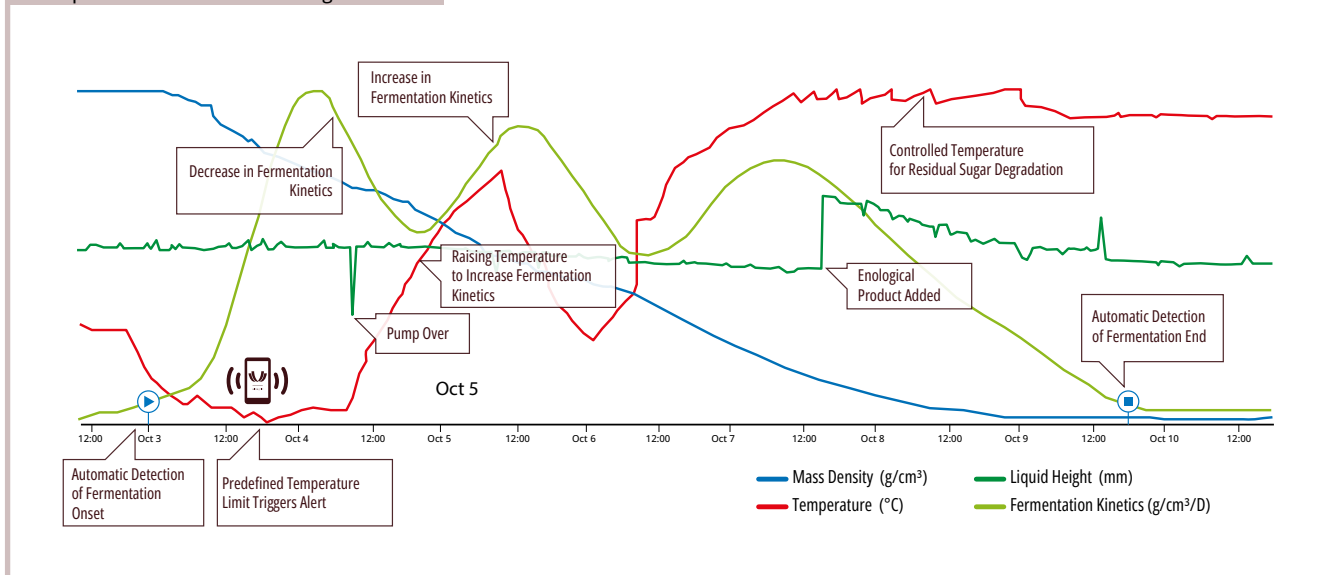
Once fermentation is complete, the system automatically sends a notification. The final fermentation curve graph provides a detailed view of the fermentation progress.

WINEGRID technology by Enartis brings the concept of *Smart Enology* to life, enabling remote, real-time monitoring of the alcoholic fermentation process. Through advanced fermentation sensors (Wineplus Premium and Barrelplus) winemakers can track critical parameters such as: density, temperature, liquid level and fermentation kinetics. These metrics are essential for effective fermentation management. Customizable alerts and warnings help **prevent stuck/sluggish fermentations** and support more **efficient**, proactive control. A user-friendly **dashboard** allows for the creation and management of **tailored work protocols**, which can be updated at any time, even remotely.

What are the Benefits?

During busy periods, such as harvest, work can be prioritized more effectively by using a monitoring system that generates alerts when necessary. This system enables more efficient organization of tasks—for example, by predicting the end of fermentation—and allows remote monitoring when the winemaker is not on-site. It also helps verify that cellar operations are carried out correctly, speeds up traceability and administrative tasks, and facilitates experimentation with different products or protocols across various tanks, even over multiple years.

Example: Fermentation Monitoring in a Tank.



By integrating smart systems, winemakers can move beyond paper notes and spreadsheets into a digital, efficient environment. Automatic notifications via WhatsApp or email allow timely interventions during critical fermentation moments. Winemakers can create vinification **protocols from scratch** or choose from a **predefined library**. These protocols can be shared across teams and modified anytime, even remotely. Thanks to the connection with automation devices, the system can trigger predefined operations, optimizing time, resources, and wine quality.





Products that can be used to produce organic wines certified according to European regulations (Reg. (EU) 2021/1165 - Reg. (EU) 848/2018 and subsequent amendments) and for the US regulation NOP (National organic program)

PRODUCT	EU	NOP
ENZYMES		
EnartisZym RS		●
EnartisZym AROM MP		●
EnartisZym COLOR FRUIT		●
EnartisZym COLOR PLUS		●
EnartisZym EZFILTER		●
YEASTS		
All products of EnartisFerm Range	●	●
NUTRIENTS		
NUTRIFERM AROM PLUS	●	
NUTRIFERM ULTRA	●	
NUTRIFERM TIRAGE	●	
NUTRIFERM CONTROL	●	●
NUTRIFERM NO STOP	●	
NUTRIFERM SPECIAL (also available)	●	
NUTRIFERM ENERGY (also available)	●	
POLYSACCHARIDES		
EnartisPro BLANCO	●	
EnartisPro PERLAGE	●	●
EnartisPro UNO	●	
EnartisPro TINTO	●	
SURLÌ ONE	●	●
SURLÌ ELEVAGE		●
SURLÌ FRESH	●	●
SURLÌ VITIS	●	●
SURLÌ VELVET	●	
EnartisPro AROM (also available)	●	●
EnartisPro R (also available)	●	●
SURLÌ VELVET PLUS (also available)	●	
FINING AGENTS		
PLANTIS AF-Q	●	

PRODUCT	EU	NOP
PLANTIS L	●	
PLANTIS PQ	●	
CLARIL OX	●	
CLARIL SMK	●	
CLARIL ZR	●	
CLARIL ZW	●	
ENOBLACK PERLAGE	●	
FENOL FREE	●	
PLUXCOMPACT	●	●
CLAIRBOUTEILLE P	●	●
HYDROCLAR 45	●	●
PHARMABENT (also available)	●	●
ENOBLACK DECOLOR (also available)	●	
PLUXBENTON N (also available)	●	●
BENTOLIT SUPER (also available)	●	●
MALOLACTIC FERMENTATION		
EnartisML MCW	●	●
EnartisML SILVER	●	●
EnartisML UNO (also available)	●	●
OAK ALTERNATIVES		
INCANTO CREAM	●	
INCANTO VANILLA	●	
INCANTO CARAMEL	●	
INCANTO SPECIAL FRUIT	●	
INCANTO TOFFEE	●	
INCANTO DARK CHOCOLATE	●	
INCANTO BLACK SPICE	●	
INCANTO NC	●	●
INCANTO NC WHITE	●	●
INCANTO NC DARK CHOCOLATE	●	●
INCANTO NC CHERRY	●	●

PRODUCT	EU	NOP
INCANTO NC RED	●	●
INCANTO NATURAL (also available)	●	
INCANTO SLI (also available)	●	
TANNINS		
All products of EnartisTan Range	●	●
STABILIZING AGENTS		
EnartisStab MICRO M	●	
CITROSTAB rH	●	
CITROGUM	●	●
CITROGUM PLUS	●	
MAXIGUM F	●	●
MAXIGUM PLUS	●	
EnartisStab MICRO (also available)	●	●
ENOCRISTAL SUPER ATTIVO (also available)	●	

PRODUCT	EU	NOP
WINEMAKING BASICS		
ASCORBIC ACID POWDER, Food Grade	●	●
CITRIC ACID, Food Grade	●	●
DISACIDIFICANTE BIANCONEVE	●	
L-MALIC ACID, Food Grade		●
PULVICLAR S	●	●
SIL FLOC	●	
TARTARIC ACID, Food Grade	●	●
crystalGRAPESUGAR.Bio	●	●
SULFITING AGENTS		
AST	●	
EFFERGRAN	●	
EFFERBARRIQUE/EFFERGRAN DOSE 5	●	
WINY	●	

PAGE	PRODUCT	
ENZYMES		
5	EnartisZym RS	
5	EnartisZym AROM MP	
6	EnartisZym COLOR FRUIT	NEW
6	EnartisZym COLOR PLUS	
7	EnartisZym EZFILTER	
YEASTS		
11	EnartisFerm AROMA WHITE	
12	EnartisFerm VINTAGE WHITE	
12	EnartisFerm ES123	
12	EnartisFerm ES181	
13	EnartisFerm Q9	
13	EnartisFerm Q4	
14	EnartisFerm Q CITRUS	
14	EnartisFerm RED FRUIT	
14	EnartisFerm VINTAGE RED	
15	EnartisFerm ES488	
15	EnartisFerm WS	
16	EnartisFerm D20	
16	EnartisFerm Q7	
17	EnartisFerm EZFERM 44	
17	EnartisFerm PERLAGE	
17	EnartisFerm Q RHO	
18	EnartisFerm Q GRACE	NEW
18	EnartisFerm Q TAU	
19	EnartisFerm Q MCK	NEW
ALSO AVAILABLE		
19	EnartisFerm SB	
19	EnartisFerm ES454	
19	EnartisFerm Q5	
NUTRIENTS		
24	NUTRIFERM AROM PLUS	
25	NUTRIFERM ULTRA	
25	NUTRIFERM ADVANCE	
26	NUTRIFERM NO STOP	
26	NUTRIFERM TIRAGE	
26	NUTRIFERM CONTROL	

PAGE	PRODUCT	
ALSO AVAILABLE		
26	CELFERM	
26	NUTRIFERM SPECIAL	
26	NUTRIFERM ENERGY	
26	DIAMMONIUM PHOSPHATE (DAP)	
POLYSACCHARIDES		
31	EnartisPro BLANCO	
31	EnartisPro FT	
32	EnartisPro PERLAGE	
32	EnartisPro UNO	
32	EnartisPro TINTO	
33	SURLÌ ONE	
33	SURLÌ ELEVAGE	
33	SURLÌ FRESH	NEW
ALSO AVAILABLE		
33	EnartisPro AROM	
33	EnartisPro R	
33	SURLÌ KPA	
33	SURLÌ VELVET PLUS	
34	SURLÌ VITIS	
34	SURLÌ VELVET	
FINING AGENTS		
36	PLANTIS AF-Q	
36	PLANTIS L	NEW
37	PLANTIS PQ	
38	CLARIL AF	
38	CLARIL OX	NEW
39	CLARIL SMK	
39	CLARIL HM	
39	CLARIL ZR	
39	CLARIL ZW	
40	ENOBLOCK PERLAGE	
40	FENOL FREE	
ALSO AVAILABLE		
40	CLARIL SP	
40	ENOBLOCK DECOLOR	
41	PLUXCOMPACT	

PAGE	PRODUCT	
41	CLAIRBOUTEILLE P	
	ALSO AVAILABLE	
41	PLUXBENTON N	
41	BENTOLIT SUPER	
41	PHARMABENT	
41	HYDROCLAR 45	
	ALSO AVAILABLE	
41	STABYL MET	
41	STABYL G	
MALOLACTIC FERMENTATION		
46	EnartisML MCW	
46	EnartisML SILVER	
	ALSO AVAILABLE	
46	EnartisML UNO	
47	NUTRIFERM ML	
	ALSO AVAILABLE	
47	NUTRIFERM OSMOBACTI	
OAK ALTERNATIVES		
50	INCANTO CREAM	
50	INCANTO VANILLA	
50	INCANTO CAMEL	
50	INCANTO SPECIAL FRUIT	
50	INCANTO TOFFEE	
50	INCANTO DARK CHOCOLATE	
50	INCANTO BLACK SPICE	NEW
	ALSO AVAILABLE	
50	INCANTO NATURAL	
50	INCANTO SLI	
50	INCANTO SPICE	
50	INCANTO COMPLEXITY	
52	INCANTO NC	
52	INCANTO NC WHITE	
52	INCANTO NC DARK CHOCOLATE	
52	INCANTO NC CHERRY	
53	INCANTO NC RED	
TANNINS		
55	EnartisTan CIT	

PAGE	PRODUCT	
55	EnartisTan FERMCOLOR	
55	EnartisTan V	
55	EnartisTan XC	
56	EnartisTan ANTIBOTRYTIS	
56	EnartisTan E	
56	EnartisTan MAX NATURE	
56	EnartisTan SLI	
57	HIDEKI	
57	EnartisTan CDC	
57	EnartisTan DC	
58	EnartisTan ELEVAGE	
58	EnartisTan NAPA	
58	EnartisTan TOF	
58	EnartisTan VNL	
58	EnartisTan TFT	
	ALSO AVAILABLE	
58	EnartisTan COLOR	
58	EnartisTan ROUGE	
58	EnartisTan EXTRA	
58	EnartisTan AROM	
58	EnartisTan ELEGANCE	
59	EnartisTan FF	
59	EnartisTan SKIN	
59	EnartisTan UVASPEED	
	ALSO AVAILABLE	
59	EnartisTan FT	
59	EnartisTan RF	
59	EnartisTan BLANC	
59	EnartisTan UVA	
60	EnartisTan UNICO #1	
60	EnartisTan UNICO #2	
60	EnartisTan UNICO #3	
60	EnartisTan UNICO #1 XO	NEW
STABILIZING AGENTS		
64	EnartisStab MICRO M	
	ALSO AVAILABLE	
64	EnartisStab MICRO	

PAGE	PRODUCT
67	EnartisStab CELLOGUM LV20
	ALSO AVAILABLE
67	ENOCRISTAL SUPERATTIVO
67	ZENITH UNO
67	ZENITH COLOR
68	ZENITH PERLAGE
68	ZENITH MEGA NEW
71	CITROSTAB rH
71	CITROGUM
71	CITROGUM PLUS
72	MAXIGUM F
72	MAXIGUM PLUS
	ALSO AVAILABLE
72	SORBOSOL K
WINEMAKING BASICS	
74	ASCORBIC ACID POWDER, Food Grade
74	CITRIC ACID, Food Grade
74	DISACIDIFICANTE BIANCONEVE
74	L-MALIC ACID, Food Grade
74	PULVICLAR S
74	SIL FLOC

PAGE	PRODUCT
74	TARTARIC ACID, Food Grade
74	crystalGRAPESUGAR.Red NEW
74	crystalGRAPESUGAR.Bio NEW
SULFITING AGENTS	
76	AST
76	WINY
77	EFFERGRAN/EFFERGRAN DOSE 5/EFFERBARRIQUE
TECHNOLOGIES - Equipment	
79	Eco Flot
79	MicroOX
79	Colloidal Dosing System EE CDS01
79	Tartarcheck Plus
79	Yeast Propagator
TECHNOLOGIES - Sensors	
82	Wineplus Premium
82	Wineplus
82	Barrelplus
82	e-Aphrom
82	e-Charmat
82	e-Bung
82	Smartcellar

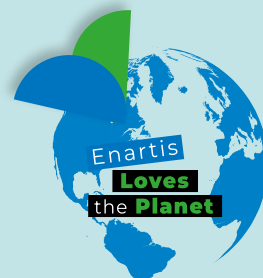


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