With more than 140 years of experience and partnership with laboratories, wineries and negociants, Lamothe-Abiet continues to bring useful and innovative enological solutions.

This great heritage feeds our inspiration to imagine the future whilst taking our clients’ needs into consideration.

Our research and development laboratory, closely linked to several universities on various projects, meets these demands with unique and innovative products.

Lamothe-Abiet was certified FSSC22000 in 2019, taking an extra step to give exemplary traceability, in alignment with the highest food safety standards. Furthermore, we are working on environmental issues in order to respond to current ecological challenges.

Together, through our diverse network and our historical expertise, we are firmly anchored in enology, now and in the future.

Guillaume Martineau
General Manager

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Yeasts are at the heart of Lamothe-Abiet's oenological expertise. Our yeasts are very rigorously selected and developed at the Institute of Vine and Wine Sciences (ISVV) of Bordeaux by our R&D teams which have proven themselves, over time, to be the most talented in the field.

Rosé and white wines

The strains Excellence® FTH, TXL and STR are references throughout the world for the production of aromatic white and rosé wines.

**EXCELLENCE® FTH**
- Intense revelation of volatile thiols
- Citrus notes, fresh aromatic profile
- Lively mouthfeel

**EXCELLENCE® TXL**
- Balanced revelation of volatile thiols
- Boxwood, citrus and tropical fruits
- Wines that are complex, fine and round on the palate

**EXCELLENCE® STR**
- Strong revelation of fermentary esters
- Stone fruit and tropical fruit notes
- Aromatic complexity

« It is important to us to showcase the purity of fruit aroma and flavour in all our wines. Due to our cooler climate the white wines generally have abundant, lively natural acidity along with more delicate aromas and flavours. For our Wineglass Bay Sauvignon Blanc I specifically wanted to elevate the varietal aromas and palate texture. Following a recommendation from Blue H2O Filtration, I made the wine as a split ferment: 75% using Excellence® FTH in stainless for the aromatic portion, and 25% in old barrels using Excellence® TXL for the textural portion. In all parcels I used OptiThiols® to increase thiol expression. The result? A wine that displays superior aromatics with strong citrus and tropical aromas, coupled with superb texture and roundness. I couldn’t be happier! »

Claude RADENTI
Winemaker, Freycinet Wines, Tasmania - AUSTRALIA
EXCELLENCE® XR

- Powerful wines with structure and volume
- Great respect for varietal typicity
- Adapted to high potential alcohols, to naturally concentrated grapes
- Low production of volatile acidity and inhibitory fatty acids
- Ideal for carrying out MLF in co-inoculation: clean and pure aroma profiles
- Large production of polysaccharides: helps to stabilise colour and give structure

« Having tried several yeasts on the market, Excellence® XR has given us complete satisfaction thanks to its technical reliability and its organoleptic results.

Its regular fermentation kinetics allows us to extract for longer in a reductive environment. Furthermore, its strong compatibility with MLF, due especially to the fact that it produces few inhibitory substances, greatly facilitates work in the winery.

Finally, it allows the wine to perfectly reflect its terroir, while improving its ageing potential and its structure. For us, Excellence® XR has become an essential tool for revealing the typical characters of “Ribera” style wines. »

Esther GOMEZ & Rebeca PALOMO, ENODIVINOS, Burgos - SPAIN.

EXCELLENCE® DS

- Muscular profile with aromas of fresh fruit
- Adapted to high alcohol contents
- Low production of volatile acidity and inhibitory fatty acids
- High implantation capacity
- Preservation of the colour intensity
- Perfectly suited to traditional winemaking and thermo-macerated musts
- For the red wines with medium aging potential (5 years)
Bioprotection involves exercising an early control of the natural flora that is present on the grapes. After harvesting and before yeast addition, this environment is extremely sensitive and is a very risky period for the development of microbial alterations (non-*Saccharomyces* yeasts such as *Brettanomyces*, as well as bacteria, which are often the source of faults).

As opposed to adding sulphur, which destroys these microorganisms, biological control involves inoculating a slow-fermenting yeast, which occupies the niche and thus naturally prevents the growth of undesirable microorganisms.

**EXCELLENCE® B-NATURE®**

Lamotho-Abiet, after extensive research, has selected *Excellence®* B-Nature®, a *Metschnikowia pulcherrima* which has the following benefits:

- Control of the microbiological flora from the harvest
- Decrease of the dosage of SO₂ on the grapes
- Reduction of the compounds that combine SO₂
- Increased aromatic complexity of the wine

The use of SO₂ makes the yeast population decrease drastically and leaves a microbiological vacuum. This poses a risk for the development of spoilage microorganisms in the environment.

In the modality B-Nature®, the total yeast population is essentially made up of *Metschnikowia*, indicating a very good implantation of our yeast, and therefore effective bioprotection. The competing yeast was not implanted in the juice as it was not detected on D+4.
<table>
<thead>
<tr>
<th>STRAIN</th>
<th>THIOLS</th>
<th>ESTERS</th>
<th>VARIETAL</th>
<th>ROUNDNESS</th>
<th>SWEET</th>
<th>NITROGEN NEEDS</th>
<th>ALCOHOL TOLERANCE (% vol.)</th>
<th>VARIETALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTH</td>
<td>•••</td>
<td></td>
<td></td>
<td>•</td>
<td>•</td>
<td>Medium</td>
<td>15</td>
<td>• sauvignon, riesling, gewurztraminer, vermentino • merlot, grenache, cinsault, cabernet franc, cabernet sauvignon, shiraz</td>
</tr>
<tr>
<td>TXL</td>
<td>••</td>
<td>•••</td>
<td></td>
<td>••••••</td>
<td>•••••</td>
<td>High</td>
<td>16</td>
<td>• chardonnay, sauvignon, gewurztraminer, grenache blanc, chenin blanc, riesling, vermentino, viognier, pinot gris • mourvèdre, grenache, cinsault, cabernet franc, cabernet sauvignon</td>
</tr>
<tr>
<td>STR</td>
<td>•</td>
<td>•••</td>
<td></td>
<td>•</td>
<td>•</td>
<td>Medium</td>
<td>15</td>
<td>• chenin, chardonnay, muscadet, viognier, muscadelle • grenache, cinsault, cabernet franc, shiraz, merlot</td>
</tr>
<tr>
<td>B2</td>
<td>•</td>
<td>•••</td>
<td></td>
<td>•••</td>
<td>•</td>
<td>Medium</td>
<td>13.5</td>
<td>• chardonnay, sauvignon, chenin, muscat</td>
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<tr>
<td>FW</td>
<td>••</td>
<td>•••</td>
<td></td>
<td>•</td>
<td>•</td>
<td>High</td>
<td>15</td>
<td>• chardonnay, sauvignon, sémillon, viognier, muscadelle</td>
</tr>
<tr>
<td>B-Nature®</td>
<td>non-Saccharomyces strain for grapes bioprotection</td>
<td>-</td>
<td>-</td>
<td>all</td>
<td></td>
<td></td>
<td></td>
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<table>
<thead>
<tr>
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<th>THIOLS</th>
<th>TECHNOLOGICAL</th>
<th>BASIC</th>
<th>RESTARTING AF</th>
<th>NITROGEN NEEDS</th>
<th>ALCOHOL TOLERANCE (% vol.)</th>
<th>VARIETALS</th>
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</thead>
<tbody>
<tr>
<td>Arom</td>
<td>•</td>
<td>•••</td>
<td></td>
<td>Medium</td>
<td>15</td>
<td>• chardonnay, sauvignon, chenin, sémillon, viognier, muscadelle • merlot, grenache, cinsault, cabernet franc, shiraz, cabernet sauvignon</td>
<td></td>
</tr>
<tr>
<td>Cerevisiae</td>
<td>•••••</td>
<td>••••••</td>
<td></td>
<td>Low</td>
<td>15</td>
<td>all</td>
<td></td>
</tr>
<tr>
<td>Bayanus</td>
<td>•••••</td>
<td>••••••</td>
<td></td>
<td>Low</td>
<td>&gt; 16</td>
<td>all</td>
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<tr>
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<th>FRUITY</th>
<th>FRUITY</th>
<th>STRUCTURED</th>
<th>RESTARTING AF</th>
<th>NITROGEN NEEDS</th>
<th>ALCOHOL TOLERANCE (% vol.)</th>
<th>VARIETALS</th>
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</thead>
<tbody>
<tr>
<td>XR</td>
<td>•••</td>
<td>•</td>
<td>•••</td>
<td>Medium</td>
<td>&gt;16</td>
<td>• cabernet sauvignon, merlot, grenache, shiraz, pinot noir, malbec</td>
<td></td>
</tr>
<tr>
<td>DS</td>
<td>•••</td>
<td>•••••</td>
<td>•</td>
<td>High</td>
<td>15.5</td>
<td>• merlot, cabernet sauvignon, cabernet franc, shiraz, grenache, malbec</td>
<td></td>
</tr>
<tr>
<td>SP</td>
<td>•••••</td>
<td>••••••</td>
<td>•</td>
<td>Medium</td>
<td>15</td>
<td>• cabernet franc, shiraz, grenache, merlot, malbec, mourvèdre</td>
<td></td>
</tr>
<tr>
<td>FR</td>
<td>•••••</td>
<td>•</td>
<td>•</td>
<td>Medium</td>
<td>15</td>
<td>• gamay, grenache, duras, carignan, carbonic maceration</td>
<td></td>
</tr>
<tr>
<td>B-Nature®</td>
<td>non-Saccharomyces strain for grapes bioprotection</td>
<td>-</td>
<td>-</td>
<td>all</td>
<td></td>
<td></td>
<td></td>
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<table>
<thead>
<tr>
<th>STRAIN</th>
<th>L.A. SOLUTIONS</th>
<th>VARIETALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BJL</td>
<td>Low 14</td>
<td>gamay, carbonic maceration</td>
</tr>
<tr>
<td>N°5</td>
<td>Low 15</td>
<td>mourvèdre, shiraz, duras</td>
</tr>
<tr>
<td>L13</td>
<td>Medium 16</td>
<td>all</td>
</tr>
<tr>
<td>RB2</td>
<td>Medium 14</td>
<td>pinot noir, merlot</td>
</tr>
<tr>
<td>Cerevisiae</td>
<td>Low 14</td>
<td>all</td>
</tr>
<tr>
<td>Bayanus</td>
<td>Low &gt;16</td>
<td>all</td>
</tr>
</tbody>
</table>
Many talk about it, but Lamothe-Abiet was the real pioneer in the technique of co-inoculation over 15 years ago. The strains that we propose are adapted to the current demands for the control of the MLF.

**ŒNO 1®**

Main benefits of our malolactic starters:

- Selected strains
- High quality production
- Ease of use
- Control of the MLF
- Prevention of faults
- Preservation of fruitiness
- Reduction of costs
- They guarantee you:
  - Speedy implantation
  - No production of biogenic amines
  - Prevention of *Brettanomyces* development

« Today all 102 tanks of the domain are co-inoculated with the bacteria/yeast duo of Œno1®/Excellence® XR. The rate of success is more than satisfying since 95% of our tanks usually finish their malolactic fermentation before racking. The wines have better aromatic precision with very low volatile acidities.

I can attest today that 10 vintages of experience of this technique have given us complete satisfaction and we would no longer consider not using this technique as part of our vinification process. »

Matthieu BORDES, General Manager - Winemaker
CHÂTEAU LAGRANGE, Grand Cru Classé, FRANCE

---

**Co-inoculation Excellence® XR-Œno1®**
Average over 10 vintages of use in the Médoc, France, for 1000 inoculated tanks.

- Normal fermentation kinetics
- Sluggish fermentation kinetics
- Naturally few days afterwards
- After detoxification using Flor'Protect®
- In spring following harvest
- In summer following harvest

<table>
<thead>
<tr>
<th>Normal fermentation kinetics</th>
<th>Sluggish fermentation kinetics</th>
<th>Naturally few days afterwards</th>
<th>After detoxification using Flor'Protect®</th>
<th>In spring following harvest</th>
<th>In summer following harvest</th>
</tr>
</thead>
<tbody>
<tr>
<td>90</td>
<td>10</td>
<td>7</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

MLF completed before end of AF
MLF completed after end of AF
Evaluate the ease of carrying out malolactic fermentation on your wines on our Œnosolutions mobile app, available on the Appstore and Google Play Store
Yeast nutrition and protection are key factors for a successful fermentation. Of course, this gives safe fermentation kinetics but also helps to optimise the production of aromas and to avoid organoleptic faults.

**OPTIESTERS® More aromas for longer time**

Formulation of inactivated yeasts naturally rich in amino acids and ergosterols.

In young wines, fermentary esters make up a large part of the aromatic profile. They promote the perception of fruity and floral aromas, especially in wines which are poor in varietal aromatic precursors. They are only formed by yeasts during the alcoholic fermentation and are optimised by the fermentation conditions: low temperature, low turbidity and the variety of yeast.

Yeast nutrition also plays an important role in defining the profile of the aromatic esters, both in their quality and quantity. Ester formation is closely linked to the yeasts' nitrogen and lipid metabolism: it can therefore be improved by adding yeast derivatives.

Advice for usage:
- Add at the beginning of AF (density -30 points)
- Dosage: 30 g/hL
- Use a strain that has a high yield in esters: Excellence® STR - LA Arom
- AF conditions: T°C of 14 to 16°C– Turbidity 30 to 80 NTU – Anaerobic

Aromatic index (AI) [fermentary esters] / perception threshold
Sémillon • South West, France • 2017

[Control] [OptiEsters®]

TOTAL

0 20 AI

+44%

Optimise the nutrition of your yeast thanks to our online diagnostic tool:

On our website in the tab LA Solutions / Toolbox
On our Oenosolutions mobile app, available on the Appstore and Google Play Store

OptiEsters®
Control
Aromatic index (AI) [fermentary esters] / perception threshold
Sémillon • South West, France • 2017

[Control] [OptiEsters®]

TOTAL

0 20 AI

+44%
**OPTITHIOLS®** More aromas for longer time

Inactivated yeasts naturally rich in reducing compounds.

**OptiThiols®** applied to white and rosé musts before the start of AF is an essential tool for making thiol-rich wines.

Its success is proven by a very significant increase in aromas (from 30 to 120%). The regularity and repeatability of these results has been shown on many different harvests (variety, terroir).

**Advice for usage:**
- Add early on, before AF
- Dosage: 30 g/hL
- A suitable fining of musts before addition ensures optimal effectiveness
- A well-adapted nitrogen nutrition of yeasts allows to take advantage of the antioxidant effect of OptiThiols® during aging

**TO KNOW**

Using OptiThiols® with our Excellence® FTH or Excellence® TXL yeasts can give up to **170%** more thiols.

---

**Aromatic index (AI)**

\[
\text{[volatile thiols] / perception threshold}
\]

**Cortese Trial • Italy • 2019**

- 4MMP (box-tree)
- 3MH (exotic fruits)
- A3MH (citrics)
- BMT (flint)

Thiol that gives flint aroma, with an impression of freshness and liveliness.

**“Since 2017, we have integrated OptiThiols® into our winemaking process. Our clients, increasingly moving towards “thiol” type wine profiles, have seen the increased aromas, in varieties such as Sauvignon and Chardonnay, but also in Chenin. We recommend adding it at the same time as the yeast, at 10 to 30 g/hL, depending on the deficiency in the must. During the fermentation, and even more so during the wines’ conservation, we observe more intense, cleaner and open aromatic profiles for the expected thiols, whilst respecting the varietal identity.”**

Paul de SURMONT, Manager - Consultant Oenologist
LITOV Laboratory, Val de Loire - FRANCE.
OPTIFLORE® O

Optiflore® O’s rich composition in amino acids as well as vitamins, minerals and oligoelements helps to ensure the yeasts' qualitative nutrition whilst avoiding the risks associated with only using mineral nutrition. Indeed, the yeast extracts allow for more complexity and a more effective fermentation kinetics.

MINERAL NITROGEN NUTRITION
- Used preferentially by the yeast
- Fast consumption
- Fast increase in yeast population
In case of excess:
- Induced deficiency
- H₂S production
- Sluggish and/or stuck AF
- Excessive heat production
- Stimulatory effect on nitrogen catabolic repression (NCR)

ORGANIC NITROGEN NUTRITION
- Progressive use
- Repression of H₂S production
- Nutrition for yeasts and malolactic bacteria
- Does not cause nitrogen catabolic repression
- Increases the aromatic complexity

TO KNOW
The addition of 10g/L of Optiflore® O provides 5mg/L of nitrogen in amino form, equivalent to an addition of 15mg/L of assimilable nitrogen.

AROMA PROTECT®

Aroma Protect® is made from inactivated yeasts that are naturally rich in glutathione, a sulfurous tripeptide with great reductive power. This specific formulation gives optimal protection of white and rosé wines' aromas.

When used during ageing, Aroma Protect® gives immediate protection against the oxidative mechanisms, releasing glutathione (GSH) into the wine, significantly slowing down oxidation phenomena.

Advice for usage:
- Dosage: 30 g/hL
- For wines with short ageing: 15 g/hL (reductive effect of glutathione)
- Making the usual precautions for inerting helps to ensure the lasting efficacy of the product

Aromatic Index (AI)

Grenache rosé trial • South-East France • 2018
Analysis 1 month after AF

<table>
<thead>
<tr>
<th>Compounds</th>
<th>Control</th>
<th>Aroma Protect®</th>
</tr>
</thead>
<tbody>
<tr>
<td>3MH</td>
<td>2</td>
<td>+54%</td>
</tr>
<tr>
<td>4MMP</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>A3MH</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

With over 50% glutathione, Aroma Protect® is the product of choice to conserve the aromatic potential during ageing.
# LAMOTHE-ABIET NUTRIENT LIST

## BASIC NUTRIENTS

<table>
<thead>
<tr>
<th>AMMONICAL NITROGEN</th>
<th>THIAMINE</th>
<th>YAN INCREASE mg/L per 20 g/hL added</th>
<th>DOSAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium Sulphate (AS)</td>
<td>⋅ ⋅ ⋅</td>
<td>40</td>
<td>10 - 50 g/hL</td>
</tr>
<tr>
<td>Ammonium Phosphate (DAP)</td>
<td>⋅ ⋅ ⋅</td>
<td>40</td>
<td>10 - 50 g/hL</td>
</tr>
<tr>
<td>Vitaferment® AS</td>
<td>⋅ ⋅ ⋅</td>
<td>40</td>
<td>10 - 50 g/hL</td>
</tr>
<tr>
<td>Vitaferment® PH</td>
<td>⋅ ⋅ ⋅</td>
<td>40</td>
<td>10 - 50 g/hL</td>
</tr>
<tr>
<td>Thiamine</td>
<td>⋅ ⋅ ⋅</td>
<td>0</td>
<td>Maximum legal dosage in EU: 60 mg/hL</td>
</tr>
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</table>

## COMPLEX NUTRIENTS

<table>
<thead>
<tr>
<th>COMPLEX NUTRIENTS</th>
<th>CELLULOSE POWDER</th>
<th>AMMONICAL NITROGEN</th>
<th>THIAMINE</th>
<th>ORGANIC NITROGEN</th>
<th>VITAMINS / MINERALS</th>
<th>DETOXIFICATION</th>
<th>STEROLS / UNSATURATED FATTY ACIDS</th>
<th>AROMATIC IMPACT</th>
<th>YAN INCREASE mg/L per 20 g/hL added</th>
<th>DOSAGE (g/hL)</th>
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<tbody>
<tr>
<td>ŒnoStim®</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td>⋅ ⋅ ⋅</td>
<td>⋅</td>
<td>⋅</td>
<td>⋅</td>
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<td>30</td>
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<tr>
<td>OptiEsters®</td>
<td>AR</td>
<td></td>
<td></td>
<td></td>
<td>⋅ ⋅ ⋅</td>
<td>⋅</td>
<td>⋅</td>
<td>⋅</td>
<td>0</td>
<td>20 - 40 Before AF</td>
</tr>
<tr>
<td>OptiThiols®</td>
<td>N/P</td>
<td>DAP</td>
<td>⋅ ⋅ ⋅</td>
<td>⋅</td>
<td>⋅</td>
<td>⋅</td>
<td>⋅</td>
<td>⋅</td>
<td>10</td>
<td>20 - 40 Before AF</td>
</tr>
<tr>
<td>OptiFlore® 0</td>
<td>N/P</td>
<td></td>
<td>⋅ ⋅ ⋅</td>
<td>⋅</td>
<td>⋅</td>
<td>⋅</td>
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<td>30</td>
<td>20 - 40</td>
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<td>DAP</td>
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<td>⋅</td>
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<td>20 - 40</td>
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<tr>
<td>Actibiol®</td>
<td>N/S</td>
<td></td>
<td>⋅ ⋅ ⋅</td>
<td>⋅</td>
<td>⋅</td>
<td>⋅</td>
<td>⋅</td>
<td>⋅</td>
<td>0</td>
<td>30 - 60 Maximum legal dosage in EU: 300</td>
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<tr>
<td>Natur'Soft®</td>
<td>P</td>
<td></td>
<td>⋅ ⋅ ⋅</td>
<td></td>
<td>⋅</td>
<td>⋅</td>
<td>⋅</td>
<td>⋅</td>
<td>0</td>
<td>20 - 100 Before end of AF</td>
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## PROTECTION, SUPPORT AND DETOXIFICATION

<table>
<thead>
<tr>
<th>PROTECTION, SUPPORT AND DETOXIFICATION</th>
<th>CELLULOSE POWDER</th>
<th>VITAMINS / MINERALS</th>
<th>DETOXIFICATION</th>
<th>STEROLS / UNSATURATED FATTY ACIDS</th>
<th>AROMATIC REVELATION</th>
<th>AROMATIC PROTECTION</th>
<th>YAN INCREASE mg/L per 20 g/hL added</th>
<th>DOSAGE (g/hL)</th>
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<tbody>
<tr>
<td>Flor‘Protect®</td>
<td>P</td>
<td></td>
<td>⋅ ⋅ ⋅</td>
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<td></td>
<td>0</td>
<td>20 - 40 Maximum legal dosage in EU: 40</td>
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<td>Granucel</td>
<td>S</td>
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<td></td>
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<td>0</td>
<td>20 - 80</td>
</tr>
<tr>
<td>Aroma Protect®</td>
<td>P</td>
<td></td>
<td>⋅</td>
<td>⋅</td>
<td>⋅</td>
<td>⋅</td>
<td>0</td>
<td>10 - 40</td>
</tr>
<tr>
<td>Aroma T’N’T</td>
<td>P AR</td>
<td>⋅</td>
<td>⋅</td>
<td>⋅</td>
<td>⋅</td>
<td>⋅</td>
<td>0</td>
<td>10 - 40</td>
</tr>
</tbody>
</table>

N : nutrition  P : protection  S : support element  AR : aromatic revelation
OENOZYME® CRUSH RED
Enzymatic preparation specifically formulated for red grape maceration. Highly concentrated and purified from Cinnamoyl Esterase and anthocyanase activities.

- Improve extraction of skin compounds:
  - Phenolics compounds
    => increasing color intensity and stability
  - Plant polysaccharides
    => decrease astringency perception
- Increase yield of free-run and press wines (6-10%)
- Improve wine filterability

OENOZYME® CRUSH WHITE
Enzymatic preparation specifically formulated for white grape maceration and extraction. Highly concentrated and purified from Cinnamoyl Esterase activity.

- Improve extraction of skin compounds:
  - Plant polysaccharides
    => improve colloidal stability, decrease astringency perception
  - Aromatic precursors
- Increase yield of free-run juice: 3-10%
  - Use lower pressure and shorter press cycle
    => less phenolic compounds extracted, less herbaceous aromas, shorter pressing time
- Improve juice clarification and lees compaction
- Improve wine filterability

OENOZYME® CLAR
Liquid enzymatic formulation to accelerate the clarification of musts before alcoholic fermentation

- Increase juice yield by compacting lees
- Accelerate settling time: fast depectinization and flocculation
- Formulation active at low (<5°C) and high (<68°C) temperature
- Suitable for clarification by static settling and flotation
- Suitable for thermo-vinification
**Œnozym® THIOLS**

Œnozym® Thiols is a new pectolytic enzyme preparation from *Aspergillus niger*, rich in secondary activities and free from cinnamyl-esterase activity.

Œnozym® Thiols used during alcoholic fermentation enhances the liberation of thiol aroma precursors such as 4MSP (boxwood) and 3SH (citrus fruit) and thus indirectly increases conversion by the yeast to A-3SH (tropical fruits).

- Can be used during fermentation, during maturation and/or few weeks before bottling
- Liberation of thiol precursors to volatile thiols (increase the % of conversion)
- Depending on the moment when used, possibility to modulate the final aromatic profile of the wines.

---

**Œnozym® Thiols added during AF**

- **white wine pecorino variety** • **2016** • **Italy**
- ABV: 13.15% vol - pH = 3.37 - TA: 4.3 g/L H₂SO₄

Aromatic Index (AI) [thiols] / perception threshold

- 4MSP (boxtree) +19%
- 3SH (citrics) +18%
- A3SH (exotic fruits)
- Thiols

---

**Œnozym® Thiols added during maturation**

- **white wine pecorino variety** • **2016** • **Italy**
- ABV: 12.65% vol - pH = 3.3 - TA: 4.4 g/L H₂SO₄

Aromatic Index (AI) [thiols] / perception threshold

- 3SH (citrics) +25%
- A3SH (exotic fruits) +24%
- Thiols

---

**LAMOTHE-ABIET ENZYME LIST**

<table>
<thead>
<tr>
<th>LIQUID ENZYMES</th>
<th>MACERATION</th>
<th>CLARIFICATION</th>
<th>EXTRACTION</th>
<th>TYPE OF WINE</th>
<th>DOSAGE</th>
<th>RECOMMENDATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Œnozym® Crush Red</td>
<td>***</td>
<td>**</td>
<td>***</td>
<td>**</td>
<td>10-30 mL/Ton</td>
<td>Addition on grapes. Improves extraction of skin compounds, color, phenolic structure, press yield and filtrability</td>
</tr>
<tr>
<td>Œnozym® Cruch White</td>
<td>***</td>
<td>**</td>
<td>***</td>
<td>**</td>
<td>10-30 mL/Ton</td>
<td>Addition at crush. Improves skin compounds extraction (aromatic compounds,polysaccharides), press yield, and filterability</td>
</tr>
<tr>
<td>Œnozym® Clar</td>
<td>***</td>
<td></td>
<td></td>
<td>**</td>
<td>0.5-3 mL/hL</td>
<td>Addition at press pan or in tank ; Static settling and Floation. Can be used on wines to improves filtrability.</td>
</tr>
</tbody>
</table>

**SPECIFIC ENZYMES**

<table>
<thead>
<tr>
<th>LIQUID ENZYMES</th>
<th>FERMENTATION</th>
<th>MATURATION</th>
<th>TYPE OF WINE</th>
<th>DOSAGE</th>
<th>RECOMMENDATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Œnozym® Thiols</td>
<td>L</td>
<td>***</td>
<td>Revelation of thiol aromas</td>
<td>4-6 mL/hL</td>
<td>Check the level of SO₂, stop the enzymatic activity with 20 g/L of bentonite</td>
</tr>
<tr>
<td>Œnozym® FW</td>
<td>G</td>
<td>***</td>
<td>Revelation of terpenes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

L : liquid  G : granulated
The result of rapidly evolving research, the tannins of our range are created in our specialised production unit. The quality of the products and their effectiveness are guaranteed by rigorous selection of the raw materials, and by our knowledge and control of the production process.

The specific microgranulated (MG) and granulated (G) formulation of our instantly soluble tannins means that they can be added directly to grapes, musts or wines. The ideal dispersal which guarantees an immediate, effective, and uniform action with simple mixing or pump-over.

**TAN’EXCELLENCE®**  
*The perfect harmony*

Tan’Excellence® is a maturation tannin, resulting from a rigorous selection of oak tannins, grape tannins and proanthocyanidic tannins.

This tool, which can be used during the fermentations or maturation, promotes **lasting colour stability** as well as a **protection against oxidation**.

The Tan’Excellence® formulation improves **structure** and brings a **harmonious balance** for great red wines.

Its directly soluble formulation makes this tannin easy to use.

---

**Colorimetric analysis**

Cabernet Sauvignon • 2019 • Lamothe-Abiet Experimental Center

Tan’Excellence® at 10 g/hL - Analysis 1 month after bottling

---

<table>
<thead>
<tr>
<th>Colorimetric intensity</th>
<th>Tan’Excellence®</th>
<th>Control</th>
<th>DO420</th>
<th>DO520</th>
<th>DO620</th>
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</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
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<tr>
<td>6</td>
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<tr>
<td>9</td>
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<td>12</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
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</tr>
</tbody>
</table>

+21%
**VINITAN® ADVANCE**  
*Increase the volume, amplify the structure*

Vinitan Advance® is the result of the latest advances in grape tannin production. It consists of the latest generation of pure grape tannins.

*Its own grape tannins* have an excellent reactivity with the native grape tannins present in the wine. It has a significant effect on wines slightly lacking in structure and in maintaining their fruity characters throughout maturation and bottle aging.

The effects can be quantified for the reduction of the astringency of certain wines, showing a reactivity with the originally present tannins.

---

**Measurement of the astringency of a wine after treatment**  
SPI - salivary protein index, (Excell laboratory, internal method), 1 month after addition

---

![Graph showing the reduction of salivary proteins](image)

---

**Results**

- Reduction of experienced astringency during tasting.
- The volume and structure are increased.

*The results are dependent on the type of wine treated and the dosages. Trials in bottle are recommended.*

---

**PRO TANIN R®**

The effectiveness of Pro Tanin R® is founded on two mechanisms of action:

Pro Tanin R® binds the must proteins that cause an early loss of desirable phenolic compounds.

Pro Tanin R® inhibits laccase, an enzyme that causes drastic and irreversible oxidation in botrytised musts and wines.

---

**Trial conditions:**
- Cabernet Sauvignon, Graves, 2016
- ABV: 11.5% vol, pH = 3.52

---

<table>
<thead>
<tr>
<th>Laccase activity on must (U/ml)</th>
<th>Control</th>
<th>½ dose Pro Tanin R</th>
<th>1 dose Pro Tanin R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

*Dosage recommended by Botrytest*  

---

Even a small laccase activity in the must can significantly decrease the visual quality of the future wine. Using Pro Tanin R® helps to stop this laccase activity and to conserve the future wine’s colour.
The **Softan** range is based on a technology that is exclusive to Lamothe-Abiet. It offers solutions for each step of wine production thanks to its formulations of specific tannins combined with natural polysaccharides of plant origin. This technology is based on a phenomenon which naturally takes place in wines wherein the tannins combine with polysaccharides.

**Softan** products significantly increase the **volume** and **length** on the palate **without adding dryness or astringency**.

**TO KNOW**
- **Added at the beginning of fermentation**, Softan® Vinification is effective in **colour stabilisation**.
- **For greater effectiveness**, it is recommended to add Pro Tanin® R in the tank at reception.

**Grenache is the main variety in our appellation. Each year we face problems with colour stability on our thermovinifications.**

Since doing a set of trials in 2016 with Softan® Vinification, a catechic tannin, we have noted that the colour lasts longer. As well as this, the taste of the wine improved. Wines treated with Softan® Vinification are rounder on the palate and show more complex aromas. It is now an integral part of our process. »

---

**Thierry Walet**
Head Winemaker,
Cellier des Dauphins - Côtes-du-Rhône, FRANCE
<table>
<thead>
<tr>
<th>VINIFICATION TANNINS</th>
<th>COMPOSITION</th>
<th>INHIBITION OF LACCASE ACTIVITY</th>
<th>ANTI-OXYDANT ROLE</th>
<th>REACTIVITY WITH PROTEINS, EASE OF FINING</th>
<th>COLOR STABILISATION</th>
<th>ROUNDNESS</th>
<th>TIMING</th>
<th>APPLICATION</th>
<th>DOSAGE g/L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pro Tanin R® MG</td>
<td>Proanthocyanidic tannins</td>
<td>•••</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>Vinning</td>
<td>Must and wine</td>
<td>Healthy harvest: 10 - 30 Affected harvest: 30 - 80</td>
</tr>
<tr>
<td>Softan® Vinification</td>
<td>Catechic tannins bound to vegetal polysaccharides</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>Added 1 day after reception</td>
<td>10 - 40</td>
<td></td>
</tr>
<tr>
<td>Tanin gallique à l'alcool G</td>
<td>Gallic tannins (Oak gall)</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>Altered mechanical harvest, pre-fermentation maceration, press, fining</td>
<td>Must and wine</td>
<td>3 - 15</td>
</tr>
<tr>
<td>Gallo Tanin B P</td>
<td>Elagitannins (Chestnut)</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
<td>Vinning</td>
<td>Must and wine</td>
<td>5 - 15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MATURATION TANNINS</th>
<th>COMPOSITION</th>
<th>COLOR STABILISATION</th>
<th>CONTROL OF REDOX POTENTIAL</th>
<th>STRUCTURE</th>
<th>ROUNDNESS</th>
<th>PROFILE HARMONISATION</th>
<th>TIMING</th>
<th>APPLICATION</th>
<th>DOSAGE g/L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vinitan® Advance</td>
<td>Grape proanthocyanidic tannins, unique selection process</td>
<td>•</td>
<td>•</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>During maturation or as a final touch</td>
<td>5 – 10</td>
<td></td>
</tr>
<tr>
<td>Tan&amp;Sense® Forte MG</td>
<td>Pure ellagitannins of toasted oak</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>During or at the end of maturation</td>
<td>3 - 5</td>
<td>0,5 - 3</td>
</tr>
<tr>
<td>Tan&amp;Sense® Volume</td>
<td>Pure ellagitannins of oak</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>During or at the end of maturation</td>
<td>5 - 20</td>
<td>3 - 5</td>
</tr>
<tr>
<td>Tan’Excellence®</td>
<td>Grape tannins and oak ellagitannins</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>At running or during maturation</td>
<td>5 - 30</td>
<td></td>
</tr>
<tr>
<td>Gallo tanin B P</td>
<td>Elagitannins (Chestnut)</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
<td>During maturation as a complement to fining</td>
<td>5 - 15</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SOFTAN®</th>
<th>COMPOSITION</th>
<th>COLOR STABILISATION</th>
<th>CONTROL OF REDOX POTENTIAL</th>
<th>STRUCTURE</th>
<th>ROUNDNESS</th>
<th>PROFILE HARMONISATION</th>
<th>TIMING</th>
<th>APPLICATION</th>
<th>DOSAGE g/L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Softan® Vinification</td>
<td>Catechic tannins bound to vegetal polysaccharides</td>
<td>•••</td>
<td>•</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>Added 1 day after reception</td>
<td>10 - 40</td>
<td></td>
</tr>
<tr>
<td>Softan® Power MG</td>
<td>Proanthocyanidic and ellagic tannins bound to vegetal polysaccharides</td>
<td>•••</td>
<td>•</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>At running or during maturation</td>
<td>10 - 40</td>
<td></td>
</tr>
<tr>
<td>Softan® Sweetness</td>
<td>Proanthocyanidic and ellagic tannins (from fresh and toasted oak) bound to vegetal polysaccharides</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>During maturation</td>
<td>5 - 20</td>
<td>1 - 3</td>
</tr>
<tr>
<td>Softan® Finition</td>
<td>Toasted oak ellagitannins bound to vegetal polysaccharides</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>During maturation or as a final touch</td>
<td>5 - 10</td>
<td>1 - 3</td>
</tr>
</tbody>
</table>

P : powder  G : granulated  MG : micro-granulated
Must fining, carried out before or during alcoholic fermentation, is an essential step in white and rosé winemaking. Lamothe-Abiet offers enological solutions that are adapted to the winemaker's objectives.

GREENFINE® Give peas a chance

Based on pea vegetal proteins and without allergen*, products from the Greenfine® range are complex formulations based on pea proteins that specifically fulfill varying objectives:

* Except GreenFine® Must L, stabilised with sulphur dioxide (E220).

**Analysis by chromametry (Lab) enables a simple, quick and objective measurement of must and wine colours as perceived by the human eye.
**Guidelines only: carry out fining trials to determine the optimal dose for each type of must and wine. Respect the maximum authorized doses according to the current regulations.**

<table>
<thead>
<tr>
<th>FINING PRODUCTS BASED ON PEA PROTEINS</th>
<th>STRUCTURE</th>
<th>ROUNDNESS</th>
<th>COLOR STABILITY</th>
<th>DECREASE VEGETAL</th>
<th>PROTEIN STABILISATION</th>
<th>REMEDY OXIDATION</th>
<th>TYPE OF WINE / APPLICATION</th>
<th>DOSAGE*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GreenFine®</strong> Must</td>
<td>★</td>
<td>●</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>Must / Flotation</td>
<td>10-50 cl/L</td>
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<tr>
<td>(Pea proteins)</td>
<td>L</td>
<td>liquid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>GreenFine®</strong> Mix</td>
<td>★</td>
<td>●</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>Must</td>
<td>10-80 g/L</td>
</tr>
<tr>
<td>(Pea proteins, PVPP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>GreenFine®</strong> XL</td>
<td>★</td>
<td>●</td>
<td>★</td>
<td>★</td>
<td></td>
<td>★</td>
<td>Press wine / Thermovinification</td>
<td>20-80 g/L</td>
</tr>
<tr>
<td>(Pea proteins, PVPP, calcium bentonite, gelatin)</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td><strong>GreenFine®</strong> Intense</td>
<td>★★</td>
<td>●</td>
<td>★</td>
<td>★</td>
<td></td>
<td>★</td>
<td>Aged wine</td>
<td>5-30 g/L</td>
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<tr>
<td>(Pea proteins, discoloring activated carbon, PVPP, calcium bentonite)</td>
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<tr>
<td><strong>GreenFine®</strong> Wine</td>
<td>★★★</td>
<td>●</td>
<td>★</td>
<td>★</td>
<td></td>
<td>★</td>
<td>Press wine</td>
<td>3-10 g/L</td>
</tr>
<tr>
<td>(Pea proteins, gallic tannins)</td>
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<td></td>
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<td></td>
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<tr>
<td><strong>GreenFine®</strong> Press</td>
<td>★★★</td>
<td>●</td>
<td>★</td>
<td>★</td>
<td></td>
<td>★</td>
<td>Press wine</td>
<td>3-10 g/L</td>
</tr>
<tr>
<td>(Pea proteins, calcium bentonite, inactivated yeasts)</td>
<td></td>
<td></td>
<td></td>
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<table>
<thead>
<tr>
<th><strong>COMPLEX FINING PRODUCTS</strong></th>
<th>STRUCTURE</th>
<th>ROUNDNESS</th>
<th>COLOR STABILITY</th>
<th>DECREASE VEGETAL</th>
<th>PROTEIN STABILISATION</th>
<th>REMEDY OXIDATION</th>
<th>TYPE OF WINE / APPLICATION</th>
<th>DOSAGE*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Polymix®</strong> Natur’</td>
<td>★</td>
<td>●</td>
<td>★</td>
<td>★</td>
<td></td>
<td>★</td>
<td>Must during AF</td>
<td>15-100 g/L</td>
</tr>
<tr>
<td>(PVPP, calcium bentonite, inactivated yeasts)</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Polymix®</strong></td>
<td>★</td>
<td>●</td>
<td>★</td>
<td>★</td>
<td></td>
<td>★</td>
<td>Must</td>
<td>15-100 g/L</td>
</tr>
<tr>
<td>(PVPP, potassium caseinate)</td>
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<td></td>
</tr>
<tr>
<td><strong>Natur’fine® Prestige</strong></td>
<td>★★</td>
<td>●</td>
<td>★</td>
<td>★</td>
<td></td>
<td>★</td>
<td>Wine for laying down / Must during AF</td>
<td>5-40 g/L</td>
</tr>
<tr>
<td>(Inactivated yeasts, peptolytic enzymes)</td>
<td></td>
<td></td>
<td></td>
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<table>
<thead>
<tr>
<th><strong>CASEINS</strong></th>
<th>STRUCTURE</th>
<th>ROUNDNESS</th>
<th>COLOR STABILITY</th>
<th>DECREASE VEGETAL</th>
<th>PROTEIN STABILISATION</th>
<th>REMEDY OXIDATION</th>
<th>TYPE OF WINE / APPLICATION</th>
<th>DOSAGE*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Caséimix</strong></td>
<td>★★</td>
<td>●</td>
<td>★</td>
<td>★</td>
<td></td>
<td>★</td>
<td>Must / press wine</td>
<td>15-80 g/L</td>
</tr>
<tr>
<td>(Potassium caseinate)</td>
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<td></td>
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<tr>
<td><strong>Caséine soluble</strong></td>
<td>★★</td>
<td>●</td>
<td>★</td>
<td>★</td>
<td></td>
<td>★</td>
<td>Must / press wine</td>
<td>20-60 g/L</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PVPP</strong></td>
<td>Structure</td>
<td>ROUNDNESS</td>
<td>COLOR STABILITY</td>
<td>DECREASE VEGETAL</td>
<td>PROTEIN STABILISATION</td>
<td>REMEDY OXIDATION</td>
<td>TYPE OF WINE / APPLICATION</td>
<td>DOSAGE*</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>------------</td>
<td>-----------</td>
<td>-----------------</td>
<td>-----------------</td>
<td>-----------------------</td>
<td>-----------------</td>
<td>-----------------------------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>Clarfine</strong></td>
<td>★★</td>
<td>●</td>
<td>★</td>
<td>★</td>
<td></td>
<td>★</td>
<td>Must / press wine</td>
<td>10-100 g/L</td>
</tr>
<tr>
<td>(PVPP, cellulose support)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PVPP</strong></td>
<td>Structure</td>
<td>ROUNDNESS</td>
<td>COLOR STABILITY</td>
<td>DECREASE VEGETAL</td>
<td>PROTEIN STABILISATION</td>
<td>REMEDY OXIDATION</td>
<td>TYPE OF WINE / APPLICATION</td>
<td>DOSAGE*</td>
</tr>
<tr>
<td>--------------------------------------</td>
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<td>-----------------</td>
<td>-----------------</td>
<td>-----------------------</td>
<td>-----------------</td>
<td>-----------------------------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>Bentosol Protect</strong></td>
<td></td>
<td></td>
<td>★</td>
<td>★</td>
<td></td>
<td>★</td>
<td>Must/Wine</td>
<td>10-120 g/L</td>
</tr>
<tr>
<td>(Sodium)</td>
<td>G</td>
<td>granulated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Bentosol Poudre</strong></td>
<td></td>
<td></td>
<td>★</td>
<td>★</td>
<td></td>
<td>★</td>
<td>Must/Wine</td>
<td>10-120 g/L</td>
</tr>
<tr>
<td>(Sodium)</td>
<td>P</td>
<td>powder</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Bentosol FT</strong></td>
<td></td>
<td></td>
<td>★</td>
<td>★</td>
<td></td>
<td>★</td>
<td>Must/Wine</td>
<td>10-120 g/L</td>
</tr>
<tr>
<td>(Compatible with tangential)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>GELATINS</strong></th>
<th>STRUCTURE</th>
<th>ROUNDNESS</th>
<th>COLOR STABILITY</th>
<th>DECREASE VEGETAL</th>
<th>PROTEIN STABILISATION</th>
<th>REMEDY OXIDATION</th>
<th>TYPE OF WINE / APPLICATION</th>
<th>DOSAGE*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gelflot</strong></td>
<td>★</td>
<td>●</td>
<td>★</td>
<td>★</td>
<td></td>
<td>★</td>
<td>Flotation</td>
<td>1-6 cl/L</td>
</tr>
<tr>
<td><strong>Gélatine Spéciale</strong></td>
<td>★</td>
<td>●</td>
<td>★</td>
<td>★</td>
<td></td>
<td>★</td>
<td>Aged wine</td>
<td>2-10 cl/L</td>
</tr>
<tr>
<td>Vins Fins</td>
<td>L</td>
<td>liquid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Geldor®</strong></td>
<td>★</td>
<td>●</td>
<td>★</td>
<td>★</td>
<td></td>
<td>★</td>
<td>Young fruity wine / Thermovinification</td>
<td>1-5-6 cl/L</td>
</tr>
<tr>
<td><strong>Gélatine de Russie</strong></td>
<td>★</td>
<td>●</td>
<td>★</td>
<td>★</td>
<td></td>
<td>★</td>
<td>Press wine</td>
<td>1-5 cl/L</td>
</tr>
<tr>
<td>Supérieure</td>
<td>L</td>
<td>liquid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gelfine®</strong></td>
<td>★</td>
<td>●</td>
<td>★</td>
<td>★</td>
<td></td>
<td>★</td>
<td>Aged wine</td>
<td>3-10 g/L</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>powder</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>OVALBUMIN</strong></th>
<th>STRUCTURE</th>
<th>ROUNDNESS</th>
<th>COLOR STABILITY</th>
<th>DECREASE VEGETAL</th>
<th>PROTEIN STABILISATION</th>
<th>REMEDY OXIDATION</th>
<th>TYPE OF WINE / APPLICATION</th>
<th>DOSAGE*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ovaline®</strong></td>
<td>★★</td>
<td>●</td>
<td>★</td>
<td>★</td>
<td></td>
<td>★</td>
<td>Wine for laying down</td>
<td>1-9 cl/L</td>
</tr>
<tr>
<td><strong>Albumine d’œuf</strong></td>
<td>★★</td>
<td>●</td>
<td>★</td>
<td>★</td>
<td></td>
<td>★</td>
<td>Wine for laying down</td>
<td>5-10 g/L</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>liquid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>ISINGLASS</strong></th>
<th>STRUCTURE</th>
<th>ROUNDNESS</th>
<th>COLOR STABILITY</th>
<th>DECREASE VEGETAL</th>
<th>PROTEIN STABILISATION</th>
<th>REMEDY OXIDATION</th>
<th>TYPE OF WINE / APPLICATION</th>
<th>DOSAGE*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Colle de poisson LA</strong></td>
<td>★★</td>
<td>●</td>
<td>★</td>
<td>★</td>
<td></td>
<td>★</td>
<td>Wine for laying down</td>
<td>1-3 g/L</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>powder</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>FINING ADJUVANTS</strong></th>
<th>STRUCTURE</th>
<th>ROUNDNESS</th>
<th>COLOR STABILITY</th>
<th>DECREASE VEGETAL</th>
<th>PROTEIN STABILISATION</th>
<th>REMEDY OXIDATION</th>
<th>TYPE OF WINE / APPLICATION</th>
<th>DOSAGE*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Blankasit Super</strong></td>
<td></td>
<td></td>
<td>★</td>
<td>★</td>
<td></td>
<td>★</td>
<td>Increase the efficacy of protein fining</td>
<td>2-5 cl/L</td>
</tr>
<tr>
<td>(Acid silica gel)</td>
<td>L</td>
<td>liquid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gel de Silice</strong></td>
<td></td>
<td></td>
<td>★</td>
<td>★</td>
<td></td>
<td>★</td>
<td>Increase the efficacy of protein fining</td>
<td>3 cl/L</td>
</tr>
<tr>
<td>(Alkaline silica gel)</td>
<td>L</td>
<td>liquid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Guidelines only: carry out fining trials to determine the optimal dose for each type of must and wine. Respect the maximum authorized doses according to the current regulations.**

L : liquid  G : granulated  P : powder  MG : micro-granulated
Stabilisation strategy helps to increase the effectiveness of oenological treatments, to limit the number of subsequent treatments, and also to limit organoleptic losses (colour, aromas).

**Manno'Sense®** Magnify the balance of wines

Manno'Sense® is a formulation of mannoproteins rich in sapid peptides. Mannoproteins are released during yeast autolysis and play a crucial role in the perception of sucrosity in dry wines.

Manno'Sense® is a natural solution which improves the organoleptic qualities of white, rosé and red wines.

Manno'Sense®:

- Increases roundness and sucrosity
- Adds balance and freshness on the palate
- Improves length of aromas
- Does not have an effect on the clogging index or the CFLA (Lamothe-Abiet Criteria of Filtration)
- Plays a role in tartaric stabilisation

**Tasting results of wines (15 trained tasters) after treatment with Manno'Sense®**

10 cL/hL before bottling

<table>
<thead>
<tr>
<th>Control</th>
<th>Manno'Sense®</th>
</tr>
</thead>
<tbody>
<tr>
<td>White wine from Gers (Colombard), 2018</td>
<td></td>
</tr>
<tr>
<td>Volume on the palate</td>
<td></td>
</tr>
<tr>
<td>Length</td>
<td>Sucrosity</td>
</tr>
<tr>
<td>4.00</td>
<td>2.00</td>
</tr>
<tr>
<td>3.00</td>
<td>1.00</td>
</tr>
<tr>
<td>2.00</td>
<td>0.00</td>
</tr>
<tr>
<td>1.00</td>
<td>Balance</td>
</tr>
<tr>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Médoc (Cabernet Sauvignon, Merlot), 2019</td>
<td></td>
</tr>
<tr>
<td>Volume on the palate</td>
<td></td>
</tr>
<tr>
<td>Length</td>
<td>Sucrosity</td>
</tr>
<tr>
<td>4.00</td>
<td>2.00</td>
</tr>
<tr>
<td>3.00</td>
<td>1.00</td>
</tr>
<tr>
<td>2.00</td>
<td>0.00</td>
</tr>
<tr>
<td>1.00</td>
<td>Balance</td>
</tr>
<tr>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>

**Subli'Sense®** Sublime flavors

Solution of gum arabic and mannoproteins for organoleptic improvements of your wines.

- Increases the unctuosity and flavour
- Enrobes the tannins
- Improves the softness and length on the palate

"**Subli'Sense**, improves the mouthfeel and flavour of wines without giving excess heaviness."
KILLBRETT® Take control

Made 100% from a high purity chitosan exclusively of fungal origin.

To eliminate Brettanomyces, KillBrett® is shown to be the easiest solution, most gentle on the wines against DMDC and physical treatments. KillBrett® chitosan causes the lysis of the cell walls of Brettanomyces and its sedimentation at the bottom of the barrel or tank.

Killbrett® is a natural product, non-animal origin and non-allergic, produced of 100 % fungal chitosan (Aspergillus niger) which the reduction of microbial load is widely demonstrated.

Effect of KillBrett® on Brettanomyces populations

<table>
<thead>
<tr>
<th>Initial population = 3000 cell/ml</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kilbrett® 2 g/hL</td>
</tr>
<tr>
<td>KillBrett® 4 g/hL</td>
</tr>
<tr>
<td>Kilbrett® 2 g/hL + VinoTaste® Pro 15 g/hL</td>
</tr>
</tbody>
</table>

Recommended dosages:

<table>
<thead>
<tr>
<th>Initial contamination</th>
<th>Recommended treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderate ± 10² cell/mL</td>
<td>KillBrett® 4g/hL</td>
</tr>
<tr>
<td>High ± 10³ cell/mL</td>
<td>KillBrett® 4g/hL + VinoTaste® Pro 10g/hL</td>
</tr>
<tr>
<td>Very high ≥ 10⁴ cell/mL</td>
<td>KillBrett® 6g/hL + VinoTaste® Pro 10g/hL</td>
</tr>
<tr>
<td>Preventive treatment  (after MLF)</td>
<td>KillBrett® 4g/hL</td>
</tr>
</tbody>
</table>

KillBrett® causes cellular lysis and a fining of Brettanomyces thus saving your wines from contamination. We recommend that you adapt the treatment according to the observed population of Brettanomyces.

KILLBACT® Take control

Made from fungal chitosan and lysozyme.

KillBact® is a tool specifically formulated to reduce and control microorganism populations as bacterial (lactic and acetic) and yeast populations. It avoids negative impacts related to spoilage microorganisms present in the wine (risks reduction of volatile acidity or phenol ethyls production).

The use of KillBact® can limit SO₂ doses added during aging when winemaking goal is without sulphites or dose reduction.

KillBact® is a natural product, produced of fungal chitosan (Aspergillus niger) and lysozyme, which the reduction and the control of microbial load is widely demonstrated.

<table>
<thead>
<tr>
<th>Total yeasts (UFC/mL)</th>
<th>Acetic bacteria (UFC/mL)</th>
<th>Lactic bacteria (UFC/mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control without SO₂ (2 g/hL)</td>
<td>Control without SO₂ (2 g/hL)</td>
<td>Control without SO₂ (2 g/hL)</td>
</tr>
<tr>
<td>KillBact® (15 g/hL)</td>
<td>KillBact® (15 g/hL)</td>
<td>KillBact® (15 g/hL)</td>
</tr>
</tbody>
</table>
**VINOPROTECT®**

Cellulose gum for white wine stabilisation against the risk of precipitation of potassium bitartrate.

As well as its incredible efficacy, Vinoprotect® also allows you to save preparation time, to reduce the risk of filter clogging and any over- or under-dosage in the final product.

**TO KNOW**

- Vinoprotect®, is a product with a very low viscosity, it is actually a liquid solution which is both easy to use, to mix in the tanks, and well adapted to in-line injection using a dosing pump.

**DOSAPOMPE**

Dosapompe is an in-line injection system for liquid enological products, specially designed for automatised in-line continuous injection. It allows any type of liquid product to be safely added to the wine, even the most viscous, such as gum arabic, cellulose gum, liquid SO₂, RCM, enzymes…

- Avoids loss of product and premature clogging of filter cartridges.
- Guarantees the hygiene and entire integrity of the product and the wine since the product is injected directly from the container.
- Easy cleaning and in-line disinfection through a completely automatised programme.
- Ensures perfect traceability thanks to a management system for batches and volumes.

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>PRODUCTION LINE RATE</th>
<th>DOSAGE RATE</th>
<th>DOSAGE PRECISION</th>
<th>MAX. PRESSURE PUT ON LINE</th>
<th>WORKING TEMPERATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dosapompe 100-20</td>
<td>Up to 10 000 bottles/h</td>
<td>Up to 20 liters/h</td>
<td>+/- 3% with calibration</td>
<td>4 bars</td>
<td>5 to 60°C (resistant to vapour)</td>
</tr>
<tr>
<td>Dosapompe 200-50</td>
<td>Up to 20 000 bottles/h</td>
<td>Up to 50 liters/h</td>
<td></td>
<td>7 bars *</td>
<td></td>
</tr>
</tbody>
</table>

* Compatible with counter-pressure bottling line

« The gum arabics offered by Lamothe-Abiet conform with our quality expectations for stabilisation and giving roundness in wines. After having good results, we decided to install a dosapump to make it easier to do in-line mixing. »

Thomas TROULAY, Wine manager
Vignerons de Puisseguin - Lussac Saint-Emilion, FRANCE
### Guidelines only: carry out trials to determine the optimal dose for each type of wine. Respect the maximum authorized doses according to the current regulations.

**ARABIC GUMS**

<table>
<thead>
<tr>
<th>ARABIC GUMS</th>
<th>STABILISATION</th>
<th>APPLICATION</th>
<th>DOSAGE*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gomme LA</td>
<td>L</td>
<td></td>
<td>10 cl/hL</td>
</tr>
<tr>
<td>Gomme Standard</td>
<td></td>
<td></td>
<td>10 cl/hL</td>
</tr>
<tr>
<td>Polygom</td>
<td></td>
<td></td>
<td>5-30 cl/hL</td>
</tr>
<tr>
<td>Vinogom®</td>
<td>MG</td>
<td></td>
<td>5-30 cl/hL</td>
</tr>
<tr>
<td>Excelgom®</td>
<td>MG</td>
<td></td>
<td>15-120 g/hL</td>
</tr>
</tbody>
</table>

**TARTARIC AND MICROBIOLOGICAL STABILISATION**

<table>
<thead>
<tr>
<th>TARTARIC AND MICROBIOLOGICAL STABILISATION</th>
<th>STABILISATION</th>
<th>APPLICATION</th>
<th>DOSAGE*</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARABIC GUM AND MANNOPROTEINS</td>
<td>L</td>
<td></td>
<td>10-30 cl/hL</td>
</tr>
<tr>
<td>MANNOPROTEINS</td>
<td></td>
<td></td>
<td>2.5-15 cl/hL</td>
</tr>
<tr>
<td>CMC</td>
<td></td>
<td></td>
<td>≤ 40 cl/hL</td>
</tr>
<tr>
<td>CREAM OF TARTAR</td>
<td>L</td>
<td></td>
<td>4 g/L</td>
</tr>
<tr>
<td>METATARTARIC ACID</td>
<td></td>
<td></td>
<td>10 g/hL</td>
</tr>
<tr>
<td>CHITOSAN</td>
<td></td>
<td></td>
<td>2-10 g/hL</td>
</tr>
<tr>
<td>LYSOZYME</td>
<td></td>
<td></td>
<td>10-50 g/hL</td>
</tr>
<tr>
<td>CHITOSAN AND LYSOZYME</td>
<td></td>
<td></td>
<td>7-35 g/hL</td>
</tr>
<tr>
<td>SORBATE</td>
<td></td>
<td></td>
<td>10-20 g/hL</td>
</tr>
<tr>
<td>SO₂</td>
<td></td>
<td></td>
<td>According to objectives</td>
</tr>
</tbody>
</table>

**CHARCOALS**

<table>
<thead>
<tr>
<th>CHARCOALS</th>
<th>STABILISATION</th>
<th>APPLICATION</th>
<th>DOSAGE*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Géospriv</td>
<td>G</td>
<td>+ decontaminating</td>
<td>20-100 g/hL Before the end of AF</td>
</tr>
<tr>
<td>Super Ultose TS</td>
<td>P</td>
<td>+ discolouring</td>
<td>≤ 100 g/hL</td>
</tr>
</tbody>
</table>

* Guidelines only: carry out trials to determine the optimal dose for each type of wine. Respect the maximum authorized doses according to the current regulations.

L : liquid  G : granulated  P : powder  MG : micro-granulated  ET : effervescent tablets  C: crystal
Having first released sticks with a thick format, Œnobois® continue in this direction with the launch of 18mm Staves. The use of “thick” oak with a longer contact period allows the oak compounds to diffuse progressively. The compounds in the oak and the wine will polymerise gradually. The aromas last longer over time, and the wine finds a better balance, with greater finesse and elegance.

**ŒNOBOIS® 18mm Staves & Blocks**

Œnobois® 18mm Staves are the result of a two-step toast (Double Toast Process):
- the first slow toast **works evenly on the whole wood mass**;
- the second superficial toast **helps to increase aromatic complexity**.

The resulting profiles are characterised by **intense and complex aromas that emphasise the wine’s finesse and length on the palate**.

Œnobois® 18mm Blocks are made from Œnobois® 18mm Staves. Their small size allows wines with shorter maturation to benefit from a new dimension of organoleptic complexity.

---

**Analyses of wood volatile compounds after 9 months of contact**

Cabernet Sauvignon • Bordeaux

- The “lightest” toasting profile
- Freshness of the fruit, coconut and vanilla aromas
- Sweetness and roundness

- The most “moderate” toast
- Notes of vanilla, caramel, crème brulée and roasted coffee
- Complexity and length

- The toast with the most “character”
- Intense aromas of roasted coffee, mocha, smokiness, but also fresher as licorice and eucalyptus
- Freshness and tension

---

**Graph**

- Control
- Origin
- Expression
- Absolute

- Eugenol (clove)
- Gaïacol (smokey)
- 4-Méthylgaïacol (smokey, pharmaceutical)
- Cis-Whiskylactone (coconut)
- Trans-Whiskylactone (coconut)
- Vanilline (vanilla)
- Furfural (almond)
- 5 Méthyl-furfural (roasted almond)
**ŒNOBOIS® STICKS & ŒNOBOIS® 3D**

The aim of Œnobois® Sticks is to obtain the most integrated toasting profile as best as possible, since the wood/wine exchanges can take place throughout the entire winemaking process.

This has two effects on the taste: the aromas are found to be more precise, and the tannic structure is found to be more fine and silky.

**Vinification with sticks**

«Objectives and benefits of the method: vinification with sticks is an alternative technique that does not replace barrels. It allows a qualitative, integrated oak character whilst addressing the issues of production costs.

Linked to the thickness of the stick, this practice gives roundness, volume, a complex aromatic profile, and participates in a greater colour intensity. It has a great benefit on mid-quality batches with the aim of integrating them into the top wine.»

Antoine MÉDEVILLE, Œnoconseil Laboratory, Pauillac - FRANCE.

The cube shaped Œnobois® 3D (with sides of 22mm) are made from Œnobois® Sticks. They therefore exactly match the delicate and complex aromatic profiles obtained through the toasting of the sticks. They combine the singular effects of the thickness of the Œnobois® Sticks with the ease of use of chips. They help to guide the maturation of wines with precision and finesse.

### Aromatic analyses

**Merlot • Bordeaux**

<table>
<thead>
<tr>
<th>Furfural (almond)</th>
<th>Eugénol (cloves)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>0</strong></td>
<td><strong>3,5</strong></td>
</tr>
<tr>
<td><strong>0,5</strong></td>
<td><strong>3,0</strong></td>
</tr>
<tr>
<td><strong>1,0</strong></td>
<td><strong>2,5</strong></td>
</tr>
<tr>
<td><strong>1,5</strong></td>
<td><strong>2,0</strong></td>
</tr>
<tr>
<td><strong>2,0</strong></td>
<td><strong>1,5</strong></td>
</tr>
<tr>
<td><strong>2,5</strong></td>
<td><strong>1,0</strong></td>
</tr>
<tr>
<td><strong>3,0</strong></td>
<td><strong>0,5</strong></td>
</tr>
<tr>
<td><strong>3,5</strong></td>
<td><strong>0</strong></td>
</tr>
<tr>
<td><strong>4</strong></td>
<td><strong>0</strong></td>
</tr>
</tbody>
</table>

**TO** | **1 month** | **2 months** | **3 months**

- **Œnobois® 3D Medium**
- **Stick Medium**
- **Œnobois® 3D Highlight**
- **Stick Highlight**
Œnoblend® is a unique and original range of chips created by blending oaks of different origins and different toasts. Developed by a team of aromaticians and enologists, this range makes use of the sensorial pyramid, as described by experts in the field of perfumery and aroma creation. Their profiles are a perfect illustration of the alliance of aromatic precision with modern styles.

Œnoblend® Chic
- Oaky and spicy

Œnoblend® Fun
- Gourmand and sweet

Customise your Sticks Inside:
Œnobois® now offers the possibility to custom-make personalised recipes by blending different toasts into the same Stick inside. The goal is to add complexity and individuality to the aromas for each barrel.

Optimise your choice of oak for winemaking:
On our ŒnoSolutions mobile app, available on the Appstore and Google Play Store
### Sticks, 3D, Staves and Blocks

<table>
<thead>
<tr>
<th>Sticks 2,2 x 2,2 x 90 cm 3D 2,2 x 2,2 x 2,2 cm French oak</th>
<th>Highlight</th>
<th>COCO, VANILLA, SWEETNESS</th>
<th>CARAMEL, SMOKY NOTES</th>
<th>FINESSE</th>
<th>AF</th>
<th>MLF</th>
<th>AGEING</th>
<th>TYPE OF WINE</th>
<th>RECOMMENDATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sticks 2,2 x 2,2 x 90 cm 3D 2,2 x 2,2 x 2,2 cm French oak</td>
<td>Highlight</td>
<td>***</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>●</td>
<td>***</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium +</td>
<td>●</td>
<td>●</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staves 1,6 x 5 x 90 cm Blocks 1,8 x 5 x 5 cm French oak</td>
<td>Origin</td>
<td>***</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expression</td>
<td>●</td>
<td>●</td>
<td>***</td>
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<td></td>
</tr>
<tr>
<td>Absolute</td>
<td>●</td>
<td>●</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

**Contact time (varies according to dosage, wine and objective)**

3D: 2 to 4 month

Sticks: 6 to 10 month

Blocks: 3 to 6 month

Staves: 8 to 12 month

### Chips and Granulars

<table>
<thead>
<tr>
<th>Chips and Granulars</th>
<th>Highlight the Fruit, Respect the Typicity</th>
<th>COCO, VANILLA, SWEETNESS</th>
<th>CARAMEL, SMOKY NOTES</th>
<th>Bring Structure</th>
<th>AF</th>
<th>MLF</th>
<th>AGEING</th>
<th>TYPE OF WINE</th>
<th>RECOMMENDATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chips French oak</td>
<td>Fresh</td>
<td>***</td>
<td>●</td>
<td>●</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Light</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>●</td>
<td>***</td>
<td>●</td>
<td></td>
<td>***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Medium +</td>
<td>●</td>
<td>●</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chips American oak</td>
<td>Medium</td>
<td>●</td>
<td>***</td>
<td>●</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Medium +</td>
<td>●</td>
<td>●</td>
<td>***</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Chips CŒNOBLEND®**

<table>
<thead>
<tr>
<th>Chips CŒNOBLEND®</th>
<th>Highlight the Fruit, Respect the Typicity</th>
<th>COCO, VANILLA, SWEETNESS</th>
<th>CARAMEL, SMOKY NOTES</th>
<th>Bring Structure</th>
<th>AF</th>
<th>MLF</th>
<th>AGEING</th>
<th>TYPE OF WINE</th>
<th>RECOMMENDATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chic Oaky and spicy</td>
<td>***</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fun Gourmand and sweet</td>
<td>●</td>
<td>***</td>
<td>●</td>
<td>●</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pure Natural and fruity</td>
<td>***</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Contact time: 4 - 8 weeks.**

### Granular French oak

<table>
<thead>
<tr>
<th>Granular French oak</th>
<th>Highlight the Fruit, Respect the Typicity</th>
<th>COCO, VANILLA, SWEETNESS</th>
<th>CARAMEL, SMOKY NOTES</th>
<th>Bring Structure</th>
<th>AF</th>
<th>MLF</th>
<th>AGEING</th>
<th>TYPE OF WINE</th>
<th>RECOMMENDATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oenofresh®</td>
<td>***</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fresh</td>
<td>***</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Light</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>●</td>
<td>***</td>
<td>●</td>
<td>●</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Contact time: 1-2 weeks.**

### Granular American oak

<table>
<thead>
<tr>
<th>Granular American oak</th>
<th>Highlight the Fruit, Respect the Typicity</th>
<th>COCO, VANILLA, SWEETNESS</th>
<th>CARAMEL, SMOKY NOTES</th>
<th>Bring Structure</th>
<th>AF</th>
<th>MLF</th>
<th>AGEING</th>
<th>TYPE OF WINE</th>
<th>RECOMMENDATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium</td>
<td>●</td>
<td>***</td>
<td>●</td>
<td>●</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Possible use during MLF or ageing according to recommendations of your winemaker.**

**Contact time: 1-3 weeks.**

### Sticks Inside and Oak Inside

<table>
<thead>
<tr>
<th>Sticks Inside and Oak Inside</th>
<th>Highlight the Fruit, Respect the Typicity</th>
<th>BRING ROUNDEDNESS AND WEIGHT</th>
<th>CARAMEL, SMOKY NOTES</th>
<th>BRING FINESSE</th>
<th>AF</th>
<th>MLF</th>
<th>AGEING</th>
<th>TYPE OF WINE</th>
<th>RECOMMENDATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sticks Inside French oak</td>
<td>HighLight</td>
<td>***</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>●</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Medium +</td>
<td>●</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oak Inside Diameter of balls: 3 cm French oak</td>
<td>HighLight</td>
<td>***</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>●</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Medium +</td>
<td>●</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SPARKLING WINES

Lamothe-Abiet has developed a range of specialised products for the production of sparkling wines. These are equally suitable for winemaking using the "traditional method" as for in sealed tanks (Charmat method).

1. PRODUCTION OF THE BASE WINE

For the alcoholic fermentation of the base wine, and for the secondary fermentation, we have selected 3 yeast strains capable of giving the different wine profiles that may be sought after:

- **Excellence® E2F**: the most hardy yeast, for the objective of aromatic purity. Yeast resistant to alcohol, pressure, to hostile environments, produces a good quality of bubbles.
- **Excellence® TXL**: varietal yeast, for the objective of volume and finesse.
- **Excellence® STR**: the most aromatic yeast, for the objective of aromatic impact.

<table>
<thead>
<tr>
<th>STRAIN</th>
<th>BASE WINE</th>
<th>SECONDARY FERMENTATION</th>
<th>RESTARTING AF</th>
<th>NITROGEN REQUIREMENTS</th>
<th>ALCOHOL TOLERANCE (% Vol.)</th>
<th>VARIETALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>E2F</td>
<td>•••</td>
<td>•••</td>
<td>•••</td>
<td>Low</td>
<td>&gt;17</td>
<td>all</td>
</tr>
<tr>
<td>TXL</td>
<td>••</td>
<td></td>
<td>High</td>
<td>16</td>
<td>all</td>
<td></td>
</tr>
<tr>
<td>STR</td>
<td>•</td>
<td></td>
<td>Medium</td>
<td>15</td>
<td>all</td>
<td></td>
</tr>
</tbody>
</table>

Yeast nutrition:

- **ŒnoStim®**: used at a rate of 30 g/hL in the yeasts’ rehydration water, ŒnoStim® gives the growth factors (vitamins, minerals) and survival factors (sterols, unsaturated fatty acids) necessary for the increase in the number of viable cells. It ensures the yeasts’ survival under difficult conditions.

- **OptiFlore® O**: rich in organic nitrogen, OptiFlore® O gives a rich nutrition to yeasts throughout the alcoholic fermentation. This can decrease the appearance of reductive aromas and ensures regular fermentations and aromatic purity.

2. TIRAGE

Tirage liquor:

- **TANIN E2F®**: selection of gallic and ellagic tannins
  - Protection role: natural antioxidant, blocks polyphenol oxidases and improves the effectiveness of SO₂.
  - Stabilisation role: causes the precipitation of unstable proteins and protects the organoleptic qualities of wines.
  - Organoleptic role: adds elegance and structure to white wines without adding astringency.
Riddling adjuvants:

**BENTOSOL E2F® and ALGINATE E2F®:** riddling adjuvants in liquid formulation

- To optimise the clarification and sedimentation of the yeast
- The deposit formed is compact and improves the quality of the disgorgement
- After remuage, wines are clear, with shine and without residues. The nose remains cleaner and fresher.

**Trial conditions:**
- Crémant de Loire, 2015
- 12 months on laths, riddling on pupitre

Wines treated with Bentosol E2F® and Alginate E2F® (on the right) display less loss during disgorgement than the lead competition product.

For a winery that produces 10 000 hL at 400 €/hL, the **direct saving** is estimated to be 24 000 €.

---

**TO KNOW**

**Mixture of bentonite-alginate:**

Thanks to bentonites with low deproteinising potential, this mixture maintains the finesse and the longevity of the bubbles, whilst having a coagulating effect which aids in the gathering and flocculation of suspended particles.

This leads to the formation of a compact deposit in the bottle, which can be easily eliminated during disgorgement. In either case, the addition of a riddling adjuvant during the tirage process guarantees that the subsequent disgorgement will go smoothly.

**BENTOSOL Protect®:** Mixture of pure bentonite

Easily neutralised by proteins, you must therefore first check that the base wine is not too rich in proteins. If it is, it is sometimes advised to increase the adjuvant dosage by 1 to 2 cL/hL.

---

**EXPEDITION LIQUOR**

- Citric acid: adds liveliness and freshness
- Solution de bisulfite (bisulfite solution): microbiological and anti-oxidising protection
- Acide ascorbique (ascorbic acid) (only to be used with a 10 mg/L minimum of free SO$_2$): antioxidant effect and limits premature ageing
- Gomme LA, Polygom®, Vinogom®: colloidal stabilisation and/or addition of roundness
- Copper sulfate solution: limit reductive tastes
- Subli’Sense®: Add roundness, sweetness, flavour and aromatic persistence
- Softan® Finition: production of a liquor with a profile adapted to consumer demands: roundness and sweetness

---

More information about our E2F® range on our website at LA Solutions / Technical booklets.
DECLARATION ON HONNOR

We hereby confirm that all products and auxiliaries listed below, contain no substances of animal origin. Furthermore, we confirm that for the production of the raw materials no processing aids of animal origin are being used. The substances weren’t tested on animals (conducted or sponsoring directly by our company). This is individually true for all substances (ingredient or auxiliary material), and for the final product.

PRODUCTS AND AUXILIARY MATERIALS CONCERNED

All our products are concerned by this document, except these listed below*.

Informations provided on this product information sheet is intended solely for internal use or for Vegan certification and hasn’t to be send in other case.

* Products that couldn’t be used with this document:
Albumine d’oeuf poudre, Caséimix, Caséine soluble, Colle de poisson LA, Gélatine spéciale vins fins, Gélatine supérieure de Russie, Geldor, Gelfine, Gelflot, Geliclar, Greenfine XL, Ovaline, Lacticide, Killbact, Polymix.

Ambre RAIBON,
Quality Manager
the 26/03/2020
PROTOCOLS

// L.A SOLUTIONS
Lamothe-Abiet offers its expertise for optimising thiol and fermentary ester aromas. The methods shown have proved themselves around the world.

## AROMATIC OPTIMISATION

### Fermentary esters

**Optimal turbidity** = 50 – 100 NTU  
**Optimal AF temperature** = 14-16°C

### TO KNOW

- The production of fermentary esters depends directly on the strain of yeast used. Certain enzymatic activities specific to the yeast are essential for an optimal revelation of acetate esters and ethyl esters of fatty acids. Excellence® STR was selected for this very reason.

### Volatile thiols

**Optimal turbidity** = 150 – 200 NTU  
**Optimal AF temperature** = 18°C

### Oenozym® Clar

**Application:** on the grapes as soon as possible  
**Benefits:**  
- Fast depectinisation of must in cold clarification or flotation

### GreenFine® Range

**Application:** after pressing  
**Benefits:**  
- Clarification of must  
- Removal of polyphenols  
- Colour management

### Oenozym® Crush White

**Application:** on the grapes as soon as possible  
**Benefits:**  
- Depectinise must  
- Extract aroma precursors

### OptiThiols®

**Application:** before AF  
**Benefits:**  
- Stimulates the synthesis of thiols during AF  
- Better preservation of thiols after AF

### GreenFine® Range

**Application:** after pressing  
**Benefits:**  
- Clarification of must  
- Removal of polyphenols  
- Colour management
**ŒnoStim®**

*Application:* in rehydration water for the yeast  
*Benefits:* • optimised fermentation kinetics  
• better implantation of selected yeast

**Excellence® STR**

*Application:* yeast addition  
*Benefits:* • synthesis of fermentary esters  
• good fermentation kinetics

**OptiEsters®**

*Application:* at the end of the first third of AF  
*Benefits:* • stimulate synthesis of fermentary esters during AF

**ŒnoStim®**

*Application:* in rehydration water for the yeast  
*Benefits:* • optimised fermentation kinetics  
• better implantation of selected yeast

**Excellence® FTH / TXL**

*Application:* yeast addition  
*Benefits:* • reveal aroma precursors  
• good fermentation kinetics

**Œnozym® Thiols**

*Application:* start of AF  
*Benefits:* • reveal aroma precursors of 4MSP, 3SH and A3SH

**Post-AFFermentation**

**Optiflore O**

*Application:* after first third of AF  
*Benefits:* • no effect on nitrogen catabolic repression  
• increased aromatic complexity

**Aroma Protect®**

*Application:* after AF or during maturation  
*Benefits:* • protection of thiol aromas thanks to high concentration in glutathione

**Œnozym® Thiols**

*Application:* during maturation  
*Benefits:* • reveal aroma precursors 4MSP and 3SH
In order to meet certain or absolute limits on sulfites in wines, we have characterised different products from the range which might meet winemakers’ needs.

**On white and rosé wines**

**Excellence® B-Nature®**
*Application:* on grapes in hopper, as soon as possible
*Benefits:* • control of microbial flora,
• reduction of compounds that combine SO₂

**Aroma Protect®**
*Application:* on grapes in hopper, as soon as possible
*Benefits:* • consumes dissolved oxygen,
• reacts with quinones

**Tanin gallique à l’alcool**
*Application:* on grapes in hopper, as soon as possible
*Benefits:* • inhibition of oxidases (tyrosinase, laccase)

**On red wines**

**Excellence® B-Nature®**
*Application:* on grapes in hopper, as soon as possible
*Benefits:* • control of microbial flora,
• reduction of compounds that combine SO₂

**Tan&Sense® Volume**
*Application:* on grapes in hopper, as soon as possible
*Benefits:* • consumes dissolved oxygen,
• protects grape tannins and anthocyanins

**Pro Tanin R®**
*Application:* on grapes in hopper, as soon as possible
*Benefits:* • inhibition of oxidases (tyrosinase, laccase)
**Excellence® XR / DS / SP / FR**

Application: when adding yeast
Benefits: low production of SO₂ and compounds that combine SO₂

**GreenFine®**

Application: directly after pressing
Benefits: decrease oxidised and oxidisable compounds

**Thiamine**

Application: at the beginning of AF
Benefits: decreases yeast production of compounds that combine SO₂

**Tan&Sense® Volume Tan’Excellence® / Softan® Power**

Application: after MLF
Benefits: consume dissolved oxygen, protect grape tannins and anthocyanins, colour stabilisation

**Excellence® FTH / TXL / STR / B2**

Application: when adding yeast
Benefits: low production of SO₂ and compounds that combine SO₂

**Aroma Protect®**

Application: after AF (if MLF not desired) or after MLF
Benefits: consumes dissolved oxygen, reacts with quinones

**Killbrett® / Lacticide / Killbact®**

Application: after MLF
Benefits: eliminate brettanomyces populations (Killbrett®) and lactic bacteria (Lacticide)
- reduce populations of lactic bacteria and non-saccharomyces yeasts (Killbrett®)
- holistic management of microbial populations (Killbact®)

**Œno 1®**

Application: in the hours following the start of AF
Benefits: shorten the gap between AF and MLF through early coinoculation: limit microbial contamination and oxidations.

**Clarification**

**Fermentation**

**Post-MLF**

**Post-AF**
Discover Œnosolutions, Lamothe-Abiet’s mobile app available on Android and iOS. A real partner for winemakers and cellar masters Œnosolutions is an innovative app developed to help with the daily decision-making tasks in the cellar.

The app has enological calculators to help with acidity management, chaptalisation, and other additives… they help you to implement the best solutions, depending on the wine’s characteristics and the desired objective.

Enjoyable and easy to use, this app and its virtual assistant helps you with:

- Active SO₂
- Yeast nutrition
- Restart of alcoholic fermentation
- Choice of enological woods
- Malolactic fermentation management

Download our Œnosolutions mobile app, available on the Appstore and Google Play Store.
DECISION MAKING TOOLS
// L.A SOLUTIONS
Unbalanced due to astrinency

Medium to high in tannins
- Gélatine de Russie supérieure: 3-5 cl/hL
- Polymix® Natur*: 30-80 g/hL
- Clarfine: 30-60 g/hL

Low in tannins
- Gélatine de Russie supérieure: 1-2 cl/hL
- Polymix® Natur*: 10-30 g/hL
- Geldor: 1,5-4 g/hL

Other causes of imbalance
- Treat the cause of imbalance
  - Ex: lack of sweetness
  - > Subli'Sense®, Softan® Sweetness
  - Ex: lack of roundness/volume
  - > Vinotaste® Pro + works on lees

Excess of polyphenols

Secondary oxidation
- Polymix® Natur*: 40-80 g/hL
- Polymix*: 40-80 g/hL
- Clarfine: 40-80 g/hL
- PVPP: 30-60 g/hL
- Caséimix: 40-80 g/hL
- GreenFine® Press: 40-80 g/hL

Bitterness, astrinency
- Polymix® Natur*: 15-30 g/hL
- Polymix*: 15-30 g/hL
- Clarfine: 10-30 g/hL
- GreenFine® Press: 10-40 g/hL

Finishing

High in tannins
- Gélatine spéciale vins fins: 5-10 cl/hL
- Gelfine: 5-10 g/hL
- Ovaline: 5-9 g/hL
- Natur'Fine® Prestige: 10-40 g/hL
- GreenFine® Wine: 10-20 g/hL
- GreenFine® Press: 20-40 g/hL

Medium in tannins
- Geldor: 3-8 cl/hL
- Gélatine spéciale vins fins: 4-8 cl/hL
- Gelfine: 2-4 g/hL
- Ovaline: 3-6 cl/hL
- Natur'Fine® Prestige: 5-20 g/hL
- GreenFine® Wine: 5-10 g/hL

Low in tannins
- Geldor: 1,5-4 cl/hL
- Gélatine spéciale vins fins: 2-4 cl/hL

Clearness
- Colle de poisson LA: 0,5-1,5 g/hL
- Gélatine spéciale vins fins: 1-3 cl/hL
- Geldor: 1,5-3 cl/hL
- Natur'Fine® Prestige: 5-10 g/hL
- GreenFine® Wine: 3-5 g/hL

Protein stability:
- Bentosol Protect (granulated)
- Bentosol powder
- Bentosol FT (tangential)
  - Dosage to be determined by heat test

2020 - 2021/ LAMOTHE-ABIET SOLUTIONS

Unbalanced due to astrinency
AGEING TANNINS: find your solution

**Positioning & Tannins effects depending on time before bottling**

**End of MLF to 30d before bottling**

**Tan&Sense® Volume**
Pure ellagitannins of french oak
- Structure
- Volume
- Freshness
- Antioxidant

**Tan’Excellence®**
Proanthocyanidic tannins of grapes and high-quality oak ellagitannins
- Elegance
- Colour stabilisation
- Tannin balance

**Softan® Power**
Proanthocyanidic and ellagic tannins associated to vegetal polysaccharides
- Soft structure
- Colour stabilisation
- Antioxidant

**60d to 30d before bottling**

**Tan&Sense® Forte**
Pure ellagitannins of french toasted oak
- Intensity
- Length in mouth
- Toasted

**Vinitan® Advance**
Pure grape tannin - unique selection process
- Pure structure
- Sweet structure
- Harmony

**Softan® Sweetness**
Association of toasted fresh oak tannins and vegetal polysaccharides
- Soft structure
- Sucrosity
- Gourmand

**15d to 2d before bottling**

**Softan® Finition**
Association of oak tannins and polysaccharides
- Soft structure
- Sweetness
- Toasted

**Recap of the ageing tannins in chronological order and before bottling**

**POST-MLF**

- MLF
- 60d
- 30d
- 15d
- 2d

**MATURATION**

- Tan&Sense® Volume
- Tan’Excellence®
- Softan® Power

**FINITION**

- Softan® Finition

**FINITION**

- Tan&Sense® Forte
- Vinitan® Advance
- Softan® Sweetness
Clearness and the absence of deposits are essential for white and red wines. Therefore, stabilisation is a crucial step. Lamothe-Abiet provides specific solutions to obtain tartaric, protein and aromatic stabilisation in wines, whilst respecting their organoleptic characteristics.

**WHAT IS TARTARIC PRECIPITATION?**

Tartaric acid is the acid with the highest concentration in grapes. When the concentration is too high (saturation) in musts or wines, it precipitates during the vinification or storage. The crystals (tartar, potassium bitartrate or KHT) can then be seen at the bottom of the bottle. Although these crystals do not affect the organoleptic qualities of the wines, many consumers reject wines that contain them, thinking that they are a fault.

Tartaric acid is found in equilibrium in wines in the form of two salts: potassium hydrogen tartrate (KHT) and neutral calcium tartrate (CaT).

These salts have specific solubilities which vary according to the temperature, the pH and the alcohol content. If the amount of KHT or CaT are greater than the solubility limit at a given temperature, there is therefore the risk of “precipitation”.

**Tartar crystal precipitation in two steps:**

1. **NUCLEATION**
   - complexation of tartaric acid with potassium bitartrate or calcium tartrate

2. **GERM ENLARGEMENT**
   - appearance of crystals that are visible to the naked eye

**STAB K®**
- Mannoproteins
  - Dosage: 5-20 cL/hL
- Vinoprotect | CMC
  - Dosage: ≤ 40 cL/hL

**Antitare 36**
- Metartaric acid
  - Dosage: 10 g/hL

**Antitare 40**

**Cream of tartar + cold**
- Dosage: 4 g/L

**PROMOTES CRYSTALLISATION**
- Crystals are quickly and fully formed, which can then be removed
LAMOTHE-ABIET
Solutions for winemaking

Z.A Actipolis,
23-25 avenue Ferdinand de Lesseps
33610 BORDEAUX-CANEJAN

+33 (0)5 57 77 92 92
contact@lamothe-abiet.com

Distributed in Australia by

Blue H2O Filtration | BHF Technologies
Unit 1/11-13 Wells Rd, Oakleigh VIC 3166, Australia
P.: + 03 9564 7029
info@blueh2o.com.au
www.bhftechnologies.com.au