Affinity™
ECA5

Release the **aromatic power** of your wines.
**What is Affinity™ TCAS?**

**Affinity™ TCAS** is an innovative product to control alcoholic fermentation (AF) and improve aromas expression of most of neutral grape varieties wines for early released and consumption, for white, rosé and red wines.

This product is specially adapted to the technical and economic goals of wineries with large volume.

**Affinity™ TCAS** is a kit composed by a sachet of Active Dry Yeast and a sachet of specific Nutrient: “Stimula”.

- The yeast has an “extra” ordinary genetic potential to biosynthesise aromas precursor and to produce aromatic compounds.
- The Stimula is a specific nutrient, formulated differently from a classic nutrient to compensate nitrogen deficiency for yeast growth and/or to enhance alcohol resistance during AF, but mainly to warrant aroma compounds production during yeast secondary metabolism. The usage of both in combination (yeast and stimula) was studied to enhance aromatic value of most of the grape juices.

5 Esters are over expressed by **Affinity™ TCAS** including the 3 higher alcohol acetates and the 2 essential fatty acid ethyl esters, impacting wine organoleptic profile.

- The 3 higher alcohol acetates the most important:
  - Isoamyl acetate (banana, bonbon anglais)
  - Hexyl acetate (peach)
  - Phenylethyl acetate (Floral notes)

- The 2 essential fatty acid ethyl esters:
  - Ethyl hexanoate (Red fruits)
  - Ethyl octanoate (apricot, pineapple)

**THESE CHARACTERISTICS MAKE THIS PRODUCT BEING A VERY INTERESTING GOOD TOOL FOR BLENDING MANAGEMENT.**
Instructions for use

DOSAGE for 250hL (5kg of Yeast and 10 kg of Stimula) for red, rosé and white wines.

1 - ECAS yeast
- Rehydrate ECA5 yeast in 50L of water (temperature 37°C).
- Dissolve carefully by gentle stirring and wait for 20 to 30 minutes.
- Add to the must. The temperature difference between the must to be inoculated and the rehydration medium should never be over 10°C.
- The total rehydration duration should never exceed 45 minutes.
- It is essential to rehydrate the yeast in a clean container.

Recommendation:
To help yeast to adjust the must temperature and avoid cold shock, slowly combine an equal amount of must with yeast Rehydration solution (this step may be repeated).

2 - Stimula
- Rehydrate the Stimula in 100L of water
- Add to the must just after inoculation of Affinity™ Yeast

Nutrition is a key point when using Affinity™ Kit

Below the limit YAN value (cf Table), apply the classic nutrition strategy.
The YAN limit is lower for Affinity™ Yeast than for classical yeast (low nitrogen requirements). However, whatever the YAN content is (low or high), the use of the “Stimula” is essential at the beginning of the fermentation.

<table>
<thead>
<tr>
<th>Rehydration Temperature</th>
<th>Inoculation rate</th>
<th>Temperature range</th>
<th>Turbidity</th>
<th>Limit YAN</th>
<th>Alcohol potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>37°C</td>
<td>20 g/hL</td>
<td>14°C - 28°C</td>
<td>&gt; 10 NTU</td>
<td>100 mg/L</td>
<td>15% u/v</td>
</tr>
</tbody>
</table>
Sensory Profile of wine fermented with Affinity™: different trials results show some trends in several sensory attributes recognized by professionals and consumers as well.

Rosé de merlot - Gers, 2010 / Sensory analysis (Internal tasting panel – 14 professionals tasters)

Rosé de syrah - Sud-Ouest, 2011 / Sensory analysis (External tasting panel – 14 professionals tasters)

Rosé merlot trials - Gironde, 2010

The best one overall?
The most aromatic intensity?
The most different aromas?
The most fruity intensity?
The most floral intensity?
The most « bonbon » intensity?
The less aggressive?
The most aromatic intensity in mouth?
The most fruity intensity?
The most « bonbon » intensity?
The most aromatic intensity?
The low nitrogen demand and the large range of temperature of usage of **Affinity™** make it an easy-to-use product adapted to large volume management. (Easiest nitrogen deficiency management, with no excessive need of frigories for temperature control). Adapted to fermentation of red, white and rosé wines. A very interesting good tool to develop blend basis, bringing aromatic intensity and complexity thank to an overexpression of 5 important wine aromatic compounds.

Lallemand put considerable effort in understanding wine yeast metabolism and aromas production during wine alcoholic fermentation. **Affinity™** is resulting from studies in collaboration with INRA Montpellier.
Affinity™ is the result of a Lallemand collaboration with the INRA (Institut National de la Recherche Agronomique, Montpellier, France). The aim of this collaboration was based on a study of yeast improvement by orientation of its metabolism through natural evolution process thanks to evolutionary adaptation technics, during a PhD thesis.


**Evolutionary adaptation: principle**

After 70 generations, the phenotype of the adapted yeast when used in alcoholic fermentation has shown very interesting properties for winemaking.

Compared to other classical yeast used for winemaking, **Affinity™** was always showing higher level of production of esters such as isoamyl acetate, ethyl hexanoate.
This over biosynthesis of esters and higher alcohols was explained and described by Dequin and al., (2011) through the study on yeast metabolism and the pentose phosphate pathway amplification.


TO SUMMARIZE, THE Affinity™ IS AN INNOVATIVE YEAST SELECTION APPROACH (PATENT PENDING N°W02011/061702) WITH A NUTRIENT EXCLUSIVELY STUDIED TO ENHANCE AND STIMULATE THE ECAS YEAST PROPERTIES.

F.A.Q.

Do I need to use a protector with Affinity™? No, the kit Affinity™ is sufficient by itself to achieve Alcoholic fermentation in a large range of conditions.

What is the difference between Stimula and Nutrient? The stimula is a nutrient exclusively studied for this yeast:
• To enhance and stimulate ECAS own properties: “big 5 aromas” biosynthesis
• To warrant aromas & balance

What is the compatibility with SIY? Will it change the result? There is no objection in the usage of SIY with Affinity™.

What is the difference between sterol during rehydration and sterol during fermentation? During Fermentation, the sterol participates to ester biosynthesis. During rehydration, the sterols offer the protein that they surround an environment more structured and less prone to strong variation of fluidity, which help them to properly function.

Does The stimula contains sulfate? No, only phosphate sources.

Can I add the Stimula to the rehydration water, and/or can I add both yeast and stimula at the same time? To be efficient, the stimula should be added to the must just after the yeast inoculation.

What about the longevity of the aroma within the next 6 months? Today, it is the best solution as you'll start in any case with a higher level (amount) of esters. In any case, target is short term wine (we must avoid to speak about esters but about aroma compounds).