



CHR HANSEN

Viniflora® FrootZen™ Inoculation & Usage Protocol

Viniflora® FrootZen™ is a direct inoculation yeast product based on a selected strain of *Pichia kluyveri*, isolated from a spontaneously fermenting Chardonnay must by Auckland University (New Zealand), and then developed as a frozen specialty yeast product ready for direct inoculation by Chr. Hansen.

This document is intended to be used in the winery when using FrootZen™, to secure its optimal performance. To get more information about the product content and its oenological characteristics please consult the Product Information Sheet.

Viniflora® FrootZen™ is meant to be used in a **sequential inoculation**, meaning that alcoholic fermentation is initiated with FrootZen™, and then completed by a classical *Saccharomyces cerevisiae* inoculation. This sequence emulates what happens in natural 'wild ferments', where grape juice is initially fermented by non-*Saccharomyces* species before being superseded by *Saccharomyces cerevisiae*, able to rapidly convert sugars into a high concentration of alcohol.

Part 1: Handling of Viniflora® FrootZen™

Viniflora® FrootZen™ is very different from standard Active Dry Yeasts (ADY). The product is frozen and stored at -45°C (-49°F) and does not require re-hydration or activation before inoculation into grape juice/must as it is already hydrated and adapted to survive in grape juice. This convenient feature is called 'direct inoculation' and frees up time for winemakers at a critical time by removing re-hydration and acclimatization steps.

To succeed with Viniflora® FrootZen™ the following inoculation protocol has been developed:

- ❶ Check the grape juice/must parameters are compatible with FrootZen™:
Total SO₂ ≤ 45 ppm
Temperature range 10-20°C (50-68°F) ideally 16-20°C (61-68°F)
- ❷ Wear gloves as the product is deeply frozen
- ❸ Take one box of Viniflora® FrootZen™ out of the -45°C (-49°F) freezer - see Fig. I
- ❹ Remove the bag from the box and the cap protecting the bag - see Fig. II
- ❺ To ease handling, by thawing the product slightly, add the bag to a bucket of water at 10 - 20°C (68°F) for 10 minutes, before removing
- ❻ Cut open the bag with a pair of scissors (or a cutter) following the dotted lines as shown on Fig. III
- ❼ Throw the contents of the bag into a 100 hl tank (10000 liters; 2642 US Gall.) - see Fig. IV
- ❽ Once FrootZen™ has melted into the juice, mix tank to help disperse.

Viniflora® FrootZen™ - INOCULATION PROTOCOL/December 2012/1:4

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If the tank size does not fit with the recommended dosage, you can thaw 1 brick / 1 kg of FrootZen™ into a clean bucket containing 4 litres grape juice. Make sure the sulfite dosage of the grape juice is below 30 ppm (or mg/L) to ensure a good fermentation start. Then use the 5 litres solution to inoculate vessels, e.g. 2 tanks of 50 hl each or 40 barrels of nearly 2.5 hl, for instance.

Fig. I - Box of Viniflora® FrootZen™



Fig. II - Bag of Viniflora® FrootZen™ in its box, topped with its cap (to remove before use)



Fig. III - After 10 minutes in a bucket of cold tap water, cut open the bag following the dotted lines



Fig. IV - Pour the content of a bag in a tank... and let the yeast initiate the fermentation



Part 2: Sequential inoculation with Viniflora® FrootZen™, follow up and key steps.

After inoculation into the grape juice, fermentation will start within a few hours delivering two tangible signs: CO₂ release and production of intense fruity/floral aromas. The conversion of sugars into ethanol is slow compared to standard wine yeasts, hence the kinetics are not comparable with traditional *Saccharomyces cerevisiae*. Average consumption of sugars is less than 1 °Brix per day or 4 points in specific gravity (density) at 16-20°C (61-68 °F).

After 48 hours, winemaker's standard *Saccharomyces cerevisiae* of choice can be inoculated. **The maximum waiting time between the two inoculations should be no more than 72 hours or 3 days.** When adding the *Saccharomyces*, please follow the recommended dosage, the re-hydration guidelines and the nutritional indications delivered by the yeast manufacturer; always check the YAN (Yeast Available Nitrogen) before inoculating a *Saccharomyces cerevisiae*.

Please also note that in some circumstances a film can be observed on top of the must a few hours after the FrootZen™ inoculation - this is not unusual and will dissipate after the *Saccharomyces* inoculation.

To follow the alcoholic and the malolactic fermentation use our monitoring tools available on our web site: www.chr-hansen.com/wine