

## Viniflora® HARMONY

### Product Information

Version: 1 PI-GLOB-EN 01-08-2014

### Description

Viniflora® HARMONY is an optimal blend of *Saccharomyces cerevisiae*, *Torulaspota delbrueckii* and *Kluyveromyces thermotolerans*. The blend gives a safe and reliable alcoholic fermentation, while enhancing the aroma and flavor of the wine. The strains have been especially selected for their flavor impact in wine. Aroma improvement has been achieved with several grape varieties, producing wines characterized by a round and rich flavor, with notes of black fruit. In white wines, enhanced fruity notes were observed. The strains have furthermore been selected for their good compatibility with malolactic bacteria cultures, ensuring a successful malolactic fermentation (MLF).

### Culture composition:

*Saccharomyces cerevisiae*, *Kluyveromyces thermotolerans* , *Torulaspota delbrueckii* .

Material No:	673454		
Size	500g	Color:	Off-white to slightly brown
Type	Vacuum packed alu-foil pouch	Form:	Granulate

### Storage

4 - 8 °C / 39 - 46 °F

### Shelf life

Dried yeast stored according to recommendation will have a shelf life of 24 months.

### Dosage

It is recommended to use one 500g pouch in 35-50 hl / 900-1300 US gallons under normal conditions and in 25-35 hl / 660-920 US gallons under harsh conditions.

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### Application

This yeast blend is provided as a dried culture that should be rehydrated and activated before addition to the wine, as the standard procedure for active dry yeast.

The blend will conduct a secure alcoholic fermentation in red and white grape juice. The culture can tolerate an alcohol level of 16 % vol. and produces very low levels of SO<sub>2</sub> and volatile acids.

Enhanced flavor benefits observed in the following red wine varieties:

- Cabernet sauvignon
- Merlot
- Shiraz
- Pinot Noir

Enhanced flavor benefits observed in the following white wine varieties:

- Chardonnay
- Pinot blanc
- Pinot gris
- Riesling

### Directions for use

1. Rehydration: Add the yeast to unchlorinated tap water (chlorine kills microorganisms such as yeasts) in a ratio 1:10. Water temperature has to be monitored and kept between 20 and 25°C (68-77°F), as *Torulasporea delbrueckii* and *Kluyveromyces thermotolerans* are more sensitive to high temperature than *Saccharomyces cerevisiae*. Therefore, water temperature is a critical factor for a successful fermentation, as a water temperature higher than 25°C (77°F) may kill an important part of the yeast population.
2. Activation: Add un sulphured grape must to the yeast suspension (sulphures/sulfites kill microorganisms such as yeasts) in a ratio of 1:3. Leave the mixture for approx. 20 minutes.
3. Acclimatization: When small bubbles are visible on the surface of the yeast/must mixture, add it to the must tank and pump over to make sure that the yeast is well suspended. If the must has a low temperature (10-15°C/50-59°F) adjust the temperature of the yeast suspension slowly to approx. 20°C/68°F before adding to the must.

### Technical Data

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## Physiological data

Parameter	Value(s)	Comment
<b>Temperature*</b>		
<i>Tolerance limits</i>	10-32° C (50-90° F)	
<i>Optimum</i>	15-28° C (59-82° F)	
<b>SO<sub>2</sub> tolerance*</b>	30 ppm at crush	
<b>Alcohol tolerance*</b>	17.0%	
<b>Nitrogen requirements</b>	medium	Check YAN before inoculation
<b>Sugar to alcohol yield</b>	17.7 g/ % vol	standard
<b>Glycerol yield</b>	5 - 8 g/l	standard

\* note that these inhibitory factors are antagonistic towards each other.

The individual tolerances are valid only if other conditions are favourable.

Check level of SO<sub>2</sub> produced by the yeast used for primary fermentation and be aware of level of free SO<sub>2</sub>.

## Fermentation characteristics

Flavors	Acidic balance	Mouth-feel	Other
Enhance fruit flavors (thiols, esters)	Very low volatile acidity	Medium production of polysaccharides	Low production of SO <sub>2</sub>
Very low volatile phenols	Very low acetic acid		Facilitate MLF
Very low H <sub>2</sub> S			
Balanced 'wild ferment' effect			

## Legislation

The product is intended for food use as an œnological product and complies with the current International Oenological Codex. Chr. Hansen's cultures comply with the general requirements on food safety laid down in Regulation 178/2002/EC and with Council Regulation (EC) No 606/2009 of 10 July 2009, as amended.

The product is intended for food use.

## Product content

Wine yeast products available on the market contain emulsifier used as a processing aid in production. Chr. Hansen wine yeasts products contain less than 1% sorbitane monostereate, a fatty acid from vegetable source. This emulsifier is broadly authorized in food products around the world and has a proven record of safety demonstrated by its E number (E491).

Chr. Hansen wine yeast products content is strictly identical to previous batches delivered before 2010. The only change is the voluntary labelling of the emulsifier used in production as a processing aid.

## Food Safety

No guarantee of food safety is implied or inferred should this product be used in applications other than those stated above. Should you wish to use this product in another application, please contact your Chr. Hansen representative for assistance.

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### Labeling

No labeling required, however please consult local legislation if in doubt.

### Trademarks

Product names, names of concepts, logos, brands and other trademarks referred to in this document, whether or not appearing in large print, bold or with the ® or TM symbol are the property of Chr. Hansen A/S or used under license. Trademarks appearing in this document may not be registered in your country, even if they are marked with an ®.

### Technical support

Chr. Hansen's Application and Product Development Laboratories and personnel are available if you need further information.

### Additional Information

Check the latest news on [www.chr-hansen.com/wine](http://www.chr-hansen.com/wine)

### GMO Information

In accordance with the legislation in the European Union\* we can state that Viniflora® HARMONY does not contain GMOs and does not contain GM labeled raw materials\*\*. In accordance with European legislation on labeling of final food products\*\* we can inform that the use of Viniflora® HARMONY does not trigger a GM labeling of the final food product. Chr. Hansen's position on GMO can be found on: [www.chr-hansen.com/About us/Policies and positions/Quality and product safety](http://www.chr-hansen.com/About us/Policies and positions/Quality and product safety).

\* Directive 2001/18/EC of the European Parliament and of the Council of 12 March 2001 on the deliberate release into the environment of genetically modified organisms and repealing Council Directive 90/220/EEC.

\*\* Regulation (EC) No 1829/2003 of the European Parliament and of the Council of 22 September 2003 on genetically modified food and feed.

Regulation (EC) No 1830/2003 of the European Parliament and of the Council of 22 September 2003 concerning the traceability and labeling of genetically modified organisms and the traceability of food and feed products produced from genetically modified organisms and amending Directive 2001/18/EC.

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### Allergen Information

List of common allergens in accordance with the US Food Allergen Labeling and Consumer Protection Act of 2004 (FALCPA) and EU labeling Directive 2000/13/EC with later amendments	Present as an ingredient in the product
Cereals containing gluten* and products thereof	No
Crustaceans and products thereof	No
Eggs and products thereof	No
Fish and products thereof	No
Peanuts and products thereof	No
Soybeans and products thereof	No
Milk and products thereof (including lactose)	No
Nuts* and products thereof	No
List of allergens in accordance with EU labeling Directive 2000/13/EC only	
Celery and products thereof	No
Mustard and products thereof	No
Sesame seeds and products thereof	No
Lupine and products thereof	No
Mollusks and products thereof	No
Sulphur dioxide and sulphites at concentrations of more than 10 mg/kg or 10 mg/litre expressed as SO <sub>2</sub>	No

\* Please consult the EU Labeling Directive 2000/13 Annex IIIa for a legal definition of common allergens, see European Union law at: [www.eur-lex.europa.eu](http://www.eur-lex.europa.eu)