Viniflora® MERIT

Product Information
Version: 2 PI GLOB EN 02-11-2016

Description
Viniflora® MERIT is a selected strain of Saccharomyces cerevisiae isolated from a Shiraz wine in South Africa. It has a unique fermentation capacity allowing a fast and reliable alcoholic fermentation, especially in red wine fermentations. It has been specifically selected for its high alcohol tolerance and good compatibility with malolactic bacteria, in particular Viniflora® Oenos, CH11, CH16 and CH35. The product is delivered as a Dry Active Yeast to re-hydrate before use.

Culture composition:
Saccharomyces cerevisiae.

Material No: 710679  Color: Off-white to slightly brown
Size 2X5 kg  Type Vacuum packed alu-foil pouch
Form: Powder

Storage
0 - 8 °C / 32 - 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 5kg bag in 250 hl / 6600 US gallons.

Application
This yeast has an alcohol tolerance of 17 vol % and is recommended for red wines in warm climate regions and/or second fermentation in sparkling base wines. It has an approximate conversion of sugar to ethanol of 17.7 g / vol %, depending on the grapes used and the fermentation conditions. The yeast facilitates successful malolactic fermentation through a fast autolysis of the yeast cells and a very low production of SO₂ during alcoholic fermentation. Furthermore it has a very low production of volatile acidity, and a glycerol production of 5-8 g/l. The yeast produces a complex, full-bodied and fruity style of wine with round tannins that emphasize the spicy and fruity flavors of the grape variety.

Recommended for red wine grape varieties:
• Merlot
• Grenache
• Cabernet Sauvignon
• Tempranillo
• Syrah/Shiraz
• Zinfandel
• Carignan
• Petite Shiraz
• Pinotage

Recommended for white wine varieties:
• Chardonnay
• Riesling
• Pinot Gris
• Sauvignon Blanc
• Pinot Blanc

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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 25 and 30°C (77-86 °F); this water temperature monitoring is a critical success factor for a successful ferment. Water temperatures higher than 30°C (86 °F) may kill an important part of the yeast population.

2. Activation: Add unsulphured 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

Physiological data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value(s)</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tolerance limits</td>
<td>10-32°C (50-90°F)</td>
<td></td>
</tr>
<tr>
<td>Optimum</td>
<td>15-30°C (59-86°F)</td>
<td></td>
</tr>
<tr>
<td>SO2 tolerance*</td>
<td>90 ppm at crush</td>
<td></td>
</tr>
<tr>
<td>Alcohol tolerance*</td>
<td>17.0%</td>
<td></td>
</tr>
<tr>
<td>Nitrogen requirements</td>
<td>medium</td>
<td>Check YAN before inoculation</td>
</tr>
<tr>
<td>Sugar to alcohol yield</td>
<td>17.7 g / % vol</td>
<td></td>
</tr>
<tr>
<td>Glycerol yield</td>
<td>5 - 8 g/l</td>
<td>standard</td>
</tr>
</tbody>
</table>

* note that these inhibitory factors are antagonistic towards each other.
The individual tolerances are valid only if other conditions are favourable.
Check level of SO2 produced by the yeast used for primary fermentation and be aware of level of free SO2.

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.

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.
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 ®.

Additional Information
Check the latest news on www.chr-hansen.com/wine

Technical support
Chr. Hansen's Application and Product Development Laboratories and personnel are available if you need further information.
GMO Information
In accordance with the legislation in the European Union* Viniflora® MERIT 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® MERIT 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.


Allergen Information

<table>
<thead>
<tr>
<th>Common Allergens</th>
<th>Present as an ingredient in the product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereals containing gluten* and products thereof</td>
<td>No</td>
</tr>
<tr>
<td>Crustaceans and products thereof</td>
<td>No</td>
</tr>
<tr>
<td>Eggs and products thereof</td>
<td>No</td>
</tr>
<tr>
<td>Fish and products thereof</td>
<td>No</td>
</tr>
<tr>
<td>Peanuts and products thereof</td>
<td>No</td>
</tr>
<tr>
<td>Soybeans and products thereof</td>
<td>No</td>
</tr>
<tr>
<td>Milk and products thereof (including lactose)</td>
<td>No</td>
</tr>
<tr>
<td>Nuts* and products thereof</td>
<td>No</td>
</tr>
<tr>
<td>Celery and products thereof</td>
<td>No</td>
</tr>
<tr>
<td>Mustard and products thereof</td>
<td>No</td>
</tr>
<tr>
<td>Sesame seeds and products thereof</td>
<td>No</td>
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<tr>
<td>Lupine and products thereof</td>
<td>No</td>
</tr>
<tr>
<td>Mollusks and products thereof</td>
<td>No</td>
</tr>
<tr>
<td>Sulphur dioxide and sulphites at concentrations of more than 10 mg/kg or 10 mg/litre expressed as SO₂</td>
<td>No</td>
</tr>
</tbody>
</table>

* Please consult the EU Regulation 1169/2011 Annex II for a legal definition of common allergens, see European Union law at: www.eur-lex.europa.eu