FD-DVS TCC-4
Product Information
Version: 3 PI-EU-EN 11-23-2011

Description
Defined thermophilic lactic acid culture.

Taxonomy
Lactobacillus delbrueckii subsp. bulgaricus
Streptococcus thermophilus

Application
Usage
The culture is primarily applied in the production of Pasta Filata cheese types, e.g. Mozzarella and Pizza cheese types.

Suggested dosage
As a principal rule 1000 U of freeze-dried DVS cultures will correspond to 100 l of active bulk starter. However, specific usage rates should be determined experimentally before a new application.

Recommended inoculation rate

<table>
<thead>
<tr>
<th>Amount of milk to be inoculated (in liters)</th>
<th>1,000 l</th>
<th>2,500 l</th>
<th>5,000 l</th>
<th>7,500 l</th>
<th>10,000 l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of DVS culture</td>
<td>200 U</td>
<td>500 U</td>
<td>1,000 U</td>
<td>1,500 U</td>
<td>2,000 U</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Amount of milk to be inoculated (in lbs)</th>
<th>2,270 lbs</th>
<th>5,500 lbs</th>
<th>11,350 lbs</th>
<th>17,000 lbs</th>
<th>22,700 lbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of DVS culture</td>
<td>200 U</td>
<td>500 U</td>
<td>1,000 U</td>
<td>1,500 U</td>
<td>2,000 U</td>
</tr>
</tbody>
</table>

Directions for Use
Remove cultures from the freezer just prior to use. Sanitize the top of the pouch with chlorine. Open the pouch and pour the freeze-dried granules directly into the pasteurized product using slow agitation. Agitate the mixture for 10-15 minutes to distribute the culture evenly. The recommended incubation temperature is 35-45°C (95-113°F). For more information on specific applications see our technical brochures and suggested recipes.
Range
Cultures in this series include TCC-3, TCC-4, TCC-5, TCC-6 (freeze-dried) and TCC-20 (frozen and freeze-dried).

Storage and handling
< -18 °C / < 0 °F

Shelf life
At least 24 months from date of manufacture when stored according to recommendations. At +5°C (41°F) the shelf life is at least 6 weeks.

Technical Data
Acidification curve

Fermentation conditions:
Lab milk 9.5 % T.S.: 140°C/8 seconds - 100°C/30 minutes
Inoculation: 500U/5000L

Analytical Methods
References and analytical methods are available upon request.
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Legislation
Chr. Hansen's cultures comply with the general requirements on food safety laid down in Regulation 178/2002/EC. Lactic acid bacteria are generally recognized as safe and can be used in food, however, for specific applications we recommend to consult national legislation.

The product is intended for use in food.

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

Labeling
Suggested labeling "lactic acid culture" or "starter culture", however, as legislation may vary, please consult national legislation.

Trademarks
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Dietary status
Kosher: Kosher Dairy Excl. Passover
Halal: Certified

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* we can state that FD-DVS TCC-4 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 FD-DVS TCC-4 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>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</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>Yes</td>
</tr>
<tr>
<td>Nuts* and products thereof</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>List of allergens in accordance with EU labeling Directive 2000/13/EC only</th>
<th>Present as an ingredient in the product</th>
</tr>
</thead>
<tbody>
<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>
</tr>
<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 Labeling Directive 2000/13 Annex IIIa for a legal definition of common allergens, see European Union law at: www.eur-lex.europa.eu

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