

## Thermoflex™ Starter Media

### Thermophilic Bulk Starter Medium

#### Product Information

- Description** Chr. Hansen's Thermoflex Starter Media is a balanced, whey based starter medium. Thermoflex Starter Media provides a high quality starter with optimum activity and phage protection.
- Applications** Thermoflex Starter Media can be used in the production of Italian cheese varieties (Mozzarella, Parmesan, Provolone, Romano, etc.). This medium is formulated to be used at 6% solids and can be used in manual pH control and external pH control bulk starter systems.
- Ingredients** Thermoflex Starter Media contains whey, phosphate buffers, yeast extract, magnesium sulfate, hydrolyzed casein and nonfat dry milk.
- Packaging** Thermoflex Starter Media is packaged in 50 lb. moisture resistant, plastic-lined, multi-walled, paper bags.
- Kosher Status** Thermoflex Starter Media is Kosher approved ( K D ) for year-round use, excluding Passover.
- Storage** Thermoflex Starter Media should be stored in a cool, dry place.
- Use Levels** Use 50 lbs. of Thermoflex Starter Media per 100 U.S. gallons (850 lbs./378 liters) of starter. The **recommended usage levels** are as follows when this medium is used with external pH control:

Starter Volume Desired			Water	Thermoflex Starter Media	HC (Defined )	HR (Defined)	IT (Mixed)	Italiano Neutralizer
US gals.	Liters	lbs.	lbs.	lbs.	70 ml.	130 ml.	130 ml.	(approx. gals)
300	1,135	2,550	2,370	150	2	2	2	½
800	3,030	6,800	6,320	400	4	4	6	1 ¾
1,000	3,785	8,500	7,900	500	4	4	7	2 ½

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## Starter Preparation

1. Add the required amount of water to the starter tank (see chart for usage level).
2. Heat the water for HTST System to 100 to 105°F (38 to 41°C). Heat the water for Conventional System to 130 to 140°F (54 to 60°C).
3. Add the required amount of Thermoflex Starter Media (see chart for usage level). The pH range should be 6.60 to 6.85 (TA range of 0.28 to 0.40).
4. Conventional System - Pasteurize the medium at 185 to 190°F (85 to 88°C) for 40 minutes. HTST System - Follow recommended procedures for pasteurization.
5. Cool the medium to the proper setting temperature 106 to 114°F (41 to 46°C).
6. Inoculate the medium with the desired culture (see chart for usage level) and agitate to distribute the culture evenly. Please refer to Chr. Hansen's product information sheets on the HC, HR, and IT culture systems for the proper culture selection.

## Manual pH Control

7. Allow the pH to develop to a range of 4.80 to 5.00 (TA range of 0.60 to 0.65). This should take approximately 3 hours and 30 minutes to 4 hours after inoculation.
8. Turn the agitator on and add the required amount of Italiano Neutralizer (see chart for use level) until a pH range of 5.80 to 6.40 is reached depending upon the strain balance desired (higher pHs will favor coccus growth). Agitate the starter for 2 to 3 minutes after adding the neutralizer.
9. Allow the pH to develop to a range of 4.80 to 5.00 (TA range of 0.90 to 1.00). This should take approximately 1 to 2 hours after neutralization.
10. Break and cool the starter to 50 to 55°F (10 to 13°C). After cooling, the pH range should be 4.40 to 4.60.

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## External pH Control

7. Continue fermentation using your predetermined set points (contact Chr. Hansen Technical Services to determine the set points for your individual make procedure). **Neutralize with ammonia for a maximum of 10 - 15 injections.**
8. Break and cool the starter to 50 to 55°F (10 to 13°C).

## Further Information

If you would like to order Thermoflex Starter Media or require further information, please contact Chr. Hansen, Inc.

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