



# Freeze-dried Sacco cultures

*General information for cultures consisting of Bifidobacterium and lactic acid bacteria*



*Additional information to culture specific technical sheets*

**Description** Sacco's freeze-dried (FD) Bifidobacterium, lactic acid bacteria, Propionibacterium, and other starter/ripening cultures are direct vat cultures or bulk starter cultures for milk processing. The range of FD cultures ensures a uniform and controlled production of lactic butter, cheese and fermented milk products.

**Application** **Lyofast** (initial numbers 0 to 4): sprinkle the culture powder directly into process milk under aseptic conditions ensuring that the culture is well dispersed by gentle stirring. Alternatively, the culture is hydrated in appropriate water or activated in milk prior to use.  
**Lyoto** (initial numbers 5 to 9): prepare the bulk starter in milk or preferably in a defined medium. Inoculate aseptically with the required inoculation level.

Some product application examples with guidelines for inoculation ranges might be mentioned in the culture specific technical sheet. The inoculation level might vary due to raw materials and processing. Specific advises may be given by Sacco's application staff helping you to find the optimal solution for your process. The fermentative activity of a culture is defined in standard units (UC). Non-starter cultures are available in doses.

**Acidification information** Bulk starter is prepared in Lacmon PM or skim milk pasteurised at 90°C for 40 minutes and cooled to processing temperature. Standardized laboratory acidification tests are conducted in UHT skim milk at defined temperatures. Acidification profiles are to be found in the specific technical sheet for each culture. Furthermore, a standard activity (temperature/time/pH) might be mentioned.

**Activity information** Relevant information about performance of the specific culture is listed in the technical sheet. The full range of activities is listed below but only relevant items are mentioned per culture. For activities measured under standard conditions the unit of the test is mentioned. Otherwise the activity is expressed as a range with – being none, + low/slow, ++ medium, and +++ high/fast activity. The activities are obtained under standardized laboratory conditions, and consequently, should be considered as guidelines.

Item	Explanation	Unit
<b>Culture name</b>		
<b>Optimal temperature for growth</b>	Recommended temperature range for application	°C
<b>Scalding temperature</b>	Maximum recommended scalding temperature	°C
<b>Acidification capability</b>	Lowest pH reached under defined conditions	pH
<b>Acid tolerance</b>	The ability to survive the gastrointestinal tract	Range
<b>Bile tolerance</b>	The ability to survive the gastrointestinal tract	Range
<b>Adherence test</b>	The ability to adhere to intestinal cells	Range
<b>Diacetyl production/ Sensory assessment</b>	Citrate fermentation. Sensory assessment	Range
<b>Urease activity</b>	Able to split urea	Pos.
<b>Gas production/Citrate/Heterofermentative</b>	Origin of gas production	Range
<b>Recommended rotations</b>	To prevent phage problems	Name(s)
<b>Aroma formation (for yoghurt)</b>	Sensory assessment	Range
<b>Post-acidification</b>	Stored at 10°C	Delta pH
<b>Texture formation</b>	Viscosity measured under standard conditions	Sec/g
<b>Proteolytic activity (for cheese)</b>	Empiric information	Range

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En-G-FD Bf/LAB/P-0112-14

**Specification** These specifications are valid for all FD Bifidobacterium, lactic acid bacteria starter cultures, Propionibacterium, and other starter/ripening cultures.

**Heavy metals**

Pb (lead) <1 ppm (mg/kg)

Hg (mercury) <0.03 ppm

Cd (cadmium) <0.1 ppm

The level of heavy metals is controlled by raw material specifications. Random control is conducted on finished starter culture.

**Bacteriological investigation of contaminants**

		Method
<i>Bacillus cereus</i>	<100 CFU/g	Sacco M10
<i>Escherichia coli</i>	<1 CFU/g	Sacco M27
Enterobacteriaceae	<10 CFU/g	Sacco M2
<i>Listeria monocytogenes</i> *	Not detected in 25 g	Sacco M13
Moulds & yeasts	<10 CFU/g	Sacco M3
Salmonella*	Not detected in 25 g	Sacco M12
Coagulase positive staphylococci*	<10 CFU/g	Sacco M11

\*Analysed on regular basis

Analytical methods are available upon request

**GMO** The bacterial strains are not genetically modified (GMO) in accordance with the European Directive 90/220/CEE. The strains are isolated from natural sources. The raw materials used are also GMO free in accordance with Regulative 1829 and 1830/2003. Special statement available upon request.

**Allergens** The raw materials used are generally based on dairy ingredients. All materials are free of the following components and their derivatives: peanut, tree nut, sesame, egg, fish, shellfish, mollusc, crustacean, sulphite, wheat, celery, mustard, soy and lupine. Special statement is available upon request.

**Package data** Lyophilised, cream to brownish culture that might turn darker brown or pinkish. The available sizes are culture dependent and will be mentioned in the technical sheet for each culture. The freeze-dried cultures are packed in water and air proof aluminium pouches.

**Storage** Unopened pouches should be kept at a temperature  $\leq -18^{\circ}\text{C}$  or  $+4^{\circ}\text{C} \pm 3^{\circ}\text{C}$

**Shelf life** Activity will remain for 18 months at  $\leq -18^{\circ}\text{C}$  or 12 months at  $+4^{\circ}\text{C} \pm 3^{\circ}\text{C}$ . The shelf life includes up to 14 days of shipment at temperatures below  $30^{\circ}\text{C}$ .

**Safety information** The safety information is available on a separate safety data sheet accessible on [www.saccosrl.it](http://www.saccosrl.it).

**Certificate** A product certificate is available upon request.

**Kosher** Sacco cultures are generally kosher dairy approved except for surface ripening cultures.

**Halal** Sacco cultures are generally Halal approved except for surface ripening cultures.

**ISO** Sacco S.r.l. is UNI EN ISO 9001:2008 certified.

**Service** Please contact your distributor for guidance and instructions for your choice of culture and processing. Information about package sizes and sales units are also available upon request.

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