

Spoonable Greek-Style Yogurt

Greek yogurt is traditionally a thick, spoonable yogurt with the added step of concentration after fermentation. Historically, this was achieved by filling muslin bags with yogurt and draining the whey; however, at an industrial scale, the concentration is commonly carried out with centrifugal separators.

An alternative process to straining the yogurt is to increase the milk solids at the start of the process, which eliminates the secondary waste stream and reduces the production cost.

This product concept card is designed to show how our ingredients can be used to create products with a range of benefits for you and your consumers.

Typical greek yogurt ingredients are:

- A milk base (raw milk, skim milk, Whole Milk Powder, Skim Milk Powder etc.)
- Texturising/functional ingredients (Milk Protein Concentrate, Whey Protein Concentrate, Whey Protein Isolate stabilisers, emulsifiers, etc.)
- Other (fruit prep, sugar, cultures etc.)

Typical nutritional properties:

Protein: 5.6-12%, Fat: 0-10%, Fermentation Type: Thermophilic, pH: 3.7-4.3

Univar Solutions recommends: WPC515, MPC485 & MPC4861

USP	BENEFITS	CHALLENGES
A combination of functional WPC and functional MPC provides the best performance for desired taste and texture in a high-protein greek-style yogurt	<ul style="list-style-type: none"> • Optimised balance between firmness, powderiness and creamy, indulgent texture • The mix of WPC and MPC provides excellent flavour 	<ul style="list-style-type: none"> • Combination of protein ingredients should be tailored to desired taste and texture

Method

- Mix the ingredients for 30-60 minutes
- Pre-heat to 60°C and homogenize in 2 stages (150/50 bar)
- Heat treatment (90-95°C for 8-10 minutes)
- Cool to 40-45°C
- Inoculate (add culture) and ferment at 40-45°C to target pH, e.g.4.3 – 4.6
- Stir gently to break gel & chill using PHE to -20°C
- Smooth the curd with a back pressure valve to meet desired consistency
- Fill into containers
- Cool to 4°C



Basic recipe

For a Greek-style stirred yogurt at 10% protein

INGREDIENTS	%
Skim Milk	92.1
WPC 515	6.1
MPC 485	1.5
MPC 4861	1.5
Cream	4.2
Culture (non-EPS producer)	

Ingredients: Skim milk, Whey Protein Concentrate 515, White sugar, Sucralose, Culture (non-EPS producer).

SPOONABLE YOGURT	
Nutrition facts	
Amount per 100g	
Energy Value (kcal/kj)	78 / 327
Total Fat	2g
Carbohydrates	5g
Protein	10g
MSNF	16.7g

Key benefits of ingredients

NOTE: *Protein claim percentages are based on individual ingredient application. Combinations possible to increase overall claim.

	Protein claim %	Enables high protein claim	Low viscosity	High viscosity	Smooth mouthfeel	Dairy flavour
MPC 485	1-7					●
MPC 4861	1-6			●	●	●
Sureprotein™ WPC 515	4-10	●	●		●	
Sureprotein™ WPC 550	8-12	●	●			
WPC 356	1-2					

● Excellent

Alternative ingredients

PRODUCT	USP	BENEFITS	CHALLENGES
MPC 485	<ul style="list-style-type: none"> Most cost effective protein source for skim milk replacement 	<ul style="list-style-type: none"> Cost effective protein source Faster fermentation (less pH buffering) compared with skim milk powder Mild flavour Low in lactose Lower addition rates compared with skim milk or SMP reduce volume requirements 	<ul style="list-style-type: none"> Less cold soluble than other ingredients Reduced dispersability compared with other ingredients
MPC 4861	<ul style="list-style-type: none"> Creates a more indulgent mouthfeel due to its creamy texture - reducing reliance on stabilisers 	<ul style="list-style-type: none"> Natural/clean label texture builder Cold soluble Faster fermentation (less pH buffering) compared with skim milk powder Clean flavour Low lactose 	<ul style="list-style-type: none"> Increased viscosity limits addition rate for drinking yogurt Less milky flavour than MPC485
WPC 550	<ul style="list-style-type: none"> Possible to achieve high protein rate in an ambient stable yogurt while retaining a drinkable viscosity 	<ul style="list-style-type: none"> Provides extra protein without increasing viscosity at protein levels >12% Smooth mouthfeel Mild flavour Stable for UHT heat treatment Shorter fermentation times compared with using casein based ingredients 	<ul style="list-style-type: none"> At high addition rates the flavour may become a challenge
WPC 356	<ul style="list-style-type: none"> A cost effective clean label emulsifier and source of dairy protein and fat 	<ul style="list-style-type: none"> Clean label emulsifier due to phospholipid content (avoids sedimentation) Reduces creaming Pre-biotic fibre 	<ul style="list-style-type: none"> Off flavours and insoluble particles can limit addition rate
Galacto-oligosaccharide	<ul style="list-style-type: none"> Source of pre-biotic fibre with functional benefits 	<ul style="list-style-type: none"> Can be used to reduce sugar and fat while still achieving the same mouthfeel (Sweet flavour, smooth texture) 	<ul style="list-style-type: none"> Addition rate is limited due to laxative effect

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