

**IN
FUSE**
by Cargill

Cargill Dairy Solutions

for **HEALTHY**
more **AFFORDABLE**
and **TASTY**
dairy products

Cargill



Custom Dairy Solutions

Cargill is your **co-creation** partner for **growth** in dairy





The Cargill Advantages

Cargill provides unparalleled ingredient portfolio for dairy applications, supported by technical expertise and a reliable supply chain. As a customer-driven supplier, Cargill helps you to develop new solutions that address consumer trends, formulation challenges, and ingredient replacements. We deliver high-quality solutions while helping our customers manage risks and control cost.

- **Insight driven innovation:** Cargill translates **emerging consumer** trends into **winning concepts** that create a distinct competitive advantage
- **Broad solutions portfolio:** We bring your dairy applications to life through our **unparalleled portfolio** of solutions and **application capabilities**
- **Enhanced expertise:** Our **dedicated dairy experts** identify the best solution for your product reformulation, expansion or launch
- **Accelerated sustainability:** We can help you grow by differentiating through sustainability at scale
- **Global supply chain & capabilities:** Get peace of mind through our **global supply chain expertise**





Cargill solutions for optimal product performance in dairy applications

Simplify your business with Cargill's unparalleled ingredient portfolio for the dairy industry. Our wide range of products addresses formulation challenges and enables label-friendly products, while managing risks and controlling costs. We offer texturizers, sweeteners, fibers, oils, cocoa & chocolate, blended ingredient solutions / functional systems. Whether you need to improve phase stability, enhance creaminess, or increase shelf life our expert team is ready to assist.





Label-Friendly

Transparency is a hallmark of Cargill's extensive global supply chain. We have extensive experience working with customers to readily provide solutions that meet consumers' expectations. We'll deliver label-friendly dairy ingredients that meet your needs.

- Replace less desirable ingredients with label friendly ingredients
- Reduce the number of ingredients on the label
- Use ingredients that may enable desirable claims

Smart, Reliable and Quality-Assured Solutions

The food and beverage industry faces rising consumer demands for healthier, lower-sugar options without compromising taste and experience.

We tailor ingredient blends to meet these challenges and develop innovative products for our customers:

- We understand the challenges when removing functional ingredients such as sugar and still ensuring quality and taste remain forefront
- We understand ingredient synergies
- We combine formulation knowledge with a 40+ year experience in blending functional ingredients

Our Promise:

- On-trend: Our unparalleled ingredient portfolio helps you answer challenging consumer demands such as sugar and fat reduction and label-friendly and without the need for reformulation
- Speed: Our blended ingredient solutions allow you to simplify and speed up development and production
- Designed for you: No one blend is the same – starting from your needs, we leverage our broad Cargill ingredient portfolio of over 300 ingredients, to design a tailor-made solution



Cargill Solutions in

DAIRY

Applications







Identity card - Neutral beverages

Definition

Neutral beverages are liquid neutral dairy products with low viscosity

- With different recipes (MSNF* / fat / cocoa type and content / flavor and sugars levels)
- With different ingredients (liquid milk – SMP* – Soy – fat...)
- With different packaging (packs / bottles / cans)
- With different shelf life (HTST*, UHT*, retort): Long shelf-life: 2 - 6 months at room T°C Short shelf-life: 1- 3 weeks at 5-8°C

* MSNF (Milk Solid Non Fat), SMP (Skimmed Milk Powder), HTST (High Temperature Short Time), UHT (Ultra High Temperature)



Cargill Offerings

● Texturizers

Fresh milk: Satiagel™ ABN, Lygomme™ ABN, Lygomme™ TBN, Lygomme™ TGG

Recombined milk (flavored and/or chocolate milk): Lygomme™ ABN ...R

● Sweeteners

Glucose syrup, glucose-fructose syrup and dried glucose: C*Sweet™, C*Sweet™ F, C*Dry™ GL

High Intensity Sweetener: Steviol glycosides Truvia™, ViaTech™

Polyols: Zerose™, C*Sorbitex™, C*Maltidex™

● Cocoa & Chocolate

Consistency For Indulgence & Stability: 10-12% CT70, 10-12% GT50, 10-12% DS 150, DS 200 10- 12% MD100, DP70, DR74, GT78

High-fat Cocoa Powder with Chocolate Taste: 20-22% CT70, 20-22% DP 70, 20-22% GT 50, 22-24 DS 150

Single Origin Cocoa Powders: 10-12% GHL

Organic Cocoa Powder: 10-12% OA01

The Sweety Range for Sugar Reduction: SRB100 & SRB200





Value Propositions of Texturizers

- Prevent cocoa particles sedimentation
- Stabilize fat globules (to avoid creaming)
- Control viscosity and improve mouthfeel
- Efficient at low dosage
- Adapt emulsifier/hydrocolloid combination for recombined beverages

Value Propositions of Sweeteners

- Regulate sweetening intensity
- Reduce sugar level
- Control calorie intake
- Bring additional mouthfeel



Value Propositions of Cocoa & Chocolate

- Stability in beverages
- Consistent performance with sourcing and processing capabilities, bean quality and high microbiological quality standards
- Good combination of taste with chocolaty taste offerings in wide range of products up to consumer and customer preferences with indulgence appearance
- With Gerkens™ special technique during alkalization process: Nice intense colour combined with relatively low pH and alkalinity
- Gerkens™ high-fat cocoa powders: Rich and pleasing mouthfeel; allow for labelling as 'chocolate powder' on the label (when blended with right amount of sugar) in a number of countries
- Organic and Single Origin powders: Organic and single origin claim on the label
- Gerkens® Sweety Cocoa powders are targeted to enable **30% sugar reduction** in the end application, **in a natural way** (without adding any sweeteners or artificial ingredients) and provide **a nice chocolaty taste that is loved by consumers.**



Identity card - Liquid creamers

Definition

Liquid creamers are long shelf life preparations used to flavor and color coffee and tea

- **Dairy creamers** are milk preparations containing milk and cream (between 10-30%)
- **Alternatives to dairy creamers** are milk or cream substitutes. Most of these products milk derivative (sodium caseinate) or vegetable proteins and oils

Value Propositions of Texturizers

- Stabilize fat globules (to avoid creaming)
- Control viscosity and improve mouthfeel
- Create stable emulsion for plant based creamers (emulsifier/hydrocolloid combination)
- Keep product stable during shelf life

Value Propositions of Sweeteners

- Regulate sweetening intensity
- Reduce sugar level
- Control calorie intake
- Bring additional mouthfeel



Cargill Offerings

● Texturizers

Liquid dairy creamers: Satiagel™ ABN, Lygomme™ ACL & TCL

Liquid alternatives to dairy creamers: Satiagel™ ABN, C*Emcap™, Lygomme™ ABN & TBN, Lygomme™ ACL & TCL

● Sweeteners

Glucose syrup, glucose-fructose syrup and dried glucose: C*Sweet™, C*Sweet™ F, C*Dry™ GL

High Intensity Sweetener: Steviol glycosides Truvia™, ViaTech™

Polyols: Zerose™, C*Sorbitol™, C*Maltidex™





Identity card - Acid dairy drinks

Definition

Acid dairy drinks are low viscous beverages similar to milk. They are composed of fermented or neutral base, blended with acidic medium (fruit pulp / concentrate / flavor)

- Various protein (MSNF) concentration
- Various proteic raw material quality (milk, whey, soy, yogurt...)
- Various acidification conditions
- Shelf life: Short (1 month chilled with living cultures) - Long (6 months - 2 years ambient)

Value Propositions of Texturizers

- Stabilize without viscosity
- Avoid proteins precipitation
- Protect the proteins (mainly during thermization)
- Enhance body/mouthfeel

Value Propositions of Sweeteners

- Regulate sweetening intensity
- Reduce sugar level
- Control calorie intake
- Bring additional mouthfeel



Cargill Offerings

- **Texturizers**

Hydrocolloids: UniPECTINE™ AYD 2000/3000/200

Functional systems: Lygomme™ AYD & TYD

- **Sweeteners**

Glucose syrup, glucose-fructose syrup and dried glucose:
C*Sweet™, C*TruSweet™, C*TruSweet™ Plus, C*Dry GL™

High Intensity Sweetener: Steviol glycosides Truvia™, ViaTech™

Polyols: Zerosé (in legal limits), C*Sorbitex™, C*Maltidex™

- **Proteins**

Puris™ 2.0

*Licensed Trademark
of Puris Proteins



Identity card - Plant-based drinks

Definition

A plant-based drink is a dairy alternative obtained:

- Obtained by water extraction of food components from grains and nuts such as soy, oat, almond, rice and so on
- Stabilization by homogenization, sterilization and texturizers such as carrageenan, gellan and galactomannan
- Sweetened naturally by bioconversion or carbohydrates addition
- Emulsification and stabilization of the fat(s) by emulsifiers and 3D network
- Protection and stabilization for acidic plant based drinks (depending on flavoring – fruit juice added)

Value Propositions of Texturizers & Sweeteners

- To reduce and optimize oil droplet size
- To prevent phase separation
- To control mouthfeel and avoid watery texture
- To impart creaminess and cloudiness
- To create a stable emulsion
- To protect proteins during heat treatment





Cargill Offerings

● Texturizers

Hydrocolloids: Satiagel™, UniPECTINE™

Lecithin: Emulpur SF

Maltodextrin: C*Dry™ MD

Functional systems:
Lygomme™ TBN & ABN & QBN

● Sweeteners

High Intensity Sweetener:
Steviol glycosides Truvia™, ViaTech™

Polyols: Zerose™

● Proteins

Puris™ 2.0, Puris 870H

*Licensed Trademark of Puris Proteins





Cheeses

Definition

- **Processed cheeses (spreadable – slices – blocks):** Are made only with dairy ingredients and containing some cheese in the formulation
- **Analogue cheeses:** Used for several application some part of dairy ingredients can be substituted by vegetable fat, vegetable proteins
- **Cream cheeses:** Quark or “fromage frais” is used as an ingredient in the formulation. Combined with other ingredients (salts – stabilizers – flavoring...) it is processed to get the final texture





Value Propositions of Texturizers & Sweeteners

- Improve consistency, body & mouthfeel
- Allow cost reduction (protein / fat levels)
- Improve melting – grating – stretching – oiling off
- Improve shape retention (portion)
- Prevent and control syneresis
- Protect the proteins (avoid sandiness)
- Allow range extension (when quark = ingredient)

Value Propositions of Fats & Oils

Imitation cheeses / Analogue cheeses

- Cost-efficient cheese production
- Sensory performance and flavor release
- Adequate creaminess according to the specific application
- Clean melting and adequate mouth feel
- Excellent performance over time

Cargill Offerings

● Texturizers

Processed cheese - Spreadable: Satiagel™ ACH, Lygomme™ ACH, Flanogen™ ACH & TCH

Processed cheese - Slice: Satiagel™ ACH, Lygomme™ ACH, C*Gel™ LM (potato)

Processed cheese - Blocks: Satiagel™ ACH, Lygomme™ ACH

Imitation cheeses / Analogue cheeses: Turfill™ CF 20, Turfill™ CF 20 H, Turflex™ FD 20, C*Stretch, Lygomme TCH

Cream cheeses: Satiagel™ ACH, Lygomme™ ACH, Flanogen™ ACH & TCH

● Sweeteners

Sweet & flavored cream cheeses:
C*Dry™ MD, C*Dry™ GL, C*Sweet™ low DE

● Fats & Oils

Imitation cheeses / Analogue cheeses:
Turfill™ CF 20, Turfill™ CF 20 H, Turflex™ FD 20

Cargill Malaysia:
Socfat™ 36, Cocolate™ 24, Cocolate™ SP

● Proteins

Plant based block cheese:
Puris™ 870

Spreadable cheese:
Puris™ 870

*Licensed Trademark of Puris Proteins



Identity card - Neutral creams

Definition

Cream is the yellowish fatty component of unhomogenized milk that tends to accumulate at the surface

Three main uses:

- Whipping cream: Perfect whipping properties, with AMF Liquid mixes or recombined
- Cooking/culinary cream: Liquid (3-30% fat) or thick (15-25% fat) with AMF* or heat stable to provide various culinary application, perfect coating applications
- Breakfast cream (20 to 25% fat): With AMF
- Multipurpose cream: In a combination of whipping and cooking cream

Value Propositions of Texturizers

- Avoid fat globules creaming
- Keep product stable during shelf life
- Improve cream whip ability and stability
- Improve cooking cream heat stability
- Protect proteins from flocculation (in soup or sauce)
- Control cream viscosity

* AMF: Anhydrous milk fat

Value Propositions of Sweeteners

- Regulate sweetening intensity & sugar level
- Control calorie intake
- Bring additional dry matter



Value Propositions of Fats & Oils

Whipping Cream & Cooking Cream

- Good overrun performance
- Foam stability for whipping cream
- Heat stability for cooking cream
- Excellent performance over time
- Excellent sensory performance and flavor release
- Adequate creaminess according to the specific application
- Clean melting and adequate mouth feeling
- Lauric solutions for whipping cream
- Lauric & non lauric solutions for cooking cream





Cargill Offerings

- **Texturizers**

Whipping liquid cream: Satiagel™ **ACL**, Lygomme™ **ACL**, C*PolarTex™, Lygomme™ **TCW**

Whipping recombined: Lygomme™ **ACW & TCW ... R**

Liquid cooking cream: Satiagel™ **ACL**, Lygomme™ **ACL & TCL**, DeliTex™, C*Polartex™

Breakfast / Thick cream: Lygomme™ **ACT & TCT**, C*PolarTex™





- **Sweeteners**

Glucose syrup, glucose-fructose syrup and dried glucose:
C*Sweet™ low DE, C*TruSweet™ F30, C*Dry™ GL

Polyols: C*Sorbitol™, C*Maltidex™

- **Fats & Oils**

Whipping Cream: Turcream™ CC 70, Turcoat™ SL 30,
Turcoat™ SL 30 P

Cooking Cream: Turflex™ FD 20, Turfill™ CF 20

Cargill Malaysia: Hysoc™ 36RT, Hysoc™ 36-38



Identity card - Acid / Sour cream

Definition

Sour cream is a dairy product made by fermenting regular cream with certain kinds of lactic acid bacteria. This process sours and thickens the cream, resulting in a tart, thick substance often used as a condiment or in cooking

Sour cream: In the USA and Australia (12 to 16% or more fat)

Crème fraîche: (28% to 38% fat) Slightly soured with culture

Mexican crema: (or cream espesa) Similar to crème fraîche

Smetana: Heavy sour cream (35 - 40% fat) Central Eastern EU

Rjome or rømme: Norwegian (35% fat), similar to Icelandic rjómi

- Acidification: Mesophilic fermentation or direct acidification (edible acid)
- Sour creams: From 5 - 15% (low fat) to 35 - 45% (high fat)



Cargill Offerings

● Texturizers

With or without Gelatin: Lygomme™ **ACA**,
C*PolarTex™

Value Propositions of Texturizers

- Develop correct texture
- Improve consistency, body & mouthfeel (hyd + st)
- Accept fermentation step: neutral to acid (hyd) & process (st)
- Prevent syneresis
- Protect proteins during heat treatment (if existing)
- Allow fat reduction





Identity card - Mousse & Topping

Definition

Mousses and toppings are aerated dairy products

- These products are dairy products that have been aerated by mixing with air or gas. They can be acidic or neutral and need to be stable until consumption
- Fat content and overrun are different according to the subcategory
- Mousses: 4 - 8% fat - overrun: 80 to 120%
- Toppings: 15 - 25% fat - overrun: 150 to 200%

Value Propositions of Texturizers

- Improve whipping properties
- Create partial fat globule coalescence
- Stabilize air phase and avoid bubbles coalescence
- Stabilize water to limit drainage in the time
- Replace gelatin

Value Propositions of Sweeteners

- Regulate sweetening intensity & reduce sugar level
- Control calorie intake
- Bring additional dry matter and consistency

Cargill Offerings

● Texturizers

Mousse with or without gelatin: Lygomme™ ADM, C*Polartex™, C*Tex™

Topping with or without gelatine: Lygomme™ ADM & ACW & TCW, C*Polartex™, C*Tex™

● Sweeteners

Glucose syrup, glucose-fructose syrup: C*Sweet™, C*TruSweet™, C*TruSweet Plus™, C*Dry™ GL

High Intensity Sweetener: Steviol glycosides Truvia™, ViaTech™

Polyols: Zerose™, C*Sorbitex, C*Maltidex™





Identity card - Dairy / Plant based desserts

Definition

Neutral desserts are covering a wide scope of textures and formulations

- Texture: Gelled, semi gelled, creamy
- Shelf life: Short (4-6 weeks) or long (12-18 months)
- Single servings: (100-125 g) or family servings (1 kg)
- Fat: 0 - 5%, Protein: 2 - 4%, Sugar: 8 -14%
- Flavorings: Chocolate / vanilla / coffee / caramel... and more
- Processing: Type of sterilization (UHT or can retort)
- Filling conditions: Hot or cold

Value Propositions of Texturizers

- Select appropriate hydrocolloid & starch according to process and texture
- Get optimum carrageenan/protein synergy
- Control syneresis (flan and gelled milk)
- Control post gelation kinetic (cold filled)
- Allow topping deposition (cold filled)

Value Propositions of Sweeteners

- Regulate sweetening intensity & reduce sugar level
- Control calorie intake
- Bring additional dry matter and consistency

Value Propositions of Cocoa & Chocolate

- Creaminess impression with very fine particle size
- Intense flavour and appetising warm deep colours without grey hues and black spots
- Variety: Gerkens™ Cocoa Powders provide distinctive and consistent flavour profiles as mild cocoa, mild chocolate, fruity notes, full bodied strong cocoa and intense chocolate profiles up to preferences
- Consistent Performance
- Organic and Single Origin powders, Belgium Chocolate: Claims on the label
- Gerkens™ high-fat cocoa powders: Rich and pleasing mouthfeel; allow for labelling as 'chocolate powder' on the label (when blended with right amount of sugar) in a number of countries





Cargill Offerings

● Texturizers

Hot filled desserts: Custard – crème dessert:
Satiagum™ ADC, Lygomme™ ADC, SimPure™,
C*Tex™, C*PolarTex™, C*CreamTex™

Cold filled dessert: Liegeois – crème dessert:
Satiagel™ ADF, SimPure™, C*Tex™, C*PolarTex™,
C*CreamTex™

Flan: Satiagel™ ADG, Flanogen™ ADG,
SimPure™, C*Gel™

Acid desserts: Flanogen™ ADA, Lygomme™ ADA,
SimPure™, C*Gel™

● Sweeteners

Glucose syrup, glucose-fructose syrup: C*Sweet™,
C*TruSweet™, C*TruSweet™ Plus, C*Dry™ GL

High Intensity Sweetener: Steviol glycosides Truvia™,
ViaTech™

Polyols: Zerose™ C*Sorbitex , C*Maltidex™

● Proteins

Plant based dessert: Puris™ 2.0, Puris™ 870H,
Puris™ 870

*Licensed Trademark
of Puris Proteins



● Cocoa & Chocolate

Cocoa Powders For Indulgence: 10- 12% DS200,
10-12% GT50, 10-12% GT78, 10-12% CT70

Cocoa Powders Bold Flavour: 10-12% DB400,
10-12% GT150

High Fat Cocoa powders: 20-22% GT50,
20-22% GT78, 20-22% GT150, 20-22% CT70,
22-24% DR 74, 22-24% DS 150

Belgium Chocolates: Milk, Dark, White

Organic Cocoa Powder: 10-12% OA01,
10-12% ON01, 10-12% POR10G9SO

Single Origin Cocoa Powder: 10-12% DB82,
10-12% GHR, 10-12% GHL, 10-12% AM70





Identity card - Yogurts / Plant based Yogurts

Definition

Yogurts is produced by bacterial fermentation of milk sugar (Lactose) transformed into lactic acid, which coagulates the proteins

- Types (set / stirred / drinkable)
- Flavoring (plain / flavored / with fruit)
- Sweetening intensity (sweetened or not)
- Shelf life (short / long if thermized)
- Market segment (health / indulgence / economic)
- Names: Yogurt – Yoghurt – Yoghourt – Youghurt – Yogourt – Yaourt

Value Propositions of Texturizers

- Improve consistency, body & mouthfeel (hyd + st)
- Accept fermentation step: Neutral to acid (hyd) & process (st)
- Prevent syneresis
- Protect proteins during heat treatment (if thermized)
- Allow cost reduction (protein / fat levels)
- Allow range extension: Liquid – Thick – Gelled – Aerated

Value Propositions of Sweeteners

- Regulate sweetening intensity & reduce sugar level
- Control calorie intake
- Do not modify fermentation step
- Bring additional dry matter and consistency



Cargill Offerings

- **Texturizers**

Set/stirred: UniPECTINE® **AYS**, Satiagar™ **AYS**, SimPure™, C*Tex™, C*PolarTex™, C*CreamTex™, Lygomme **AYS & TYS**

- **Sweeteners**

Glucose syrup, glucose-fructose syrup: C*Sweet™, C*TruSweet™, C*TruSweet Plus™, C*Dry™ GL

High Intensity Sweetener: Steviol glycosides Truvia™, ViaTech™

Polyols: Zerose™, C*Sorbitex™, C*Maltidex™

- **Proteins**

Plant based: Puris™ 870

*Licensed Trademark of Puris Proteins





Identity card - Quark & Fromage frais

Definition

Fromage frais (fresh cheese): Tvorog or quark is made from milk fermented by mesophilic lactic bacteria. The curdled milk is more or less drained after fermentation (centrifugation or ultra-filtration)

Standard recipe:

Total Sugar: 15 to 25% - Protein: 7 to 10% - Fat: 0 to 40%

Quark without drainage: The amount of proteins and fat is determined before fermentation. A stabilizer is also added before fermentation. The final quark texture is obtained after fermentation (no need to drain)

Value Propositions of Texturizers

- Improve consistency, body & mouthfeel
- Prevent and control syneresis
- Protect the proteins (avoid sandiness)
- Allow to produce quark without separation process
- Reduce cost of the formulation (protein / fat levels)

Value Propositions of Sweeteners

- Regulate sweetening intensity & reduce sugar level
- Control calorie intake
- Bring additional dry matter and consistency



Cargill Offerings

- **Texturizers**

Quark without separation: Lygomme™ AYS & TYS

- **Sweeteners**

Glucose syrup, glucose-fructose syrup: C*Sweet™, C*TruSweet™, C*TruSweet™ Plus, C*Dry™ GL

High Intensity Sweetener:
Steviol glycosides Truvia™, ViaTech™

Polyols: Zerosé™, C*Sorbitex™, C*Maltidex™



Identity card - Quark & Yogurt used as ingredients

Definition

Quark and yogurt can be used, once produced, as ingredients in the formulations. Addition of a slurry will allow to get all possible a large variety of textures

- Liquid quark/yogurt like beverage with controlled viscosity
- Thick quark/yogurt like products with high mouthfeel & body
- Gelled quark/yogurt like desserts with cuttable structure
- Aerated quark/yogurt like mousse with controlled overrun
- With keeping living ferments

Value Propositions of Texturizers

- Improve consistency, body & mouthfeel
- Allow important cost reduction
(protein / fat levels)
- Prevent and control syneresis
- Protect the proteins (avoid sandiness)
- Allow range extension: Liquid - Thick -
Gelled - Aerated

Value Propositions of Sweeteners

- Regulate sweetening intensity
& reduce sugar level
- Control calorie intake
- Bring additional dry matter
and consistency





Cargill Offerings

● Texturizers

Creamy texture: Lygomme™ AYS & TYS Flanogen™ ADA, SimPure™, C* PolarTex™

Gelled texture: Flanogen™ ADA

Aerated texture: Lygomme™ ADM

● Sweeteners

Glucose syrup, glucose-fructose syrup: C*Sweet™, C*TruSweet™, C*TruSweet™ Plus, C*Dry™ GL

High Intensity Sweetener: Steviol glycosides Truvia™, ViaTech™

Polyols: Zerose™, C*Sorbitex™, C*Maltidex™





Identity card - Ice cream & Frozen desserts

Definition

Ice Cream & Frozen Desserts

- **Ice cream:** At least 10% dairy fat and 6% non-fat milk solids
- **Frozen desserts:** Edible fats - Proteins and sugars
- **Sherbets:** Frozen desserts composed of fruits, sugars, and approximately 10 to 20% whole milk equivalent
- **Sorbets:** Frozen desserts containing water, sugars, and at least 25% fruit (15-16% for lemon) - No added fat
- **Water ice:** Frozen desserts containing water, sugars, edible acids, and flavors. Generally, they are molded and not aerated (90% of the cases)

Important parameters

- Recipe: MSNF % & quality – Fat % & quality – TS % – Flavors
- Overrun: Not aerated or 80 -120%
- Shape of finished product: Bulk – Sticks – Cones – Pots – Cakes
- Freezing process: Extrusion – Bulk – Molding



Value Propositions of Texturizers

- Stabilize & avoid liquid mix separation
- Stabilize the foam & ease extrusion
- Improve melting properties
- Modify organoleptic properties
- Reduce ice crystal growth & limit shrinkage
- Increase shelf life

Value Propositions of Sweeteners

- Bring additional dry matter and consistency
- Regulate sweetening intensity & reduce sugar level
- Control freezing point of the solutions
- Improve shelf life
- Control calorie intake



Value Propositions of Fats & Oils

Ice cream mass

- Excellent sensory performance and flavor release
- Adequate creaminess and good melting in mouth
- Non hydrogenated solutions
- Good overrun performance
- Good performance during extrusion
- Contributes to texture and mouthfeel
- Excellent performance over time, melting behavior
- Good cooling effect

Ice cream coating

- Provide excellent dipping and pickup rates
- Good crystallization
- Set very quickly leaving a thin yet non-transparent layer on the ice cream surface
- Provide a crunchy coating – snapping – for a distinctive eating experience
- Shiny appearance
- Good melting in mouth

Ice cream cone dough

- Excellent crispy texture
- Taste booster
- Stability to oxidation
- Stability to humidity transfer





Value Propositions of Cocoa & Chocolate

- Dark red brown or brown colours without grey and violet hues and intense flavour
- Consistent performance
- Variety: Gerkens™ Cocoa Powders provide distinctive and consistent flavour profiles as mild cocoa, mild chocolate, fruity notes, full-bodied strong cocoa and intense chocolate profiles up to preferences
- Organic and Single Origin powders,
Belgium Chocolate: Claims on the label
- Gerkens™ high-fat cocoa powders: Rich and pleasing mouthfeel; allow for labelling as ‘chocolate powder’ on the label (when blended with right amount of sugar) in a number of countries





Cargill Offerings

● Texturizers

Ice creams and frozen desserts: Lygomme™ FM, C*DryLight™

Sorbets: Lygomme™ FZ & TFZ

Water ice: Lygomme™ FW

● Sweeteners

Glucose syrup, glucose-fructose syrup: C*Sweet™, C*Sweet™ FT, C*TruSweet™, C*TruSweet™ Plus, C*Dry™

High Intensity Sweetener: Steviol glycosides Truvia™, ViaTech™

Polyols: Zerose™ C*Sorbitol™, C*Maltidex™

● Fats & Oils

Ice Cream Mass: Turcream™ CT 33, Turflex™ FD 20

Ice Cream Coating: Turcream™ CT 17, Turfill™ CF 60, Turcream™ CT 45, Turcoat™ SL 30, Turcoat™ SL 30 P

Ice Cream Cone Dough: TurFill™ CS 01

Ice Cream Mass ROAP: Socfat™ 36, Cocolate™ 24

Cargill Malaysia:

Cocolate™ SP, Hysoc™ 36RT, ICECOAT, Socfat™ 36

● Cocoa & Chocolate

Cocoa Powder For Milk Chocolate

Ice- cream: 10-12% DS200, 10-12% DR79, 10-12% CT70

Cocoa Powder For Dark Chocolate

Ice- cream: 10-12% DB 400, 10-12 % DB 82, 10-12% GT50, 10-12% GT150

High Fat Cocoa Powders: 20-22% GT50, 20-22% GT78, 20-22% GT150, 20-22% CT70

Belgium Chocolates: Milk, Dark, White

Organic Cocoa Powder: 10-12% OA01, 10-12% ON01, 10-12% POR10G9SO

Single Origin Cocoa Powder: 10-12% GHR, 10-12% RS 75



Identity card - Dry mixes

Definition

Dry mixes (ready to use) are powder mixes composed of sugar, native starches, gelling agents, flavors, and colors, allowing the production of multi-texture finished products

Demouldable puddings: Traditionally, the powders are added to milk, then warmed to boiling. The final texture is obtained when the pudding cools down

Creamy desserts: Traditionally, these desserts are prepared from powders dispersed into milk and heated to complete dissolution. The trend is now to prepare these desserts in cold conditions, using products like Satiagum™ & Gelogen™ BDC series, allowing anyone to prepare them without any safety risk

Mousse powder mixes: These are particularly light desserts, traditionally prepared at home from beaten egg whites. For mousse preparation, eggs have been replaced by gelatin. Due to the BSE problem, the new tendency is to substitute gelatin with other systems that have the same functionality

Frozen desserts dry mixes: These are powders to be dispersed in cold water or cold milk, whipped, and then frozen at home





Value Propositions of Texturizers & Sweeteners

To structure – to develop mouthfeel

- Easily dispersible & quick dissolution
- Give consistency or in cold or hot conditions
- Give shiny and smooth texture (Limit syneresis)
- Prevent vanillin coloration during shelf life

To structure - to foam

- Easily soluble in cold milk or water
- Get high foaming properties & Stabilize the mousse
- Cold soluble
- Be suitable for acid and neutral application





Value Propositions of Fats & Oils

Coffee Creamer

- Resistance to oxidation
- Extra white color
- Fat brings creaminess
- Excellent melting profile on mouth
- Stable during the shelf life

Value Propositions of Cocoa & Chocolate

- Appetising colour and intense flavour
- Consistent performance
- Variety: Gerken's™ Cocoa Powders provide Different, Distinctive & Consistent Flavour Profiles: ex. mild cocoa, mild chocolate, fruity notes, full-bodied strong cocoa, intense chocolate etc.
- Lecithinated cocoa powders improve wettability and dispersibility, also provide perfect stability in cold beverages
- Gerken's™ high-fat cocoa powders: Rich and pleasing mouthfeel; allow for labelling as 'chocolate powder' on the label (when blended with right amount of sugar) in a number of countries



Cargill Offerings

● Texturizers

Gelled Texture

Hot prepared flans:

Satiage[™] **ADG**,
Flanogen[™] **ADG**, C*Gel[™]

Cold prepared flans: C*Gel[™]
Instant, C*HiForm[™]

Creamy Texture

Hot prepared: Satiagum[™]
ADC, Lygomme[™] **ADC**,
C*PolarTex[™], C*Gel[™]

Cold prepared: Gelogen[™]
BDC, Satiagum[™] **BDC**,
C*Mix[™], C*Tex[™] Instant,
PolarTex[™] Instant, C*HiForm[™]

Aerated Texture

Satiagum[™] **BDC**,
Gelogen[™] **BDC**,
Lygomme[™] **BM**

● Sweeteners

C*Dry[™] GL, C*Dex[™], Steviol glycosides Truvia[™],
ViaTech[™], Zerose[™]

● Fats & Oils

Coffee Creamer: Turcoat SL 30, Turfill CF 20 H

Cargill Malaysia: Hysoc36RT, Cocolate SP

● Cocoa & Chocolate

Cocoa Powders For Indulgence: 10-12% DR 79, 10-12% GHL, 10-12% GT78,
10-12 % DB 400, 10-12% GD81

Lecithinated Cocoa Powders: 10-12% DR79W3, 10-12% DR74W3, 10-12% GT78W3

High Fat Cocoa Powders: 20-22% GT78; 22-24% GT78, 20-22 % DR 74





Identity card - Spray dried (fat) powders

Definition

Spray dried fat powders often consist of proteins, emulsifiers, carbohydrates, and fat. After an emulsification process, they are spray dried. Non-fat powders don't undergo an emulsification process

Plant based vegetable: Vegetable oil (25-30%), protein (2-5%), emulsifiers (0.4-2%), buffer salts (0-3%), and carbohydrates (rest) are used as whitening and creaming agents in coffee, tea, vending machines, soups, and sauces

High fat powders: Vegetable oil (30-80%), protein (2-5%), emulsifiers (0-2%), buffer salts (0-3%), lecithin, and carbohydrates (rest) are used as a fat source in baked products, frozen desserts, and milk replacers in beverages

Infant nutrition powders: Vegetable oil (20-25%), protein (10%), emulsifiers, other supplements, lecithin, and carbohydrates (rest)

Fat filled milk powder: Vegetable oil (<28%), protein (<24%), lactose (34%), and lecithin are used as a cost-effective milk powder replacer, with a key export market in Africa

Spray-dried powders non-fat: Whey protein concentrates/isolates (possible addition of lecithin) are often used as nutritional protein (e.g., in sports nutrition)



Value Propositions of Texturizers & Sweeteners

Processing

- Emulsification
 - Emulsion stability before and during spray-drying
 - Emulsion concentration (= spray-dry capacity \$\$)
- Spray-drying
 - Stickiness in tower (Tg) (downtime for cleaning = \$\$)
- Instantizing
 - Improving wetting properties of powder by spraying lecithin



Powder properties (depending on powder type)

- Stability after reconstitution of powder (stable and homogeneous)
- Whitening / flavor / body & mouthfeel
- Instant properties (wettability / sinkability / dispersibility)

Value Propositions of Fats & Oils

Fat Filled Milk Powder (FFMP)

- Resistance to oxidation
- Extra white color
- Excellent melting profile on mouth
- Stable during shelf life



Cargill Offerings

- **Texturizers**

Starch: C*Emcap™

Lecithin: Topcithin™, Leciprime™, Metarin™, Emulpur™, Emultop™

Maltodextrins: C*Dry™ MD, C*NutriDry™ 01953 (INF grade)

- **Sweeteners**

Glucose syrup, glucose-fructose syrup and dried glucose: C*Sweet™, C*Dry™ GL, C*NutriDry™ 01922 (INF grade)

- **Fats & Oils**

Fat Filled Milk Powder: Turflex™ FD 20

Cargill Malaysia: Socfat™ 36



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