FUTURA ingredients
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EKÖMUL KREM 200 SERIES

TEXTURISING SYSTEMS FOR WHIPPABLE CREAM

Whipping cream is widely recognised for its versatility across various culinary applications, serving as a fundamental component in both sweet and savoury dishes. It is crucial for creating light, airy textures in desserts such as mousses, cakes, and whipped toppings, while also enhancing the richness and creaminess of sauces and soups.

The **Ekömul KREM 200** series, a combination of emulsifiers and stabilisers, is designed to enhance the performance of whipping cream formulations in both dairy and non-dairy versions. Its key functionalities include:

- Optimising fat dispersion for a stable and consistent emulsion
- Preventing separation in emulsion and foam
- Improving aeration properties
- Contributing to a smoother texture
- Delivering longer lasting volume

WHIPPING CREAM APPLICATION

Dairy & Recombined Dairy Whipping Cream

Recombined Non-Dairy Whipping Cream with Dairy Protein

Recombined Non-Dairy Whipping Cream without Protein Sources

Exploring Variations of Whipping Cream

Dairy whipping cream is a high-fat dairy product typically containing 32% to 38% milk fat, in addition to water, proteins, lactose and various minerals. The high fat content is essential for its ability to whip and trap air, forming a stable foam. Dairy whipping cream can be produced using either cream or anhydrous milk fat (AMF) as the fat source, with dairy proteins and other ingredients added as needed. The **Ekömul KREM 200** series is typically added in small dosages to aid aeration and impart product stability.

Non-dairy whipping cream, on the other hand, is typically formulated using plant-based fats, such as coconut fat or palm kernel fat, typically between 22 to 30% fat. Traditionally, dairy protein is present in non-dairy whipping cream; however, formulations without protein sources are also feasible. The **Ekömul KREM 200** series is required in non-dairy whipping cream to mimic the characteristics of traditional dairy whipping cream, achieving similar texture and stability when whipped, although the flavour and mouthfeel may vary. Non-dairy whipping cream is produced through a recombination process that involves heat treatment, high pressure homogenisation and aseptic filling, ideally stored in chilled conditions.

Essential Criteria for Whipping Cream

Key factors contributing to the quality and functionality of whipping cream:

- **FAT CONTENT:** Higher fat content enhances stability and texture of whipped cream, resulting in a richer and creamier consistency. Plant-based fats such as coconut fat, palm fat or a combination of vegetable fats are used for their ability to provide a solid fat content resembling that of milk fat. The selection of an appropriate fat type, combined with a well-suited **Ekömul KREM 200** series texturising system, is critical for achieving a stable, high quality whipping cream product.

- **CHILLING:** Whipping cream should be thoroughly chilled (ideally below 5°C) before whipping. Low temperatures stabilise fat globules, preventing coalescence and ensuring a stable emulsion essential for effective air trapping. Additionally, partial crystallisation of some fat within the globules forms a network of solid crystals that further stabilises the whipped foam, helping retain air cells and preventing collapse. The emulsifiers in **Ekömul KREM 200** series enhance emulsion stability and regulate partial fat crystallisation, balancing stabilisation and de-stabilisation in whipping cream formulations.

- **HOMOGENEITY & STABILITY:** The cream emulsion should display a smooth, uniform consistency without lumps or fat-water separation to ensure even whipping and optimal air incorporation. It should maintain this homogeneity and avoid excessive fat agglomeration leading to increased viscosity before whipping, while preserving structure and stability post-whipping without collapsing or separating.

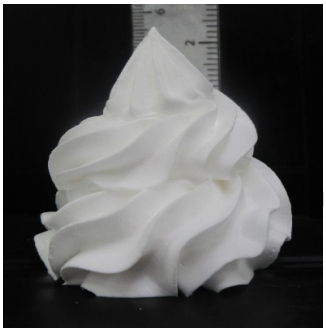
- **WHIPPING PROPERTIES:** Good whipping cream effectively incorporates air during the whipping process, creating a light, fluffy texture that holds its shape without compromising on stability. Dairy whipping cream typically achieves an overrun of around 200%, while non-dairy varieties often exceed 250%. **Ekömul KREM 200** series is often added to enhance aeration capabilities, improving whippability and increasing overrun.

  The texture of whipped cream varies based on desired application. Soft peaks form when the cream is whipped just enough for some air incorporation, making them ideal for lighter uses such as toppings or folding into other ingredients. In contrast, stiff peaks form with prolonged whipping, providing the stability required for frosting, mousse, or layered dressings as they retain their shape well and offer a richer mouthfeel.

Soft peak

Stiff peak

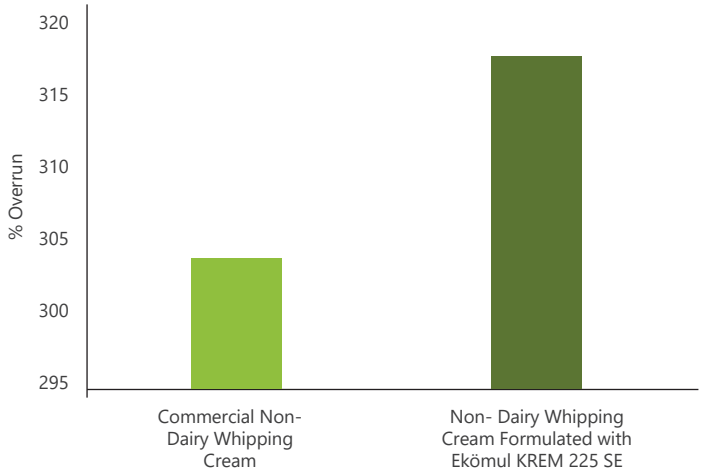
The texture of whipped cream varies based on desired application: soft peak (left) is achieved by whipping just enough to incorporate some air, while stiff peak (right) results from prolonged whipping.



Good whipped cream results from an optimal emulsion that balances between stabilisation and de-stabilisation, demonstrating sharp piping definition and remaining stable without collapsing for the desired duration.

Comparative Whipping Performances

The whipping performances of a commercially available non-dairy whipping cream sample is evaluated in comparison to a pilot plant sample formulated with **Ekömul KREM 225 SE**.



	Commercial Non-Dairy Whipping Cream Whipping time: 2.23 min	**Non-Dairy Whipping Cream Formulated with Ekömul KREM 225 SE** Whipping time: 2.33 min
0 hr		

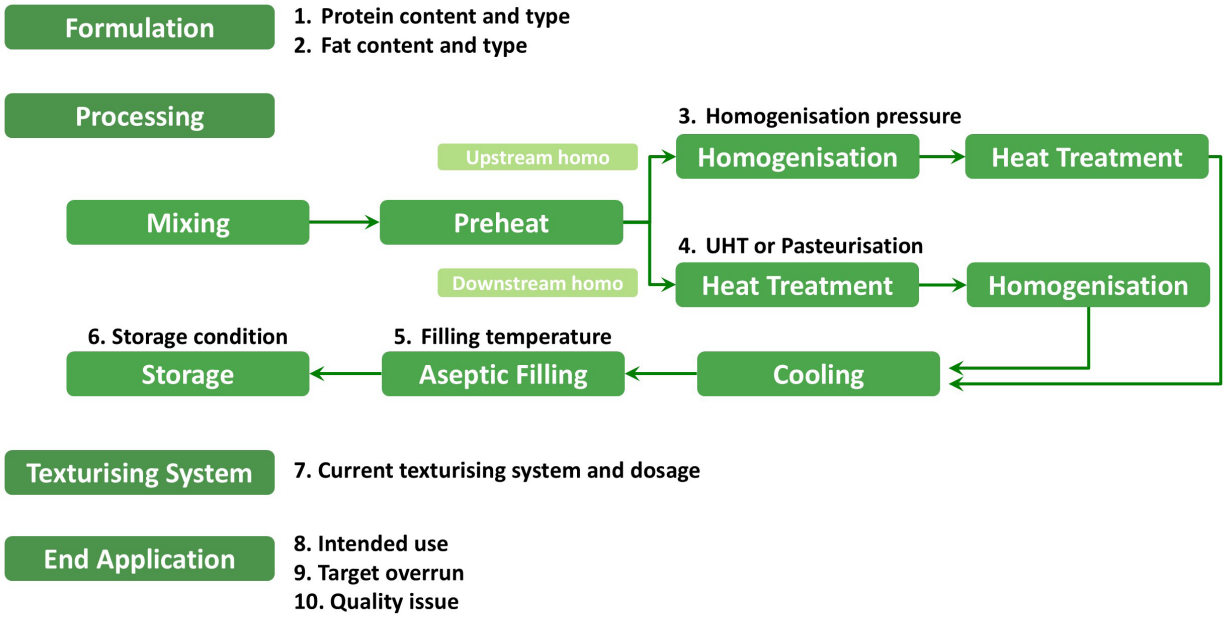
The same whipped cream was stored at air-conditioned environment for 4 hours and subsequently re-piped.

4 hr		

Both samples demonstrated stability over time, with the non-dairy whipping cream formulated with **Ekömul KREM 225 SE** achieving a higher overrun of 318%, compared to 304% for the commercial sample.

Key Considerations in Product Selection

A balance between product formulation, processing, and cost limitations impacts the overall performance of whippable cream. Here are some critical considerations:



Product Range & Recommended Dosages

Applications	Fat		Product	Recommended Dosage (%)	Composition	Product Characteristics						
	Dairy	Vegetable				Emulsion Stability	Smoothness	Whippability	Overrun	Piping Definition	Foam Stability	Reduced Syneresis
Dairy & Recombined Dairy Whipping Cream	●		**Ekömul KREM 229 SE**	**0.2 – 0.4**	**E472b, E460i, E322, E407, E466**	●●	●●	●●	●●	●●	●●	●●
Recombined Non-dairy Whipping Cream with Dairy Protein		●	**Ekömul KREM 211 SEC**	**1.3 – 1.7**	**E481, E464, E471, E339, E433**	●●	●●	●●	●●●	●●	●●	●
Recombined Non-dairy Whipping Cream without Protein Sources		●	**Ekömul KREM 225 SE**	**1.8 – 2.2**	**E435, E481, E464, E471, E339, E433, E407**	●●●	●●	●●●	●●●	●●●	●●●	●●

Note:

E322	Lecithin	E435	Polysorbate 60	E460i	Microcrystalline Cellulose
E471	Mono and Diglycerides	E433	Polysorbate 80	E464	Hydroxypropyl Methylcellulose
E477b	Lactic Acid Esters of Mono- and Diglycerides	E339	Sodium Phosphates	E466	Carboxymethyl Cellulose
E481	Sodium Stearoyl Lactylates	E407	Carrageenan		

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