

# EKÖMUL XTND SERIES

## FUNCTIONAL DISTILLED MONOGLYCERIDES

Better  
dispersibility  
in dough

Retards  
staling

Longer  
shelf life

Imparts  
greater  
softness

Maintain  
moist  
mouthfeel

Finer crumb  
structure

Synergies  
with SSL

### *Bakery : Bread Introduction*

In bread and buns, shelf life and quality attributes such as crumb softness are critical product parameters which are boosted with the addition of distilled monoglycerides. **Ekömul XTND series** is a specially designed functional distilled monoglyceride that imparts superior crumb softening effect and crumb structure in baked products when compared to fully saturated distilled monoglycerides. **Ekömul XTND series** is ideal for use as a bakery improver especially in dry formats.

### PRODUCT NAME

- Ekömul XTND 95 P
- Ekömul XTND 95 D



Winner of  
Frost & Sullivan's  
2016 Best Practices Award  
Entrepreneurial Company  
of the Year

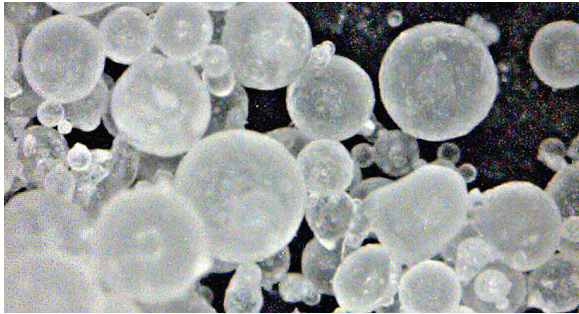
Winner of  
Frost & Sullivan's  
2018 Best Practices Award  
Food Ingredients  
Company of the Year

**Ekömul XTND series** has superior dispersibility in dough. Dispersion properties are influenced by the balance between particle size and product hardness as represented by Iodine Value. **Ekömul XTND series** is designed to maximise starch complexing functionalities

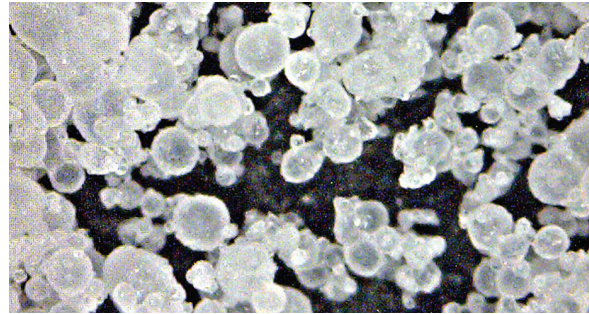
of distilled monoglycerides in dough to improve crumb softness.

Finer particles of **Ekömul XTND series** also aids dispersibility as the product mixes more uniformly with flour in dough formation.

### Finer Particle Size Aids Dough Dispersibility



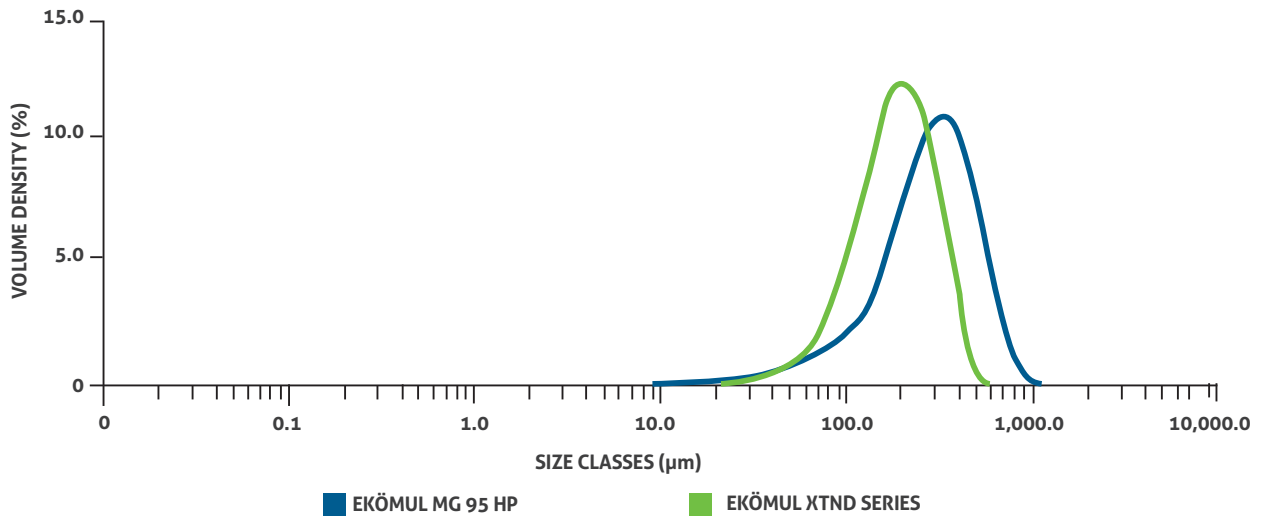
Ekömul MG 95 HP



Ekömul XTND series

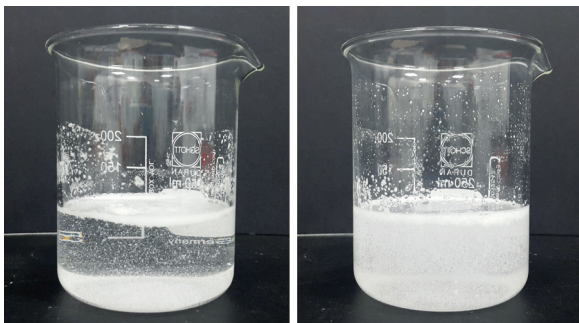
*Note: Particle size image with 60x input magnification*

### Particle Size Distribution



*Note: Test conducted using Malvern Mastersizer 3000.*

### Greater Dispersibility in Water



Ekömul MG 95 HP

Iodine Value: Max 2 g I<sub>2</sub>/100g

Ekömul XTND 95 P

Iodine Value: 18 - 26g I<sub>2</sub>/100g

*Note: 1% emulsifier in distilled water at ambient condition*

The retrogradation process starts immediately after freshly baked goods are cooled. The addition of **Ekömul XTND series** will slow this process; hence retard staling, by forming monoglyceride-amylose complexes. **Ekömul XTND series** also retains the water complexation capability in baked goods over time, therefore extending the freshness of the bread and buns.

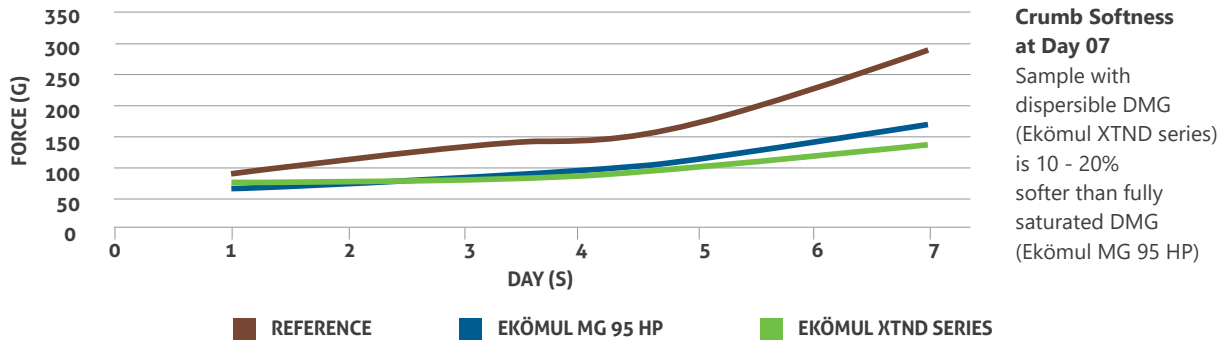
The addition of **Ekömul XTND series** in baked goods result in better crumb structure with more uniform and finer distribution of air pockets, thus improving the visual qualities and eating properties of bread and buns.

### Improved Crumb Structure



**Note:** Test conducted with basic white sandwich bread recipe added with 0.3% DMG on flour weight.

### Bread Softness Comparison Between Unsaturated and Saturated DMG



**Crumb Softness at Day 07**  
Sample with dispersible DMG (Ekömul XTND series) is 10 - 20% softer than fully saturated DMG (Ekömul MG 95 HP)

**Note:** AACC Standard Method 74-09 Bread Firmness Test, Texture Analyser. Test conducted with basic white sandwich recipe added with 0.5% DMG on flour weight. The higher the reading the firmer the bread.

**Ekömul XTND series** showcases superior dough dispersibility which enables maximised starch complexing properties of distilled monoglycerides. The end result is

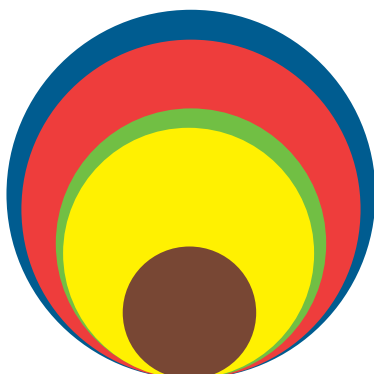
superior softness in baked products (10 - 20% softer) when compared to fully saturated distilled monoglycerides.

### Synergies of Ekömul XTND 95 P with Ekölite SL Series (SSL)

**Ekömul XTND 95 P** works synergistically with **Ekölite SL Series** Sodium Stearoyl Lactylates to boost the volume and softness of baked products.

The combination of **Ekömul XTND 95 P** and **Ekölite SL 70 S** provide the best enhancement in bread volume, moisture retention and crumb softness.

### Improved Bread Volume



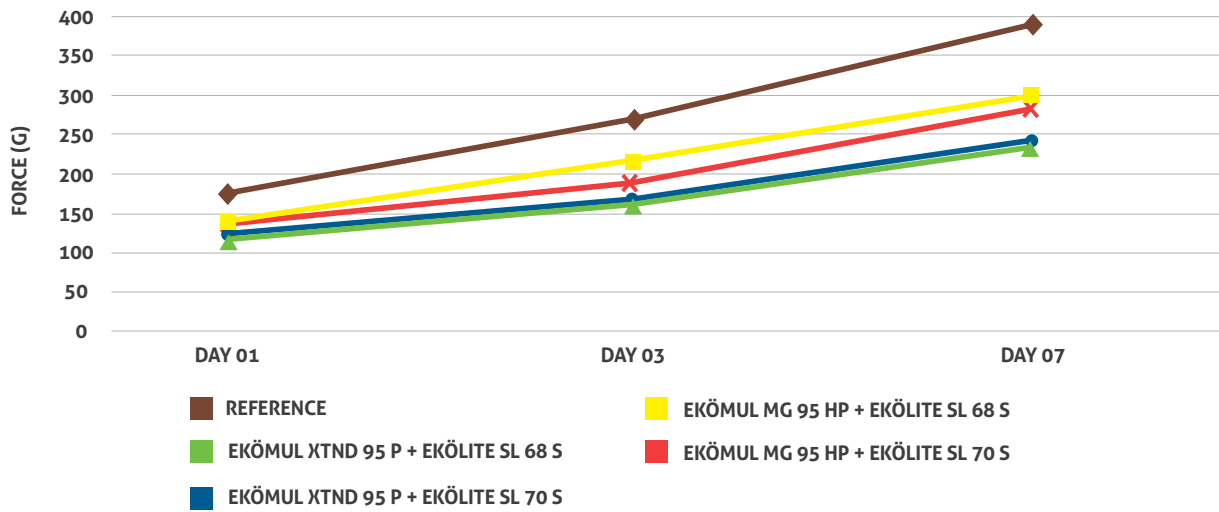
- REFERENCE (5.14 cm<sup>3</sup>/g)
- EKÖMUL MG 95 HP + EKÖLITE SL 68 S (5.31 cm<sup>3</sup>/g)
- EKÖMUL XTND 95 P + EKÖLITE SL 68 S (5.34 cm<sup>3</sup>/g)
- EKÖMUL MG 95 HP + EKÖLITE SL 70 S (5.44 cm<sup>3</sup>/g)
- EKÖMUL XTND 95 P + EKÖLITE SL 70 S (5.44 cm<sup>3</sup>/g)

**Note:** AACC Standard Method 10-05 Rapeseed Displacement Method. Test conducted with basic white sandwich recipe added with 0.5% DMG and 0.5% SSL on flour weight. The higher the reading the bigger the bread volume.



## Improved Crumb Softness

By Day 07, the sample with Ekömul XTND 95 P is ~15% softer than the sample with Ekömul MG 95 HP



**Note:** AACC Standard Method 74-09 Bread Firmness Test, Texture Analyser. Test conducted with basic white sandwich recipe added with 0.5% DMG and 0.5% SSL on flour weight. The higher the reading the firmer the bread.

The combination of **Ekömul XTND 95 P** and **Ekölite SL series** slows down the retrogradation process better than combination of fully saturated monoglycerides and **Ekölite SL series**. Therefore, it imparts superior softness in baked products.

## Distilled Monoglycerides Product Specifications

PRODUCT NAME	EKÖMUL MG 95 HP	EKÖMUL XTND 95 P	EKÖMUL XTND 95 D
Form	Bead	Micro-bead	Micro-bead
Appearance	White	White	White
Feedstock	Palm	Palm	Palm
Total Mono, % min.	95	95	95
Free Glycerol, % max.	1.0	1.0	1.0
Acid Value, mg KOH/g	Max 3	Max 3	Max 3
Iodine Value, g I <sub>2</sub> /100g	Max 2	18-26	20-27
Melting Point, °C	Approx. 65	Approx. 60	Approx. 58
Shelf Life, months	24	18	18
E number	E471	E471	E471
US FDA Number	21 CFR 184.1505	21 CFR 184.1505	21 CFR 184.1505
PSD, µm (average)	300	175	175
RSPO Offerings	MB & SG	MG & SG	MB

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### MANUFACTURING SITE

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