

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

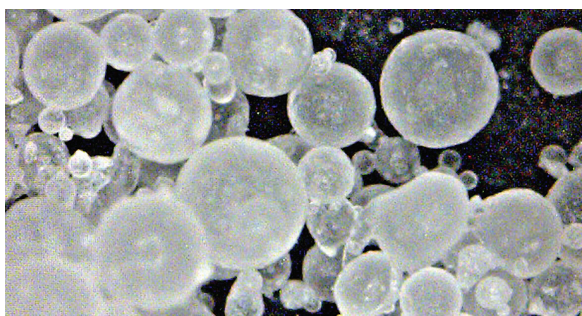
Winner of
Frost & Sullivan's
2018 Best Practices Award
Food Ingredients
Company of the Year

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

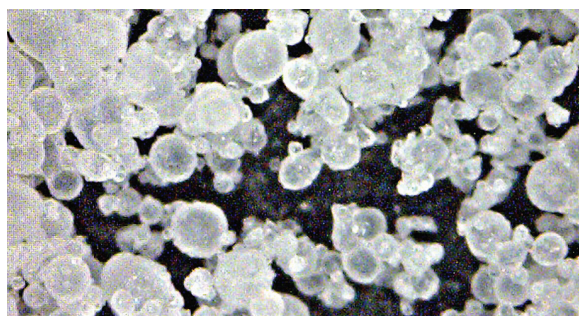
of distilled monoglycerides in dough to improve crumb softness.

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

Finer Particle Size Aids Dough Dispersibility



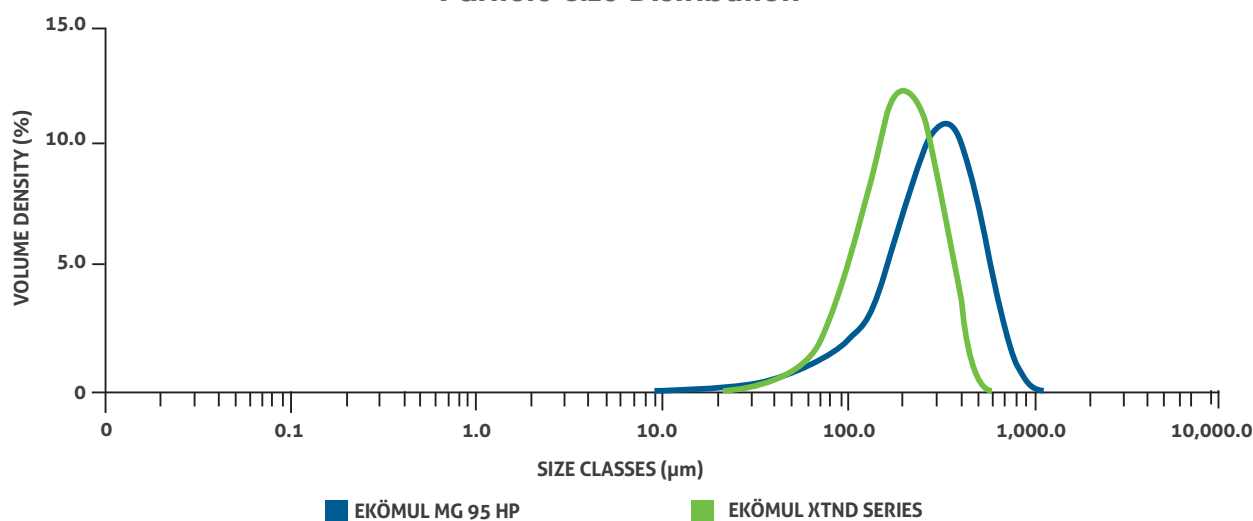
Ekömul MG 95 HP



Ekömul XTND series

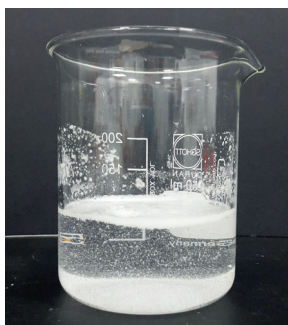
Note: Particle size image with 60x input magnification

Particle Size Distribution



Note: Test conducted using Malvern Mastersizer 3000.

Greater Dispersibility in Water



Ekömul MG 95 HP
Iodine Value: Max 2 g I₂/100g



Ekömul XTND 95 P
Iodine Value: 18 - 26g I₂/100g

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.

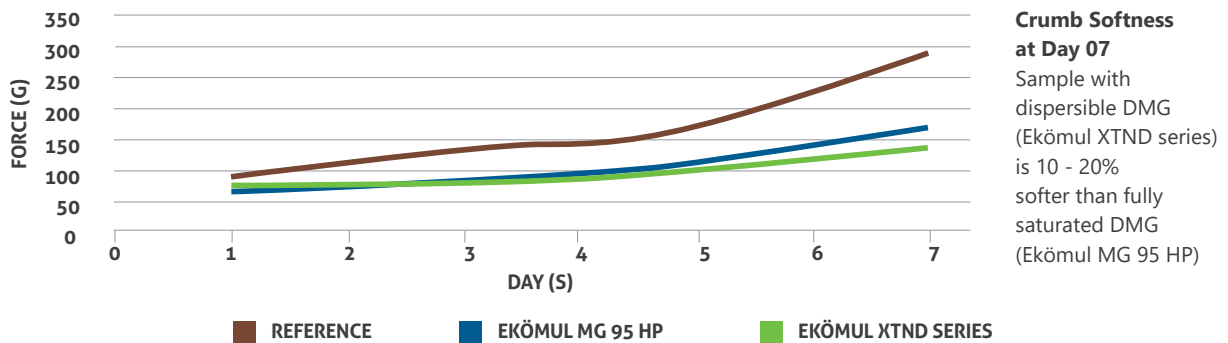
The addition of **Ekömul XTND series** in baked goods result in better crumb structure with more uniform and finer distribution of air pockets, thus improving the visual qualities and eating properties of bread and buns.

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



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

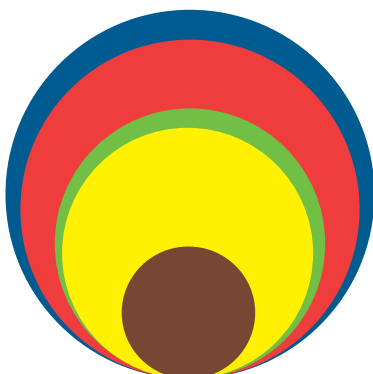
superior softness in baked products (10 - 20% softer) when compared to fully saturated distilled monoglycerides.

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

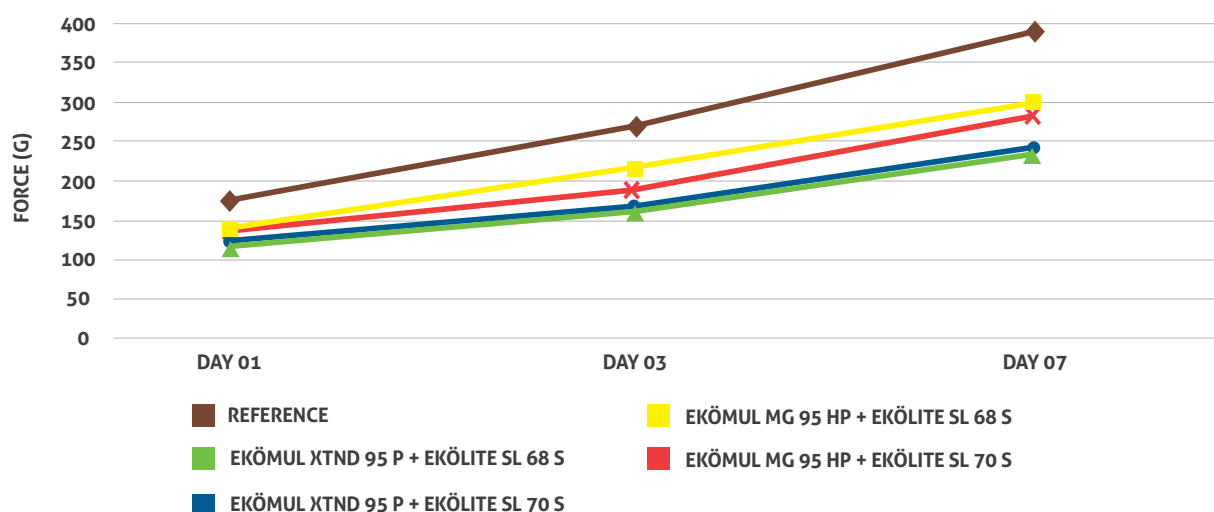


- REFERENCE (5.14 cm³/g)
- EKÖMUL MG 95 HP + EKÖLITE SL 68 S (5.31 cm³/g)
- EKÖMUL XTND 95 P + EKÖLITE SL 68 S (5.34 cm³/g)
- EKÖMUL MG 95 HP + EKÖLITE SL 70 S (5.44 cm³/g)
- EKÖMUL XTND 95 P + EKÖLITE SL 70 S (5.44 cm³/g)

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 ₂ /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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