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# Functionality of Modified Wheat Starch In Foods



# Unique Features of Wheat Starch

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- Bright white color
- No sulfite treatment
- High level of purity
- Bimodal granule distribution
- Distinct shape of cooked granules
- Paste viscosity increases with rate of heating
- Melt-in-your-mouth texture (non-sticky)
- Compatible with wheat flour-based foods
- Non-GMO

Bakery products remain the predominant application of wheat starch because of its compatibility with wheat flour. The added wheat starch has similar size, shape, and size distribution of granules, surface properties, swelling pattern, gelatinization characteristics, textural qualities, and composition as the wheat starch present in the flour.

# Benefits as Thickener Pregel 40

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## Soups

- Thickens the liquid to suspend food particulates
- Thins down to the desired consistency after retorting



# Benefits as Thickener/Gelling Agent Midsol 4

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## Pumpkin Pies

- Thickens fillings
- Enhances sliceability
- Imparts soft-gel texture



# Benefits as Thickener/Moisture Retention Pregel 40 and Pregel 46

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## Cake mixes

- Increases batter viscosity
- Enhances moisture retention
- Imparts crumb tenderness
- Prolongs freshness



# Benefits as Adhesion Agent

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## Batter mixes

- Midsol Adhere provides adhesion
- Midsol Krisp imparts crispness
- Midsol 1 provides crispness
- Midsol 35 provides browning and crispness



# Benefits as Tenderizer/Texturizer

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## Bakery mixes

- Pregel 40 and Pregel 46 exhibit excellent moisture binding resulting in tender texture of muffins and cakes; prolong shelf-life or freshness

## Breakfast cereals

- Midsol Krisp promotes expansion during extrusion; imparts crispness; extends bowl life; blander flavor



## Fish cake (*Kamaboko*)

- Midsol 50A imparts elasticity and soft texture; keeps product fresh and juicy due to good water retention; soft texture is retained after prolonged storage in the refrigerator

## Bread

- Midsol 1 functions as a swelling-resistant dusting agent in baking pans to facilitate bread release



# Benefits as Structure Control Agent

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## French cruller donuts

- Pregel 10FC helps form a uniform structure with no blow-outs; good volume; well-defined ridges

## Chinese dumplings

- Midsol 4 increases transparency and imparts strength to prevent bursting; prevents development of hard texture when stored under chilled conditions



# Benefits in Reducing Fat Absorption

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## Deep-Fried Snacks (Indirect Expanded Snacks)

- Midsol Adhere, Midsol 1, Fibersym® RW, Midsol 46, and Midsol Krisp reduce fat absorption of deep-fried snacks

## Direct Expanded Snack (Corn Curl)

- Midsol Adhere, Midsol 1, Midsol Krisp and Midsol 46 increase crispness of corn curls

## Indirect Expanded Snack (Snack Pellets)

- Midsol 1, Fibersym® RW, Midsol Adhere, Midsol 46, and Midsol Krisp increase crispness of deep-fried snacks



# Benefits as Fiber-Fortifying Agent Fibersym® RW

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Bakery Products, Pasta, Noodles, Breakfast Cereals, Snacks, and Confectioneries

- Substantially retains the integrity of the fiber after processing while maintaining or improving finished product quality
- Nutrient claims for “good source” or “excellent source” of fiber



# Summary of Benefits of Wheat Starch

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- Thickener
- Thickener/Gelling Agent
- Thickener/Moisture Retention
- Adhesion Agent
- Tenderizer/Texturizer
- Dusting Agent
- Structure Control Agent
- Reducing Fat Absorption
- Crisping Agent
- Fiber-Fortifying Agent