

# WHEAT STARCH AND VITAL WHEAT GLUTEN

## STRENGTH, VERSATILITY, AND VALUE

The goal of any food formulator is to produce a product that meets and exceeds customers' expectations. You need cost-effective ingredients that contribute to a product's quality, taste, texture, appearance, and nutritional value. ADM has the building blocks to take your application to the next level: a full range of wheat starches, wheat glutens, and wheat protein isolates for baking, cereals, snacks, meats, meat analogs, and more.

## WHEAT STARCH HOLDS IT ALL TOGETHER

ADM's high-quality wheat starches function as thickeners, extenders, emulsion stabilizers, and ingredient carriers in cakes, noodles, pie fillings, soups, sauces, cereals, coatings, bakery and batter mixes, dustings, and convenience foods; they are also exceptional binders in processed meats.

Our unmodified, modified, and pregelatinized starches are flavor neutral and improve texture and tenderness in a variety of foods. They are ideal for applications in which delicate texture, flavor, and light color are important.

## THE POWER OF VITAL WHEAT GLUTEN

Vital wheat gluten has a protein level of 75-82%, adding nutritional value as well as functional protein to many foods. It is an essential ingredient used to fortify and strengthen baking flours, increase baking tolerances, increase water absorption, and improve tolerance to mixing and fermentation. It also improves ingredient carrying capacities.

In bakery products, high-fiber products, breakfast cereals, pastas, meat and seafood analogs, and vegetarian products, vital wheat gluten improves manufacturing and cooking qualities, upgrades nutritional value and structural strength, improves adhesion, reduces moisture loss to extend shelf life, and binds with and restructures muscle proteins.

To improve value, formulators can use regular wheat grades and vital wheat gluten in place of extruded durum wheat semolina in pastas. Manufacturers of processed meat, fish, and poultry can reduce ingredient costs by using gluten to bind with and restructure muscle proteins in economical cuts of meat.

### WHY WHEAT STARCH & GLUTEN?

#### WHEAT STARCH

- Excellent thickener, extender, stabilizer, and ingredient carrier
- Provides delicate texture, flavor, and light color

#### VITAL WHEAT GLUTEN

- 75-82% protein
- Increases strength and mixing tolerance
- Extends shelf life
- Enhances nutritional values



For customers around the world, ADM draws on its resources—its people, products, and market perspective—to help them meet today's consumer demands and envision tomorrow's needs.

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## APPLICATIONS AND BENEFITS

### WHEAT STARCH

#### BAKED GOODS

- Can replace up to 30% flour in cakes to improve volume, eating quality, symmetry, and tenderness
- Controls batter viscosity to improve cell structure in cakes
- Controls spread and thickness in cookies
- Provides structure with desired texture in cream puffs, eclairs, and cream pie fillings
- Permits shortening reduction

while

retaining tenderness

#### DRY MIXES

- Controls absorption, moistness, and structure in cake mixes
- Controls viscosity and fat absorption and increases tenderness in cake-type donut mixes
- Provides high solids without excessive thickening in gravies, sauces, and soup bases
- Controls spread in pancake and waffle mixes
- Provides soft body in pudding and dessert mixes
- Provides bulk and flowability protection without masking delicate flavors

#### CANNED OR GLASSED FOODS

- Gives soft consistency with clear flavor release in baby foods
- Provides smooth mouthfeel and soft texture in puddings
- Contributes to spoonable salad dressing's soft, full body and emulsion stability
- Provides fast heat penetration for thickened sauces, gravies, and soups with improved flavor

#### OTHER PRODUCTS

- Promotes binding, adhesion, and low oil pickup in breading and batters
- Controls body and texture of sour cream and dips
- Acts as puffing aid and flake strengthener in cereals

### VITAL WHEAT GLUTEN

#### BAKED GOODS

- Improves the strength of baking flours
- Excellent strengthener in breads with whole grains or high fiber
- Increases baking tolerances, mixing time tolerances, and fermentation tolerances
- Extends shelf life by reducing moisture loss
- Improved taste, color, and nutritional value

of end product

- Increases absorption and loaf volume
- Improves freeze/thaw stability in frozen doughs
- Serves as a functional protein in low carbohydrate formulations

#### PASTAS

- Improves manufacturing, cooking, and eating qualities
- Increases resistance to breakage and tolerance to overcooking
- Reduces cooking losses
- Improves structural integrity in retorted products
- Reduces the need for egg albumen
- Restores functional protein

in formulations that use added fiber or alternate sources of protein

#### BREAKFAST CEREALS

- Upgrades nutritional value
- Increases structural strength, reduces breakage

#### BATTERS AND BREADINGS

- Improves adhesion of batters in fried foods
- Can replace egg albumen
- Provides barrier properties to moisture loss
- Contributes to surface crispiness
- Controls oil pickup in fried coatings

#### PROCESSED MEAT, FISH, AND POULTRY

- Simulates texture of meat, fish, and poultry muscle
- Binds with and restructures muscle proteins
- Provides optimum emulsion stabilization
- Provides low flavor and high functionality

#### CHEESE ANALOGS

- Adds protein
- Provides low flavor and high functionality

## Other Applications

#### Wheat Starch

Angel food cake  
Tortillas  
Noodle snacks  
Flavor carriers  
Cereals  
Fillings  
Surimi analogs  
Batters  
Mixes  
Pie crusts  
Marshmallows

#### Vital Wheat Gluten

Vegetarian patties  
Cereals  
Pizza crusts  
Specialty breads  
Frozen and refrigerated breads  
Pastas  
Flatbreads  
Batters and breadings  
Surimi analogs  
Extruded snacks

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