

Guide to Flour



Flour 101

What is protein?

Protein is the most common measure of the gluten content of various wheat types and the resulting flour, and it is the most accepted standard for flour prices and grades.

What is gluten?

Gluten is functionally important in baked goods, because it forms an elastic web when mixed with water that traps gasses produced during the leavening process, allowing bread to “rise.”

Some products call for less gluten, such as cakes and pastries. Others products require more gluten, such as crusty breads and bagels.



Wheat is a non-GMO grain.

FLOUR DEFINITIONS

Moisture: The amount of water present in the flour after milling, typically 14%.

Ash: The mineral content left after “burning” the flour sample. The highest concentration of ash is in the bran. Ash is used as a general indicator of bran content.

Patent: A term used to describe lower-ash flour.

Absorption: The amount of water that will be taken up by flour to produce the desired dough consistency and performance.

WHEAT TYPES

Soft Red Winter: Grown in the eastern United States. Low in protein. Used for flatbread, cakes, pastries and crackers.

Hard Red Winter: Grown in the central United States. High in protein, strong in gluten. Used for yeast breads and hard rolls.

Hard Red Spring: Grown in the north central United States. Highest in protein. Used in yeast breads, hard rolls and noodles.

Durum: Grown in North Dakota and Montana. Used for production of macaroni and spaghetti.

Hard White: Grown primarily in Colorado and California. Used in yeast bread, hard rolls and noodles.

Soft White: Grown in the Northwest. Low in protein. Used for flatbreads, cakes, pastries, crackers and noodles.

FLOUR GRADES

Cake & Pastry: Common applications include cakes, pastries, pie crusts and crackers.

Protein: 6.25% - 9.25%

Ash: 0.36% - 0.52%

Moisture: 14% maximum

All-Purpose H&R: Common applications include cookies, gravies, breadings, muffins, biscuits, pancakes and brownies.

Protein: 9.0% - 13.0%

Ash: 0.52% - 0.56%

Moisture: 14% maximum

Bread/Tortilla: Common applications include pan breads, sweet doughs, yeast-raised donuts, soft rolls, Danish pastries, croissants, tortas and tortillas.

Protein: 10.7% - 12.5%

Ash: 0.50% - 0.54%

Moisture: 14% maximum

Pizza/Hearth-Style Bread: Common applications include thick-crust pizzas, kaiser rolls, hearth breads, and specialty and variety breads.

Protein: 12.2% - 13.3%

Ash: 0.52% - 0.56%

Moisture: 14% maximum

High Gluten: Common applications include bagels, thin-crust pizzas, kaiser rolls and hearth breads.

Protein: 13.2% - 14.3%

Ash: 0.51% - 0.57%

Moisture: 14% maximum

FLOUR TREATMENTS

Bleach: Benzoyl peroxide is added to remove the natural creamy yellow color of flour, producing a whiter flour. It has no effect on the baking performance of the flour.

Enrichment: Nutrients (B vitamins, iron, folic acid) are added to refined flour. It has no effect on the baking performance of the flour.

Potassium Bromate/Ascorbic Acid: These dough conditioners/oxidizing agents improve flour’s bread-making performance. They strengthen the dough-forming properties, improve dough-gas retention and increase dough volume.

Malted Barley/Fungal Alpha Amylase: These provide enzymes to supplement the naturally occurring wheat enzymes. They convert starch into fermentable sugars. Then, yeast converts the sugar into carbon dioxide and alcohol during the fermentation process.

Chlorination: Chlorine gas is added to improve flour color and cake baking quality. In high-ratio cake flour, adding chlorine results in improved volume and a finer crumb texture. It also results in a reduction of flour pH to 4.4–4.8. Chlorine can also be added in lesser amounts to cookie flour to control cookie spread.

Applications

Assoluti® Premium High Gluten protein: 13.7 - 14.3%
Mid Protein protein: 13.2 - 13.8%
Luigi® High Gluten protein: 12.7 - 13.3%
Roma Pizza & Bread High Gluten protein: 11.9 - 12.5%
Short Patent protein: 11.5 - 12.1%
Bakers protein: 12.2 - 12.8%
Low Protein Bread/Tortilla protein: 10.7 - 11.7%
Roma® H&R All Purpose protein: 9.0 - 13.0%
West Creek™ Self Rising protein: 9.0 - 13.0%
Clear protein: 6.25 - 9.25%
Pastry protein: 6.25 - 9.25%
Cake protein: 6.25 - 9.25%
Semolina & Durum Flour protein: 11.1 - 11.7%
Fine Whole Wheat protein: 11.1 - 11.7%
Ultragrain® Whole Wheat protein: 11.1 - 11.7%
Roma® Premio '00' protein: 11.1 - 11.7%

	Assoluti® Premium High Gluten	Mid Protein	Luigi® High Gluten	Roma Pizza & Bread High Gluten	Short Patent	Bakers	Low Protein Bread/Tortilla	Roma® H&R All Purpose	West Creek™ Self Rising	Clear	Pastry	Cake	Semolina & Durum Flour	Fine Whole Wheat	Ultragrain® Whole Wheat	Roma® Premio '00'
Breads/Sides																
Breadsticks																
Biscuits																
European Crusty Breads																
Hamburger/Hot Dog Buns																
Hard/Kaiser Rolls																
Hearth Breads																
Pita/Flat Breads																
Pumpernickel																
Quick Breads																
Rye Breads																
Soft & Dinner Rolls																
Specialty Pan Breads																
Tortillas & Tortas																
White Pan Breads																
Breakfast																
Bagels																
English Muffins																
Muffins																
Waffles & Pancakes																
Pasta/Noodles																
Asian Noodles																
Sheeted Pasta (noodles, ravioli)																
Extruded Pasta (spaghetti, linguine)																
Pastries/Cakes/Cookies																
Brownies																
Cake Donuts																
Cakes (layer, sheet, wedding, etc.)																
Cinnamon Rolls																
Coffee Cakes																
Cookies																
Croissants																
Danish Pastries																
Dessert Bars																
Jelly Rolls																
Pastries/Pie Dough																
Scones																
Sweet Doughs																
Tortes																
Yeast-Raised Donuts																
Pizza																
Chicago Style Pizza																
New York Style Pizza																
Neapolitan Style Pizza																
Detroit/Pan Pizza																
Roman Style Pizza																
Sicilian Style Pizza																
Thin-Crust Pizzas																
Thick-Crust Pizzas																
Snacks																
Crackers																
Soft Pretzels																
Other																
Batters & Breadings																
Sauces & Gravies																

Alternative Grains

In addition to traditional wheat and organic flours, Ardent Mills has a complete portfolio of ingredients to help drive innovation across emerging nutrition applications, including gluten-free ancient grains, heritage wheats, pulses, mixes & blends, and other grains & seeds.

Common Treatments

AA	Untreated	FA	Wheat flour enriched (wheat flour, niacin, ferrous sulfate, thiamine mononitrate, riboflavin, folic acid)
AB	Wheat flour, malted barley flour	FD	Wheat flour enriched (wheat flour, niacin, ferrous sulfate, thiamine mononitrate, riboflavin, folic acid), malted barley
AL	Bleached wheat flour	FF	Semolina (wheat), niacin, ferrous sulfate, thiamine mononitrate, riboflavin, folic acid
AP	Wheat flour, malted barley flour, potassium bromate	RA	Wheat flour enriched (wheat flour, niacin, reduced iron, thiamine mononitrate, riboflavin, folic acid)
AR	Bleached wheat flour, potassium bromate	RC	Bleached wheat flour enriched (bleached wheat flour, niacin, reduced iron, thiamine mononitrate, riboflavin, folic acid)
AY	Bleached wheat flour, malted barley flour	RG	Wheat flour enriched (wheat flour, niacin, reduced iron, thiamine mononitrate, riboflavin, folic acid), malted barley flour
AZ	Bleached wheat flour, malted barley flour, potassium bromate	RH	Wheat flour enriched (wheat flour, niacin, reduced iron, thiamine mononitrate, riboflavin, folic acid), malted barley flour, ascorbic acid as a dough conditioner
EA	Wheat flour enriched (wheat flour, niacin, reduced iron, thiamine mononitrate, riboflavin, folic acid), enzyme	RI	Bleached wheat flour enriched (bleached wheat flour, niacin, reduced iron, thiamine mononitrate, riboflavin, folic acid), malted barley flour
EC	Bleached wheat flour enriched (bleached wheat flour, niacin, reduced iron, thiamine mononitrate, riboflavin, folic acid), enzyme	RJ	Bleached wheat flour enriched (bleached wheat flour, niacin, reduced iron, thiamine mononitrate, riboflavin, folic acid), malted barley flour, ascorbic acid added as a dough conditioner
EF	Bleached wheat flour enriched (bleached wheat flour, niacin, reduced iron, thiamine mononitrate, riboflavin, folic acid), potassium bromate, enzyme	RK	Bleached wheat flour enriched (bleached wheat flour, niacin, reduced iron, thiamine mononitrate, riboflavin, folic acid), malted barley flour, potassium bromate
EI	Wheat flour enriched (wheat flour, niacin, reduced iron, thiamine mononitrate, riboflavin, folic acid), enzyme	RN	Wheat flour enriched (wheat flour, niacin, reduced iron, thiamine mononitrate, riboflavin, folic acid), malted barley flour, potassium bromate
EK	Wheat flour enriched (wheat flour, niacin, reduced iron, thiamine mononitrate, riboflavin, folic acid), enzyme, potassium bromate	RS	Bleached wheat flour enriched (bleached wheat flour, niacin, reduced iron, thiamine mononitrate, riboflavin, folic acid), enzyme



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