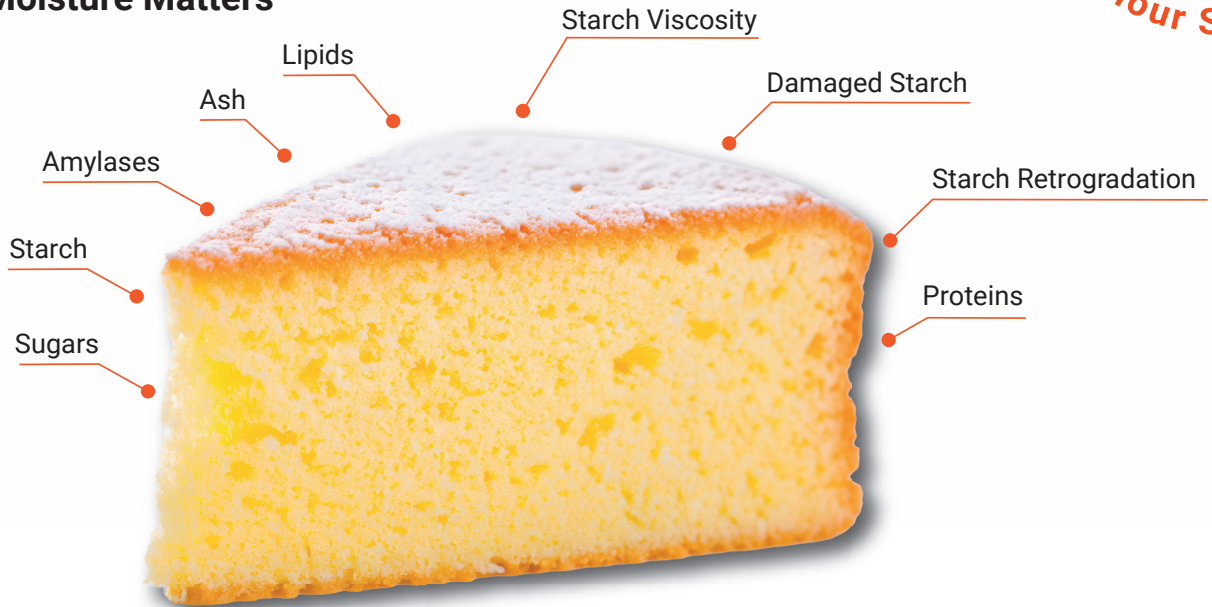


Why Inner Moisture Matters



• **Texture and Tenderness:** Moisture defines softness and crumb quality. Too little makes products dry and crumbly.

• **Freshness and Appeal:** Proper moisture slows staling and maintains appeal in bakery products.

• **Shelf Life and Storage:** Balanced moisture prevents drying and spoilage, helping preserve flavor and extend shelf life.

• **Crumb Structure and Mouthfeel:** Inner moisture shapes the crumb structure and creates a melt-in-your-mouth sensation.

• **Flavor and Richness:** Inner moisture enhances buttery, sweet, or savory notes; dryness dulls taste.

• **Bakeability and Dough/Batter Behavior:** Ensures proper dough handling and stretching; too dry = stiff, too wet = sticky

• **Gluten Development and Structure:** Activates proteins for elasticity and light texture; too little moisture = dense results.

• **Preventing Overbaking:** Moisture helps control baking, reducing the risk of dryness.

• **Baking Technique and Ingredient Balance:** Reflects the harmony of wet and dry ingredients in the recipe, ensuring proper interaction and consistent texture in the final product.

Key Flour Components Affecting Inner Moisture

Key Flour Components	Contribution to Inner Moisture	Mechanisms
Damaged Starch	19%	Absorbs more water, increasing dough's water-holding capacity and a moister crust.
Proteins	17%	Gluten network influences moisture retention; choice depends on desired product texture.
Starch Viscosity	16%	Starch gelatinizes during baking, trapping moisture and supporting crumb structure.
Amylase (Enzyme Activity)	15%	Breaks down starch into sugars, releasing water and promoting balanced hydration.
Starch (Native)	8%	Absorbs 40–50% of its weight in water, supporting moisture retention.
Lipids	8%	Form a barrier, helping maintain softness and moisture.
Ash Content (Minerals)	7%	Binds moisture; too much leads to microbial growth or softening.
Starch Retrogradation	6%	Recrystallizes during cooling/storage, leading to moisture loss and staling.
Sugars	4%	Bind water, softening crumb and delaying staling.

How Flour Components impact Inner Moisture of Different Products ?

Inner Moisture	Starch (Native)	Starch Viscosity	Starch Retrogradation	Damaged Starch	Proteins	Amylase (Enzymatic Activity)	Ash Content (Minerals)	Sugar	Lipids
Flat Bread	3	3	2	2	2	3	1		2
Crackers	2			3	2	2	1		2
Pan Bread			2	3	2	2	1	3	1
Wafer	2			3	2	2	1		1
Wheat Tortilla	2	3	2	3	3	2	1		1
Baguette		3	2	3	3	2	1		1
Hamburger Bun		2		3	2	2	1		1
Pizza Crust	2	3		2	3	2	1		1
Sponge Cake		3		3	2	2	1		1
Biscuit		3		3	2	2	1	3	1
Croissant	2	3	2	2	2	2	1		1
Steam Bread	1	3		2	3	2	1		1

3: Strong Impact

2: Average Impact

1: Low Impact

Explore the Back to Flour Series
Connecting Flour Components With Bakery Product Excellence.
- Click here -

KPM Equipment for Monitoring These Key Flour Components



SpectraStar



Alveograph



Mixolab



SDmatic



Rheo F4