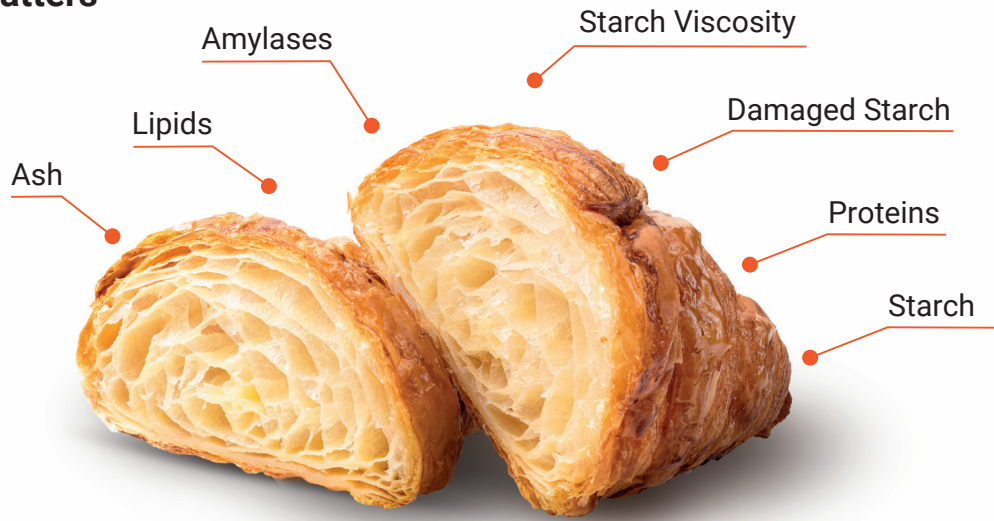


Why Puffing Matters



• **Light & Airy Texture:** Puffing creates layers and pockets of air that make products light and fluffy, essential for pastries such as croissants and breads like baguettes.

• **Proper Leavening & Structure:** Good puff reflects the right balance of leavening agents and ensures structural integrity, since too little puffing leads to dense, heavy products.

• **Flakiness & Layer Separation:** In puff pastry, steam from butter layers causes lift and crisp flaky layers; without puffing, layers merge into a chewy texture.

• **Visual Appeal & Volume:** Well-puffed products look more appetising and professional, which matters in laminated doughs that need distinct, flaky layers.

• **Even Baking & Moisture Retention:** Proper puffing distributes heat evenly to prevent raw or overbaked spots and forms a protective outer layer that keeps moisture inside.

• **Consumer Expectations:** A well-puffed product meets expectations for texture and eating experience, while flat or dense goods can be seen as low quality.

• **Sign of Correct Technique & Ingredients:** Puffing indicates proper mixing, proofing, and baking temperatures; poor puffing may signal issues with hydration, gluten development, or fermentation.

Key Flour Components Affecting Puffing

Key Flour Components	Contribution to Puffing	Mechanisms
Starch Viscosity	22%	During baking, heat drives starch gelatinisation, which stabilises the air pockets formed by steam.
Proteins	22%	A well-developed gluten network traps steam to create puffing, and its elasticity keeps layers distinct; gluten too strong or weak hinders the rise.
Damaged Starch	19%	Moderate damage boosts hydration and yeast activity for better rise, but excessive damage makes dough sticky and weakens its ability to hold steam.
Amylase (Enzymatic Activity)	15%	Enzymatic activity affects dough elasticity and extensibility, influencing how well the dough can trap the gases that drive puffing.
Starch (Native)	8%	Starch gives structural support to the dough layers as they expand, helping maintain integrity and proper layer separation.
Ash Content (Minerals)	7%	Higher ash flours carry more bran and minerals that interfere with gluten formation and reduce puffing, though finer milling can lessen this.
Lipids	7%	Lipids enhance dough extensibility and form complexes with starch that reduce retrogradation, helping layers stay extensible and puff well.

 Consistent Impact Across Most Products

 Impact Varies Significantly by Product Type

How Flour Components Impact Puffing of Different Products ?

Puffing	Starch (Native)	Starch Viscosity	Damaged Starch	Proteins	Amylase (Enzymatic Activity)	Ash Content (Minerals)	Lipids
Croissant	2	3	3	3	2	1	1
Flat Bread		3	2	3	2	1	1

3: Strong Impact

2: Average Impact

1: Low Impact

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Connecting Flour Components With Bakery Product Excellence.

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KPM Equipment for Monitoring These Key Flour Components



SpectraStar



Alveograph



Mixolab



SDmatic



Rheo F4