



Culinary Institute  
of America

# Pastry Boot Camp

Day 2: Sponge Cakes



# Learning Objectives

- Explain and distinguish the difference between the four-sponge cake mixing methods.
- Identify the key ingredients used in various types of sponge cakes.
- Apply the appropriate mixing methods based on the desired cake texture and structure.
- Determine when to bake immediately or chill the batter/ dough for optimal results.
- Identify the ribbon stage and its importance in foam-based cakes.

# Four Sponge Cake Methods

- **Chiffon cake:** A hybrid cake that combines whipped egg whites with oil and baking powder for a light, moist texture



- **Creaming method:** Uses softened butter and sugar creamed together, incorporating air for a fine, tender crumb

# Types of Sponge Cake Methods



- **Separated egg foam method:** Egg yolks and whites are whipped separately, then folded together to create a delicate, airy structure

- **Warm foaming method:** Whole eggs are gently warmed and whipped to incorporate volume, resulting in a flexible and spongy cake ideal for rolling or layering



# Chiffon Cake Method

## Key ingredients:

- Cake flour
- Baking powder
- Sugar (divided)
- Eggs (separated)
- Oil
- Water or juice
- Cream of tartar



# Chiffon Cake Method Steps

- 1. Preheat the oven:** set to 375° F and grease and flour cake pans
- 2. Mix wet:** combine all the liquids **except** half of the liquid and all the eggs whites.
- 3. Add dry:** sift the dry ingredients and add them to the wet mixture and mix until smooth
- 4. Add remaining water:** and stir until fully incorporated.



# Chiffon Cake Method Steps

- 5. Whip egg whites:** in a separate bowl, beat egg whites until foamy
- 6. Make meringue:** add cream of tartar and gradually beat in the sugar-whip until soft to medium peaks form
- 7. Fold meringue:** gently into the batter in 2-3 additions
- 8. Bake:** pour into pans and bake



# Creaming Method

## Key ingredients:

- Butter (unsalted, room temp)
- Granulated sugar
- Eggs
- Cake or all-purpose flour
- Leavening agents
- Milk or other liquid
- Salt
- Vanilla extract or other flavoring



# Creaming Method Steps

- 1. Soften the butter:** let it reach room temperature for optimal mixing
- 2. Mix butter & sugar:** beat together on medium speed with the paddle attachment until light and fluffy
- 3. Scrape the bowl:** stop the mixer and scrape the sides and bottom of the bowl as needed
- 4. Add liquid gradually:** slowly add the liquid, mixing for a minute after each addition



# Creaming Method Steps

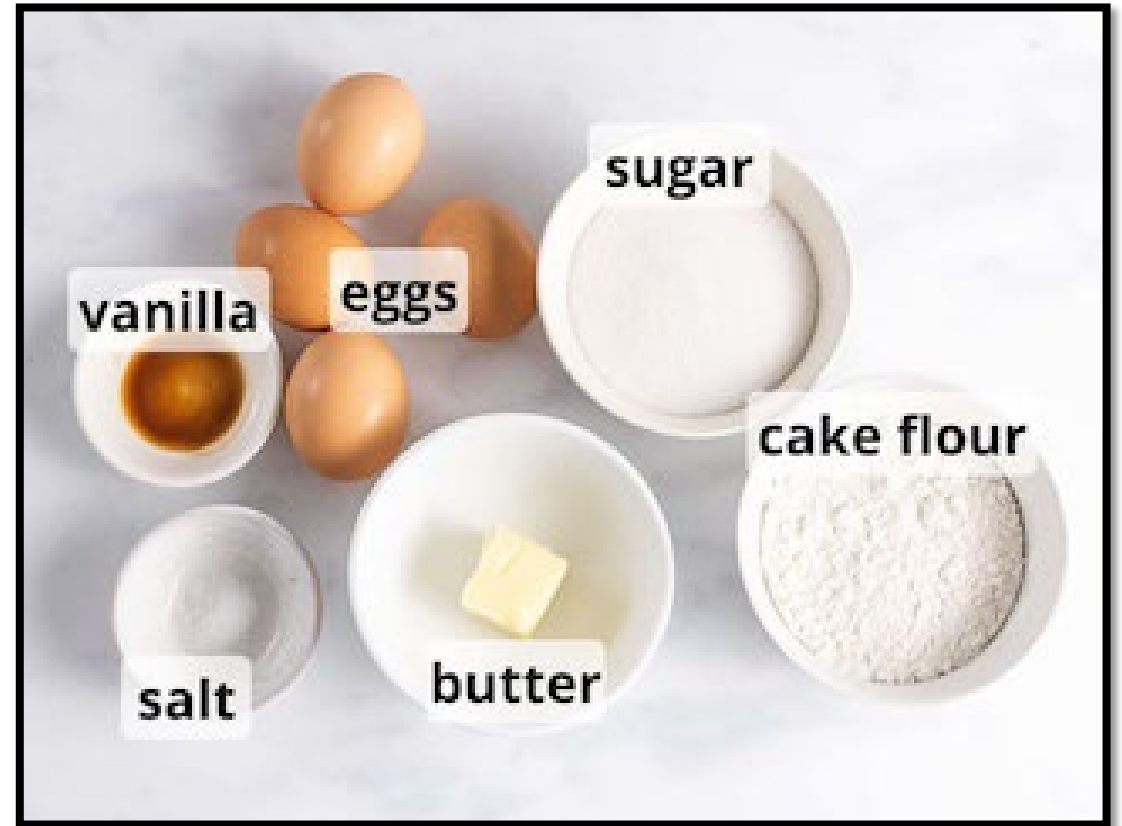
- 5. Scrape the bowl again:** scrape the sides and bottom of the bowl after each liquid addition
- 6. Add flour:** add all the flour at once and mix on low speed until just incorporated
- 7. Final scrape:** scrape the bowl one last time to ensure everything is mixed well



# Warm Foaming Method

## Key ingredients:

- Whole eggs
- Sugar
- Cake flour
- Butter (optional) melted for richness
- Vanilla or other flavoring



# Warm Foaming Method Steps

- 1. Preheat the oven:** set to 375° F and grease and flour cake pans
- 2. Warm the eggs + sugar:** combine whole eggs and sugar in a bowl and place over a double boiler. Gently heat to 110°-120°F, whisking constantly
- 3. Whip to ribbon stage:** transfer to a stand mixer and whip on high speed until the mixture is pale, thick, and tripled in volume



# Warm Foaming Method Steps



- 4. Fold in flour:** sift dry ingredients and gently fold into the egg mixture in batches to avoid deflating the foam
- 5. Add melted butter:** temper the butter with a small amount of batter first, then gently folding it in
- 6. Bake immediately:** pour into prepared pans and bake right away to retain volume



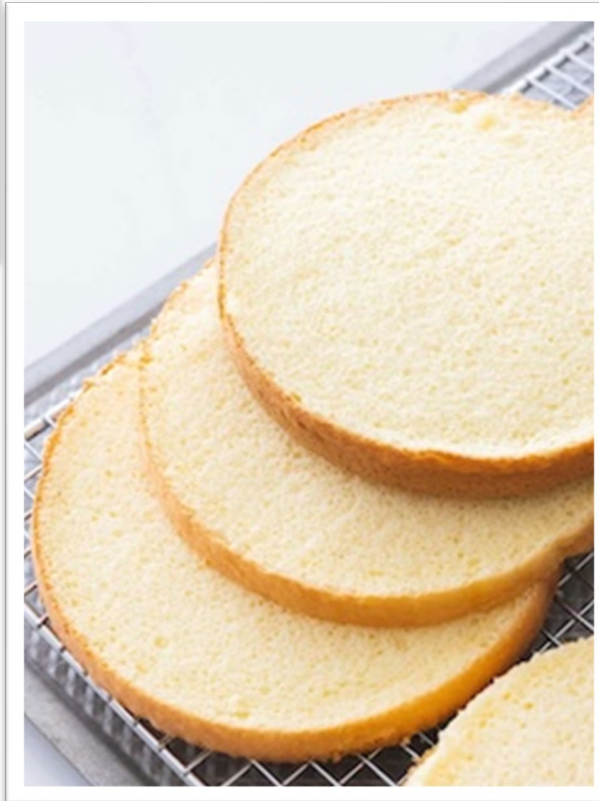
# What is the Ribbon Stage?

Ribbon stage is reached when **eggs and sugar are whipped** together until the mixture becomes:

- Pale and thick
- Tripled in volume
- Falls from the whisk in thick ribbons that slowly dissolve back into batter



# Why its Important in Foam-Based Cakes?



- **Incorporates air** into the batter, providing natural leavening
- Helps create a **light, airy texture** without chemical leaveners
- Ensures the **structure and volume** of sponge cakes like genoise or warm foamed sponge.

# Separated Egg Foam Method



## Key ingredients:

- **Eggs (separated)**- yolks for richness, whites for volume
- **Sugar (divided)**- divided between yolks and whites for sweetness and stability
- **Cake flour** – provides soft, tender structure
- **Salt** – enhances flavor
- **Cream of tartar** – stabilized egg whites during whipping
- **Flavoring**

# Separated Egg Foam Method Steps

- 1. Preheat oven:** set to 400°F and prepare pans with parchment paper
- 2. Separate the eggs:** divide egg yolks and white into two clean bowls
- 3. Whip the yolks:** beat the yolks with  $\frac{1}{2}$  of the sugar until light in color and stiff, about 5 minutes.
- 4. Whip the whites:** beat egg whites until foamy. Add cream of tartar, then gradually add remaining sugar and whip to soft or medium peaks



# Separated Egg Foam Method



- 5. Combine mixtures:** fold the yolk mixture into the dry ingredients
- 6. Fold in the meringue:** gently fold the whipped egg whites into the yolk mixture in batches to maintain volume
- 7. Bake immediately:** pour into an ungreased pan and bake right away to prevent foam from collapsing

# Baking Tips for Sponge Cakes

**Preheat oven fully before baking:** consistent temperature is key

**Do not open the oven door early:** this can cause sponge cakes to collapse

**Use light-colored pans:** to prevent over-browning

For **foam-based cakes**, **avoid greasing the pan** so the batter can cling and rise properly

Bake until the cake **springs back** when gently touches or a toothpick comes out clean

# Cooling & Storing Sponge Cakes

## Cooling:

- Cool foam-based cakes upside down to prevent collapsing
- Turn out butter-based cakes after 10 minutes and cool on a rack



## Storing:

- **Room temperature (1-2 days):** wrap tightly in plastic
- **Refrigerator (3-5 days):** best for cakes with fillings or frostings that require chilling
- **Freezer (up to 3 months):** wrap in plastic wrap and then foil; thaw at room temperature before storing



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Any Questions?