

MayoPowder™ – Basic Instruction Manual (Egg-Free Mayonnaise)

This operating manual is designed to help you create professional-quality mayonnaise using MayoPowder™, a revolutionary product that allows you to produce up to 16 liters of mayonnaise for every kilogram of powder. This guide has been specifically developed for home cooks and small-scale food producers seeking reliable instructions and consistent results.

MayoPowder™ represents a significant innovation in egg-free mayonnaise production, offering a practical solution that easily mixes with oil and water. Throughout this manual, you will find step-by-step procedures, precise formulas, and troubleshooting tips that will enable you to master the art of egg-free mayonnaise from the very first attempt.



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MayoPowder™ Product Fundamentals

Exceptional Yield

Up to 16 liters of quality mayonnaise per kilogram of MayoPowder™

Easy to Use

Easily mixes with oil and water without specialized equipment

Egg-Free

Safe and stable alternative for production without animal-derived ingredients

MayoPowder™ has been formulated to deliver consistent and predictable performance across a wide range of production conditions. Whether you are preparing a small batch at home or scaling up to pilot production, the product maintains its exceptional emulsifying and texturizing properties. The key to success lies in understanding and following basic proportions, the correct order of ingredient addition, and recommended hydration times.

This manual will guide you through every critical aspect of the process, from precise dosing to final texture adjustments. With the right knowledge and attention to key details, you will be able to create mayonnaise with the desired texture, stability, and quality, adapting the basic formula according to your specific needs.



MAYOPOWDER™

Egg- Free Mayonnaise

MayoPowder™

Egg-Free Mayonnaise



Key Dosing Rule

The foundation of every successful formulation with MayoPowder™ begins with a simple yet critical dosing rule that ensures reproducible results in every batch. The product's benchmark yield is up to 16 liters of mayonnaise per kilogram of powder, which translates to a very specific practical dosage.

62.5

Grams per Liter

Standard MayoPowder™ dosage
for each liter of finished
mayonnaise

16

Liters of Yield

Maximum production capacity
per kilogram of powder

6.25%

Percentage in Formula

Proportion of powder in the
finished mayonnaise

This dosage is calculated directly: 1000 grams divided by 16 liters equals 62.5 grams for each "liter equivalent" of finished mayonnaise. However, to achieve maximum reproducibility and precision in your results, it is essential that you always formulate based on the final batch weight in kilograms, not volume.

Working with weight instead of volume eliminates variations caused by differences in density, temperature, and air content in the emulsion. This professional approach is especially important when scaling from small batches to larger production, ensuring that each batch maintains the same organoleptic and textural properties.



Recommended Base Formula

One of the most robust and reliable formulas for achieving a "classic mayonnaise" texture uses approximately 70% oil along with the fixed powder dosage established earlier. This proportion has been extensively tested and offers the ideal balance of creaminess, stability, and mouthfeel that consumers expect from a high-quality mayonnaise.

The 70% oil base formula provides a solid starting point that can be adjusted according to specific texture and application preferences. Keeping the oil in this range allows MayoPowder™ to fully develop its emulsifying capacity, creating a stable structure that resists separation and maintains its consistency during storage.

It is important to understand that this base formula represents a scientifically optimized balance. The 70% oil content provides sufficient lipid phase to create a rich and stable emulsion, while 23.75% water allows for complete hydration of the powder and the development of its functionality. The 6.25% MayoPowder™ is the minimum amount necessary to effectively emulsify and stabilize this proportion of oil and water.

Key Proportions

- 70% vegetable oil
- 23.75% cold water
- 6.25% MayoPowder™

This 70:23.75:6.25 ratio creates the creamy texture characteristic of premium mayonnaise



Practical Dosage Tables

To facilitate formulation at different production scales, we present the exact quantities for two common batch sizes: an industrial/pilot batch of 10 kilograms and a test or home-use batch of 1 kilogram. These tables eliminate the need for calculations and ensure perfect proportions in every preparation.

10.0 kg Batch

Ingredient	Quantity
Vegetable oil	7.000 kg
Cold water	2.375 kg
MayoPowder™	0.625 kg
Total	10.000 kg

Ideal for pilot or small commercial production. Quantities in kilograms facilitate precise weighing with industrial scales.

1.0 kg Batch

Ingredient	Quantity
Vegetable oil	700 g
Cold water	237.5 g
MayoPowder™	62.5 g
Total	1000 g

Perfect for formulation testing, product development, or home use in manageable quantities.

These proportions have been carefully calculated to maintain exactly the same ingredient ratio regardless of batch size. You can scale up or down by multiplying or dividing all ingredients by the same factor, always maintaining the relative proportions. For example, to make 5 kg of mayonnaise, simply multiply the quantities of the 1 kg batch by 5.

Always remember to weigh all ingredients precisely using a calibrated scale. Even small deviations in proportions can significantly affect the texture and stability of the final product. Water should be cold (5-15°C) for best viscosity results.





Custom Texture Adjustments

One of the most valuable advantages of working with MayoPowder™ is the flexibility to adjust the final texture without changing the emulsifying powder dosage. This allows you to create different styles of mayonnaise and creamy dressings while maintaining product stability and functionality.



Rich and Thick Mayonnaise

For a denser, creamier texture, increase the oil content to the 72-75% range, proportionally reducing the water. This formulation is ideal for high-end sauces, gourmet applications, and premium products that require a rich, unctuous mouthfeel.



Light Dressing-Style

For a lighter, pourable product, reduce the oil to the 55-65% range, increasing the water content accordingly. This style is perfect for salad dressings, dipping sauces, and applications where a less dense but equally stable texture is desired.

The key to making these adjustments successfully is always to keep the MayoPowder™ dosage constant at 62.5 grams per kilogram of finished product. Only adjust the relative proportion between oil and water, ensuring that both ingredients always total the remaining 93.75% of the formula. For example, if you increase the oil to 73%, the water should be reduced to 20.75% to maintain the total at 100%.

These adjustments allow you to develop a complete line of products with different texture profiles using the same base ingredient. Experiment within these ranges to find the perfect balance for your specific application, always documenting your modifications to ensure reproducibility.



Required Equipment

One of the great advantages of MayoPowder™ is its versatility regarding the necessary equipment. The product works effectively with both simple domestic equipment and sophisticated industrial machinery, making it accessible to producers of all sizes.



Small Scale / Domestic

Immersion blender (hand mixer) with a tall cup, or a high-power countertop blender. These pieces of equipment are perfectly suited for 1-5 kg batches and offer the necessary shear speed to create stable emulsions.



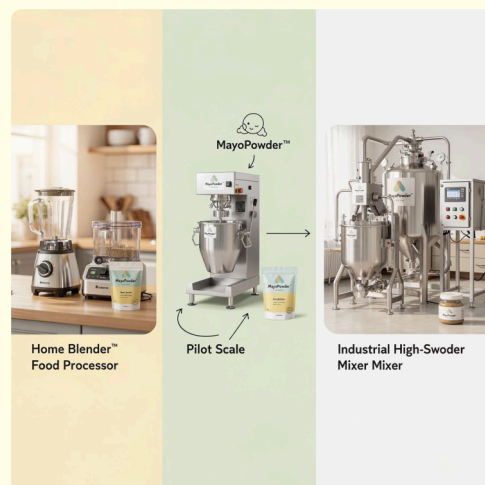
Pilot / Industrial Scale

High-shear rotor-stator mixer. Vacuum mixing is an additional advantage that reduces air incorporation, improving the stability and appearance of the final product. These systems allow for batches from 10 kg up to tons.

The design of MayoPowder™ has been specifically optimized to be "easy to use" by simply mixing with oil and water, as highlighted in the product's technical documentation. This feature means that you do not need expensive specialized equipment or complicated processes to achieve professional results.

Regardless of the equipment you use, the fundamental principles remain constant: you need the ability to mix at medium-high speed, add liquids in a controlled manner, and maintain constant shear during emulsification. The key to success is not so much the specific type of equipment, but understanding how to control the oil addition rate and the shear level during each phase of the process.

For producers planning to scale, start by perfecting your technique on a small scale. The principles learned with an immersion blender translate directly to industrial equipment, although processing times and oil addition rates will need to be adjusted proportionally to the batch volume.



Critical Control Points

Before beginning the step-by-step manufacturing procedure, it is essential to understand the critical control points that will determine the success of your mayonnaise. These factors are the difference between a perfect product and one with texture or stability issues.

01

Addition of Powder to the Aqueous Phase

Always add MayoPowder™ to water, never the other way around. This prevents the formation of lumps that are difficult to disperse later and compromise the final texture.

02

Allow Brief Hydration

After dispersing the powder, allow a hydration period of 3-5 minutes before adding oil. This step is fundamental for the full development of the final viscosity.

03

Gradual Addition of Oil

Add the oil in a thin, steady stream under high shear, especially during the first half of the addition. This is the most critical phase of emulsification.

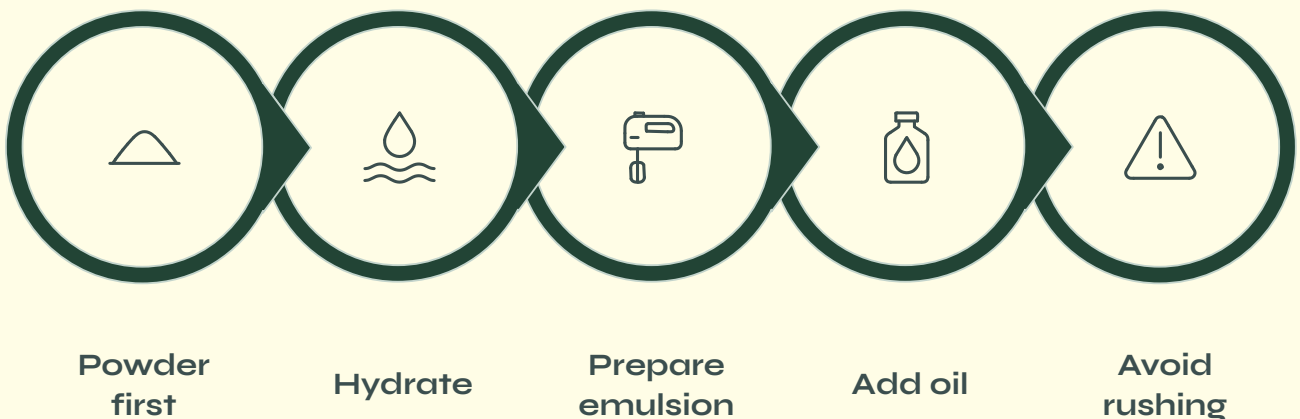
04

Work Cold

Keep all ingredients cold (5-15°C) during the process. Low temperatures significantly improve both the viscosity and stability of the emulsion.

These four control points are not optional suggestions, but absolute requirements for consistent success. Each addresses a specific aspect of the physics and chemistry of emulsions. Ignoring any of them, especially the hydration time, is one of the most common causes of failure in mayonnaise production.

The order of operations is particularly critical: powder first into water for complete hydration, then oil gradually once the system is ready to emulsify. Reversing this order or rushing through the stages will inevitably result in texture problems that are difficult or impossible to correct later.



Versatile Production Equipment for MayoPowder™



Step A – Aqueous Phase Preparation

Detailed Procedure

1. Place cold water (5-15°C) in the mixing vessel
2. Begin mixing at medium-high speed
3. Add MayoPowder™ slowly in a "rain" fashion (never all at once)
4. Mix for 2-3 minutes until a perfectly smooth dispersion is achieved

Water temperature is critical. Cold water improves final viscosity and reduces the risk of microbial growth during the process. Use good quality drinking water to avoid strange flavors.

The "rain" addition technique is crucial to prevent lump formation. This means sprinkling the powder over the water surface while mixing, allowing each particle to get wet individually before it touches another particle. If you pour all the powder at once, the particles in the center of the pile will agglomerate before hydrating, creating lumps that are practically impossible to disperse.

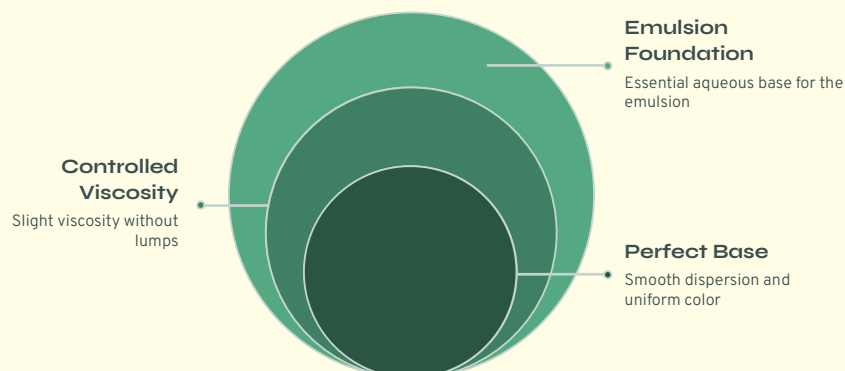
During initial mixing, carefully observe for any lumps. If you notice lumps forming, increase the mixing speed and consider extending the mixing time up to 5 minutes. It is much easier to prevent lumps than to try to eliminate them later. Use a spatula to scrape the sides of the container periodically, ensuring all powder is incorporated into the liquid phase.

At the end of this stage, you should have a perfectly smooth, slightly viscous dispersion, with uniform color and no granular texture. This aqueous base is the foundation upon which the emulsion will be built, so perfection at this stage is absolutely essential.

Acceptance Criteria

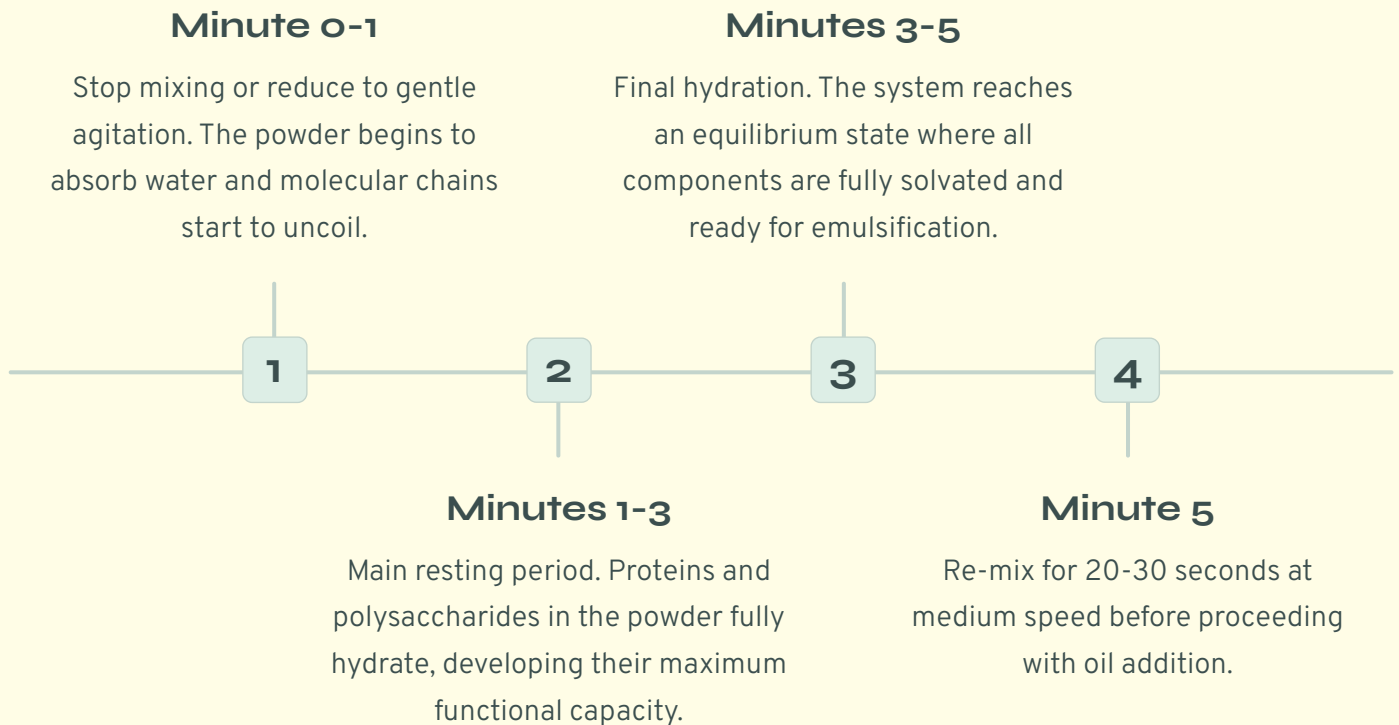
Pass: No visible dry particles, no "fish eyes" (wet but undissolved lumps), the mixture is completely homogeneous and smooth.

Fail: Presence of lumps, dry particles floating, granular or irregular texture to the touch.



Step B – Short Hydration

After achieving a perfect dispersion of MayoPowder™ in water, it is absolutely critical to allow a hydration period before proceeding with oil addition. This step, though brief, is one of the most important in the entire process and is frequently overlooked by inexperienced producers, resulting in mayonnaise with inadequate viscosity.



During this 3-5 minute hydration period, you can leave the mixture to rest completely or maintain very gentle agitation. Both approaches work, although complete resting is more common in small-scale production. The important thing is that the system is not under high shear during this time, as the goal is to allow the powder molecules to expand and organize without mechanical interference.

Skipping this hydration step is the number one cause of liquid or low-viscosity mayonnaise. Without adequate hydration, the functional components of MayoPowder™ do not fully develop their ability to stabilize the emulsion and create the network structure that provides the characteristic creamy texture. Three additional minutes of patience at this stage can mean the difference between success and failure of the entire batch.

After the hydration period, always re-mix briefly (20-30 seconds) before starting to add oil. This ensures that any stratification that may have occurred during resting is homogenized again, providing a uniform base for emulsification.

Steps C and D – Emulsification and Final Adjustment

Once hydration is complete, the process enters its most critical phase: the incorporation of oil to form the emulsion. This stage requires constant attention and precise control to achieve a perfectly stabilized mayonnaise.

Step C: Emulsification

- 1. Switch to high shear** – Increase mixing speed to its maximum level before adding any oil.
- 2. Add oil in a thin stream** – Pour the oil in a thin, constant stream for 3-6 minutes. The rate of addition is crucial.
- 3. Maintain constant shear** – Do not reduce speed during oil addition. The emulsion should thicken noticeably after incorporating 60-80% of the oil.
- 4. Final mix** – After adding all the oil, continue mixing for an additional 1-2 minutes to complete emulsification.

Step D: Adjustment and Maturation

- 1. Brief rest** – Stop mixing and let it rest for 2-3 minutes. This allows air bubbles to escape and the texture to stabilize.
- 2. Check viscosity** – Evaluate consistency with a spatula or spoon.
- 3. Adjust if necessary** – Too thick: add 0.5% water at a time (5g per kg), mix for 20-30 seconds. Too thin: see troubleshooting section.
- 4. Maturation** – Chill and allow 30-60 minutes of rest before final packaging. The texture "sets" completely during this time.

During oil addition, observe carefully how the emulsion evolves. Initially, the mixture may seem very liquid, but around the point where 60-70% of the total oil has been incorporated, you should observe a dramatic change: the emulsion will begin to thicken rapidly and acquire the characteristic creamy appearance of mayonnaise. If you do not observe this change, it is possible that you are adding the oil too quickly.

The rate of oil addition is particularly critical during the first half of the process. In this early phase, there is proportionally a lot of water and little oil, which makes the emulsion more fragile. An oil stream that is too fast can overwhelm the system's ability to create uniform small droplets, resulting in an unstable emulsion. Once approximately 50% of the oil has been incorporated, you can slightly increase the addition rate, but always maintain control.

The final maturation period of 30-60 minutes is not optional. During this time, the intermolecular forces in the emulsion reorganize, the network structure strengthens, and the texture reaches its optimal final state. Packaging the mayonnaise immediately after mixing can result in a product that changes consistency during the first few hours of storage.



MayoPowder™

Troubleshooting Guide

Even with careful adherence to all procedures, problems can occasionally arise. This section provides diagnostics and solutions for the three most common problems in mayonnaise production with MayoPowder™.

A) Viscosity Too Low / Liquid Mayonnaise

Probable Causes:

- Oil added too quickly during emulsification
- Insufficient shear (mixing speed too low)
- Insufficient hydration (skipping or shortening rest period)
- Processing at warm temperature (water >15°C)
- Oil percentage too low in the formula

Immediate Correction: Re-mix at high shear and slowly add additional oil (then correct the next batch formula to maintain target final proportions).

Prevention in future batches: Keep water cold, strictly observe the 3-5 minute hydration period, and reduce the oil addition speed during the first half of the process.

B) Emulsion Breakdown / Oil Separation

Probable Causes:

- Oil poured too quickly at the start, before the emulsion is established
- Poor powder dispersion (presence of lumps)
- Insufficient shear during emulsification

Correction: Start a fresh mini-base (water + proportional amount of MayoPowder™ according to the broken batch size). Then slowly incorporate the broken batch into this new base under high shear, essentially "restarting" the emulsion. This rescue method works in most cases.

Prevention: Ensure the powder is fully dispersed before adding oil. During emulsification, start with a very thin stream of oil and gradually increase only after the emulsion is well established.

C) Lumpy / Granular Texture

Cause: Powder not properly wetted, typically because it was added all at once instead of gradually.

Correction: Improve the dispersion method by using the "raining" technique (sprinkling gradually while mixing), increase initial agitation to a higher speed, and scrupulously observe the hydration time. In severe cases, it may be necessary to pass the mayonnaise through a colloidal mill or homogenizer to break up lumps, although prevention is always preferable to correction.

Prevention: Never pour all the powder at once. Always add by "raining" it over the surface of the water while mixing vigorously. Visually inspect after initial mixing and extend the time if necessary.



Storage and Shelf Life Notes

Proper storage is essential for both unused powder and prepared mayonnaise. Understanding optimal storage conditions ensures product quality is maintained and waste is minimized.



Unopened Powder

Sealed MayoPowder™ has a shelf life of 12 months when stored at room temperature in dry conditions. Keep the original packaging closed until use.



Prepared Mayonnaise

Once prepared, mayonnaise can be stored for up to 72 hours in the freezer according to product specifications. For refrigerated storage, consult local regulations.



Industrial Production

For commercial products, pasteurization or sterilization can significantly extend shelf life. Specific process parameters depend on equipment and local regulatory requirements.

MayoPowder™ should be stored in a cool, dry place, protected from direct moisture. Once the package is opened, it is advisable to transfer any unused powder to an airtight container to prevent absorption of ambient moisture, which could affect its functionality. If the powder forms hard lumps due to moisture exposure, it is best to discard it, as its performance will have been compromised.

For mayonnaise prepared in domestic or small-scale settings without pasteurization, freezer storage for up to 72 hours is a valid option to preserve quality. However, for commercial production, pasteurization or sterilization is required to achieve an extended shelf life at refrigeration temperature. These thermal processes must be carefully validated to ensure food safety without compromising the emulsion's texture.

Always label prepared batches with the production date and use them within the specified period. For commercial applications, consult local regulatory authorities regarding specific shelf life, labeling, and microbiological testing requirements applicable to your market and product category.

MAYOPOWDER™

Egg - Free Industrial Mayonnaise