

Quick Tips for Freeze Drying Success

Pre-Freezing for Efficiency ❄️

Whenever possible, pre-freeze your food before placing it in the freeze dryer. This not only reduces batch times but also saves energy and minimizes wear and tear on your machine. If you have a freezer running regularly, take advantage of its cold temperatures to get a head start on the process.

Optimize Your Freeze-Drying Space 🌡️

Maintain a well-ventilated and climate-controlled area between 60-78°F for optimal freeze-drying conditions. If you live in a humid climate, consider using a dehumidifier in the room to improve efficiency. Additionally, placing a fan aimed at your freeze dryer can help regulate airflow and prevent overheating.

Avoid Cross-Contamination ⚠️

When freeze-drying raw meats, eggs, or other potentially hazardous foods, do not mix them with other items in the same batch. Also, be sure potential food allergens do not contaminate other foods, especially if you intend to give or sell the food to others. To ensure food safety:

- ✓ Label all bags and containers that have come in contact with raw foods.
- ✓ Keep track of contents now—you may not remember them later!
- ✓ Thoroughly clean your freeze dryer after running cycles with these foods.

Managing Strong Odors 🧄

Onions, garlic, and other pungent foods can leave lingering smells in your freeze dryer. To neutralize odors:

- ✓ Follow up with a batch of rice, soups, stir-fries, or other complementary foods to absorb residual scents.
- ✓ If odors persist, thoroughly clean the freeze dryer with soap and water and then use rubbing alcohol or vodka to wipe the machine down and clean your drain hose before your next batch.

Proper Cleaning Methods 🍷

❌ Do NOT use bleach or harsh chemicals on your freeze dryer, as they can damage the plexiglass door, rubber seals, and heating mats—and may even contaminate your food.

Instead, use gentle cleaning solutions such as:

- ✅ Grain alcohol or vodka
- ✅ Rubbing Alcohol
- ✅ Vinegar
- ✅ Good ol' fashioned soap and water with some elbow grease!
- ✅ Get yourself a good bottle brush

Always do your research before using a cleaning agent.

Weighing Your Food for Accuracy ⚖️

Weighing your food before and after freeze-drying allows you to determine how much water needs to be reintroduced for proper rehydration. Using tray dividers (like those from freezedryingsupplies.com) can help ensure consistent and accurate portioning across all trays.

Preparing Your Food and Trays for Success

- ✅ Blanch Vegetables Before Freeze-Drying: Most veggies (like broccoli, asparagus, and green beans) rehydrate better if they are lightly blanched before freeze-drying.
- ✅ Avoid Overloading the Trays: Spreading food evenly in a single layer allows for faster and more efficient drying. Overcrowding can result in partially dried foods and extra long freeze-drying cycles.
- ✅ Using Parchment Paper or Silicone Mats: Helps prevent food from sticking to trays and makes cleanup easier!
- ✅ Batch Similar Foods Together: Group similar moisture-content foods (like fruits with fruits, meats with meats) to optimize drying times.
- ✅ Remove excess Fats and Oils: For meats or foods high in oil content, rinse with water and pat dry with paper towels before freeze-drying. Removing excess fat can extend storage life and prevent the food from going rancid over time. Repeat this process as needed for better long-term preservation.

How to tell if your freeze dried food is dry

The Weighing Method


This method ensures **precise** results:

1. Weigh your trays before freeze-drying.
2. Weigh the trays after drying. Add extra dry time
3. If the trays continue to lose weight after additional drying, moisture is still present.
4. When the weight stays the same after extra drying, the food is fully dry.
5. Scales have a natural small variability, so minor fluctuations in weight readings are normal. Small changes within this range are negligible and considered the same weight.

Purchase a Water Activity Meter:

For professional freeze-drying results and complete confidence that your food is fully dry, consider using a Water Activity Meter. While these devices can be pricey, they provide precise measurements of your food's moisture levels. To prevent bacterial growth and spoilage during storage, your water activity level should be at or below 0.6, the lower the better.

What to Do If Food Is Not Fully Dry?

 Use the "Extra Dry Time" Setting: Run the freeze dryer for an additional 2-6 hours.

When in Doubt, Add More Dry Time!

If you're ever unsure whether your food is fully dry, the safest option is to add extra dry time. Adding extra time ensures safe, long-lasting food storage. Even a small amount of leftover moisture can lead to spoilage, bacteria growth, or a shorter shelf life. You can't overdry your food so don't be afraid to add more time

Storage & Labeling Tips

✓ Double-Seal Mylar Bags for Extra Protection: After heat-sealing a Mylar bag, seal it a second time about ½ inch above the first seal for extra security.

Always use oxygen absorbers. The information in the table below is provided by PackFreshUSA

Absorption Required For Common Foods			
Pack food tightly and fill containers completely to insure adequate absorption. If you are not certain which column your product should be in, use the greater quantity. There is nothing wrong with using more absorption than required.			
Container Size (Fill completely)	Pinto beans, red beans, rice, sugar (35% air)	Flour, flax meal, instant mixes, powders, coffee beans (50% air)*	Pasta, cereal, instant potatoes, oatmeal, barley, dried corn (75% air)
1 Pint (16 oz.)	50cc	50cc	100cc
1 Quart (32 oz.)	100cc	100cc	150cc
1/2 Gallon (64 oz.)	150cc	200cc	300cc
#10 Can (0.82 gallons)	250cc	350cc	500cc
1 Gallon	300cc	400cc	500cc
1 1/2 Gallon	450cc	600cc	800cc
2 Gallon	600cc	800cc	1000cc
4.25 Gallon	1200cc	1700cc	2000cc
5 Gallon	1400cc	2000cc	2500cc
6 Gallon	1700cc	2300cc	3000cc

*Despite the fact that items like flour and powdered mixes consist of very fine particles, they can contain a surprising amount of air. Also be aware that the often recommended 300cc per gallon is not enough for many food types like pasta.

✓ Once you open a pack of oxygen absorbers, be sure to store unused ones in a vacuum-sealed jar until needed. Oxygen absorbers should only be exposed to the air for 15 minutes. If left exposed for too long, they can become saturated and may no longer remove oxygen properly. If an absorber feels hard instead of pliable, it has likely been fully activated and should not be used.

✓ Label Everything Clearly! Write the food type, date, and rehydration instructions on Mylar bags or jars. You may remember now, but in 5 minutes, 5 months or 5 years, you may not!

✓ Store in a Cool, Dark Place: Freeze-dried food lasts longest when stored in a temperature-controlled environment (below 75°F and away from light & moisture).

✓ Use a Vacuum Sealer for Extra Protection: If storing freeze-dried food in jars, use a vacuum sealer with a jar attachment to remove excess air.

Desiccants?

You may wish to use **food grade** desiccants during short term storage, something you will be opening and closing frequently like fruit powders, garlic powder etc. or things that are not packaged for the long term and are high in sugar, like candy.

For long term storage fruit powders that are very high in sugar may turn hard with an oxygen absorber, and you may wish to use a desiccant for storage. If using a desiccant and an Oxygen absorber, place the desiccant in the bottom of the bag, then add your food, then the oxygen absorber, and finally seal your container.

Don't Skip the Defrost Process ❄️➡️💨

After each cycle, be sure to fully defrost your freeze dryer before starting a new batch. To speed up defrosting:

- ✅ Press and hold the leaf icon (upper left of your home screen) to manually activate the tray heaters.

- ✅ Place a clip-on fan aimed at the vacuum chamber to circulate warm air.

- ✅ This method reduces defrost time to 15-20 minutes instead of hours!

- 🔥 IMPORTANT: Don't forget to turn off the heaters when defrosting is complete.

By following these quick tips, you'll maximize the efficiency of your freeze dryer, extend the shelf life of your foods, and make the process smoother and more enjoyable.