

**POLAR
CLEAN**



YOUR GUIDE TO

**ADVANCED CLEANING SOLUTIONS
FOR FOOD MANUFACTURING FACILITIES**

DRY ICE BLASTING FOR GMP ENVIRONMENTS, ALLERGEN TRANSITIONS, AND PRODUCTION EFFICIENCY

Maintaining cleanliness in [food manufacturing](#) is not just about compliance — it's about protecting public health, product integrity and brand reputation. From mixers and conveyors to walls and ceilings, every surface that comes into contact with ingredients must meet exacting standards.

But many food manufacturers face a critical dilemma: how to meet strict GMP requirements in areas where traditional cleaning methods — especially water or chemicals — cannot be used. Whether due to the presence of electronics, the nature of the product (such as dry goods or dairy powders), or risks associated with combustible dust, the constraints are complex.



At Polar Clean, we specialize in providing advanced, water-free, non-toxic cleaning solutions tailored to the food manufacturing industry and other sensitive applications — and doing it at scale, on schedule, and in line with food safety regulations.

CHALLENGES WITH TRADITIONAL CLEANING IN FOOD PRODUCTION

In food manufacturing environments, traditional cleaning methods can be more harmful than helpful. Here's why they fall short — and in some cases, pose serious risks:

1. Water Restrictions

In many facilities, water is either restricted or completely prohibited due to the risk of microbial growth, ingredient clumping, or corrosion. This is especially true in plants processing dry goods, spices, powdered dairy, or sugar-based products. Introducing water in these environments can create the very hazards that GMP protocols are designed to prevent.

Example: In one facility producing powdered milk, even light water spray caused powder to cake onto walls and ceilings, creating a breeding ground for bacteria and increasing the risk of inspection failure.

2. Hand Cleaning Limitations

Manual scrubbing is often the fallback when water and chemicals are ruled out. But at an average rate of just 1-2 square feet per minute, this method is extremely labor-intensive and inefficient for large-scale operations. It also introduces the potential for human error and inconsistency, depending on the thoroughness and technique of individual workers.

3. Chemical Contamination

While chemical sanitizers can be effective, they must be completely removed from all surfaces before production resumes — a process that introduces its own complexity, risk of residue, and significant additional labor. Chemical vapors may also pose risks to sensitive equipment and worker safety.

4. Dust & Debris Management

Facilities processing flours, grains, powders, or baking products often battle [combustible dust](#). Vacuuming such dust is laborious and poses explosion risks if not managed properly. Additionally, traditional abrasive cleaning methods may contribute to airborne particulate matter, triggering compliance issues and safety concerns.

DRY ICE BLASTING: PRECISION CLEANING FOR FOOD MANUFACTURING

[Dry ice blasting](#) is a non-abrasive, water-free cleaning method that uses pellets of frozen CO₂ to remove debris, protein buildup, allergens, and biofilm from a wide range of surfaces. Upon impact, the CO₂ sublimates — transitioning from solid to gas — leaving no liquid, dust, or residue behind.

This process offers unique advantages for food manufacturing environments, particularly where:

- Sanitation must be thorough and repeatable
- Water is either ineffective or non-compliant
- Equipment includes sensitive electronics
- Cleaning must occur during production windows or limited downtime

Suitable for:

- Conveyors, mixers, ovens, hoppers, dryers, packaging equipment
- Floors, walls, ceilings, overheads
- Cold rooms, dry rooms, allergen-sensitive areas
- Control panels, motors, sensors, and electrical cabinets

Dry ice blasting is also ideal for “reset cleans,” when equipment must be restored to a verified clean baseline after an allergen run, microbial hit, or inspection failure.

KEY BENEFITS OF DRY ICE BLASTING IN FOOD MANUFACTURING

1. Non-Toxic & Non-Abrasive

Dry ice is classified as GRAS (Generally Recognized as Safe) by the FDA and does not require post-cleaning removal. There are no added chemicals, no secondary contaminants, and no abrasion to sensitive surfaces — making it safe for direct use on food contact surfaces and around electrical equipment.

2. Water-Free Cleaning

Because the CO₂ sublimates on contact, dry ice blasting eliminates the moisture and runoff challenges posed by steam or water-based cleaning. This is especially critical in dry production zones and allergen-controlled areas.

3. Speed & Efficiency

Dry ice blasting cleans 6–8 square feet per minute — a dramatic improvement over manual scrubbing. It's capable of reaching into corners, crevices, and complex geometries where buildup often accumulates unnoticed. Faster cleaning times reduce downtime and labor costs without sacrificing thoroughness.

4. No Secondary Waste

Unlike abrasive blasting, which creates media that must be collected and disposed of, dry ice sublimates, leaving only the removed soil or debris behind. This minimizes cleanup, reduces load on filtration systems, and simplifies compliance with environmental safety protocols.

5. Safe for Delicate Equipment

With adjustable nozzle pressure and a non-conductive blast media, dry ice blasting can be safely used on components such as PLCs, motors, sensors, and HMIs — components that would be damaged by moisture or abrasives.



CASE APPLICATIONS IN THE FOOD INDUSTRY

Facility Allergen Transition

Following its sale, a Midwestern food production facility was transitioned to the production of a non-allergenic food additive and needed to eliminate all traces of soy protein from the production areas. Polar Clean was the only contractor not overwhelmed by the job – which required meticulous results and the ability to clean the inside of food dryers 75 feet deep.



Pet Food Plant Conveyor Cleaning

In a pet food production facility, a multi-tiered conveyor system was accumulating debris under and within drying ovens – locations impossible to reach with standard tools. Chemical use was ruled out due to regulatory restrictions. Polar Clean deployed a combination of dry ice and vacuum-assisted blasting, restoring airflow, reducing fire risk, and eliminating clogged debris without halting production.



FOOD SAFETY CREDENTIALS & COMPLIANCE SUPPORT

Polar Clean is the first dry ice blasting company in the world to achieve [SQF Level 3 results](#) — the highest tier of the Safe Quality Food program, which incorporates both food safety and quality management system requirements. Our team members are trained to work in environments requiring:

- GMP Compliance
- HACCP-Based Cleaning Protocols
- Allergen Control and Documentation
- Respirator and PPE Certification
- Lock-Out/Tag-Out Procedures
- Zone Analysis and Cross-Contamination Mitigation

Our clients include leaders in food and beverage manufacturing.



BEYOND BLASTING: CONTAINMENT, SCHEDULING & SITE STRATEGY

Polar Clean isn't just a service provider — we're a strategic partner. Every job begins with a technical assessment that includes:

- Identification of cleaning targets and substrate compatibility
- Access planning and scaffolding where necessary
- Customized containment, where needed, to isolate debris and maintain GMP zones
- Coordination with production teams to minimize disruption, often via night and weekend shifts
- Assessment of areas that may require additional solutions, including [sponge blasting](#) or [abrasive blasting](#) using food-safe media.

We understand that in the food industry, cleaning isn't just about sanitation — it's about timing, compliance, and protecting throughput. That's why we build our process around your operational needs, not the other way around.

PARTNERING WITH POLAR CLEAN

When conventional cleaning fails — or can't even be attempted — dry ice blasting from Polar Clean provides the expert-level alternative your facility demands.

We support:

- Routine GMP Cleaning
- Inspection Prep
- Product Line Changeovers
- Allergen Cleans
- Post-Event Remediation
- Emergency and Spot Cleaning

Each project is managed with a focus on food safety, plant integrity, and productivity — backed by a team with deep industry experience and an unwavering commitment to excellence.

Contact Polar Clean to Schedule a Food Manufacturing Site Assessment

We'll help you evaluate whether dry ice blasting is the right solution for your sanitation and compliance goals and design a strategy that works for your production schedule. Contact the Polar Clean team to learn more about dry ice blasting for food manufacturing.

[Schedule a Site Assessment](#)

About Polar Clean



Since 2011, facility managers, turnaround managers and restoration professionals have relied on Polar Clean for safe, efficient and mess-free cleaning needed for challenging commercial and industrial environments. Without the collateral damage and containment challenges of hydroblasting and other abrasive cleaning methods, dry ice blasting is ideal for preventive maintenance, shutdowns, emergencies, and restoration – for oil refineries, petrochemical plants, power plants, food processing facilities, manufacturing plants, and more. Polar Clean offers hydroblasting and other abrasive blasting services when they are a better fit. Our 2023 integration with [Premium Plant Services](#) – a market leader in industrial cleaning solutions – has broadened our nationwide reach and array of solutions. To determine the right cleaning method for your facility, contact Polar Clean for a dry ice blasting assessment: <https://polarclean.com>