



- ✓ DRY ICE CLEANING
- ✓ INDUSTRIAL SURFACE PREPARATION
- ✓ ON-SITE SERVICE

sublimatetech.com



Dry Ice Cleaning for Manufacturing & Machine Shops

Industry: General Manufacturing, CNC Machining, Metal Fabrication

Service Area: Central Indiana — Midwest

Company Snapshot

SUBLIMATE Technologies provides mobile dry ice blasting and specialty industrial cleaning for manufacturers that need production equipment cleaned without abrasion, water, chemical solvents, or extended downtime. We clean-in-place so your equipment stays on the floor and your line gets back to production faster. Our founder brings a background in federal environmental law enforcement and compliance consulting, ensuring every job meets the highest safety and regulatory standards.

The Manufacturing Challenge

Manufacturing and machine shops accumulate oils, coolant residue, metal fines, grease, carbon deposits, and coating buildup on equipment and infrastructure. Traditional cleaning methods — solvent wipe-downs, pressure washing, and abrasive blasting — introduce water, risk surface damage, create secondary waste, and require costly downtime. Dry ice blasting is a non-abrasive, dry, chemical-free process that removes contaminants in place while preserving tolerances, surface finishes, and equipment integrity.

Pain Points We Address



Production Downtime

Equipment pulled offline for cleaning means lost output. Disassembly, solvent soaking, drying, and reassembly extend maintenance windows far beyond the actual cleaning time.



Secondary Waste Streams

Pressure washing generates contaminated wastewater. Solvent cleaning creates spent chemistry and VOC exposure. Abrasive media requires disposal. All add cost and compliance burden.



Coolant & Oil Buildup

CNC machines, lathes, mills, and grinders accumulate coolant residue, way oil, hydraulic fluid, and metal fines in hard-to-reach areas that manual wipe-downs can't address effectively.



Inconsistent Manual Cleaning

Hand scrubbing and wipe-downs are labor-intensive, often leave streaks or lint, miss recessed areas, and produce inconsistent results that can affect overall part quality.



Surface Damage Risk

Abrasive blasting and aggressive scrubbing can alter tolerances, scratch machined surfaces, damage coatings, and compromise the dimensional accuracy of precision tooling.



Electrical & Controls Risk

Motors, VFDs, PLCs, sensors, and control panels need cleaning but can't tolerate moisture. Wet methods force full de-energization and extended dry-out times.



High-Value Applications



01

CNC Machines, Lathes, Mills & Grinders

Remove coolant residue, oil buildup, metal fines, and swarf from ways, spindles, enclosures, and chip trays without disassembly.

02

Molds, Dies & Tooling

Remove release agents, carbon buildup, and residue from molds and forming tools without altering surface profile or tolerances.

03

Weld Fixtures & Jigs

Clean spatter, anti-spatter coatings, oils, and production residues from fixtures to restore dimensional accuracy and contact surfaces.

04

Electrical Panels & Controls

Detail cleaning of cabinets, PLCs, VFDs, motors, and sensors under LOTO – no moisture introduced into electrical systems.

05

Hydraulic Systems & Presses

Degrease press beds, rams, manifolds, and hydraulic components – removing oil and contamination without generating wastewater.

06

Conveyors, Robots & Material Handling

Clean conveyor chains, rollers, guides, robotic arms, and end effectors to restore function and prevent contamination transfer.

07

Facility Infrastructure

Overhead steel, piping, ductwork, walls, and floors – remove oil mist buildup, shop grime, and airborne residue over time.

08

Pre-Paint & Coating Prep

Remove oxidation, coatings, and mill scale to prepare substrates for finishing without altering surface profile.

09

Shutdown & Turnaround Cleaning

Deep-clean production lines during scheduled maintenance. Clean-in-place methods reduce teardown and restore equipment faster.

10

Deburring & Deflashing Support

Remove flash, burrs, and particulates from molded and machined parts as a secondary finishing step – dry process leaves no residue.

The Business Case for Proactive Equipment Cleaning

Deferred maintenance cleaning is one of the most overlooked cost drivers in manufacturing. Equipment that runs dirty doesn't just look bad – it degrades output quality, accelerates component wear, increases unplanned downtime, and creates safety and compliance exposure. A proactive cleaning program built around dry ice blasting addresses all four risk categories simultaneously, without introducing the secondary problems of traditional cleaning methods.

30–50%

Faster Turnarounds

Facilities using clean-in-place dry ice blasting during scheduled maintenance report 30–50% shorter cleaning windows compared to manual or wet methods requiring teardown and dry time.

Up to 25%

Fewer Unplanned Stops

OSHA and industry reliability studies consistently link contamination buildup – oil, coolant residue, metal fines – to higher rates of unplanned equipment failure and production interruption.

3–5x

Waste Handling Savings

Eliminating secondary waste streams (wastewater, spent solvents, blast media) reduces disposal costs, manifesting requirements, and environmental compliance burden by 3–5x.

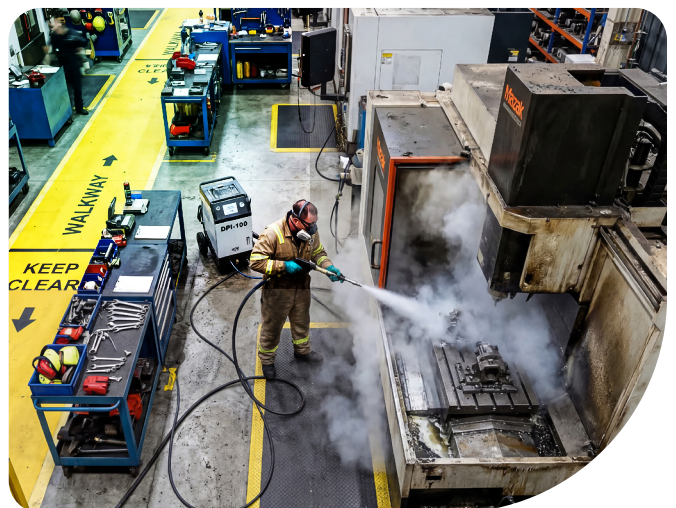
Workforce Impact: Cleaner Facilities, Safer Operations

The connection between facility cleanliness and workforce outcomes is well-documented. Oil and coolant accumulation on floors, walkways, and equipment surfaces is a leading contributor to slip, trip, and fall incidents in manufacturing environments. OSHA data consistently ranks these among the top recordable injury categories in general manufacturing (NAICS 31–33).

Beyond physical hazards, traditional cleaning methods introduce their own workforce risks. Solvent-based cleaning exposes workers to volatile organic compounds (VOCs), increasing respiratory and dermatitis incident rates. Pressure washing in electrical environments creates shock and arc flash exposure. Abrasive blasting generates airborne particulates requiring respiratory protection programs.

Dry ice blasting eliminates all three exposure vectors. The process is non-toxic, non-conductive, and generates no secondary airborne particulates beyond the contaminant being removed.

For manufacturers managing OSHA recordable rates, Experience Modification Rates (EMR), or Total Recordable Incident Rate (TRIR) targets, integrating dry ice cleaning into maintenance programs directly supports those metrics.



Total Cost of Ownership: The Real Cost of Cleaning

Most manufacturers evaluate cleaning costs on a per-service basis – what does this cleaning event cost? But the real cost of any cleaning method is the total burden it places on your operation: labor, materials, downtime, waste handling, compliance, and equipment impact. When you account for all cost drivers, dry ice blasting consistently delivers the lowest total cost of ownership.

Hidden Cost Comparison

Cost Category	Manual / Solvent	Pressure Wash / Abrasive	Dry Ice Blasting
Direct Labor Hours	High – manual scrubbing, multiple passes	Moderate – setup and containment time	Low – single-pass, no setup
Material / Chemical Costs	Ongoing – solvents, rags, degreasers	Moderate – media, water supply	Dry ice only – sublimates on contact
Equipment Downtime	Extended – disassembly + dry time	Extended – wet process + dry-out	Minimal – clean-in-place, no dry time
Secondary Waste Disposal	Hazmat – spent solvent manifesting	Wastewater – treatment or hauling	None – zero secondary waste
Surface / Tolerance Risk	Moderate – aggressive scrubbing	High – abrasion, pressure damage	None – non-abrasive, tunable
Regulatory Compliance Burden	High – VOC reporting, haz waste	Moderate – discharge permits	Low – no permits, no waste streams
PPE / Exposure Management	Respiratory + chemical PPE	Hearing + respiratory PPE	Standard PPE + CO ₂ monitoring

The Real Question Isn't What Cleaning Costs — It's What Dirty Equipment Costs

When coolant residue overheats a CNC spindle bearing, the cost isn't skipped cleaning – it's a \$15,000 rebuild, lost production time, and expedited replacement parts. When OSHA cites oil accumulation on walkways, the cost isn't cleaning – it's recordables, higher EMR, insurance premium increases, and compliance scrutiny. Dry ice blasting isn't a cleaning expense but a proactive maintenance investment that protects equipment value, preserves production uptime, reduces compliance risk, and extends the service life of critical capital assets.

Ready to see what clean-in-place service looks like for your operation?

Contact us for a no-obligation site assessment and scope of work.

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Regulatory & Operational Comparison

Benefits	Dry Ice	Trad. Cleaning
No wastewater generation; fewer discharge concerns	✓	✗
No secondary blast media to characterize or dispose of	✓	✗
Reduces reliance on solvents (lower VOC exposure and haz waste)	✓	✗
Non-abrasive: preserves tolerances, finishes, and coatings	✓	✗
Clean-in-place capability – minimal disassembly required	✓	✗
Safe for electrical/electronic components (non-conductive, dry)	✓	✗
Supports 5S, lean, and ISO quality/audit programs	✓	✗
No drying time – equipment ready for production immediately	✓	✗

EPA, FDA & USDA Accepted:

Dry ice blasting uses recycled CO² and is recognized as an approved cleaning media by EPA, FDA, and USDA. It introduces no chemicals, no water, and no secondary contaminants into your production environment.

Safety & Credentials



Fully Insured

General liability + workers' comp coverage



LOTO Certified

Lockout/tagout trained operators



CO₂ Monitoring

Real-time atmospheric monitoring on every job



Site-Specific JSAs

Customized Job Safety Analysis for each project

What Sets **SUBLIMATE** Apart



Single-Source Accountability

One crew, one process, and one dedicated point of contact throughout the entire project. No subcontracted layers or coordination gaps between you and the work being carried out on site.



Zero Secondary Waste

No blast media to sweep up, no wash water to treat, no spent chemistry to dispose of. The only residue is the removed contaminant itself — simplifying waste handling and disposal.



Full Documentation Standard

Every job includes before/after photo records, written scope completion notes, and JSA documentation — ready for your quality audits, ISO records, and maintenance logs.



Built for Production Schedules

We mobilize within your scheduled maintenance windows and clean in-place so equipment stays on the production floor. No degreasing bays, no soak tanks, no extended dry times.



Tunable, Surface-Safe Process

We adjust pressure, media flow rate, and nozzle selection to match each substrate — from hardened tool steel to delicate machined surfaces, coatings, and plated finishes.



Trained, Insured & Site-Ready

Our operators carry their own PPE, follow your LOTO and EHS protocols, and arrive with CO² monitoring and containment plans already prepared. We integrate into your safety culture.

Sublimate Technologies Core Philosophy

Sublimate Technologies was founded on a simple principle: deliver results that exceed expectations, every single time. Our founder's background in federal service and environmental consulting instilled a standard of precision, accountability, and professionalism that runs through everything we do. We've invested heavily in best-in-class technology. But equipment alone doesn't set us apart. What makes Sublimate different is how we work. We take the time to understand each client's operation, and build lasting partnerships rooted in trust and consistent performance.

Common Equipment We Clean:

Motors • Generators • Turbines • Compressors • Pumps • Gearboxes • Heat Exchangers • Boiler Tubes • Condensers • Valve Assemblies • Hydraulic Units • Press Beds • Conveyor Systems • Weld Fixtures • Robotic Cells • Injection Molds • Ovens • Kilns • Switchgear • Transformers • MCC buckets • VFDs • Control Panels • Cable Trays • Tank Internals •

Core Capabilities



Non-abrasive, dry cleaning
(clean-in-place)



Detail cleaning for sensitive surfaces
& precision tooling



Electrical and controls cleaning under
LOTO protocols



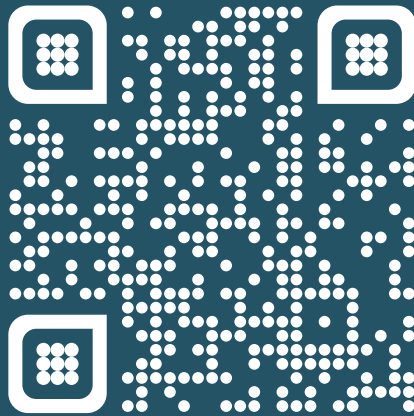
Shutdown/outage support and
rapid turnarounds



Containment, debris capture,
and full documentation



Mold, die & fixture cleaning
without disassembly



Company Data

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Email: oware@sublimatech.com

Website: www.sublimatech.com

Insurance: General Liability + Workers' Comp

How It Works



Contact us with your cleaning challenge — what equipment, what contaminant, what timeline.



We provide a scope and quote, typically within 24–48 hours.



We mobilize to your facility with our own equipment, dry ice, compressor, and PPE.



We clean in-place during your scheduled window — your equipment stays on the floor.



You receive before/after documentation and scope completion notes for your records.