



GAMAJET®

GAMAJET Cleaning Systems, Inc.
604 Jeffers Circle, Exton, PA 19341

Are your tanks **dirty**?

Want to save **time and water**?

Need to **validate** your tank cleaning process?

Tired of **confined space entry**?

Want Sustainability?

Personal Care and Pharmaceutical Industry

The most efficient and effective tank cleaning for any application

Become More Sustainable with Gamajet

Use **70% Less Water**

Clean **85% Faster**

Consume **90% Less Chemicals**

Validate your tank cleaning process

Eliminate confined space entry

Tank Types:

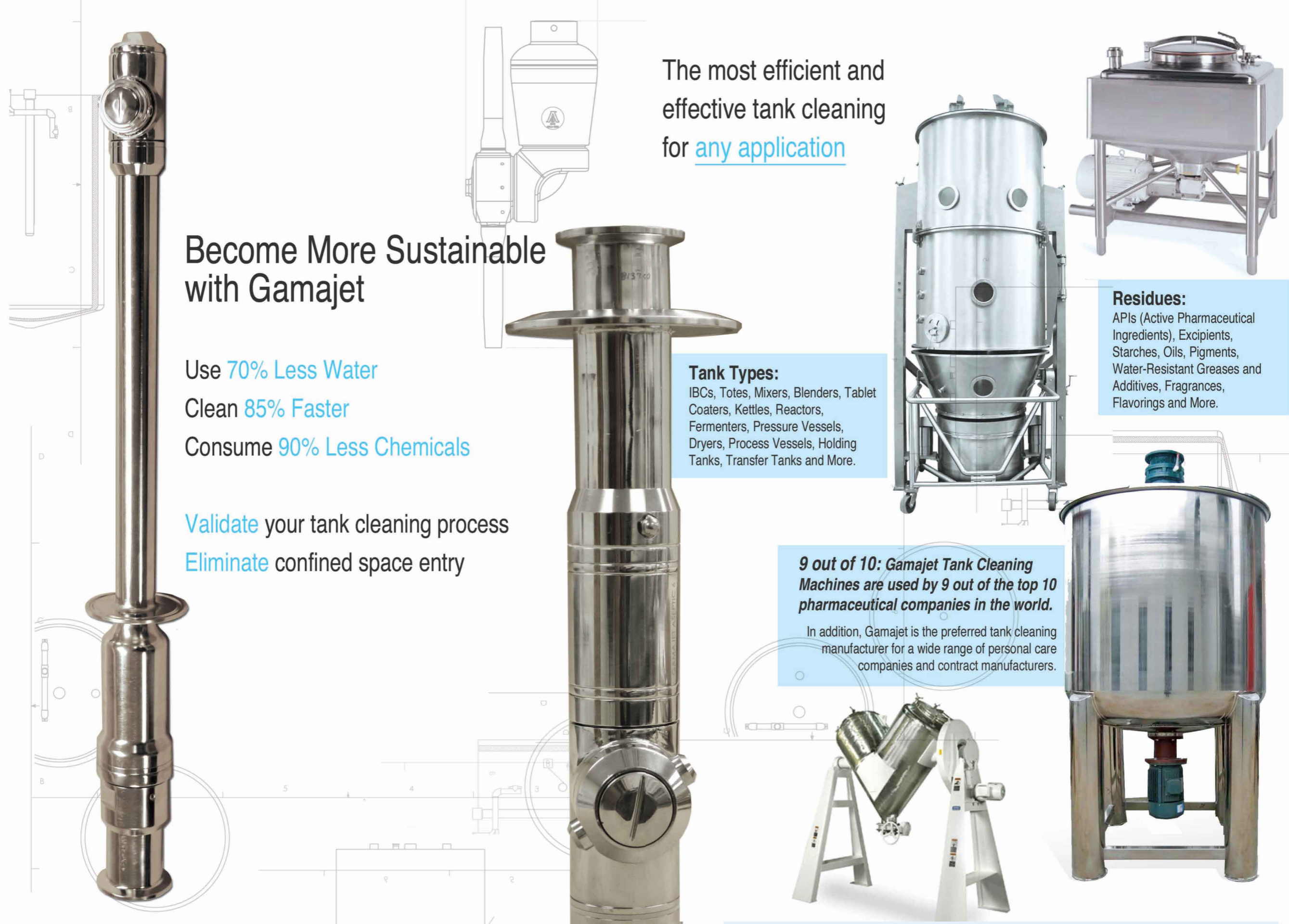
IBCs, Totes, Mixers, Blenders, Tablet Coaters, Kettles, Reactors, Fermenters, Pressure Vessels, Dryers, Process Vessels, Holding Tanks, Transfer Tanks and More.

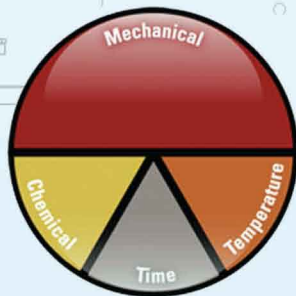
Residues:

APIs (Active Pharmaceutical Ingredients), Excipients, Starches, Oils, Pigments, Water-Resistant Greases and Additives, Fragrances, Flavorings and More.

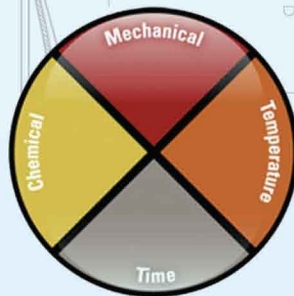
9 out of 10: Gamajet Tank Cleaning Machines are used by 9 out of the top 10 pharmaceutical companies in the world.

In addition, Gamajet is the preferred tank cleaning manufacturer for a wide range of personal care companies and contract manufacturers.

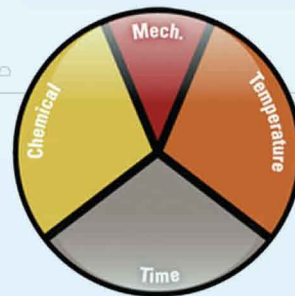




GAMAJET®



Rotary Wetting

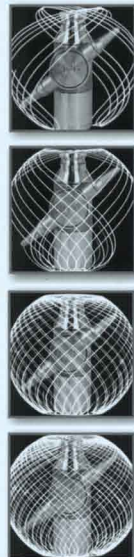


Spray Ball

Dr. Herbert Sinner, a former chemical engineer for Henkel, first summarized the basic principals of cleaning in 1959. His summary, now referred to as the Sinner's Circle (seen above), describes the four factors that can be manipulated in any cleaning scenario: **Temperature, Chemical Reaction, Time and Mechanical Action**. When the effectiveness of any factor is reduced, it must be compensated with the increase of one or multiple other factors. Washing dishes is an effective example of how the four factors interact. Hot water temperature is going to remove stuck on food better than cold. Adding soap (chemical reaction) makes the process even easier, and you can either soak a dish overnight (time) or scrub the dish clean (mechanical action). **Gamajet utilizes the "mechanical action" to its maximum benefit, resulting in a drastic reduction of the three remaining factors; time, chemical and temperature.**

Why use Gamajet's Proven Rotary Impingement Tank Cleaning Technology?

Gamajet's rotary impingement tank cleaning machines combine pressure and flow to create high impact cleaning jets. Cleaning occurs at the point at which the concentrated stream impacts the surface. It is this impact and the tangential force that radiates from that point which **blasts contaminants from the surface**, scouring the tank interior. In conjunction with this impact, the Gamajet is engineered to rotate in a precise, **repeatable and reliable, 360-degree pattern** (seen right). This full-coverage, indexing pattern ensures the **entire tank interior is cleaned**, every time. This combination of impact in a controlled indexing manner results in an economic homerun, because impact is a one time investment; chemicals, temperature and time are continual, never-ending expenditures.



Are we cleaning efficiently?
 How can you validate manual cleaning? What about human error?
 How much revenue is lost, per hour, due to tank downtime?
 How much water do we waste?



As the Tank Cleaning Experts, with over 60 Years of Experience, Gamajet Provides the Best Cleaning Solution For Your Application, Backed By Quality Service and Products

Case Studies

53% Less Chemicals
88% Less Time
\$9.97 Mil. in Recovered Revenue

Memphis, TN
Tank Type: 8 Storage and Process Vessels with Agitators
Tank Residue: Variety of Water Resistant Lotions
Tank Revenue Per Hour: \$4700
Current Procedure: Tanks are initially rinsed with 3 sprayballs and then filled with ethanol, while blades are agitated. Cleaning takes a total of 8 hours per batch with 303 batches per year.

Tank Cleaning Downtime
 2,424 hours per year
Ethanol Usage
 864,560 kg per year
Revenue lost to Cleaning
 \$11,392,800 per year

Solution: Gamajet Mobile CIP System powering 2 Gamajet IX's operating at 180 psi and 22 gpm (per machine). Cleaning includes a 15 minute pre-rinse, 35 minute recirculated wash with caustic and a final 10 minute rinse with ethanol, totalling 1 hour.

Tank Cleaning Downtime
 303 hours per year
Ethanol Usage
 406,727 kg per year (At \$1.00 per kg \$457,833 in Ethanol was saved)
Revenue Recovered
 \$9,968,700 per year

71% Less Chemicals/Water
82% Less Time
\$5.1 Mil. in Recovered Revenue

Phillipsburg, NJ
Tank Type: 3 Process Vessels with Center Agitator
Tank Residue: Active Pharmaceutical Ingredients
Tank Revenue Per Hour: \$9000
Current Procedure: Manual cleaning is performed between batches, five hours every 3 days. In addition, 20 hours of manual cleaning is performed every 4 months.

Tank Cleaning Downtime
 688 hours per year
Chemical/Water Usage
 620,000 gallons per year
Revenue lost to Cleaning
 \$6,192,000 per year

Solution: Gamajet Mobile CIP System powering 2 Gamajet Aseptic VI's operating at 120 psi and 10 gpm (per machine). Cleaning includes a 15 minute pre-rinse, 30 minute recirculated wash with caustic and a final 15 minute rinse, totalling 1 hour, every 3 days.

Tank Cleaning Downtime
 121 hours per year
Chemical/Water Usage
 181,500 gallons per year
Revenue Recovered
 \$5,103,000 per year
Eliminated Confined Space Entry

51% Less Chemicals/Water
69% Less Time
\$9.96 Mil. in Recovered Revenue

Somerset, NJ
Tank Type: 8 Process Vessels restricted to a 3" Tri-Clover Opening
Tank Residue: Variety of Cosmetic Products
Tank Revenue Per Hour: \$3300
Current Procedure: Tanks are cleaned daily with 3 sprayballs at 60 gpm. Cleaning includes 20 pre-rinse, 50 minute recirculated caustic wash and a 20 minute final rinse.

Tank Cleaning Downtime
 4,380 hours per year
Chemical/Water Usage
 5,256,000 gallons per year
Revenue lost to Cleaning
 \$14,454,000 per year



Solution: 2 Gamajet Aseptic VI's operating at 80 psi and 20 gpm (per machine). Cleaning includes a 7 minute pre-rinse, 14 minute recirculated wash with caustic and a final 7 minute rinse, totalling 28 minutes every day, for every tank.

Tank Cleaning Downtime
 1362 hours per year
Chemical/Water Usage
 2,569,600 gallons per year
Revenue Recovered
 \$9,959,400 per year

If you have a tank to clean, we have a way to do it!

Comprised of 316L Stainless Steel and FDA Compliant Materials

Product Comparison Chart

Product/ Tank Type	Mechanical Force: Distance	Operating Pressure	Operating Flow	Minimum Clearance	Directional Option	Self Cleaning and Draining
Tanks up to 5' in Diameter						
Gamajet EZ-7	4lbs @ 5'	50-1500 psi	2-8 gpm	1.5"		
Gamajet All-in-One	5lbs @ 5'	100-1000 psi	3.5-6 gpm	1.75"		
Gamajet HDBB	5lbs @ 5'	100-1000 psi	3.5-6 gpm	1.75"		
Gamajet Intrepid*	3lbs @ 5'	20-80 psi	10-30 gpm	3.00"	☉	
Gamajet Aseptic-2 (3-A)* 	3lbs @ 5'	20-80 psi	10-30 gpm	3.00"	☉	
Tanks 5' - 10' in Diameter						
Gamajet Aseptic VI*	10lbs @ 10'	10-700 psi	5-40 gpm	2.8"	☉	
Gamajet NanoJet*	7lbs @ 10'	20-300 psi	5-30 gpm	1.87"	☉	
Tanks 10' - 25' in Diameter						
Gamajet IX	15lbs @ 10'	50-1000 psi	3-30 gpm	2.76"	☉	
Gamajet V	20lbs @ 10'	50-1200 psi	5-45 gpm	3"	☉	
Gamajet PowerFLEX*	40lbs @ 10'	30-500 psi	20-120 gpm	3.875"	☉	
Gamajet Aseptic-1 (3-A)* 	10lbs @ 10'	20-80 psi	20-70 gpm	5.75"	☉	
Tanks 25' - 200' In Diameter						
Gamajet X	25lbs @ 25'	50-750 psi	40-80 gpm	4"		
Gamajet VIII	40lbs @ 25'	20-1000 psi	25-130 gpm	4.75"	☉	☉
Gamajet IV	85lbs @ 25'	20-700 psi	30-320 gpm	6.7"	☉	☉

The average spray ball produces .01lbs of force at any given distance

**Designed Specifically for the Personal Care and Pharmaceutical Industry*



Want an Effective and Economical Solution to Your CIP System? Gamajet manufactures a complete line of Mobile CIP systems for tank and vessel cleaning. These units are tailored to provide the most effective and efficient solution based on the user's application, beginning **inside the tank with the residue**. **See our MCIP Series to Learn More**

Customize your Gamajet with a variety of options:

Inlet Connections

- Tri-Clover
- Female NPT
- Camlock
- R-Clip*

*R-Clip is Only Available with Select Machines

Seals and Bearings:

- EPDM
- Viton®
- Kalrez®

Stator and Nozzle Sizes:

Based on operating conditions for optimal performance.



Watch Videos and Learn More at www.Gamajet.com

GAMAJET® The Tank Cleaning Experts.

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