

Integrated Wastewater Treatment Solutions



MacDermid
ENVIO SOLUTIONS

Taking bigger steps...
to leave a smaller footprint



MacDermid Envio Solutions Smart Partnership

Regardless of the type, difficulty, or urgency of your wastewater challenge, **MacDermid Envio Solutions** can help you solve it.



Who We Are

MacDermid Envio Solutions is the premier provider of integrated wastewater treatment solutions. For over 45 years, we have been dedicated to helping our industrial customers solve their most difficult water treatment issues economically. At **MacDermid Envio Solutions**, we take the worry out of wastewater by:

- Getting you into compliance and helping you stay in compliance
- Saving you money
- Helping you use water more efficiently

Why Work With MacDermid Envio Solutions

As a truly integrated provider of wastewater treatment solutions, we are uniquely positioned to help. **MacDermid Envio Solutions** has in-house expertise in equipment design, chemical solutions and process. No other provider has the depth and breadth of capabilities to solve your problems. More importantly, our cross-functional capabilities allow us to be 100% accountable for your system - no more finger-pointing between your chemical vendor and your equipment provider.

Integrated solutions

The power of an integrated solution begins with design. Something as simple as which polymers and coagulants you choose for treatment can impact the size of the mixing tanks, mixers and filter or belt press. Working with separate equipment and chemical vendors typically result in post-installation issues due to lack of understanding and upfront coordination during the design process.

As your manufacturing process evolves with time, so too will your waste treatment needs. Having a single-source wastewater treatment provider means your designated account manager has the unique ability to rapidly adapt to your needs, utilizing the latest chemical and equipment

Equipment Design
& Fabrication

Chemical
Optimization



Integrated

technologies - but only those that are appropriate and cost-effective.

MacDermid Envio Solutions has a great depth of knowledge in a variety of fields and always delivers the most technically-fitting solutions for customers. As a consultant, I have partnered with **MacDermid Envio Solutions** for many years and they have addressed every customer problem and need successfully.

Owner, National Water Treatment Consulting Firm

MacDermid Envio Solutions Industries & Customers

- Surface Finishing Industry
- Aerospace & Defense Manufacturing
- Automotive & Heavy Industry
- Electronics & Semiconductor Manufacturing
- Corrugated Box & Flexo Printing
- Paint & Finishings
- Adhesive & Sealant Manufacturing
- Chrysler
- General Motors
- John Deere
- Pratt & Whitney
- Toyota
- GE
- Boeing
- Bosch
- Caterpillar
- Corning
- Piper
- Beretta
- Freightliner
- Motorola

Your Partnership with MacDermid Envio Solutions

We know your primary goal is to produce products as efficiently as possible. Wastewater management is only your concern when it isn't working or when it costs too much. We understand - we've been solving wastewater problems for companies like you for over 45 years in over 40 countries.

At **MacDermid Envio Solutions**, we want to understand every aspect of your production and business goals, so we can build the best strategy to solve your challenges.

Our consultative, collaborative partnership process includes:

- Compliance Assurance
- Routine Maintenance & Consumables
- Site Supervision & Labor
- Rapid Response Engineering
- Training & Advice
- Laboratory Support



Integrated Wastewater Treatment Solutions & Industrial Wastewater Recycling



Equipment Designed to Meet Your Wastewater Challenges

MacDermid Envio Solutions brings a wealth of experience and technology to the in-house manufacture of integrated wastewater treatment solutions. Using high-quality components, our systems are designed to let you realize maximum efficiency with the most Cost-effective methods. From the removal of heavy metals or the separation of oils and grease, to the reduction of chemicals or organics, we will work with you to provide equipment, controls and chemicals that meet your discharge requirements and best integrate with your existing production processes.

Industrial Wastewater Recycling & Reuse

MacDermid Envio Solutions industrial water reuse solutions integrate seamlessly into existing industrial wastewater treatment processes to reclaim effluent, treat it, and then supply the purified water back to the facility wherever it's needed. Reclaimed water can be used anywhere from manufacturing rinse lines to boiler feed water and cooling tower makeup water.

Automation & Controls for Wastewater Treatment

Effectively automating your wastewater treatment system offers outstanding investment payback by reducing errors and allowing for a reallocation of labor.

MacDermid Envio Solutions in-house programmers work in close collaboration with our design team to build best in class control panels that will help you take better control of your wastewater treatment system.

Solving the Chemical Equation

Other wastewater treatment providers will sell you chemicals, but as an **ISO 9001 certified chemical manufacturer, MacDermid Envio Solutions** brings decades of experience developing and blending chemicals designed to work cohesively with systems for optimal long-term results. Our proprietary formulas and application expertise will help you stay in compliance, extend the life of your equipment and reduce downtime.



MacDermid Envio Solutions Comprehensive Solutions

For 45 years, we have provided continued success for our clients because we are singularly focused on providing exceptional industrial wastewater solutions with the best possible people, state-of-the-art techniques and technologies, and outstanding service.

I What MacDermid Envio Solutions Can Do for You

MacDermid Envio Solutions integrated approach makes us the best choice for your wastewater needs. Our unique ability to rapidly adapt to changing technology and regulations makes us your optimal, single source solutions partner. Some examples of our many offerings include:

- Heavy Metal Removal
- Sludge Dewatering
- Total Suspended Solids
- Upgrades
- Fats, Oils & Grease
- Water Recycle & Reuse
- BOD, COD Reduction
- Automation & Controls
- Remote Monitoring
- Zero Liquid Discharge

Chemical optimization is designed as part of our complete treatment solution and is a key piece of our integrated approach. Pairing chemicals that work in harmony with your specific equipment design not only creates the best possible treatment conditions, it also offers long-term advantages that positively impact operating costs. Our chemical offerings include:

- Coagulants
- Flocculants
- Organic Polymers
- Sludge Conditioners
- Membrane Cleaners & Anti-Scalants
- pH Control
- Defoamers
- Reducing Agents
- Cleaners & Degreasers
- Odor Control
- Biocides & Bio-Dispersants

I Environmental Services for Compliance Security

EnvioCARE is our customizable Service Program that allows you to select from a range of support plans to manage your water treatment system to ensure environmental compliance at all times. Maintenance, supervision, engineering, training and routine analysis are all available to mix and match to your specific requirements. **EnvioCARE** ensures your wastewater treatment system remains in compliance and is supported by a dedicated team of professional experts in water management.

With **EnvioCARE**, you have support from the best chemical and engineering experts in the water treatments industry.

I Design your service the way you need it:

EnvioCARE includes on-site management, scheduled service visits and remote monitoring services.

You select exactly what your business needs:

- From 24/7 Support to Annual System Inspections
- From Full time On-Site Engineers to Routine Analytical Services
- From Daily Site Checks to Monthly System Audits
- Emergencies Cover and Flexible Site Service
- For Convenient and Cost-Effective Environmental Services, ask about

EnvioCARE



EnvioCARE

MacDermid Envio Solutions significantly reduced our waste treatment program costs. With their direction and expertise, they designed a site-specific program that fit our requirements and helped us achieve our corporate initiatives to reduce overall operating costs.

Carter Hanson, Environmental Manager, Patrick Cudahy LLC

Integrated Wastewater Treatment Solutions

Case Study: MacDermid Envio Solutions Helps Surface Finishing Subcontractor to Meet Discharge Limits

Location: Ohio, USA
Industry Type: Surface Finishing Sub Contractor
Project Cost: \$819,000



MACDERMID ENVIO SOLUTIONS SYSTEM PERFORMANCE

Metal	Limit (ppm)	MES Discharge Avg (ppm)
Chrome	< 3	Non-Detectable
Zinc	< 2	0.7
Nickel	< 3	Non-Detectable

WASTEWATER FLOW RATE FOR THIS FACILITY
200-250 Gallons/minute (45-57 m³/hour)

The Situation

After a fire had destroyed all process lines as well as the wastewater treatment and ventilation system, a sub-contract metal finishing company needed help with designing and installing a new wastewater treatment system to treat the waste streams from 5 fully automated plating lines:

1. Automatic Barrel Acid Zinc Plating System
2. Manual 9' Rack Acid Zinc Plating System
3. Manual 12' Aluminum Anodize System
4. Manual Barrel and Rack Zinc Phosphate System
5. Small Rack Alkaline Non-Cyanide Copper Plating Line

The MacDermid Envio Solution

MacDermid Envio Solutions assisted with the design of a new customized wastewater treatment system and worked closely with the insurance company's engineering evaluation team. The new system helped the customer to not only meet the required discharge limits but to stay well below them. With a waste volume of 200 GPM/day, the system has worked flawlessly ever since its installation.

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