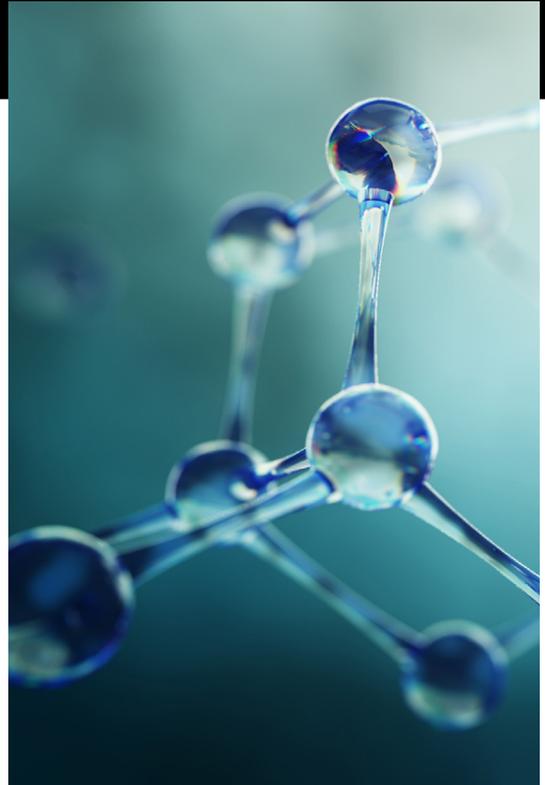


POLYBLEND[®]

DYNABLEND[™]

POLYMER FEED SYSTEMS



SOLUTIONS THAT WORK



Proper Polymer Activation is the Key

Proper Polymer Activation Systems Maximize Effectiveness and Help Reduce Costs

Backed by decades of scientific research and field experience gained from more than 10,000 installations, Polyblend® mechanical and Dynablend™ hydraulic polymer activation systems deliver significant operational savings by reducing the consumption of polymers used for the treatment of water and wastewater.

Polymers vastly improve the operation of water and wastewater plants by accelerating the settling of particles and improving sludge dewatering. **Polymer costs are one of the largest operating expenses at a plant. Even a small reduction in polymer consumption can result in meaningful savings.** Proper polymer activation is the key to maximizing polymer effectiveness.

How We Achieve Optimal Results

To get optimal “uncoiling” of polymer chains without damaging or shortening the polymer chain, different levels of energy must be applied to the polymers at different times. High energy mixing is required to prevent agglomerations, but over-mixing can damage the

polymer. **The key is to shift mixing energy over time to get optimal results.**

Following the science of polymer activation, our hydraulic and mechanical mixing technologies employ two-zone mixing regimens of applying high energy at the moment of initial wetting (MOIW) followed by a transition to a low-energy quiescent zone.

As a result, our Polyblend® and Dynablend™ polymer mixing systems can consistently achieve high activation levels and viscosities.

All cleanwater1 polymer activation systems are designed using the science of efficient polymer activation.

The Science of Efficient Polymer Activation



How We Optimize Performance

We Follow the Science

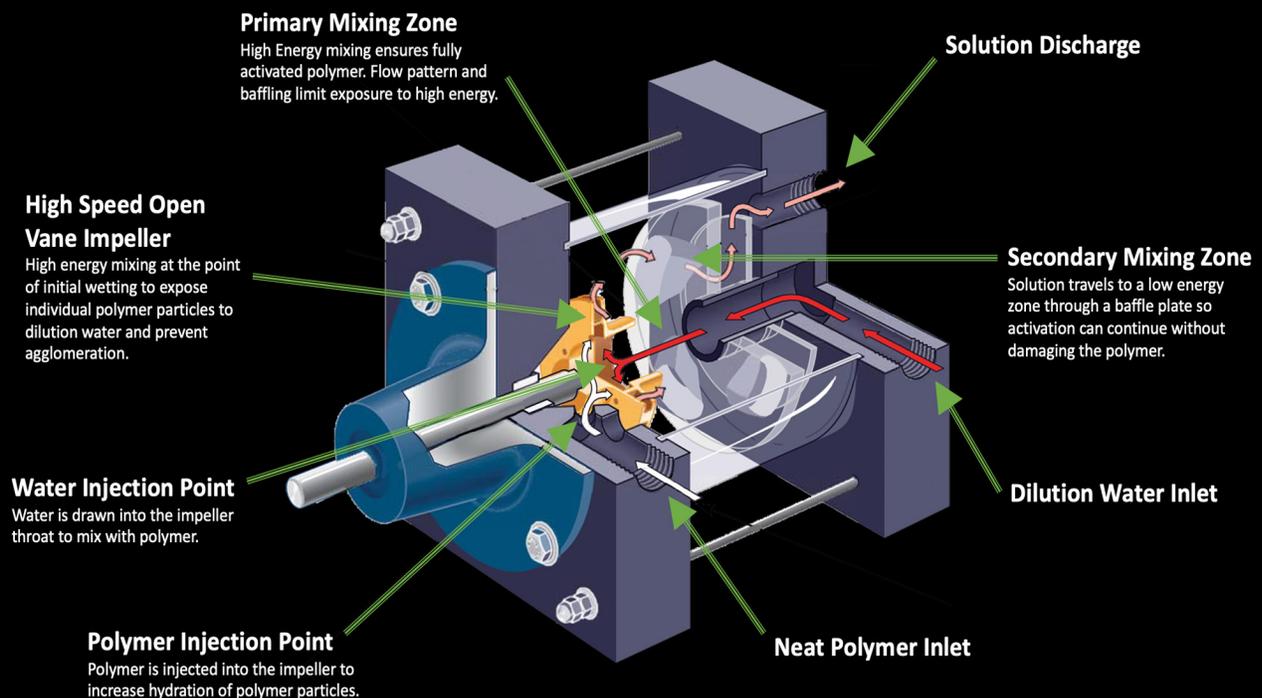
Our Polyblend® and Dynablend™ systems are designed to optimize polymer performance because they follow the latest in polymer science: Two stage mixing with the highest energy applied first at the moment of initial wetting (MOIW) followed by a “quiescent” zone allowing for more gentle activation. *This two-zone mixing regimen is widely recognized by polymer experts and manufacturers as the proper mixing methodology to optimize polymer activation.*

Polyblend® and Dynablend™ - The De-Facto Standard for Water and Wastewater Professionals

Cleanwater1 is proud to offer the most comprehensive line of both mechanical and hydraulic polymer activation feeders. With thousands of installations around the world, Polyblend® and Dynablend™ polymer activation systems not only represent the best science of polymer blending, but they are the de-facto standard for serious water and wastewater professionals focused on the best polymer efficiencies.

The Polyblend® name has become synonymous with water and wastewater polymer optimization.

How We Achieve High Activation Levels and High Viscosities



Emulsion Polymer Activation Technologies



Polyblend® M Series

POLYBLEND®

Mechanical Mixing

- Highly efficient mixing process leads to polymer savings
- Excels at handling high molecular weight polymers
- Quantifies the energy input and relates it to G value. This is important for high molecular weight polymers or polymers with a tight tolerance for activation.
- Low maintenance cost
- Wide variety of size options
- Large installation base

Polyblend® Mechanical Activation (Emulsion Polymer)

Series	Water Flow Rate GPH/(LPH)	Polymer Output Range
PB Series	1.6 - 1200 / (6 - 4540)	0.005 - 8 / (0.015 - 30.2)
M-Low Series	3 - 120 / (11.4 - 454.2)	0.5 - 2.5 / (1.5 - 9.5)
MM-Series	240 - 3200 / (912 - 22,800)	0.5 - 660 / (1.5 - 2508)
M-Series	240 - 12,000 / (912 - 45,600)	0.5 - 660 / (1.5 - 2508)

Achieve Greater Savings with Two-Stage Mixing

cleanwater1's industry-leading emulsion polymer activation technologies use two-stage mixing to achieve superior results. We frequently see higher polymer savings with two-stage mixing compared to single-stage mixing. Optimizing mixing energy ensures consistent performance. This allows us to handle new polymer developments, ultra-high molecular weights, different charge densities and new chemistries. Our compact size and open-frame designs enable easy installation, access, and maintenance in confined spaces. Control options range from simple manual to full PLC-based automatic control with complete SCADA interface.

DYNABLEND™

Hydraulic Mixing

- Performs well with wide range of molecular weight polymers
- No moving parts in the mixing chamber
- Low operating cost
- Low maintenance cost
- Multiple mixing chamber sizes
- Highly reliable



Dynablend™

Dynablend™ Hydraulic Activation (Emulsion Polymer)

Series	Water Flow Rate GPH/(LPH)	Polymer Output Range
Miniblend™	12 - 1200 / (45 - 4543)	0.0125 - 5 / (.05 - 18.9)
L4	12 - 1200 / (45-4543)	0.125 - 20 / (.05 - 75.7)
L6	180 - 3000 / (681 - 11,356)	0.125 - 20 / (.05 - 75.7)
L8	360 - 6000 / (1363 - 22,712)	1.5 - 300 / (5.7 - 1135)
L12	900 - 21,000 / (3407 - 79,494)	1.5 - 300 / (5.7 - 1135)

Dry Polymer Activation Technologies

POLYBLEND®

Mechanical Mixing

To create the ideal environment for the first stage of dry polymer dissolution, crucial initial wetting occurs in the DD4 disperser, where polymer and water are subjected to high energy created by mechanical mixing.

The dry polymer is precisely metered into the high-energy mix chamber and properly activated with water.

After brief exposure, the solution exits the high-energy disperser. The point of initial polymer / water contact is visible to the operator through a clear, acrylic interface.

See available size options on the next page.



Polyblend® DP2000



Dynajet™

DYNAJET™

Pneumatic Conveyance System

The Dynajet™ technology uses a blower-induced pneumatic conveyance system to transfer up to 12 lbs of polymer per minute from the volumetric feeder to the wetting head with higher capacity custom systems available. The polymer is naturally dispersed in the conveyance air before introduction to the dilution water for optimum polymer-particle wetting.

Polymer and water come together in a high flow shower of water produced by specially designed waterjets to ensure complete polymer-particle wetting. The solution that's created enters the mix tank where the polymer solution is ready for the mixing and aging process.

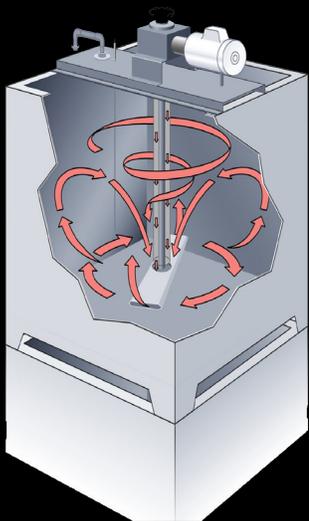
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Low-Energy Mix Tanks Create Uniformity

Most polymer mix tanks are not uniform in their mixing energy. Agglomerations form in the portions of the tank that receive the least mixing energy, while polymer chains are broken up at the tip of the rotating mixing blade. In contrast, the Polyblend® activated polymer storage tank is specifically designed to provide fully uniform mixing intensity.

The rotating impeller, known as a "hollow wing," has a length that is more than half the width of the tank. This unique design continuously moves the solution both vertically and horizontally, creating a pump-like action that reduces agglomerations and broken polymer chains. The square tank design eliminates the potential for a damaging vortex. With minimal waste, polymer costs are reduced and polymer activation performance is improved.

The hollow wing impeller design is available for use with various tank sizes up to 2,000 gallons. The hollow wing design is standard on all Polyblend® dry polymer systems and optional on Dynajet™ dry polymer systems.





Experience the Savings

Experience the effectiveness of science-based polymer mixing systems for yourself. We're so sure you'll be satisfied with a demonstration on your existing or new application, that we'll bring the on-site trial to you for a side-by-side comparison.

Facts about the on-site demo program:

- Available for Polyblend®, Dynablend™ and Dynajet™ polymer activation systems
- At any given time, we have 10 demo emulsion systems operating in the field
- Two trailer mounted dry polymer systems are available
- Highly regarded by customers and consulting engineers
- Provides direct evidence of polymer savings
- Case studies about the demo program are available

Polymer Feed & Control Applications

- Drinking water
- Groundwater remediation
- Industrial process water
- Wastewater
- Water reuse and recycle

“The PolyBlend® DP800 Demo Trailer was very simple to use. I just set the settings and walked away; it was extremely user-friendly. The way it blends and the resulting polymer solution – and the reduction in polymer usage – made this an excellent unit.”

*Brad Anderson, O&M Tech V
Fairfield-Suisun Sewer District, CA*

Polyblend® Mechanical Activation (Dry Polymer)

Series	Water Supply GPM (LPM)	lbs. (kg) Polymer/Hr. @ 0.75% Concentration	# of Tanks/ Tank Capacity USG (L)
DP 110	10 (37.8)	4 (1.8)*	2/75 (283)
DP 500	20 (75.7)	16 (7.3)	2/160 (606)
DP 800	30 (113.6)	32 (14.5)	2/360 (1363)
DP 2000	30 (113.6)	62 (113.6)	2/750 (2839)
DP HC	115 (435)	469 (212)	2/7500 (23,385)

*Numbers provided are @ 0.3% concentration. Cleanwater1 does not recommend exceeding this concentration for DP110 systems.

Dynajet™ Hydraulic Activation (Dry Polymer)

Series	Water Supply GPM (LPM)	lbs. (kg) Polymer/Hr. @ 0.75% Concentration	# of Tanks/ Tank Capacity USG (L)
DJM-390	50 (185)	27 (12)	2/390 (475)
DJM-750	50 (185)	40.5 (18.4)	2/750 (2839)
DJM-750	50 (185)	63 (28.5)	2/1000 (1363)
DJM-750	50 (185)	87 (39.5)	2/1500 (5675)
DJM-750	50 (185)	114 (51.7)	2/2000 (7570)
DJM-2500	50 (185)	138 (62.5)	2/2500 (9460)

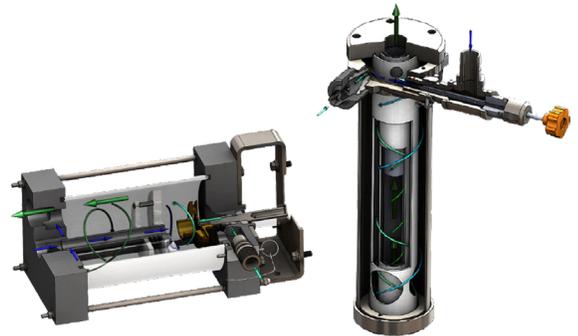
Large capacity systems available. Please consult your sales representative.

Which Technology is Right For You?

cleanwater₁ offers a comprehensive line of polymer activation methods with both the mechanical activation design of the Polyblend[®] system and the hydraulic activation design of the Dynablend[™] system for all emulsion and dry polymer formulations. And additional dry polymer options are offered via the Dynajet[™] Pneumatic System.

Our team of trained experts can help determine the best technology for your application. Because we are not limited to one technology, you can feel confident knowing we're committed to finding the system that meets your process objectives.

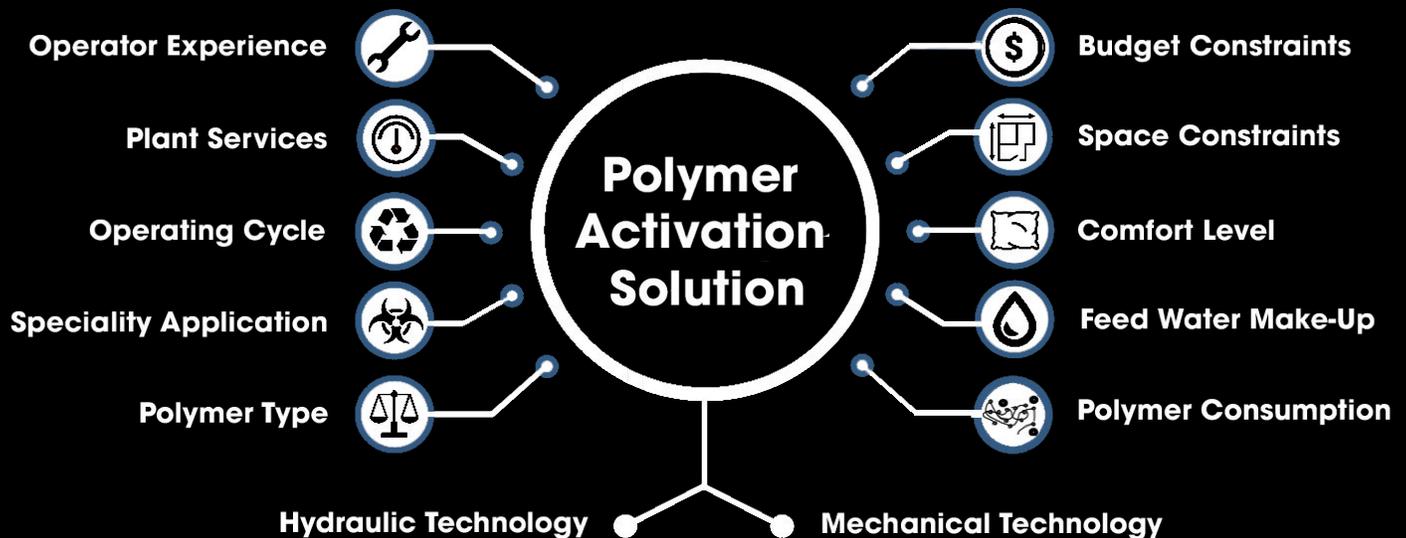
Dynablend[™] Hydraulic Mixing



Polyblend[®] Mechanical Mixing

We Provide Custom Solutions For Every Application

Our experts will guide the equipment selection process based on your particular application. Listed below are the various factors we take into account when creating your custom solution.



cleanwater₁

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