

MegaShot™ Process Technology

End Point Chemical Blending and Distribution

- » Performs accurate and precise batch-blending of liquid chemicals and slurries
- » Rapid make-up rates
- » Scalable system platform
- » Ideal for short pot-life recipes

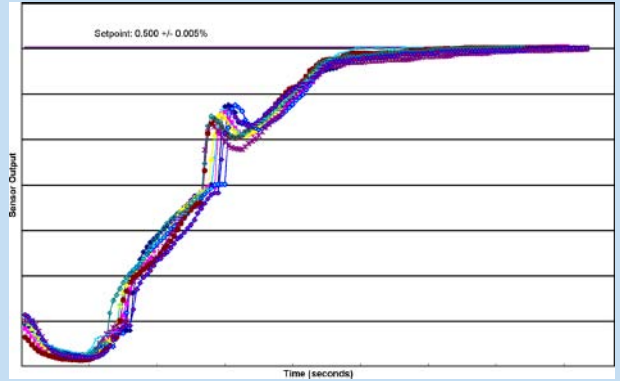
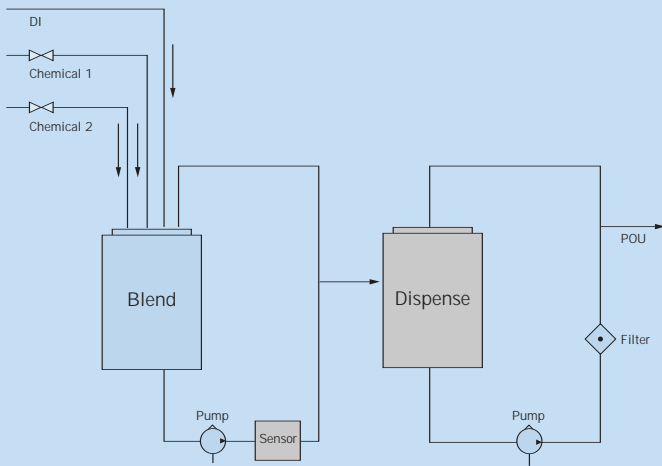


Product Overview

The MegaShot chemical blending process technology is designed for use with slurry or post-CMP applications requiring high precision, such as HF or TMAH blending, as well as other blending applications. The cost-efficient design is ideal for end-user applications, equipment upgrades and short pot-life recipes. The MegaShot process technology allows for exacting chemical concentrations to be fed directly to the point-of-use or consumption source allowing less time for the concentration to fall out of specification. With errors of 0.5% of setpoint, the process delivers high reproducibility while maintaining an excellent make-up rate.

System Operation

The system blends up to two chemicals plus DI water, controlling the recipe of the chemicals by monitoring the mixture in real-time. During operation, as the setpoint concentration is approached, the chemical addition reduces to avoid overshooting the setpoint. If an overshoot occurs, the system is capable of adjusting to return the blend to within specification.



Demonstration of high accuracy, reproducibility and rapid make-up rate of the MegaShot™ technology applied to the dilution of 49% (wt) HF to generate 5 liters per minute of $0.500 \pm 0.005\%$ (wt) HF. In this application, the process yields 20 liters of blended HF solution in less than 4 minutes with a reproducibility of 0.4% of the setpoint value.

Features and Benefits

- Performs accurate, precise batch-blending of liquid chemicals and slurries
 - Meets ever-increasing demands for accuracy and precision
- Rapid make-up rates
 - Reduces the typical number of systems needed to achieve precision blending while maintaining a high make-up rate
- End-point blending
 - Accurate and reproducible blends
 - Eliminates inaccuracies typically associated with traditional blending methods
- Scalable system platform
 - Tank sizes
 - Make-up rates
 - Configurable into any MegaBlend™
 - Exceeds tight recipe requirements for critical applications
- Ideal for short pot-life recipes
 - Rapid make-up rates suitable for small blends

Applications

- Slurry blended with H₂O₂ and APS
- Single chemical dilution such as TMAH and HF

System Specifications

- Blend accuracy: better than 0.4% setpoint
- Make-up rate: up to 8 GPM
- Availability: > 99.95%*
- MTBF: >2,500 hours
- MTTR: < 3 hours
- MTBA: > 1,250 hours

*Requires redundant pumps

Controls Systems

- Allen-Bradley series PLC
- Allen-Bradley PanelView™ series operator
- Interface
- Connectivity to MegaView™ Supervisory System via DH+ or Ethernet network
- Local and Remote EMO capabilities



CELERITY, INC.
 1315 West Drivers Way
 Tempe, Arizona 85284
 Telephone 480.763.2200
 Facsimile 480.763.2218
 www.celerity.net



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