

**TechBlend**  
Blending Systems

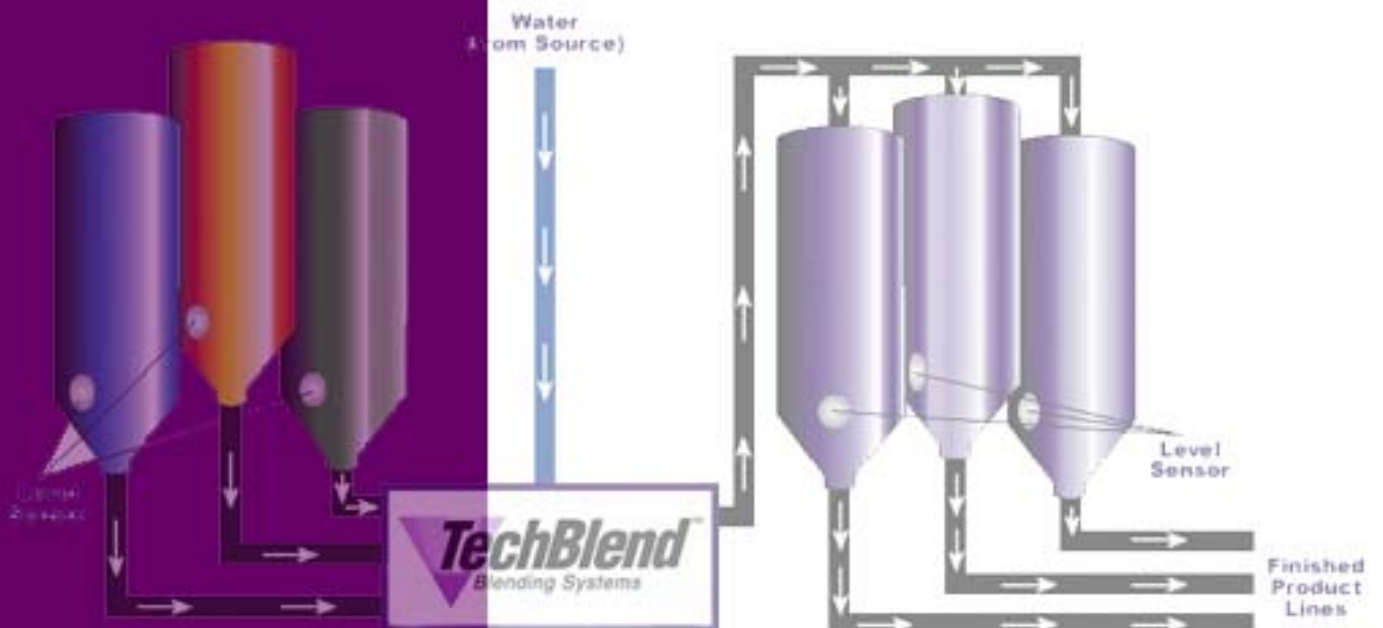


**Mixing and Process Equipment**

**2004 TechBlend Catalog**

**(203) 375-0063**

<http://www.sonicmixing.com/>



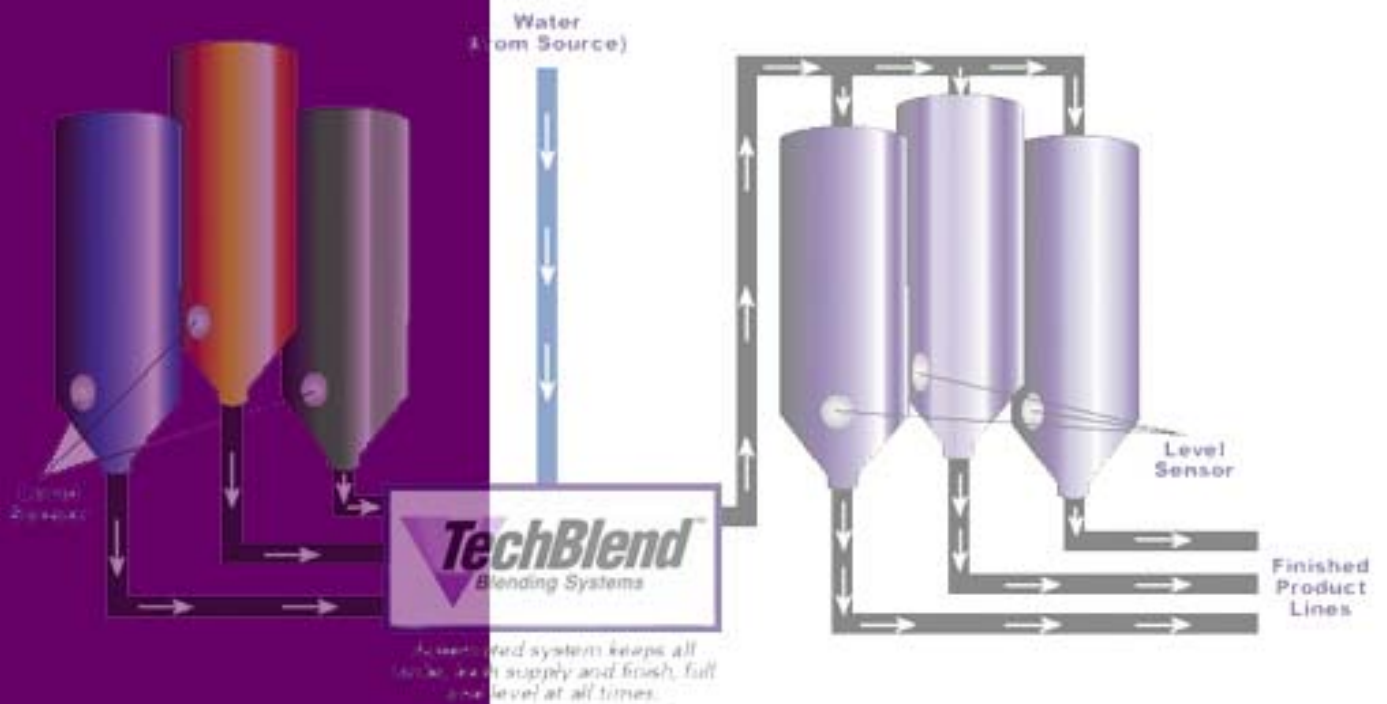
*Automated system keeps all tanks, both supply and finish, full and level at all times.*

# TechBlend

Blending Systems

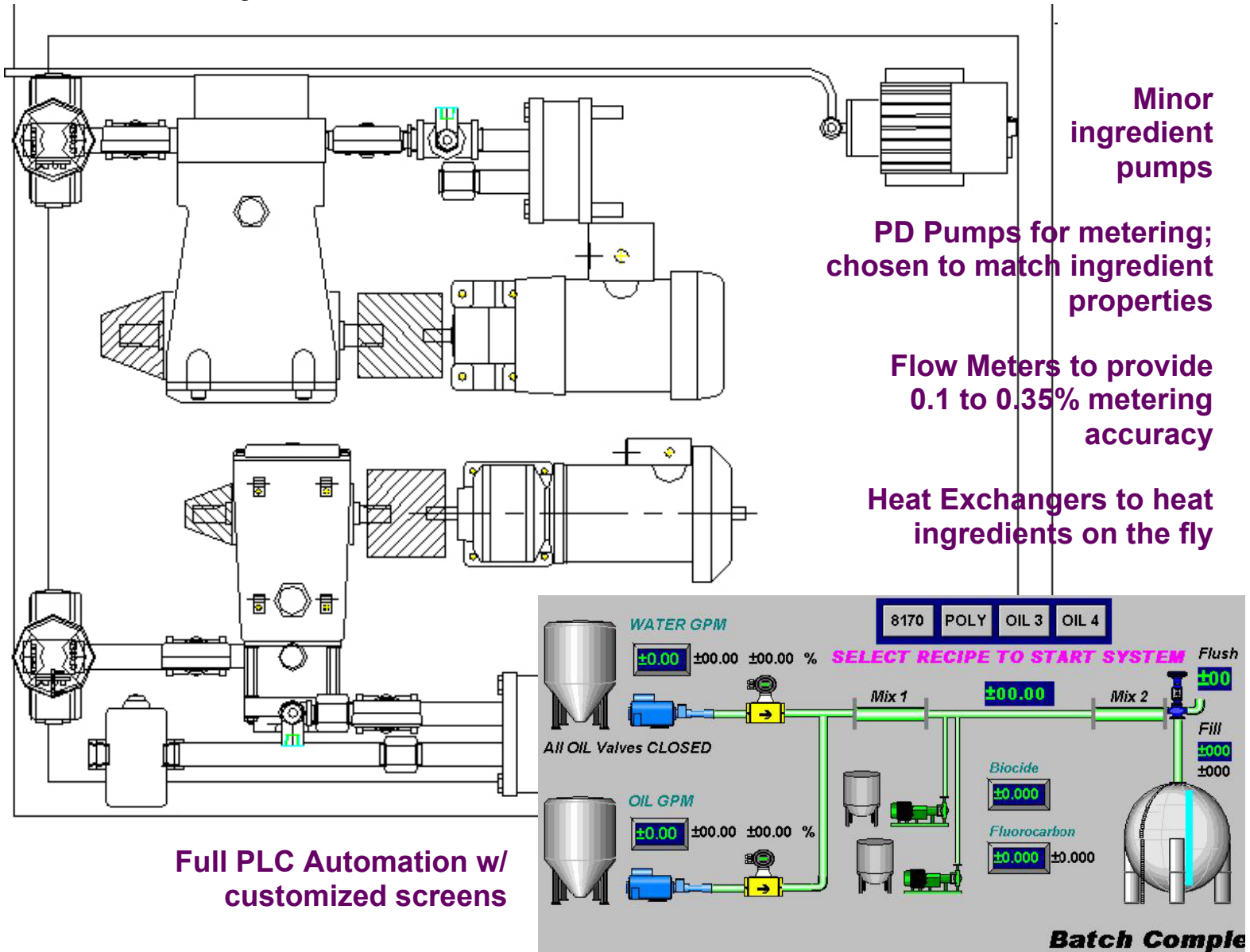
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Sonic's TechBlend in-line blending systems are customized units designed to meet your individual process needs. The TechBlend system is a continuous process solution that consists of metering pumps, instrumentation and PLC automation.

### The Basic System

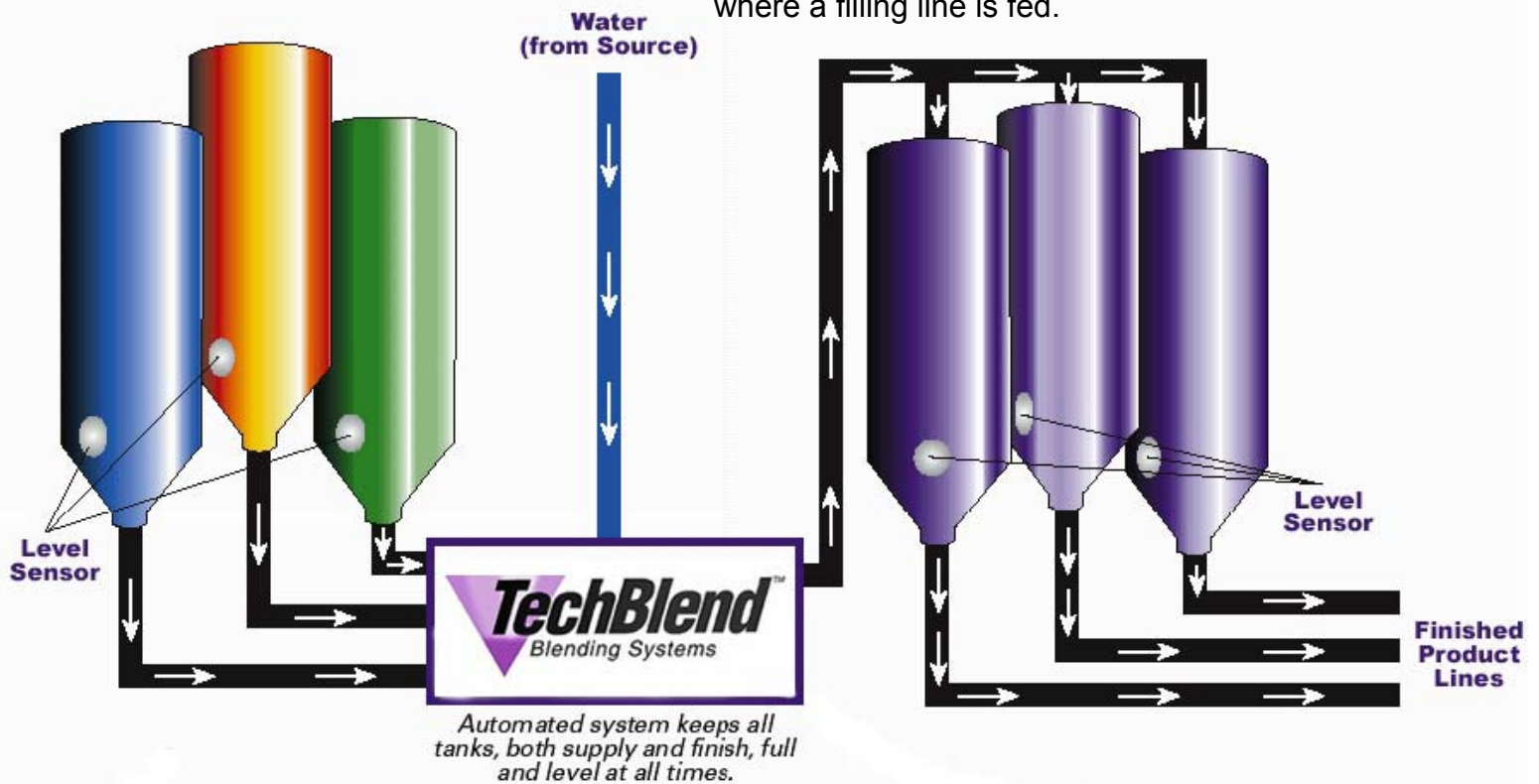


The basic TechBlend system consists of PD pumps, chosen to match your various ingredient properties, coupled with mass and/or volumetric flow meters, to provide accurate metering within as low as 0.1%. Other means of blending such as in-tank blending where ingredients are added manually or by weight are not nearly as accurate and are often subject to human error. The system can employ heat exchangers to heat material on the fly as we are pumping and blending. System is also PLC automated to provide an operator friendly environment. Minor ingredient pumps are installed to meter a wide range of liquids to be blended or post added at as low as 0.1% of the mix.



## TechBlend In-Line Blending Benefits

Blending various liquids can be quite a project. In most cases, the batch method is used whereby various ingredients are manually added to a blending tank, agitated and mixed for some period of time and finally transferred via material transfer pump to a holding tank where a filling line is fed.



With the TechBlend continuous process, the raw materials are stored in either bulk storage tanks or held in totes and are metered and blended in-line as they are pumped to some final destination. The manual compounding process used in the batch method, whereby the ingredients are dumped into the blend tank, is quite cumbersome at times, prone to weighing or human errors, and time consuming. Our custom designed TechBlend skids are continuous processing systems that streamline your process. Level sensors on source and finish tanks are used to start and stop the process, reducing operator involvement and potential errors.

**Eliminates weighing, measuring and dumping of raw components, reducing labor, errors and waste**

**Raw material drawn directly from bulk storage, system tanks or totes**

**Water can be metered directly from source without being transferred to any tanks**

**Ingredients metered within 0.1 - 0.35% accuracy**

**Increased product yield per given tank space**



## TechBlend In-Line Blending Specifics

Sonic's manufactures the TechBlend system with the highest quality components and instrumentation. Each system is designed to provide the most accurate metering available.



PLC Automation by Allen Bradley, Siemens, Koyo, Mitsubishi; full touch screen Panel PC w/ operator screens, data logging, alarms, etc.

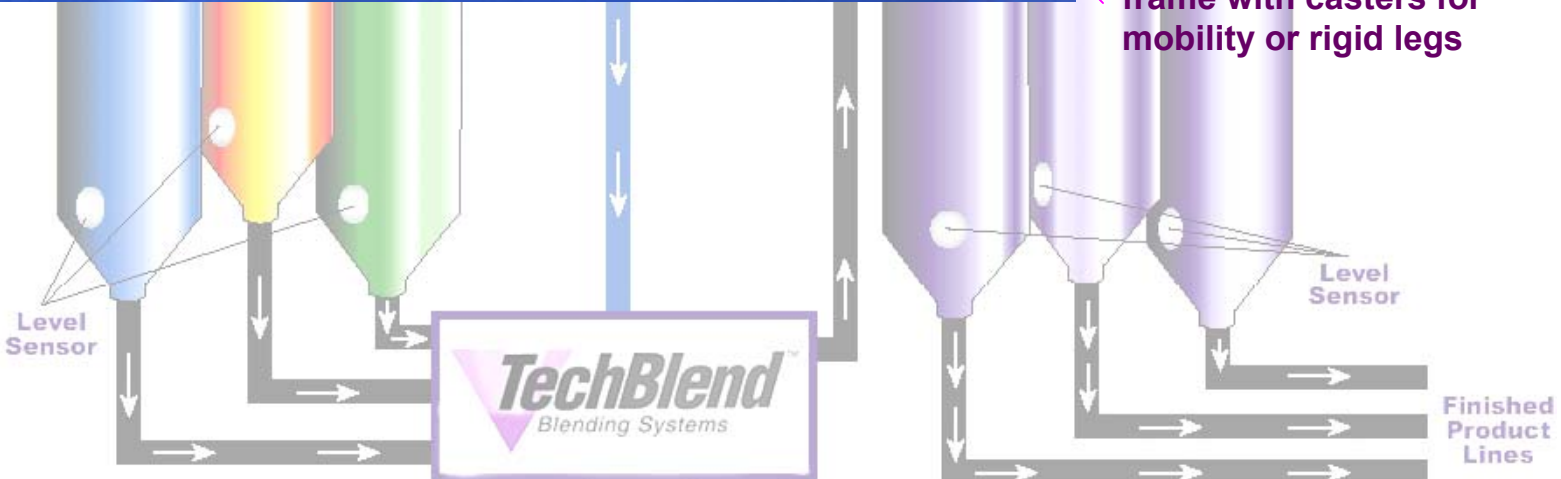
Valves and valve manifolds to accept variety of inlets and provide multiple exit points

Various in-line static mixer or Sonic's own Intermixer for highest quality blending

Coriolis mass flow meters by Endress & Hauser, Micro Motion, Foxboro to provide to 0.1% accuracy

PD Pumps to handle specific ingredient phase includes triplex plunger, progressing cavity, gear and lobe

316 Stainless tubular frame with casters for mobility or rigid legs



Automated system keeps all tanks, both supply and finish, full and level at all times.

TechBlend systems have been employed in various industries to process and blend on a continuous basis textile finish oils, lubricant oils, silicone oils and more. In many cases the system are used to dilute such oils in water phases and meter trace amounts of biocides, scotch guards, static guards, scents, colors and more.



**Converting to TechBlend continuous method from batch tank method resulted in Cost Reduction of \$0.22/lb to \$0.15/lb on average**

**3 hours process time with batch method reduced to 15-30 minutes with TechBlend continuous approach**

**Heating costs greatly reduced as only the oil phase needed to be heated, water was metered in at room temp; no costly heating of large blend tank**

**Mass metering provides higher quality finished product with material in spec to within +/- 0.1-0.125 versus 0.5-0.65 with batch method**

**Labor hours reduced from 40 to just around 4 hours**

Several TechBlend systems have been put together for textile companies manufacturing carpet, fiber and other wovens. Our system was put in to use to eliminate a labor-intensive process whereby material was weighed and transferred to a blending vessel over 1 hours time with 2 persons at work. Once material was transferred, the ingredients were blended for as much as 30 minutes then transferred to a series of tanks that fed the spinning lines. The entire process took about 3 hours. The TechBlend system automated the entire process whereby material was drawn straight from source tanks that were filled from water supply or bulk storage via level sensors that called for refill. Material was metered through the TechBlend unit as it was being pumped to the finish vessels that fed the spinning lines. Finish vessels were filled in less than 30 minutes, resulting in a reduction in cost from \$0.22/lb processed to \$0.15/lb. Finish quality was greatly improved due to accurate metering of phases. TechBlend ratio results were within +/- 0.10 - 0.125 versus +/- 0.5 - 0.65 for manual batch process. Labors hours were reduced from 40 hours per week to only 4 hours!



## TechBlend Case History and Applications

TechBlend systems have been employed in the Food & Beverage and Personal Care industries to process and blend on a continuous basis juice, soda and beverage emulsions/blends, sauces, creams, lotions, shampoos, and more.

**Converting to TechBlend continuous method from batch tank method resulted in Cost Savings based on reduced cycle times and reduced labor involvement.**

**Hours of processing time with batch method reduced to minutes with TechBlend continuous approach.**

**Mass metering provides higher quality finished product with material in spec to within 0.1% accuracy.**

**Systems custom designed to meet customer specifications and requirements. Systems designed within FDA and 3A standards with hygienic piping and components.**



Our completely automated TechBlend systems utilize coriolis mass flow meter technology to provide the best accuracy and control allowable. Other manufacturers of metering pumps and automated blending systems employ their own pumps without the use of mass flow meter technology, forcing you to rely on pump curves and pump speeds for best-guess flow rates and ratio control. Our systems rely on the best metering technology available in today's market: coriolis mass measurement by E&H, MicroMotion, Foxboro and others. In conjunction with PLC controls by companies like Allen Bradley, Siemens or Mitsubishi this makes for a powerhouse processing system that allows for terrific process management including system/process visualization, recipe management, data logging, alarming, protective interlocks, and more. In addition, Sonic works with the customer to provide any of a range of PD pumps to meet ingredient characteristics. You are not restricted to any proprietary pump with excessive spare parts costs and viscosity limitations. We use industry standard pumps such as Cat, Waukesha, Seepex and others. This keeps maintenance costs low and support availability high.