



PRESS RELEASE

MilliporeSigma Launches BioContinuum™ Buffer Delivery Platform at INTERPHEX 2019 incorporating YMC Process Technologies' system technology.

- Buffer dilution system developed by YMC and supplied exclusively to MilliporeSigma enables automated buffer preparation
- BioContinuum™ Buffer Delivery Platform is first integrated solution for streamlined buffer management

Devens, MA USA; 2 April, 2019

[MilliporeSigma](#) unveils its new BioContinuum™ Buffer Delivery Platform, a new building block in its BioContinuum™ Platform for next-generation bioprocessing, at INTERPHEX in New York City. The BioContinuum™ Buffer Delivery Platform is an integrated solution for more efficient buffer delivery. The offering is comprised of four components; a buffer dilution system, buffer concentrates, single-use assemblies and services. The buffer dilution system is designed, automated and manufactured by [YMC's Process Technologies Group](#).

The buffer dilution system, developed by YMC Process Technologies (YPT) and supplied exclusively to MilliporeSigma is based on a proven YPT platform, offers the highest accuracy available for dilution of highly concentrated buffer. Through this partnership with YMC, MilliporeSigma is the only supplier providing such an integrated buffer delivery offering. This helps drug manufacturers to enable a streamlined buffer suite and increased manufacturing efficiency utilizing a fraction of resources and facility space.

“This YMC - MilliporeSigma partnership was formed to enable bioprocessing customers access to a complete buffer solution that was made possible by integrating the best-in-class offerings from both parties.” Says Gerard Gach, CMO of YMC Process Technologies *“YMC has the premier dilution system but lacked the ability to fully exploit the technology and create a comprehensive buffer solution with consumables and services. With MilliporeSigma our technology platform has a product and support channel that is unmatched in reach. YMC Process Technologies was*

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selected by MilliporeSigma based on our proven design and success in the market. YMC committed exclusivity to MilliporeSigma based on their leadership in buffers, single use assemblies and tailored system services.”

Through close commercial alignment the parties will respond to customer demands for either standard BioContinuum™ buffer dilution units or customized buffer dilution systems by YMC from flows of 0.12 LPM to in excess of 33 LPM with an industry-leading turn-down (dilution) range.

YMC Process Technologies' staff joins MilliporeSigma experts at booth #2841, April 2-4 at the Javits Center in New York City to discuss the buffer dilution technologies, applications and services that they are delivering to help biomanufacturers bring therapies to market faster and more cost-effectively than ever before.

-ENDS-

- FAQ's found below -

About YMC Ltd.



YMC is a private Life Science company headquartered in Kyoto, Japan. Founded in 1980, company has over 9 affiliates and facilities throughout Asia, Europe and America. The over 400 employees are providing best-in-class lab and process solutions to the pharmaceutical industry. YMC focus is in the innovation, production and sales of packing materials, packed columns and systems for High Performance Liquid Chromatography (HPLC), Low Pressure Liquid Chromatography (LPLC) and custom purification and custom synthesis. YMC has recently opened CMO facility and pilot plant incorporating state of the art simulated moving bed (SMB) purification. YMC Process Technologies (YPT), Devens, MA USA (formerly LEWA-Nikkiso Bioprocess Systems' Group) has supplied GMP scale downstream process system for nearly 20 years. Acquired by YMC in December 2018, YPT Bio/Pharma Systems Group is a leading supplier of production scale single and multi-column chromatography systems. YMC's intellectual assets and know-how cultivated from many years of experience, will continue to push the limits to create a prosperous future for the purification and discovery of small and large molecule therapies. More at: <http://www.ymc.co.jp/en/>

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MilliporeSigma - YMC Buffer Dilution Partnership- FAQs

Q. What does the YMC Process Technologies and MilliporeSigma buffer dilution partnership mean for me?

A. An unmatched, single point-of-contact industry solution to intensify the time consuming, yet critical step of buffer preparation. [MilliporeSigma's](#) product portfolio (e.g. [SIGMA](#) buffer concentrates, [Mobius](#)TM disposable bags and tubing) and expert local resources combined with YMC Process Technologies (YPT) leading automated dilution system provide the industry's first truly comprehensive buffer management platform.

Q. How does this offering differ from others supplying buffer dilution systems?

A. Convenience and synergy: No other supplier offers such a comprehensive suite of products and services that allow the user to pick the right combination for their particular situation. Some may offer the hardware, some the consumables, but no-one has a single menu that contains all the products and expert services to create a single point-of-contact solution for buffer management.

Technology leadership: While others rely on feedback from sensors that drift and degrade over time, the MilliporeSIGMA / YMC solution is based on accurate volumetric dilution – a more robust and reliable approach to achieving exacting dilution ratios. The MilliporeSigma / YMC system incorporates proprietary digital fluid control with exclusive YMC fluid path design and automation to provide the intended buffer formula not corrupted by additional acid and base conditioning. This means the exact buffer composition that was proven in the development of the drug production process is the buffer composition that is delivered at scale, every time. Adding the renown quality control of SIGMA buffer concentrates ensures accurate final buffer concentrations.

Best in class technology, global reach, local service: MilliporeSigma and YMC combine for a suite of best-in-class buffer management tools that are quality controlled across geographies, yet individually tailored by local representatives to suit your situation.

Q. Will these buffer dilution units work with buffers other than MilliporeSigma?

A. Yes! The systems are configured to work with most any buffer system and support systems (tanks, bags...). Users can feel assured that any buffer concentrate can be managed with the MilliporeSigma / YMC system. However, the superior quality of SIGMA buffer concentrates provide an additional degree of formulation accuracy and the MOBIUS single use products complement the set-up to make a seamless solution across a very wide range of flows in the most rigorous biopharmaceutical applications. The added confidence instilled by having a coordinated team of buffer experts, support services and system specialists provides an end-to-end solution is unique in the industry.

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Q. What is the scope of the Millipore – YMC buffer dilution partnership?

A. Through this partnership, MilliporeSigma is the primary channel to the market and has a global exclusive right to sell YPT’s stand-alone liquid buffer dilution systems. With close commercial coordination, the MilliporeSigma and YPT team will address a broad range of buffer solutions assuring full coverage for standard and custom buffer system opportunities.

Q. How did Millipore and YPT arrive as partners in this endeavor?

A. Millipore thoroughly investigated competitive products and found the YPT technology (dilution using volumetric flow control) to be the most robust approach to buffer dilution. They were attracted by YPT’s proven design, record in the industry and YPT’s reliable (volume control) approach to automated buffer dilution. Concurrently, YPT was approached by other parties and concluded a clear end-user advantage to the MilliporeSigma products and services portfolio to complement YPT’s system expertise.

Q. Will Millipore sell these standard buffer dilution systems in all geographies?

A. Yes.

Q. I have a need for a stand-alone buffer dilution system – who should I contact?

A. Send all inquiries to your local MilliporeSigma representative ([locations](#)). YPT and MilliporeSigma will work together on your behalf to provide the best “dilution solution”.

Q. Will these be sold under the Millipore brand?

A. The standard product is dual-branded (MilliporeSigma / YMC) with MilliporeSigma as the primary brand to indicate the customer contact point is MilliporeSigma. The YPT system meets the MilliporeSigma quality standard that customers have come to trust.

Q. Who will service the standard buffer dilution system?

A. Millipore is servicing the standard line of systems supported by YMC experts as necessary. Certain custom installations will have direct care by YMC.

Q. Is this a long-term agreement?

A. Yes. The basis of the agreement is to provide for a long-term partnership in the area of buffer dilution. The specifics on the agreement are confidential and thus not made publicly known.

Q. Will Millipore and YMC be competitors in chromatography and other non-stand-alone buffer dilution systems?

A. Yes. The companies have no agreement beyond stand-alone buffer dilution systems.

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Q. Will YMC continue to sell on-board (in-line) buffer dilution on their line of EcoPrime® chromatography systems?

A. Yes. YMC was a pioneer in providing integrated buffer dilution as part of the EcoPrime LPLC and award winning EcoPrime Twin (multi-column, continuous) LPLC system. YMC and MilliporeSigma have no agreement beyond stand-alone buffer dilution systems.

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