

Looking to achieve a zero order release profile?

Formulate an exceptional drug delivery system with POLYOX™ and osmotic pump technology

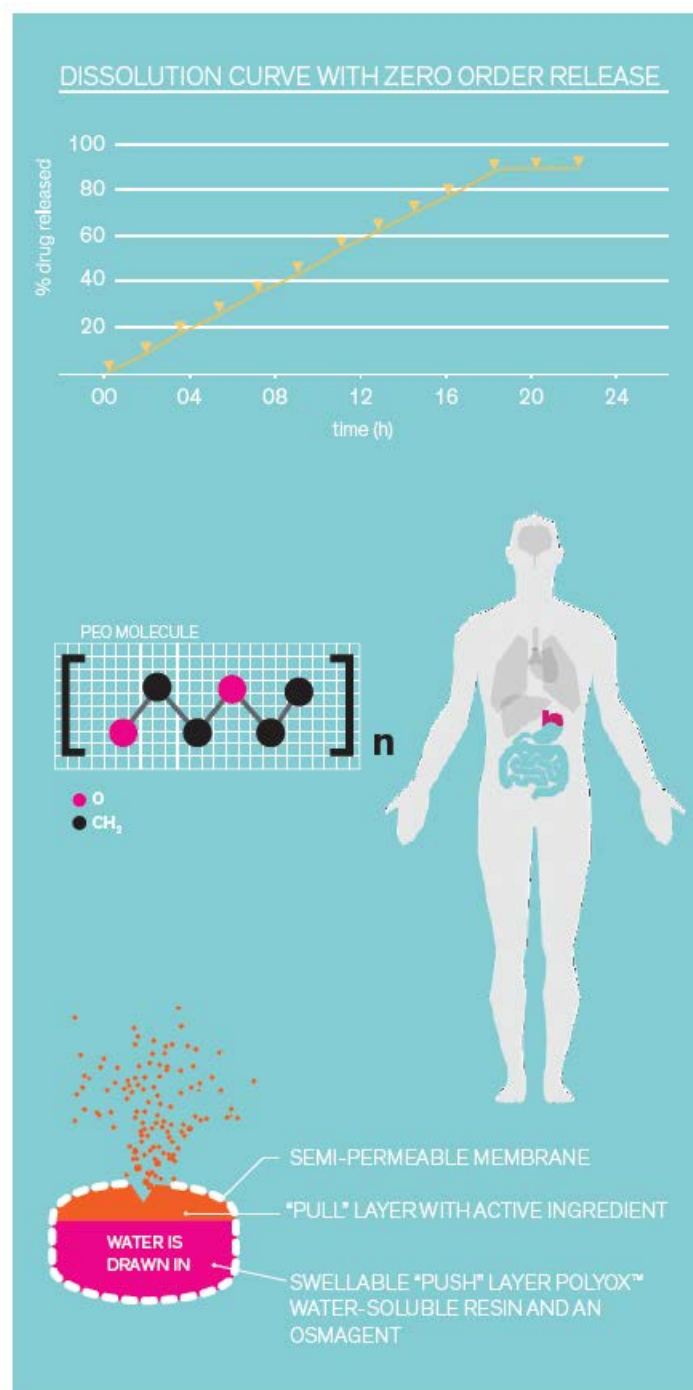


Osmotic pump technology is a well-recognized, superior¹ method of producing a more reliable and reproducible drug delivery in controlled release formulations. By using osmotic pressure and a swelling core, the dependable drug release of an osmotic pump has clear advantages, including:

- Clinical robustness
- Constant, prolonged delivery within the body – up to 24 hours
- Zero order release and customized release profiles
- Less impact of variables like gastrointestinal motility or food effects

POLYOX™ Water Soluble Resins, DuPont's osmotic pump technology solution, are:

- **EXCEPTIONAL:** POLYOX™ is a fast-hydrating water soluble polymer for pharmaceutical systems, proven to provide improved efficacy with certain APIs.
- **RELIABLE:** Our Quality by Design (QbD) approach is thoroughly supported by knowledge, documentation, collaboration and continuous improvement.
- **PROVEN:** POLYOX™ is approved and marketed in drug products sold globally.
- **FLEXIBLE:** Wide-ranging molecular weights help you control dosage size, release profiles, or production methods, while maintaining consistent flow and tablet properties.
- **SUPPORTED:** Hands-on technical support and guidance throughout formulation process is backed by consistent manufacturing and robust quality systems.
- **COMPLIANT:** POLYOX™ meets the requirements of USP polyethylene oxide NF monograph, Food Chemicals Codex, International Code Alimentarius, and U.S. National Formulary (NF).



DuPont-Colorcon Alliance:
UNIQUE TOGETHER

DuPont Pharma Solutions and Colorcon, together in the Controlled Release Alliance, bring joint resources in polymer and formulation expertise to accelerate your pharmaceutical product development efforts and reach markets throughout the world. Colorcon has exclusive, global sales and distribution rights for DuPont products used in controlled release applications, including POLYOX™ Water Soluble Resins.

Need help with your osmotic formulation?

The DuPont-Colorcon CR Alliance can help you in early formulation questions and studies. With bilayer tablet presses and laserdrilling machines, Colorcon is well-equipped to help with early proof-of-concept work around osmotic pump technology. In addition to Colorcon, below you will find a list of other companies within the pharmaceutical industry that can help in each successive step of your osmotic development process.

Company	Formulation	Clinical Trial Supply	Commercial Scale Production	Website / Contact
Bend Research A division of Capsugel Dosage Form Solutions (USA)	x	x	Contact	www.bendresearch.com +1-541-382-4100 dfs inquiry@capsugel.com
Cipla (India)	x	x	x	+91 22 2576 1800 R&D@cipla.com
Colorcon (Worldwide locations)	x			www.colorcon.com www.colorcon.com/about/contact-info/contact
Hetero Drugs India	x	x	x	www.heterodrugs.com
Hetero USA	x	x	x	www.heterodrugs.com psidhu@heterousa.com
H2 Pharma Consulting Limited (UK)	x			Dr Hiep Huatan +44 1622630057 www.h2pharma.co.uk
Patheon (USA)	x	x	x	www.patheon.com 4815 Emperor Blvd, Suite 300 Durham, NC 27703-8470 +1-919-226-3200
Valpharma	x	x	x	www.valpharma.com info@valpharmainternational.com Via G. Morgagni, 2 47864 Pennabilli (RN) - Italy

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Don't see your company listed in the chart above, but you would like to promote your osmotic pump technology capabilities?

Let us know if you'd like to be included in this list by contacting your DuPont or Colorcon representative.

¹A review of the gastrointestinal therapeutic system (GITS) formulation and its effectiveness in the delivery of antihypertensive drug treatment (focus on nifedipine GITS). Integr Blood

About DuPont Nutrition & Biosciences

DuPont Nutrition & Biosciences applies expert science to advance market-driven, healthy and sustainable solutions for the food, beverage, dietary supplement and pharmaceutical industries. We also use cutting-edge biotechnology across a range of markets to advance bio-based solutions to meet the needs of a growing population, while protecting our environment for future generations. We are innovative solvers who help our customers turn challenges into high-value business opportunities. For more information: www.dupontnutritionandbiosciences.com or www.biosciences.dupont.com



Nutrition & Biosciences
www.pharma.dupont.com

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