

Technology and Product Development: Focus on Drug Delivery



Science. Engineering. Business.

Triple Ring Technologies is a team of experienced engineers, physicists, and chemists who know how to collaborate. Our services span early-stage applied research, product development, pilot manufacturing, and entrepreneurial business development. These services **reduce risk, reduce costs, and shorten time to market.** Triple Ring has particular expertise in the development of **drug delivery technologies and systems.**

Understand. Simplify. Accelerate.

Triple Ring's team has extensive experience with drug/device combination products spanning ideation through large scale manufacturing. Our drug delivery domain expertise includes minimally invasive delivery methods such as needle-free injectors; infusion pump drug delivery systems; and pulmonary delivery via DPI's, nebulizers, pMDI's, and critical care systems for breath coordinated delivery of systemic and topical therapeutics.

Our team can also help you solve compatibility challenges between the device, drug formulations, and materials safety. Our regulatory experts help our customers navigate the complex approval pathway for combination products, prepare content for IDE/NDA filings, and assemble your device and product characterization content for regulatory filings.

Ideas. Prototypes. Production.

Triple Ring has offices serving Silicon Valley and Boston. The headquarters in Newark, CA are housed in a 41,000 sq. ft. facility that includes dedicated laboratories for electronics, optics, radiation source development, and mechanical prototyping; a machine shop; client office space; and a pilot manufacturing facility. Our quality management system is compliant with ISO 13485.

What We Deliver

Technology Development

- Feasibility Analysis
 - Technical and competitive analysis
 - Modeling and simulation
 - Risk analysis
- Proof-of-concept engineering
 - Prototype device and dosage form design and fabrication
 - Product definition development
 - Test and product characterization equipment design
 - Formulation compatibility guidance
 - Materials safety and selection

Product Development

- Product requirements documentation
- Product design
 - Mechanical and electromechanical design
 - Human factors and industrial design
 - High volume plastic and metal components
 - Disposables design
 - Design for Manufacturing
- Complete risk management
- Validation and verification

Quality and Regulatory Affairs

- FDA OCP regulatory strategy
- ISO 13485-compliant documentation
- IDE, 510(k), PMA, and CE mark submissions
- IDE/NDA filing content

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