

Engineered Resin Molding Services

Custom development of long-term implantable medical components

MRPC specializes in small- to micro-sized part molding for the medical device industry. We can produce components using highly engineered materials that are smaller, lighter and have superior physical properties than conventionally-produced molded components. We have developed numerous components using long-term implantable grades that push the envelope of the material's capabilities, such as molding products with wall thicknesses in the 0.005" range. Our ability to take on these types of challenging designs provide our customers with a resource capable of creating items that were previously thought unmoldable.

Our precision presses, operated by our experienced production staff, produce accurate, repeatable molded thermoplastic components that can weigh less than one gram. PEEK is an effective biomaterial for a wide variety of implantable devices. Due to its biocompatibility and chemical resistance, PEEK can be used anywhere in the human body and has shown no degradation over a patient's lifetime, reducing the risk for medical device manufacturers. PEEK is universally recognized for its strength and stiffness, making it an ideal replacement for metals such as titanium and stainless steel in orthopedic bone replacement applications.

In addition to PEEK materials, MRPC also has experience in molding other implantables, including PEKK, PPSU and TPUs. These materials are available to help you differentiate your product offering and create the best result for your application. As the medical device market continues to evolve, modifications have been made to materials to offer greater flexibility for use in different applications. MRPC can produce components with implantable thermoplastic materials or incorporate them into two-material combinations to meet your design specifications.

MRPC excels in creating implantable medical components for various markets. We have the following capabilities:

- Press sizes micro to 250 tons
- Class 7 and 8 clean room molding
- Micro and small part molding expertise
- Experienced long-term implantable molder
- Extensive experience with bonding technology

Our team of experienced engineers can create products with the following specifications.

- Prototype sample quantity: 1 to 100
- Production run quantity: Up to 1 million
- Required lead time: 3-8 weeks with expediting options
- Part volume: 0.04 to 25 grams

Design complexity, processes and material choice will affect the final estimate.

