

## **PLASTICS CUSTOM RESEARCH SERVICES**

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### **PLASTICS IN MEDICAL ELECTRONIC EQUIPMENT ENCLOSURES**

As the U.S. population ages the growth in the production of medical products exceeds that of most other manufacturing industries. From the mid-1980s to 2008 the U.S. production of medical equipment and supplies grew in real terms by 4.9% on average. The Great Recession brought a temporary halt to the growth in this sector of the economy. However, from 2011 to 2014 the former growth dynamic in the production of medical equipment and supplies resumed, rising 5.5% on average.

Plastics has become a mission-critical material across the full spectrum of durable and non-durable medical products. It's a vital component of daily healthcare – the packaging of medicine, the operation of implants controlling key bodily functions, and life-saving equipment such as stretchers, hospital beds, surgical devices, IV tubing, diagnostic instrumentation, and so on. And now the merging of medical and telecommunications technologies has brought diagnostic instrumentation of various types from the hospital to the home through remote monitoring programs.

The scope for plastic material suppliers and plastics processors in the medical device market space is truly vast. The focus of this research program is the enclosures or housings protecting medical electronic equipment – that is, mobile and immobile medical devices operated by electronic circuitry. In the early days of the “Electronic Age” components (e.g., power supplies, transistors, relays) were large and numerous. Thus electronic equipment assemblies were large, heavy and cumbersome, and they were produced in low volume. The standard method for enclosing these large, heavy, floor-bound assemblies was stamped sheet metal. As the miniaturization of electronic components proceeded electronic devices of all types – medical and non-medical - migrated from the floor to the desk-top and eventually to hand-held units. Thus today there is scope for many different plastics processors to participate in the medical electronic equipment enclosure market – for example,

- composite part processors
- injection molders
- reaction injection molders
- rotational molders
- structural foam molders
- thermoformers

The objectives of this research program were three-fold. First it is addressed to plastics processors, either already active in this market or contemplating entering it. It estimates the current and likely future size of the medical electronic equipment market, and it segments the market by process. Secondly it informs resin manufacturers and plastics compounders as to trends in plastic material decision-making. Thirdly, it serves as a guide for design engineers at medical device OEMs.

The data and insights presented are drawn primarily from a telephone-based survey of officials at leading suppliers of processing machinery and plastic material, plastics processors with experience producing these enclosures, a selection of medical device OEMs, and plastic part designers and consultants.

**March 2015**

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**ABOUT THE AUTHOR**

Dr. Peter J. Mooney is the founder and president of Plastics Custom Research Services. Dr. Mooney holds a Ph.D. in economics from the University of North Carolina at Chapel Hill, and he has covered the plastics industry as a technical/economic market research analyst since 1981. He is a member of several plastics industry associations such as the Society of the Plastics Industry and the Society of Plastics Engineers, and he has served on the board of directors for the SPE Rotational Molding Division since 2008. He has researched and published over 100 multi-client reports, and he has conducted over 100 single-client reports for domestic and international plastics industry participants. He has also organized, chaired, and made presentations to numerous conferences on critical issues facing the global plastics industry.

**ABOUT THE PUBLISHER**

Plastics Custom Research Services was formed in 1993 in response to the growing demand for accurate and insightful market research tailored to the evolving needs of plastic industry participants. PCRS is able to utilize research methods developed through over 30 years of experience in this field - methods that yield cost-effective and timely data and insights of relevance to the product and service offerings of the plastics industry. These research methods include telephone-based and in-person surveys of key decision-making officials in the field as well as hard-copy and electronic searches of trade literature and patents. Research findings, conclusions and recommendations are provided in written and oral reporting formats. PCRS also researches and publishes multi-client Plastics Industry Reports dealing with subjects that are part of its core competencies and that have relevance to a wide range of plastics industry operatives.

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