



“The medical device industry is one sector where innovation continues to thrive and succeed”

Dr Vinny Sastri, President, Winovia LLC

Opportunities for plastics application in medical devices

The opportunities for performance plastics in the medical device industry are continuously growing. The global medical plastics market is estimated at nearly £ 10 billion (4.5 x 10⁶ metric tonne) by 2015. Most of this growth will come from Asia and the Pacific region. Engineering performance plastics will have a higher growth rate compared to the commodity plastics used in medical device applications. The need for materials with properties like superior dimensional stability, high energy and high heat sterilisation capability, long-term durability, high strength, biocompatibility and bioresorbability will bring significant growth.

Emerging trends for processing medical plastics

Some of the major new technologies such as micro-moulding, thin-wall extrusion & moulding and production of precision parts & components with economies of scale will continue to expand. The joining & welding of plastics and innovative packaging processes also continue to push the boundaries of processing innovation. Coating technologies that add significant value & property enhancement are also increasing and technologies that provide durability,

consistency & performance along with affordability will find success in future.

India's growth index in the global medical plastics industry

The Indian medical plastics industry is still in a nascent stage. Export to North America and Europe is marginal and has significant growth potential. Improving production standards in terms of quality, cleanliness and economies of scale is the need of the hour. In addition, the education of engineers and workforce in terms of understanding and implementing effective quality systems that meet global medical device standards is also an area of concern. The pharmaceutical industry in India already meets these high standards. Thus, the Indian medical plastics industry can adopt the best manufacturing practices from the pharmaceutical sector.

Need for high performance plastics

Drivers of healthcare costs are complex and inter-related. An ageing population coupled with a shortage of healthcare workers is likely to increase healthcare costs. However, innovative medical technologies will continue to alleviate healthcare expenses. Increased home healthcare technologies in terms of remote diagnostics, home monitoring, wireless technologies and user-friendly

devices will increase the demand for affordable therapies and treatments.

The surging demand for disposables and devices that are light weight & portable, user-friendly, well-designed and durable will increase the use of plastics, including high-performance plastics. In addition, increased emphasis on disposal of waste will force manufacturers to consider sustainability, recyclability and biodegradability of the plastics used in such devices.

Overcoming challenges faced by the industry

Over the last 3-4 years, regulatory bodies in the US and Europe have increased their emphasis on supplier controls during inspections of medical device manufacturers. As a result, medical device manufacturers have started to exert more control over their suppliers, including plastic component & part suppliers and sometimes even resin suppliers.

Part of the regulatory requirements includes stringent change notification of raw materials and processes. Plastics suppliers must be prepared to work along with their medical device customers to meet these needs when they change any materials in their formulations. This will result in effective production controls for safe, high-quality products that meet customers' requirements. ■