



## News Release

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Bayer MaterialScience Makrolon® Rx1805 polycarbonate for medical applications:

### **The first pocket-sized mechanical injection pump**

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Pittsburgh, February 12, 2008 — Cost-effective mobile therapy systems are becoming increasingly popular as a result of the rising cost of health care and the growing number of elderly people who require medication at home. One solution to these developments is the RoweMiniPump by RoweMed AG, a manufacturer of medical technology. It is the first pocket-sized mechanically driven injection pump that patients can use to administer medication themselves with optimum dosing accuracy. As a result, patients are more mobile and also benefit from a high degree of safety and ergonomics. To achieve the pump's compact design, a high-tech plastic approved for medical technology was required, particularly for the housing components.

"Makrolon® Rx1805 polycarbonate, which RoweMed has successfully used in the past, was ideally suited to the complex requirements profile. Our polycarbonate provides the high level of transparency, impact strength, resistance to medication and good sterilization properties required for this application," explains Markus Krieter, a medical technology expert in the Polycarbonates Business Unit of Bayer MaterialScience AG (BMS).

The engineering plastic is used to make all of the pump's housing components. "The high transparency of our material enables patients to visually check the fill level of the medication quickly and easily," says Krieter. Furthermore, the blue components with guide channels, through which the medication flows, are also

made of Makrolon Rx1805 polycarbonate. “This is where the excellent chemical resistance of our material comes into its own. For example, resistance to lipid emulsions makes it very attractive as a material for intravenous feed system applications such as three-way stopcocks or manifolds,” continues Krieter.

A key benefit in the production of the pump is the fact that the individual housing components made of Makrolon Rx1805 polycarbonate can easily be joined together through laser welding. In addition, the material also bonds well with other plastic materials using adhesives approved for medical equipment.

A key factor in RoweMed’s decision to opt for this material was the fact that the polycarbonate can be sterilized using electron beam or gamma radiation without significant yellowing. The company also placed great emphasis on the robustness of the pump. As a mobile device, it must be able to withstand frequent “everyday accidents,” such as being dropped or hit. Makrolon Rx1805 polycarbonate is invaluable in these situations, too, thanks to its toughness.

The refillable RoweMiniPump is suited to a wide range of applications – from chemotherapy, pain treatment and cardiology to the administration of antibiotics, corticoids, hormones and antiepileptic drugs. One of the key advantages of the pump is its dosing accuracy. During the entire injection time, the flow rate only deviates by a maximum of  $\pm 5$  percent. Depending on the size of the pump, the volume of medication remaining in the pump is between 1 and 5 percent, ensuring maximum cost-effectiveness.

### **Consistency of formulation and long-term availability of the products**

For decades, BMS has been a supplier to the international medical technology industry and a market leader for polycarbonates in this market segment. “A large part of our success is based on the trust we have built with many well-known medical technology manufacturers, mainly in the form of exclusive development agreements. It is very important for us to be seen as a reliable collaborator, which is why we are committed to meeting the particular needs of this sector,” explains Krieter.

All materials supplied for medical technology meet the requirements of the American standard US Pharmacopeia, Class VI, relating to the biological compatibility of plastics. The same is true for the FDA-modified ISO 10993,

Part 1 “Biological Evaluation of Medical Devices” requirements for 30-day indirect blood contact applications. Comprehensive service is available from BMS to support manufacturers of medical instruments and the associated plastics processors, from the initial idea and design of the plastic components to mold construction and production launch. For instance, in the case of the injection pump, experts at BMS helped optimize the gating and mold design.

RoweMed AG of Parchim ([www.rowemed.de](http://www.rowemed.de)) is an innovative, international company that manufactures specialty products for medical technology. Its core competencies include the development, production and marketing of products for injection, infusion and transfusion technology, special systems and OEM business. The product portfolio is augmented by injection and infusion filters and spikes.

Bayer MaterialScience LLC is one of the leading producers of polymers and high-performance plastics in North America and is part of the global Bayer MaterialScience business with nearly 14,900 employees at 30 sites around the world and 2006 sales of 10.2 billion euros from continuing operations. Our innovative developments in coatings, adhesive and sealant raw materials, polycarbonates, polyurethanes and thermoplastic urethane elastomers enhance the design and functionality of products in a wide variety of markets, including the automotive, construction, electrical and electronics, household and medical industries, and the sports and leisure fields. Our inorganic basic chemicals unit produces chlorine and related essential products for the chemicals industry. Let us give life to your vision. Bayer MaterialScience – Where VisionWorks.

Bayer Corporation, headquartered in Pittsburgh, is a subsidiary of Bayer AG, an international health care, nutrition and innovative materials group based in Leverkusen, Germany. In North America, Bayer had 2006 net sales of 7.8 billion euros and employed 17,200 at year end. Bayer’s three subgroups, Bayer HealthCare, Bayer CropScience and Bayer MaterialScience, improve people’s lives through a broad range of essential products that help prevent and treat diseases; protect crops and enhance yields; and advance automobile safety and durability.

Contact:

**Scott Hunsberger, Phone: 412-777-5200**

E-mail: [scott.hunsberger@bayerbms.com](mailto:scott.hunsberger@bayerbms.com)

For more information about BMS' portfolio of engineering resins for the healthcare market, or other high performance Makrolon-based polycarbonate resins, call 1-800-662-2927, e-mail [naftainfo@bayerbms.com](mailto:naftainfo@bayerbms.com) or visit [www.bayermaterialscienceNAFTA.com](http://www.bayermaterialscienceNAFTA.com).

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Makrolon<sup>®</sup> Rx1805 polycarbonate provides the high level of transparency, impact strength, resistance to medication and good sterilization properties required for the RoweMiniPump by RoweMed AG. RoweMiniPump is the first pocket-sized mechanically driven injection pump that patients can use to administer medication themselves with optimum dosing accuracy.