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## **More mobility for oxygen patients**

### **Polyurethane housing enables a light-weight design of an oxygen therapy device**

**Teningen, September 2008 – The south German plastics specialist THIEME GmbH & Co. KG has manufactured a polyurethane (PUR) housing for a new mobile oxygen device of the German medical technology company Linde Medical Devices GmbH. The housing not only has an attractive shape, but also allows the patient maximum mobility thanks to its light-weight design.**

"A light-weight device, such as you've always wished for," promotes Linde Medical Devices in the brochure for its new oxygen therapy device Oxy-Gen lite®. And indeed: With a total weight of around 10 kg, the device represents real progress for patients with lung diseases, who are dependent on oxygen intake around the clock.

In order to achieve this, a suitable material for the housing had to be initially found, which was not only light-weight but also exhibited the necessary stability for a mobile device. Furthermore good acoustic absorption as well as an attractive ergonomic design was desired in order to increase the acceptance rate by patients.

The plastic polyurethane was selected, which by reason of its favourable material properties offers optimal conditions for the realization of these requirements. The PUR material Baydur® 110 FR, which Thieme is using for this project, enables the formation of highly filigree forms and exhibits at the same time a high impact strength. This allowed both the low weight and the high stability to be easily achieved. PUR could also fulfil the requirements for acoustic absorption. With 35 dB(A) the device is very quiet and creates no disturbance even in a quiet living area.

## **Cost benefits thanks to aluminum moulds and functional integration**

The manufacturing process was also economically devised with PUR: The economical aluminum tools with short construction time were particularly advantageous, making a fast market launch of the new device possible. The typical PUR integral design, with which functional parts such as connectors and fastening screw threads are preformed during the moulding process or even laid in foam, is very effective. In this way, the outlay for the end assembly of the oxygen device could be clearly reduced.

The PUR housing of the Oxy-Gen lite® consists of three parts, which together weigh 2.9 kg and form the support structure of the device. They are coated with a highly resilient, chemical-resistant structural finish, which enables an optimal hygienic cleaning. With its curved shapes, the device, which is available in silver, yellow or red and labelled with screen or pad printing, makes an elegant impression.

Thieme supported the customer in all phases of the project, from the material selection to the project planning and construction through to the production of the formed parts in the proprietary factory in Teningen.

## **Ideal linkage of form and function**

Increasingly more manufacturers of medical technical devices have recognized that an attractive and ergonomic design in addition to technical functionality has a decisive influence on the market chances of a new product. Using Oxy-Gen lite® as an example Thieme was able to show how the requirements of shape and function could be combined with the material polyurethane in an ideal manner.

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### September 2008 – **More mobility for oxygen patients**

A three-part polyurethane housing not only bestows on the mobile oxygen therapy device Oxy-Gen lite® a minimal weight, but rather also an appealing appearance.

(Photo: THIEME GmbH & Co. KG of Teningen)

#### **About THIEME**

The THIEME engineering works was founded in 1960 by Werner Thieme. In 1965, THIEME entered the plastics market. THIEME GmbH & Co. KG currently employs about 500 people around the world and achieved, in 2007, a consolidated total turnover of nearly 85 million euros. The headquarters of THIEME is in Teningen, near Freiburg in South-West Germany. There are sales and service subsidiaries in France, Great Britain and the USA.

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