



Press release  
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## Umicore and Rhodia develop unique rare earth recycling process for rechargeable batteries

Umicore and Rhodia have jointly developed a unique process for the recycling of rare earth elements (REE) from Nickel Metal Hydride (NiMH) rechargeable batteries.

This recycling process combines the capabilities of Umicore's proprietary Ultra High Temperature (UHT) battery recycling process with Rhodia's rare earth refining competences. The process can service the whole range of NiMH batteries from portable applications to the batteries for hybrid electric vehicles. It is expected that first recovery of rare earth materials could take place by the end of this year.

The process will enable the recovery of rare earths from NiMH batteries that will be treated at Umicore's new battery recycling plant in Hoboken. After the separation of the nickel and iron from the rare earths, Umicore will process the rare earths into a high grade concentrate that will be refined and formulated into rare earth materials at Rhodia's plant in La Rochelle (France).

Sybolt Brouwer, General Manager Battery Recycling and Recycling Development at Umicore, commented: "This is the first industrial process that closes the loop of the rare earths contained in NiMH batteries. It demonstrates the uniqueness and flexibility of Umicore's UHT recycling technology and underlines our commitment to closing the materials loop."

Frédéric Carencotte, Industrial Director of Rhodia Rare Earth Systems, said: "After the recycling of rare earths contained in low energy lamps, this agreement represents a new step in our strategy to recycle rare earths from end-of-life equipment."

### Note for editors:

The main use of nickel metal hydride batteries is in rechargeable AA and AAA batteries (typically used in domestic applications such as cordless phones, toys and games), power tools and hybrid electric vehicles. A typical NiMH battery will contain some 7% of rare earth elements including cerium, lanthanum, neodymium and praseodymium. This equates to some 1 gramme of rare earth for a AAA battery, 60 grammes for a household power tool and 2 kilogrammes for a hybrid electric vehicle battery.

Lithium-ion rechargeable batteries contain no meaningful amounts of rare earth elements.

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## About Umicore

Umicore is a global materials technology group. It focuses on application areas where its expertise in materials science, chemistry and metallurgy makes a real difference. Its activities are centred on four business areas: Catalysis, Energy Materials, Performance Materials and Recycling. Each business area is divided into market-focused business units offering materials and solutions that are at the cutting edge of new technological developments and essential to everyday life.

Umicore generates the majority of its revenues and dedicates most of its R&D efforts to clean technologies, such as emission control catalysts, materials for rechargeable batteries and photovoltaics, fuel cells, and recycling. Umicore's overriding goal of sustainable value creation is based on an ambition to develop, produce and recycle materials in a way that fulfils its mission: materials for a better life.

The Umicore Group has industrial operations on all continents and serves a global customer base; it generated a turnover of € 9.7 billion (€ 2.0 billion excluding metal) in 2010 and currently employs some 14,400 people.

## About Rhodia

Rhodia is an international chemical company resolutely committed to sustainable development. As a leader in its businesses, the Group aims to improve its customers' performance through the pursuit of operational excellence and its ability to innovate. Structured around 11 Global Business Units (GBUs) within 5 business clusters, Rhodia is the partner of major players in the automotive, electronics, flavors and fragrances, health, personal and home care markets, consumer goods and industrial markets. The Group employs around 14,000 people worldwide and generated sales of € 5.23 billion in 2010. Rhodia is listed on Euronext Paris.

## For more information

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