

## Evonik obtains patent for 3–step membrane process for efficient gas separation in Europe

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The European Patent Office has granted Evonik Fibres GmbH, based in Schörfling (Austria), a patent for a three–stage process for membrane–based purification of biogas and natural gas.

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In the gas separation process, which has been developed by Evonik, binary gas mixtures such as raw biogas, which consists primarily of biomethane and carbon dioxide, can be separated very efficiently and cost effectively. In addition to increased yields and lower equipment and energy requirements – a second compressor is no longer required – the membrane process eliminates the need for additional purification, so that the enriched gas can be fed directly into the natural gas network.

### Gas separation with SEPURAN® hollow–fiber membranes

At the core of the separation process are the innovative hollow–fiber membranes of Evonik’s SEPURAN® Green brand. These consist of a high–performance plastic, developed by Evonik, which can withstand extreme pressure and temperatures. The membranes also have excellent selectivity. In combination with the three–stage separation process, recycling streams can be minimized which helps to optimize the energy costs of biogas processing plants.

With the purchase of the SEPURAN® Green membranes, Evonik’s contract partners – plant engineering companies – also receive a license to use this three–stage separation process. In turn, when a company buys a biogas processing plant with SEPURAN® Green membranes that has been constructed by Evonik’s contract partners, the plant can be operated using the patent–protected process.

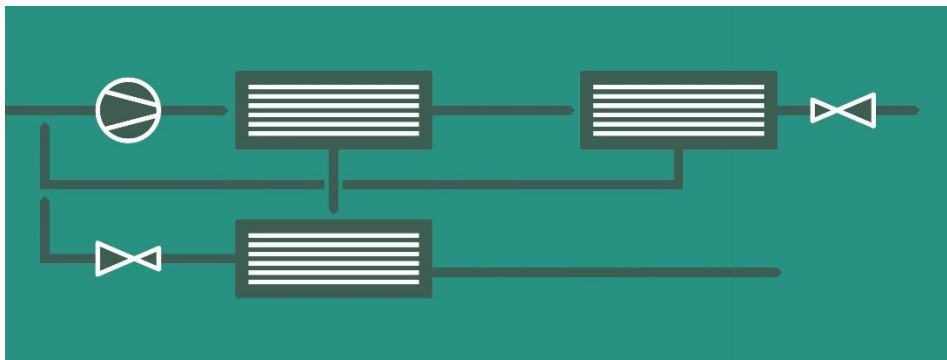
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In addition to the patents granted in the relevant markets in America and Asia, the three–stage membrane process developed by Evonik now enjoys legal protection in all the key European markets.

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Evonik's SEPURAN® product family includes membranes for biogas processing, nitrogen generation, and helium and hydrogen processing. In 2011, SEPURAN® Green membranes for biogas processing were introduced successfully to the market and since then, have been deployed successfully in more than 100 biogas plants worldwide.



**Image caption:** Evonik obtains patent for 3-step membrane process for efficient gas separation in Europe.

Find out more about the three-stage membrane process and the SEPURAN® Green membranes for biogas processing at our Stand 178 in Hall D5 at the ECOMONDO trade fair in Rimini (Italy) from November 4 to 7.

#### Company information

Evonik is one of the world leaders in specialty chemicals. The focus on more specialty businesses, customer-orientated innovative prowess and a trustful and performance-oriented corporate culture form the heart of Evonik's corporate strategy. They are the lever for profitable growth and a sustained increase in the value of the company. Evonik benefits specifically from its customer proximity and leading market positions. Evonik is active in over 100 countries around the world with more than 35,000 employees. In fiscal 2016, the enterprise generated sales of around €12.7 billion and an operating profit (adjusted EBITDA) of about €2.165 billion.

#### About Resource Efficiency

The Resource Efficiency segment is led by Evonik Resource Efficiency GmbH and supplies high performance materials for environmentally friendly as well as energy-efficient systems to the automotive, paints & coatings, adhesives, construction, and many other industries. This segment employed about 9,000 employees, and generated sales of around €4.5 billion in 2016.

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