Covestro operates production plant for exploiting CO2

Background: CO2 usage

Production

Covestro AG

Communications

51373 Leverkusen

# Innovative process for a new raw material

**Sustainable raw material for the chemical industry: since 2016, material manufacturer Covestro has been using the waste gas carbon dioxide for plastic production. A new kind of component is being manufactured with up to 20 percent CO2 in a high-tech production system at the Dormagen location near Cologne, Germany.**

An innovative alternative for markets and consumers, Covestro is using carbon dioxide as a raw material in plastics production. The company is manufacturing a new kind of polyol out of CO2 – the main building block in polyurethane foam and found in many everyday articles such as furniture and car parts or used as insulation for buildings.

The new material comes from a production facility built specifically for this purpose by Covestro at its Dormagen site, near Cologne, which has been in operation since 2016. It cost around EUR 15 million and has an annual capacity of 5,000 metric tons The CO2 required for production comes from the waste gas stream from a neighboring chemical plant. The innovative underlying technology was developed by Covestro together with partners.

**Broadening the raw material basis**

The advantage of the new process is that CO2 contains the key element carbon and can therefore be used to partially replace petroleum, from which polyols and many other chemical products are typically made . In addition, the process has a positive ecological footprint, as proven by a study from the RWTH Aachen University and internal calculations. In this way, Covestro is helping to expand the chemical industry's raw materials base and conserve fossil resources as it promotes the return of carbon dioxide into the supply chain – in line with the United Nations Sustainable Development Goals (SGDs).

**Custom-tailored plant**

The new plant is constructed from numerous components that were either custom-made or modified for the innovative process. The core is a 25 ton chemical reactor and equipment for processing and storing the CO2-based polyol.

In the Covestro plant, the CO2 reacts in liquid form with propylene oxide, a petroleum derivative, with the addition of a catalyst and additives. The resulting new plastic module called cardyon® has a CO2 content of up to 20 percent. It is already used, among other things, in mattresses, sports floors and components for car interiors.

Dormagen is one of the largest and oldest sites maintained by Covestro worldwide. It was selected because a good supply of carbon dioxide is already available there. Covestro has also had an extensive infrastructure for conventional polyol production at the plant for a long time and possesses the corresponding technical expertise.

(As of March 2021)

**About Covestro:**

With 2020 sales of EUR 10.7 billion, Covestro is among the world’s leading polymer companies. Business activities are focused on the manufacture of high-tech polymer materials and the development of innovative, sustainable solutions for products used in many areas of daily life. In doing so, Covestro is fully committed to the circular economy. The main industries served are the automotive and transportation industries, construction, furniture and wood processing, as well as electrical, electronics, and household appliances industries. Other sectors include sports and leisure, cosmetics, health and the chemical industry itself. At the end of 2020, Covestro has 33 production sites worldwide and employs approximately 16,500 people (calculated as full-time equivalents).

Find more information at [**www.covestro.com**](http://www.covestro.com) and [**www.co2-dreams.covestro.com/de**](http://www.co2-dreams.covestro.com/de)

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