

## Evonik and thyssenkrupp Industrial Solutions grant license for HPPO Technology to China

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- Qixiang Tengda Chemical will construct a world-scale plant in China for sustainable production of propylene oxide
- Evonik closes additional supply contract for custom made catalyst

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Guangzhou, China. Evonik and thyssenkrupp Industrial Solutions have agreed to grant a license for HPPO Technology to Zibo Qixiang Tengda Chemical Co. to produce propylene oxide. Corresponding agreements were signed by the parties in Guangzhou in China. In addition, Evonik has licensed the production of hydrogen peroxide for the exclusive supply of the propylene oxide plant to Qixiang Tengda. Furthermore, the companies have entered into a long-term agreement for the supply of the respective HPPO catalyst.

Propylene oxide is used mainly for the production of polyurethane foams, which are used in automotive parts, furniture upholstery, thermal insulation, coating materials, sports shoes, and other sports equipment. The global market for polyurethane is expected to grow with China being one of the most important growth markets. Tightening environmental regulations support the strategic focus of the Active Oxygens Business Line of Evonik, to further promote and expand the green HPPO Technology, including through licensing, on top of developing the traditional hydrogen peroxide business.

Claus Rettig, Chairman of the Board of Evonik Resource Efficiency segment, explains: "We're proud of having gained Qixiang as a

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new strategic partner. With environmental awareness on the rise in China, HPPO is the technology of choice for sustainable production of propylene oxide because it produces no major byproducts apart from water,”

In the next few years Qixiang Tengda will construct a plant complex at the Zibo site (in China’s Shandong province), where up to 300 kmt of propylene oxide and the amount of H<sub>2</sub>O<sub>2</sub> required for the HPPO process will be produced annually. The initial planning phase will start by the middle of August 2019. The plant is expected to come on stream in the first half of 2022.

HPPO stands for “hydrogen peroxide to propylene oxide”, a process in which propylene oxide (PO) is obtained directly from hydrogen peroxide and propylene. What makes this possible is an HPPO catalyst based on titanium silicalite (TS-1) developed by Evonik especially for the process. Compared to conventional production processes for propylene oxide, the HPPO process requires a significantly lower investment volume and is more profitable. In addition, it is very environmentally friendly, since it is characterized by a high selectivity and no significant amounts of byproducts occur other than water.

The chemical company Qixiang Tengda is part of the Cedar Holdings Group. The company, with a workforce of more than 2,000, possesses a high degree of expertise and has many years of experience in C4 chemistry. Last year it generated sales of more than 3.5 billion euros (27.9 billion CNY).

#### **Company information**

Evonik is one of the world leaders in specialty chemicals. The focus on more specialty businesses, customer-oriented 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. In fiscal 2018, the enterprise with more than 32,000 employees generated

sales of €13.3 billion and an operating profit (adjusted EBITDA) of €2.15 billion from continuing operations.

**About Resource Efficiency**

The Resource Efficiency segment is led by Evonik Resource Efficiency GmbH and produces high performance materials and specialty additives for environmentally friendly as well as energy-efficient systems to the automotive, paints & coatings, adhesives, construction, and many other industries. This segment employed about 10,000 employees, and generated sales of around €5.5 billion in 2018 from continuing operations.

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