

# Construction begins on specialty chemical facility for electronic chips

- Evonik invests in highly promising electronics market
- Production in Rheinfelden of ultra-pure hexachlorodisilane for chips with high storage density
- Technology platform for the production of silicon compounds to be further strengthened

Essen, Germany-based Evonik Industries has begun building a second hexachlorodisilane (HCDS) production facility in Rheinfelden, a city in Germany's Baden region. Production is scheduled to begin in the second half of 2012. Hexachlorodisilane, a raw material containing silicon, is used by the semiconductor industry to manufacture inexpensively and efficiently, among other things, memory chips with extremely high storage densities. Known as "flash memory," these chips can be found in devices such as smart phones, digital cameras, MP3 players, or USB sticks. Solid state drives consisting of flash memory chips instead of the standard hard drives are also increasingly used in computers.

"By building this new production facility, we're striving to further bolster our already strong position as a provider of key raw materials for the electronics industry," comments Dr. Thomas Haeberle, Evonik's Executive Board member with responsibility for the segment Resource Efficiency. Evonik markets hexachlorodisilane under the Siridion® HCDS brand. "We believe that hexachlorodisilane has promising market prospects and are planning to supply it in particular to Asia's semiconductor industry," adds Thomas Hermann, Head of the Inorganic Materials Business Unit.

Production methods for silicon compounds are one of Evonik's most important technology platforms as a specialty chemicals producer. The company itself developed the hexachlorodisilane production process and successfully implemented it in Rheinfelden in September 2010 as the first plant put into operation. The second, new production facility is much larger and has a capacity of several tens of thousands of kilograms.

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For the manufacture of flash memory chips, the semiconductor industry, even today, works with structure sizes of 25 nanometers in mass production. However, new generations with even finer structures are already in the pipeline at major memory chip manufacturers. The wafer-thin, functional layers needed for such fine structures can be created through chemical vapor deposition of hexachlorodisilane. The advantages of Siridion® HCDS are that it can be deposited in chip production at relatively low temperatures, and that it generates highly homogenous, functional films. Because ultra-pure raw materials are used in the production of Siridion® HCDS, the concentration of critical metal trace-elements in the products is exceptionally low.

Siridion<sup>®</sup> HCDS fits seamlessly into the Siridion product family, in which Evonik offers key raw materials for the manufacture of solar silicon, optical fibers, semiconductors, and flat screens.

# Company information

Evonik, the creative industrial group from Germany, is one of the world leaders in specialty chemicals. Its activities focus on the key megatrends health and nutrition, resource efficiency and globalization. In 2010 about 80 percent of the Group's chemicals sales came from activities where it ranks among the market leaders. Evonik benefits specifically from its innovative prowess and integrated technology platforms.

Evonik is active in over 100 countries around the world. In fiscal 2010 more than 34,000 employees generated sales of around  $\in$ 13.3 billion and an operating profit (EBITDA) of about  $\in$ 2.4 billion.

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