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**Innovations I**

**Consumer electronics: strong growth in the mobile phone and tablet market – special adhesive tapes used as speaker cones**

The consumer electronics segment remains one of the most important drivers of tesa’s industrial business. For example, the company achieved more than 33 percent growth with its adhesive tape solutions in the mobile phone segment in 2012. The reasons: tesa is optimally positioned to develop innovative adhesive tape products within just a short time, through its close cooperation with suppliers to global players. As devices grow increasingly small and lightweight, but also pack in greater performance capacity than before, the future, like the present, also offers a large number of potential applications for high-performance tapes used not only to bond components, but also to handle numerous additional functions such as light and heat management. In 2012, tesa landed major contracts in the booming smartphone market, and also expanded its presence in the tablet segment, especially in South Korea and China. Just recently, tesa edged out the competition to win a contract worth millions for the production of special electrically conductive tapes. The brand has long been a strong presence when it comes to secure adhesive bonding of touch displays in smartphones and tablets.

**Complex sound compositions**

There are also new application fields in which the specific adhesive effect of adhesive masses is practically negligible. Instead, the focus is on leveraging certain properties – properties that might not be immediately apparent to the eye, but certainly are to the ear. Specifically, the complex branching structure and interlinking chains of acrylate molecules give them outstanding damping and insulation properties. And that means they are a perfect fit for the layered structure of tiny speaker cones in mobile phones. Chemistry through music, you might say.

Global players in the electronics industry are setting more and more stringent requirements for the acoustic performance spectrum of their multifunctional devices. Mobile phones, for example, have to be able to not only transmit voice communications flawlessly, but also emit sound sequences that are appealing from a melodic standpoint. Cell phones typically use two different types of speakers. The high-end speakers encompass a frequency range of between 500 and 5000 hertz and are necessary for complex sound compositions such as ringtones, audio in apps, music, and games. Receivers (approximately 300–3000 hertz) are sufficient for transmitting phone conversations.

**Asia sets the tone**

Since mid-2012, tesa has offered various three-layered products to the approximately 15 companies, mostly based in China, South Korea and Japan, that drive the growing business in these tiny speakers. Each product consists of a top and bottom layer of high-performance film. In between is one of several buffering acrylate adhesive masses produced in-house. The real challenge is that the products have to combine two properties that actually conflict with each other – thin high-performance films deliver superior stiffness, while the adhesive mass on the inside provides flexibility.

All customers receive the non-adhesive “sound films” on reels, at stock thicknesses of between 22 and 60 micrometers. The individual speaker cone tailored to the specific phone is then created through an additional step, such as stamping or thermoforming. “Our cleanroom unit lets us coat films with very little deviation with regard to thickness tolerance,” explains Dr. Robert Gereke, the member of the tesa Executive Board responsible for the industrial business. “That has turned out to be a big competitive advantage.”

**Markets of millions, making music**

The consumer electronics market, especially the smartphone and tablet segment, is a business that still has quite a lot of “music” to make – including for tesa. According to the most recent analyses conducted by international market research firm IDC, state-of-the-art smartphones already accounted for 45.5 percent of global mobile phone sales in the last quarter of 2012, up from only about 20 percent in 2010. In all, about 1.7 billion devices were sold last year, 712.6 million of them smartphones. And IDC expects growth to continue at a rapid pace: More than a billion smartphones will be sold in 2014, and the figure for 2016 is forecast to be 1.4 billion. Market researchers also predict highly positive development for tablets, which have only been commercially available since 2010. According to IDC, 122.3 million of these devices were sold worldwide in 2012. By 2016, the market analysts believe the volume of tablets could reach 282.7 million, an increase from the 261.4 million forecast not too long ago. The tesa product range for the electronics industry currently includes more than 150 products.

This press release, along with image and photo materials, is available online at [www.tesa.com/press](file:///\\HAMV0405\TESA-LOC001\DATEN\1100_Unternehmenskom\Jahres-PKs\PK%202012\Texte\final\englisch\www.tesa.com\press).

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