

## Press Release

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### **New liquid repellent nano-coating for consumer electronics débutts in hearing aid devices**

Materials science innovator P2i has created Aridion™, a revolutionary liquid-repellent nano-coating technology that protects consumer electronics devices against damage from water and sweat, to improve their performance in challenging applications.

On surfaces protected with Aridion™ -- a unique nano-scale polymer coating one thousand times thinner than a human hair -- water forms beads and simply roll off. Thanks to this, Aridion™ can transform the reliability of consumer electronics devices containing delicate, expensive components at high risk of liquid damage.

Although Aridion™ has the potential to protect all kinds of consumer electronics devices, it is initially being targeted at manufacturers in the \$3bn global hearing aid market. Thanks to the protection Aridion™ provides, manufacturers will be able to improve profitability through reduced repair and replacement costs, will increase user confidence through improved reliability, and will deliver clear product benefits that support premium pricing. All of these factors combine to enhance brand image, sharpen competitive edge and increase market share.

Stephen Coulson, Chief Technology Officer of P2i, comments: "We're excited to have developed Aridion™ as a unique protective nano-coating technology concept for consumer electronics, and delighted that we have found such a ready market for our benefits, within the world's fast growing hearing aid business. We are already achieving excellent results with two of the world's largest hearing aid manufacturers, who have recognised how our revolutionary technology will increase reliability and improve the user experience with their products."

#### **Why Aridion™ makes business sense for hearing aid manufacturers**

Aridion™ can be cost-effectively applied to finished products using compact, high-throughput P2i processing machines. These integrate seamlessly and effortlessly with existing assembly lines, are easy

to scale-up, and can be operated by ordinary workers at the touch of a single button. In a typical production environment, one P2i machine can treat a hearing aid in less than ten seconds.

Although the Aridion™ coating is imperceptible to users and does not affect hearing aid acoustic properties, it physically bonds to the product surface at a nanoscopic level and thus is as durable as the material it protects. Plus, because Aridion™ effectively coats every aspect of a finished product, it protects much more thoroughly than alternative approaches where individual product components are treated prior to manufacture.

Superior protection is particularly important to hearing aid manufacturers marketing the latest receiver-in-canal (RIC) behind-the-ear (BTE) hearing instruments to new generations of users. Market share of these instruments, with their discreet appearance and comfortable open-ear fitting, rose from 26.4% in 2004 to 43.8% in 2006 (source: *Hearing Aid Market: Low Penetration Offers Development Opportunities*, Koncept Analytics 2008).

However, younger users have high expectations of reliable, extended performance as part of an active outdoor lifestyle, bringing an increased risk of warranty failures and inadvertent accidental liquid damage. Because RIC/BTE devices are delicate and contain expensive digital electronics, repair costs (to manufacturers via warranty failure, or users via accidental damage) are potentially very high, especially given the current trend towards wearing binaural devices; one for each ear.

Aridion™ helps minimise these costs by providing ‘one-shot’ protection against steam and humidity as well as sweat. The superior protection afforded by Aridion™ includes improved battery life (by avoiding moisture short circuits), and preventing component failure due to saline corrosion (sweat).

Aridion™ also helps reduce the risk of inconvenience due to component failure, which is a significant user-acceptance issue. In a survey reported by Koncept Analytics, 56% of users rated ‘fewer breakdowns’ as highly desirable. Plus, thanks to its superior protection, Aridion could also benefit hearing aids aimed at children, people suffering cognitive disorders and people working in hazardous environments, due to the higher risks of damage in each case.

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## **Notes for Editors**

### **About P2i**

P2i is the world leader in liquid repellent nano-coating technology. We make good products great by applying innovative science. Our revolutionary technology enables our customers to improve the performance of their



products and protect them from the effects of water and all other liquids. This builds value by commanding premium prices and/or reducing costs.

P2i Ltd was established in 2004 to commercialise liquid-repellent treatments developed by the UK's Ministry of Defence. Now on a commercial scale, P2i's patented process has been successfully applied to a wide range of products in a wide range of markets including performance textiles, filtration media and bio-consumables.

In consumer sectors the presence of P2i's technology is indicated by its consumer brand, ion-mask™, now available in premium products from Hi-Tec, MAGNUM, Ecco and more.

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### **How P2i's technology works**

P2i's technology works by applying a nanometre-thick polymer layer over the entire surface of a product. Using an ionised gas (plasma) this layer is molecularly bound to the surface and will not leach away. The process confers superior oil *and* water repellency by reducing the surface energy to ultra-low levels – down to one third that of PTFE (polytetrafluoroethylene). In footwear and textile applications, P2i's technology also minimises liquid absorption from outside elements and evaporated perspiration.