

Press release for Medica 2010

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Presentation of innovative copper fittings at Medica Trade Fair 2010

Copper effectively combats germs

At this year's Medica the fittings manufacturer Wilhelm May GmbH from Velbert presented a world innovation at the stand of the German Copper Institute (DKI): the **cleanic®** antimicrobial door fittings are made out of a special copper alloy which has antimicrobial properties. Hospitals and also other institutions which have a great number of visitors can complement the previous hygiene standards by using door handles, switches and fittings made of copper materials to reduce the transfer and spread of germs.

In the search for innovations it is sometimes worthwhile delving into the past: this was the experience made by the research and development department of the fittings manufacturer Wilhelm May from Velbert. They "reinvented" the antimicrobial doorknob. In doing so, they utilise the antimicrobial properties of a precious metal. 4,000 years ago the ancient Egyptians already used the germ-killing properties of copper for healing wounds, and most recently the US Environmental Protection Agency (EPA) confirmed the antimicrobial properties of copper and special alloys.

Previously knowledge about bacteria-inhibiting properties was above all based on experience, but in recent years this has been increasingly confirmed by scientific methods. The research results of laboratory and field tests throughout the world impressively prove that copper and special alloys have germ-killing properties – without any risks for the human organism.

Additional component to complement previous hygiene standards

Since germs are most frequently directly transferred from person to person, disinfection of hands is the most important rule of standard hygienic measures. However, on frequently touched contact surfaces – for instance door handles – there are pathogenic germs, because the respective cleaning



and disinfection measures only have a short-term effect. When the same objects are used there are very high risks of indirectly transferring pathogens and consequently passing on infections.

The spatial conditions in hospitals or nursing facilities encourage the spread of pathogens through frequent contacts between patients, personnel and visitors, but also because the common use of fittings and sanitary installations.

At the same time, today about 70 percent of all bacteria which cause infections in hospitals are resistant against at least one antibiotic. The number of multi-resistant pathogens is increasing.

The bacteria *Staphylococcus aureus* (*S. aureus*) is one of the most frequent pathogens, and with its variant (MRSA) which is resistant against the antibiotic methicillin, it is regarded as one of the most dangerous hospital germs.

Because of the alarming increase in multi-resistant pathogens and the resulting proliferation of nosocomial (emanating from hospitals) infections, it became necessary to analyse new solutions which provide worthwhile supplementations to established hygienic standards.

The use of a permanently effective antimicrobial material is useful for frequently used contact surfaces as an additional component for finding a solution for provably reducing the risk of transferring and spreading dangerous pathogens.

cleanic®: Why copper alloys instead of 100 % copper

Solid copper and specific copper alloys deactivate germs – including MRSA – within a very short time.

Dr. Klassert, Managing Director of the German Copper Institute (DKI), which is scientifically supervising the global research and compiling the results, regards the use of copper and its special alloys as an important supplementary approach to existing hygienic measures, such as disinfecting hands. However, he points out that copper in its pure form is too soft to be used for producing sustainable products and copper alloys hence represent a worthwhile solution.

The American Environmental Protection Agency (EPA) has up to now confirmed the antimicrobial effect of 300 copper alloys.

Dr. Ockenfeld from the German Copper Institute (DKI) explains "that the strength of the antimicrobial effect of a product is primarily based on an appropriately high copper content, and the other parts of the alloys determine the possibilities of processing the materials into products and ensuring that they can be properly used in everyday situations".

The copper alloy chosen for **cleanic®** fittings also belongs to the alloys certified by EPA, which proved their antimicrobial effectiveness in the field test (Asklepios clinic in Hamburg) and once again in the latest laboratory test.

Copper is permanently effective against germs

cleanic® copper fittings retain their antimicrobial properties over decades, because they are completely cast: the copper has an active effect throughout the entire fittings. This represents a clear advantage compared to coatings, which enable germs to once again colonise fittings when these coatings wear out, and can hence provide a false sense of security.

Thanks to the other components of the alloy, the degree of hardness of the chosen copper alloy is equivalent to the hardness of stainless steel. At the same time these components almost completely prevent tarnishing/oxidation. The antimicrobial effect is also retained when the alloy is treated with conventional cleaning agents and disinfectants.

Laboratory and field tests confirm the antimicrobial properties of cleanic fittings

Scientific studies accompanying the field studies in the Asklepios clinic impressively prove the antimicrobial effects of the copper alloy used.

A complete hospital ward was equipped with **cleanic®** copper door fittings. For the purpose of the research the neighbouring ward was fitted with conventional handles made of aluminium, stainless steel or plastic. The laboratory investigations confirm that in comparison to



conventional door handles the **cleanic®** fittings reduce germs by up to 99.9 percent within a short time. The **cleanic®** copper fittings permanently reduce the number of germs on their surfaces. Hence, for instance in the Asklepios clinic it could also be proved under everyday conditions that the rate of new colonisation by germs was considerably reduced. The positive result was that the infection rate was lower in the ward which was fitted with the **cleanic®** copper door fittings.

The **cleanic®** door fittings hence provide additional protection against infections everywhere where the spread of pathogens can have serious consequences, for instance in hospitals and old people's homes.

Here the effect of the copper working materials does not differentiate between antibiotics-resistant germs and other pathogens. This ability plays a key role in the fight against dangerous hospital germs. **cleanic®** copper door handles therefore provide an additional barrier to complement standard hygienic measures against the growing number of resistant germs, such as MRSA.

The industry's system concept sets new hygienic standards

Thanks to the antimicrobial properties of solid copper and special copper alloys, the danger of the indirect transfer of germs is considerably reduced through objects made of these working materials.

The pioneers of the industry include Wilhelm May GmbH (**cleanic®** door fittings), Berker GmbH und Co. KG (light switches) and Hansa Metallwerke AG (sanitary fittings). These companies will jointly present their products at the Medica Trade Fair at the German Copper Institute's stand. Their common goal: "Our products are not just to be regarded as stand-alone solutions, but instead as particularly effective in combination with each other, since various hot spots can be replaced by copper products."



Users can recognise the copper door fittings of the company Wilhelm May GmbH through the **cleanic®** logo, which provides a guarantee that this fitting is completely made of an alloy which is proven to have antimicrobial properties. Different shapes of

fittings are manufactured in series production, but special shapes are also possible to also cover all retrofitting requirements of customers.

The company Wilhelm May GmbH has been supplying the market with high-quality fittings for more than 20 years and has launched several patents on the market.

Links: www.wilhelm-may.de www.kupferinstitut.de www.asklepios.com

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