

Stainless steel vs. copper in the interior of a CO2 incubator

A study by the Institute for Hygiene and Public Health (IHPH) at the University of Bonn from 2009 demonstrates: copper cannot be unconditionally recommended for the prevention of germs, since there are no reliable findings on the antimicrobial effect of copper surfaces after intensive cleaning and disinfection. Stainless steel remains the material of choice for long-lasting appliances.

Memmert is committed to stainless steel

For many decades now, Memmert has been using high-quality **stainless steel** for the interiors and outer housing of its **ovens, drying ovens, incubators, climate chambers** and **heating baths**. Compared to coated steel plate in particular, the structured **stainless steel** used to give Memmert appliances their unmistakable appearance is robust, scratch-resistant and can be optimally cleaned with disinfection and cleaning agents. The issue concerning the need to offer interiors made of copper is negated in the study introduced below.

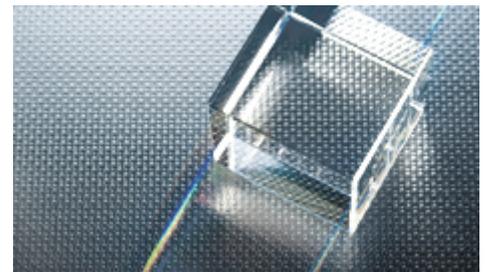
The fight against germs in hospitals

The fight against **highly resistant germs** in hospitals is one of the great challenges of our times. This has led to a renewed focus on discussions of the oligodynamic (germ-killing) properties of **copper**. This issue is of continued importance with **Memmert** as well as the question of whether it makes sense to coat the interior of **incubators**, and in particular **CO2 incubators**, with **copper**. The Institute for **Hygiene** and Public Health (IHPH) of the University of Bonn has evaluated various research results on the antibacterial qualities of **stainless steel** and **copper** in recent years. The overall result shows that the sole use of **copper**, copper alloys and coatings instead of **stainless steel** cannot be recommended.

Stainless steel offers outstanding surface



100% stainless steel on the inside and outside plus hot air sterilisation for optimum hygiene and sterility in the Memmert CO2 incubator ICO



Memmert outer casing made of 100% corrosion-free stainless steel outperforms coated steel plate in terms of hygiene and disinfection



properties

The fact that **copper** as a raw material has an antimicrobial effect has been known since ancient times. **Copper** emits ions that can penetrate the bacterial cell and destroy it. In contrast to this, **stainless steel** is inert, so that it hardly reacts at all with materials in its surroundings, and is extremely sturdy with respect to mechanical loads.

The most convincing argument for the use of **stainless steel** in healthcare is thus based on its surface properties. The scratch and abrasion-resistant, **corrosion-free stainless steel** is impervious to acids or lyes, and even after many years of using cleaning and disinfection agents still prevents the formation of a biofilm with dangerous residual germs. As infections are above all transmitted via hands and directly via the surfaces with which they come into contact, **copper surfaces** must also be cleaned constantly. Attempts to reduce the time spent cleaning and disinfecting through the use of **copper surfaces** have to be decisively rejected for reasons of safety. The Bonn study reveals that the oligodynamic effect of copper or brass surfaces is reduced by dirt or sweat, and in individual cases, even resistances could be detected.

Cleaning changes the structure of copper surfaces

Cleaning copper surfaces with cleaning and disinfection agents in turn leads to greenish discolouring and to a change in the surface structure, making cleaning increasingly difficult and reducing its **antibacterial** effect. For surfaces that have to be kept **sterile** over many years and which are subject to continuous mechanical strain through cleaning and disinfection, as is the case in the interiors of **incubators**, **stainless steel** still remains the material of choice – always in combination with an effective plan for **cleaning**, **disinfection** and **sterilisation**, to ensure maximum hygiene.

A detailed press information from the information centre of the German association of stainless steel manufacturers can be [read or downloaded here](#).

Incubating Legionella

Great emphasis is placed on **hygiene!** A **Memmert CO2 incubator** is used to monitor the **potable water quality** for the cultivation of **Legionella**.

[more information](#)

Beekeeping in the Peltier-cooled incubator

Low-vibration environment: The Würzburg BEEgroup is carrying out basic research into the health of bees in the **cooled incubator** with **Peltier elements**.

[more information](#)

Incubators from Memmert

- [Incubator I](#)
- [Peltier-cooled incubator](#)
- [ICP compressor-cooled incubator](#)

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