

Hot Topic

Preventive Hygiene



KUSCH+CO
by Nowy Styl



Minimising the infection risk through preventive hygiene.

The rapid, global spread of the SARS-CoV-2 virus has clearly demonstrated that a preventive hygiene concept is a question of vital importance these days. This insight not only holds true in medical and care environments, it also applies to everyday situations. For instance, in offices and administration buildings, in training classrooms and conference rooms, in company canteens, in hotels and restaurants, in airports and railway stations, and in a multitude of waiting rooms in public buildings.



Photo left and above: Tom Bauer / IKE Technical University Braunschweig 2020

In much-frequented environments where many people come together, the risk of germs transmission through droplet or smear infection rapidly rises. Current scientific knowledge states that viruses are able to survive for only a few hours or a few days at most on surfaces; on the other hand, germs and other micro-

organisms can persist and multiply for several months there. Regular and thorough cleaning and disinfection of all contact surfaces is required to reduce the infection risk for humans. When implementing preventive hygiene measures, hygiene-optimised seating plays a vital role.

Kusch+Co. A competent partner in hygienic safety.

Hospitals and residential care facilities have always been a key market for the contract furniture business. With their finger always on the pulse of the healthcare sector, Kusch+Co was able to identify the risks associated with multi-resistant germs that have been cropping up in more and more hospitals and pose a threat to healthy persons. Back in 2006, they developed their kuschmed® Hygienic-Line, under the scientific supervision of the Institute of Hygiene and Environmental Medicine affiliated to the Charité Berlin, consisting of a multitude of hygiene-oriented seating and table series.

Through their construction and the materials selection, these products minimise the infection risk by reducing the number of adhesion points for germs and pathogens to an absolute minimum, and are therefore ideally suited for a thorough and safe disinfection. The revised German Infection Protection Act (2011) validated this approach, laying down that all scientifically approved measures must be taken with the aim of preventing the spread of nosocomial, i.e. hospital-acquired, infections.

For their R&D in the field of hygiene, Kusch+Co relies on a close co-operation with hygiene specialists with a clinical background as well as on active feedback from hospitals.

kuschmed®
HYGIENIC-LINE



Partner in baseline studies.

Kusch+Co actively participates in scientific studies – e.g. in the Project HYBAU+ (constructional hygiene in hospitals) as well as in the follow-up study KARMIN (hospital, architecture, microbiomes and infections in hospitals).

These studies were conducted with the aim of providing a better basis for decision-making, for instance, whether, in the face of the rise of multi-resistant germs, German hospitals should have more single rooms – or whether in terms of infection prevention, twin patient rooms can provide the same hygienic safety.

This project, co-financed by the Federal Ministry of Education and Research within the framework of government-funded project “Zwanzig20” and as part of the German Research Association “InfectControl 2020”, runs until the end of 2020.

Protection against germs, microbes and co. Hygienic Solutions.




Neither concealed nor hardly accessible spots for disinfection



Surfaces chosen as to provide the least possible adhesion to germs, microbes and mildew

Upholstery fabrics impervious to liquids, permanently impervious too and growth-inhibiting for germs



The  **Covid-19** pandemic is pushing everyone to rethink their hygiene concept.

Dirt-repellent, pore-free wooden, metal or plastic surfaces

Self-sealing upholstery, featuring a concealed and inaccessible fabric fixation



Stable chassis with invisible, inside screw fixations for legs, arms and upholstery

Seamless seat base to enable optimum disinfection



Self-adhesive, permanently hygienically impervious, and disinfectant-compatible sealing lip in order to prevent the ingress of fluids and greases

Arn as master products in mock-up patient rooms.

In their capacity as industrial partner, Kusch+Co has furnished the mock-up patient room within the framework of the KARMIN project, which was unveiled in the autumn of 2020.

Among other products, the mock-up room features the Arn chair: the hygiene experts meticulously tested the mechanical cleaning properties of the plastic and aluminium surfaces.

Arn passed with flying colours. Next to the excellent hygienic properties, Arn's upmarket design quality accounts for the selection as master product.



Photo below and right: Tom Bauer / IKE Technical University Braunschweig 2020





Mock-up patient room as proposed by the KARMIN project.





High demand for hygiene-oriented seating.

Long before the outbreak of the Corona pandemic, Kusch+Co developed a range of “hygiene-oriented” seating that are now in high demand. Bianca Schmidt interviewed Ingo Bandurski, who has been in charge of the solution concepts Fire Prevention and Hygiene for many years now.



Ingo Bandurski is Sales Support Specialist at Kusch+Co, and always on the spot to advise on Fire Prevention and Hygiene.

InteriorFashion: Strict hygiene regulations have been mostly limited to healthcare facilities until now. Should this concept be expanded to other environments?

Ingo Bandurski: Absolutely. In all environments where many people come together and meet up, hygiene will play a more vital role in the future. Be it in Open Space Offices with hot desking, in conference rooms or in company restaurants.

IF: In this context, the term “hygiene-oriented” seating is often mentioned. What is your vision of this concept?

IB: In this case, I differentiate between three aspects. The first one being the physical cleaning process of a product resp. surface. The Robert Koch Institute (RKI), the German federal government agency and research institute for disease control and prevention, acknowledges the importance of this first step. This comes down to the overall design of the product. Special attention should be paid to the avoidance of edges, borders, grooves and gaps where dirt can accumulate. It has to be possible to wipe all the surfaces entirely and thoroughly clean without any complications.

A second point is the permanent resistance to disinfectants. Currently, there are five types of disinfectants that all have distinctly different compositions and mechanisms of action (MOAs). Therefore, in order to avoid damage to the surfaces, the information as to which disinfectants are suited for which surfaces has to be clearly and unequivocally communicated.

And finally, the third pillar consists of the antibacterial coating of surfaces, e.g. through nanosilver particles (NSPs). As has been proven, silver ions are extremely effective against all types of germs, even against multi-



Photo: Tom Bauer/IKE Technical University Braunschweig 2020

resistant pathogens. Future studies will have to determine their effectiveness against viruses.

IF: Do antibacterial surfaces make cleaning redundant...

IB: The answer is a clear “no”. As a matter of fact, disinfection is no substitute for cleaning. The RKI has issued a recommendation in this matter. If stains are not removed before disinfection, the efficiency of the disinfectant might be seriously impaired. On top of this, dependent on the used disinfectant, the incorrect use may result in a protein error, which is a reaction between the stains and the disinfectant causing a smear layer to form on top of the surface. Such a smear layer looks unsightly, appallingly and may even damage the surface under certain circumstances.

IF: Kusch+Co has the kuschmed® Hygienic-Line on offer. Can you tell me more about these products?

IB: We have been developing “hygiene-oriented” seating for over 15 years now, and gained invaluable experience and insights in this period. Our involvement in two hygiene-related projects – HYBAU+ and KARMIN, both co-financed by the German Federal Ministry of Health – provides convincing proof thereof.

Our primary objective is to achieve an excellent cleanability and disinfection for our seating. First of all, we have purposefully selected suitable products from our portfolio and improved their hygienic properties. And secondly, new series have been specifically designed to fulfil all hygienic requirements. Our chair Arn, designed by Scaffidi & Johansen, is a shining example. The selection of suited materials and fabrics also plays an essential role, as these must be able to withstand regular disinfection without getting damaged. In this context, all hygiene-oriented products are labelled with a sticker – also disinfected, of course – displaying a QR code with a link to our cleaning brochure and providing the user with a detailed list of suitable disinfectants. As a result, all parties can feel safe.

IF: Mr. Bandurski, thank you for this interview.



For the minimalist and elegant Arn chair, Kusch+Co uses a self-sealing upholstery technique. The fabric is invisibly fixated, thus preventing the ingress of fluids or dirt.

Contra germ.

Kusch+Co has seating with hygienic surfaces on offer.

Seating and tables geared towards hospital environments and healthcare facilities in general must be easy to clean and suited for disinfection. These special series meet all the requirements for hygienic surfaces, and therefore are ideally suited to furnish offices.



For documentation purposes, Kusch+Co marks all the hygiene-oriented products with an appropriate product label, including a QR code.

Requirements to hygienic surfaces

The label provides the user with detailed cleaning and disinfection instruction for the respective series. "In case of an infection, the health department always checks whether the furniture on site can be safely disinfected," says Ingo Bandurski, Sales Support Specialist at the Hallenberg-based contract furniture manufacturer.

To give an example, the chairs and tables of the series Arn by the designer duo Antonio Scaffidi and Mads K. Johansen meet all the requirements laid down for hygienic surfaces. Edges and borders, also on the seat's underside, have been eliminated, making the chair easy to clean. The same applies to the name-sake tables, where the legs are attached to the table top by means of flat fixing plates.

Antibacterial properties

The hygiene-oriented seating and tables from the kuschmed® Hygienic-Line, that also comprises the Arn series, were co-developed in close co-operation with the Institute of Hygiene and Environmental Medicine in Berlin.

The pore-free wooden, plastic and metal surfaces boast excellent antibacterial properties. The upholstery is impervious to fluids, permanently impervious and growth-inhibiting for germs and pathogens.



The nursing home "Woonzorgcentrum ter Durme" in the Belgian city of Lokeren has selected the seating and tables of the series "3600 Arn". These products are easy to clean.

In these difficult times dominated by the corona pandemic, hygiene has become a top priority. The virus affects a plethora of environments in hospitals, nursing homes, educational institutions as well as administration buildings. The demand for hygienic surfaces as well as germ-free furniture is on the rise.

Standard-issue furniture does not meet the hygienic requirements most of the times, given their porous surfaces, grooves, gaps and other spots that are inaccessible for a wipe disinfection. If unsuited upholstery and fabrics

are selected for the finish, the furniture can become a favourable breeding ground for germs and pathogens. In order to qualify as a "hygienic surface", the materials must meet special requirements.

Permanent resistance

The surfaces should be easy to clean and ensure a long-term suitability for disinfectants. Furthermore, they should boast antibacterial properties, even though this offers little protection against a virus such as Covid-19. These requirements are a non plus ultra for hospitals, medical practices and nursing homes.

Criteria for decision-making

Currently, the Arn variations are undergoing a field test related to the hygienic surfaces. The Hallenberg-based company is actively involved in the KARMIN project, a German acronym for hospital, architecture, microbiome and infection.

Every aspect, from the floor to the ceiling, including the room's geometry and interior design, the acoustics, surface finishing, wet room as well as the furniture, has been meticulously scrutinized.

This research project will provide a basis for future decision-making, and issue recommendations on how German hospitals can cope with the prevalence of multiresistant pathogens in private rooms or on how to implement an efficient infection prevention in twin bedrooms.

This project, co-financed by the German Federal Ministry of Education and Research within the framework of the government-funded project "Zwanzig20" and as part of the German Research Initiative "InfectControl 2020", runs until the end of 2020.

Mechanical cleaning properties

In their capacity as an industrial partner to the KARMIN project, Kusch+Co supplied the Arn chair for the mock-up patient room. "The mock-up patient room is to be unveiled at the World Health Summer in October," explains Bandurski.

Surface experts tested the mechanical cleaning properties of the chair's plastic and aluminium surfaces. "In their opinion, our product passed with flying colours. A feature that we can add to our unique selling points."

This company is generally known for manufacturing seating and tables with outstanding cleaning and disinfection properties. With their products, it is possible to add hygienic surfaces to your interior design.

Healthcare and care facilities have always been their core market, and in 2006, they added the kuschmed® Hygienic-Line products to their portfolio. As a result, they gained a lot of experience in the field of hygienic surfaces, long before the outbreak of the coronavirus.

Easy cleaning

"The infection risk also lurks in company restaurants and canteens. The chairs and tables in this environment are used by many different guests, and there is hardly enough time to clean them thoroughly in between."

The same goes for offices. Take the height-adjustable meeting table for instance, which should be cleaned and disinfected in compliance with the current hygiene regulations after every use.

For all the reasons above, Facility Managers, hygiene and OHSAS officers prioritise and prefer furniture with outstanding cleaning and disinfection properties, i.e. furniture with hygienic surfaces.

Social Distancing

Currently, the focus is on "Social Distancing" when furnishing workstations as well conference and seminar rooms. The implementation thereof entails much more than simply leaving enough space between the workstations resp. seated persons.

Table partitioning solutions are in high demand. "Whereas our past solutions used to focus on privacy screens, our portfolio now also includes adjustable, hygienic partitions," explains the specialist.

You have to see the whole picture. It is impossible to create a safe environment with just one single measure. On the contrary, in view of the corona pandemic, Mr. Bandurski recommends rethinking the entire hygiene concept for your company. "The open space philosophy as well as the hot desking principle has lost much of its appeal. We are noticing a revival of individual, one-person workstations. At the same time, the idea of working from home has gained much momentum in the past months."



Interior design of the nursing home "Woonzorgcentrum De Gerda" in the Belgian city of Sint-Niklaas.

Improving hygienic standards through specially designed furniture – germs not wanted.

The corona pandemic provides a convincing proof that well-thought-out preventive hygiene concepts are now more important than ever before. This realization not only applies to clinical wards, but is relevant to everyday situations as well. An extremely important role may be reserved for hygiene-oriented seating.

“Furniture is in the immediate contact range of people, and therefore should be part of the risk assessment,” says Ingo Bandurski, who is in charge of the solution concepts Fire Prevention, Hygiene, Bariatric Seating and Reduced Mobility at Kusch+Co.



In much-frequented environments, where many people come together, the risk of catching a disease through droplet or smear infection is extremely high. Whereas a virus, by the current state of scientific knowledge, can only survive for a couple of hours or, at the most, a few days, on surfaces, bacteria and other micro-organisms are able to hold out for several months and to further spread out. This poses a very dangerous threat to persons with a fragile health – however, in view of the multi-resistant germs, which are on the rise in hospitals and healthcare facilities, even the lives of healthy persons are in danger.

Clean first before disinfecting

Smear infections – i.e. the transmission of pathogens through surfaces on human organisms – could be easily avoided, provided that the surfaces are regularly cleaned and subsequently immediately thoroughly disinfected with appropriate disinfectants – the German Association of Applied Hygiene (VAH) regularly issues a list of approved disinfectants along with instructions. This sequence offers the best possible hygiene: cleaning is indispensable, as it removes all the dirt and stains. The pathogens are often embedded and nested inside the dirt, and therefore possibly out of range for disinfectants. Hospitals often experience difficulties to adhere to this

sequence – even though they are required to compile a hygiene plan, document and provide evidence of every step. The Infection Protection Act, revised in 2011, lays down that every scientifically validated measure has to be taken in order to prevent the transmission of nosocomial infections, i.e. hospital-acquired infections. This act is relevant to hospitals, medical practices, ambulatory healthcare centres, day hospitals and nursing homes.

Hygienic seating since 2006

The correct implementation of hygiene measures, and especially the reliable disinfection of surfaces, is extremely training- and cost-intensive. On top of this: even with the prescribed procedures, it is not always possible to efficiently reduce the number of germs on some surfaces. Especially the use of inappropriate materials as well as an unsuited design may compound the efficiency of a disinfection cycle. Bearing this in mind, Kusch+Co developed its brand *kuschmed*[®] Hygienic-Line in 2006, and ever since, they have been systematically improving their hygiene concept tailored to seating. All these products have been co-developed with renowned hygiene specialists and subsequently improved based on active feedback.

Furthermore, Kusch+Co actively participates in scientific studies – e.g. in the Project HYBAU+ (constructional hygiene in hospitals) as well as in the follow-up study KARMIN (hospital, architecture, microbiomes and infections in hospitals). These studies were conducted with the aim of providing a better basis for decision-making, for instance, whether, in the face of the rise of multi-resistant germs, German hospitals should have more single rooms – or whether in terms of infection prevention, twin patient rooms can provide the same hygienic safety. This project, co-financed by the Federal Ministry of Education and Research within the framework of government-funded project



As an industrial partner to the KARMIN research project, Kusch+Co has delivered their products to furnish the mock-up patient room, that was unveiled in autumn.
Photo: Tom Bauer/IKE Technical University Braunschweig 2020



“Zwanzig20” and as part of the German Research Association InfectControl 2020, runs until the end of 2020. The outcome was a mock-up twin patient room, including a wet room, to display a well-thought-out preventive hygiene concept put into practice. In their capacity as an industrial partner, Kusch+Co has furnished the mock-up patient room, which was unveiled in the autumn of 2020, with the Arn chair: the hygiene experts meticulously tested the mechanical cleaning properties of the plastic and aluminium surfaces. Arn passed with flying colours. Next to the excellent hygienic properties, Arn’s outstanding design quality accounts for the selection as master product.

Hygiene-oriented and aesthetic

The focal point of all kuschmed® Hygienic-Line products is on two aspects: firstly, they should not compromise on neither comfort nor aesthetics, secondly, they must feature intelligent solutions aimed at facilitating the disinfection measures. In order to achieve these goals, they seek the advice of experts, as was the case for the seating series uni_verso, designed by Norbert Geelen.

“One of the most renowned German authorities on hygiene has recommended this type of plastic as well as the texture for the seat shells, and tested the cleaning properties”, explains Ingo Bandurski from Kusch+Co.“ The independent Institute of Hygiene in Berlin confirms that the series uni_verso represents the best compromise for use in hospitals.”

This statement specifically refers to the textured seat shell. From a hygienic point of view, an extremely smooth surface may be desirable, however such a surface would be to the detriment of the non-skid protection. There would be a risk that immobile patients slide down and fall out of the chair. Bandurski: “The uni_verso variations meet a variety of essential requirements: not only are these chairs hygiene-oriented, they are extremely heavy-duty and have a low flammability.”



What are the qualities of a hygiene-oriented product?

“In essence, it is a combination of several criteria,” says Ingo Bandurski. “The first goal is to minimize the gap sizes, i.e. when joining parts together, there should be no clearance between them, as these ‘dead spaces’ are extremely difficult to clean and therefore risk turning into a breeding ground for germs.” Too small radii for the inner edges can complicate a thorough disinfection. Secondly, both the materials and the surfaces must be non-absorbent. Kusch+Co achieves this through pore-sealing coatings and dense laminated plastics. “For the Arn series, we use a self-sealing upholstery technique, the fabric is invisibly fixated and prevents the ingress of fluids or dirt into the foam,” explains Ingo Bandurski. A special seam technique is used to guarantee the best possible cleaning.

In fact, all used materials have to be compatible with intensive disinfectants, such as O2-separators or virucidal agents. Because: in spite of the optimized hygienic properties, a regular disinfection cycle is the non plus ultra – but the hygienic properties facilitate the process and improve the outcome.

Kusch+Co uses a self-sealing upholstery technique for the Arn chairs. The seat cover is invisibly fixated, preventing the ingress of fluids and dirt into the upholstery foam.

From a hygienic point of view, an extremely smooth surface may be desirable, however such a surface would be to the detriment of the non-skid protection. The textured seat shell of the uni_verso chair gives a firm support to immobile patients.

Professional advice

On request, Kusch+Co has an antibacterial silver-bearing coating on offer. The activated silver ions deteriorate the bacteria's cell membranes and destroy them, thus inhibiting their growth. “The bacteriostatic effect is immense, as the number of germs is drastically reduced on the surface. Nevertheless, these surfaces require regular cleaning and disinfection as well,” emphasises the hygiene expert Ingo Bandurski. Whether a specific antibacterial coating makes sense, mainly depends on the individual circumstances. “Furniture is in the immediate contact range of people, and therefore should be part of the risk assessment,” says Ingo Bandurski. Kusch+Co is happy to act as counsellor for planners and operators. “We can recommend certain series and materials to match the hospital's hygiene plan and assist them in meeting the requirements.” Next to the standardized products, this company is capable of realizing customer-specific hygienic solutions – in case there are added requirements. Bandurski: “Higher load capacity, increased seat height for persons with a disability, fire prevention and durability can coexist with the hygienic requirements”.

In the past, Kusch+Co assumed that the buying department used to be the primary contact for hygiene-related matters. In the meantime, the responsibility has shifted towards the executive level. And it will most likely stay that way: “We believe that the corona pandemic will permanently sharpen our general hygiene awareness. Each dining room, each staff restaurant, each open space office that is frequented by many different persons constitutes a certain risk.” Ingo Bandurski is convinced that this will lead to more stringent hygiene requirements – even in environments that weren't affected until now.



Preventive hygiene put into practice.

The Robert Bosch Hospital in Stuttgart.

The Robert Bosch Hospital in Stuttgart, established in 1940 and managed by the Robert Bosch Foundation, ranks among the largest and top-performing hospitals in the region. Though the hospital unites all medical specialities under one roof and provides a comprehensive treatment to their patients, they are specialised in tumor diseases. The hospital also attaches great importance to training and research. With a total capacity of 1,030 beds, they can treat round about 40,000 patients every year.



For the refurbishment of the patient rooms, the Robert Bosch Hospital opted in favour of the seating and tables of the series 3650 Arn, as these products excel through their exemplary preventive hygienic properties. Featuring aluminium legs, the series Arn is characterised by a modern design, and is

suited for regular and safe disinfection cycles. These chairs are even capable of supporting heavy-weight patients and visitors; certified for a dynamic load up to 150 kg. The table tops, which are the most frequently touched contact areas, are protected with an antibacterial, silver-bearing coating. The activated

silver ions destroy the bacteria's cell membranes, stopping the replication of the bacteria's DNA, and thus preventing them from multiplying. As a result, the spread of these pathogens is extremely reduced, and hardly any bacteria is able to survive on this surface.



Photography by Janina Rodeit

Following a successful test phase in the admission ward, the hospital ordered approx. 500 chairs and 250 tables for the refurbishment of the patient rooms.

In her statement, Ilka Höhl, Facility Manager and Construction and Real Estate Manager, expresses genuine satisfaction with the new seating and tables:

“For many years now (spanning several seating generations), our hospital group has always had positive experiences with Kusch+Co products. That is why we are extremely happy with the new seating and tables from the series Arn in our general wards.”

A critical role in the decision-making process – next to the upmarket finish and the appealing look – played the antibacterial coating, resulting in a maximum reduction of 99.99 % of germs on the surfaces. This surface finishing paves the way for an entirely new generation of hospital furniture and is a big leap forward in preventing the transmission of germs in hospital wards.

For these reasons, we feel well prepared for all hygienic challenges in the future. With regard to a sustainable and future-oriented interior design for our patients and our staff, we are not willing to make any compromises.

Stuttgart, May 2020

Arn desk: Table top covered with RESOPAL® Antibacterial. The aluminium legs are fixed directly to the table top.



Photography by Janina Rodeit

