

**Tags** Sustainability, disinfectant wipes, surface disinfection

**Title** **Sustainable Application of Ready-to-Use Disinfectant Wipes in Clinical Practice: Efficacy, Handling, and Contamination Risks**

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**Objective** Investigation of the efficacy of various disinfectant wipes as well as the handling and contamination risks using mikrozid® universal wipes *green line* in the context of ecological and hygienic requirements.

**Methods** In laboratory **tests**, three cloth types were compared in terms of area coverage, liquid release and disinfection performance on different surfaces (melamine, PVC, artificial leather and glass) using different folding techniques (single vs. double-layered).

**Cloth 1:** mikrozid® universal wipes *green line*, cellulose-based  
**Cloth 2:** mikrozid® universal wipes *premium*, Polyester/ PET  
**Cloth 3:** SCA-Tork cloth, impregnated with mikrozid® universal liquid, cellulose-based & PET

For **wipe 1**, the antimicrobial efficacy, contamination risks and user behaviour were additionally investigated in a clinical **observational study**.

**Results** The **double-layer folding** of the wipes led to a significant improvement in **surface coverage** compared to single-layer use, regardless of the surface type. Wipe 1 achieved the best overall surface coverage and efficiency per gram of liquid released (Fig. 1).

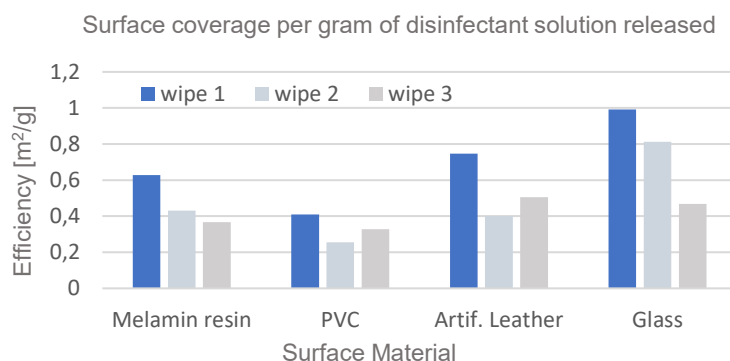


Fig. 1: Surface coverage per gram of disinfectant solution released (m<sup>2</sup>/g) for wipes 1-3. for wipes 1-3. Double-folded wipes were tested on melamine, PVC, artificial leather and glass surfaces.

**Tests conducted with wipe 1 only**, showed that even after maximum use (significantly reduced liquid release), the wipe material still fulfilled the **VAH efficacy criteria** ( $\geq 5 \log_{10}$  for bacteria,  $\geq 4 \log_{10}$  for yeasts) and showed sufficient antimicrobial activity.

After wiping, small amounts of **microorganisms** were detected on the wipes and transferred to worn gloves.

**In daily clinical practice**, there were significant differences in the folding and wiping techniques used. Often, neither a systematic wiping direction was followed nor clear criteria for the time of wipe change were taken into account.

**Conclusion** The results underline the relevance of product-specific validation and emphasize the importance of correct application techniques:

- **Double-layer folding** significantly improves disinfection performance.
- **There are risks of contamination** if handled improperly
- **Clinical practice** shows great variability – training and standardized protocols are highly recommended.
- **Sustainability:** Cellulose-based wipes reduce environmental impact
- **mikrozid® universal wipes *green line*** offer a good balance between microbiological safety the advantages of cellulose-based wipes.

The results of this study could also be achieved with a new formulation of the mikrozid universal p wipes *free line* and mikrozid universal p wipes *premium*