

Absorption Rate and Linting Study Comparing UnderGuard™ Dry Mats

Two big issues faced in the sterile processing field are the linting of materials and moisture management (i.e., the absorption rate of liquids, moisture, and condensate) after sterilization. Remaining fluid can lead to wet packs and load failures, while lint remaining on devices can lead to an increased risk of complications, such as infections, depending on what kind of material(s) are used. A 2006 study in the *International Wound Journal* involving cotton sterile gauze/sponges (widely used in the industry) "... proved that even if the surgical sponges are gently placed inside a surgically created tissue pocket, they have a potential to lose lint within the wound. ..., which still have a potential to induce a foreign body inflammatory response."¹ Becker's Hospital Review said, "... complications from these materials, which are all ubiquitous in the surgical environment, are more common than many realize and can have devastating consequences for patients."² Given these potential issues, what should you use?

Why not surgical towels?

Surgical towels have a high-linting effect and can lead to an increased infection rate. According to Stephen M. Kovach, "In short, surgical towels are useful items, but they must be used with care and consideration when it comes to moisture management and dealing with staining. Used unwisely they may pose a greater risk of infection and nullify the point of sterilization."³

"A study ... published in *American Journal of Infection Control* (October 2013) found 93 percent of laundered towels/reusable hospital cleaning towels—used to clean rooms—contained bacteria (microbial contamination) that could cause healthcare-associated infections (HAI) ... An estimated 1.7 million HAI cases are reported annually in the U.S...."⁴

What are Dry Mats good for?

These specialized, single-use dry mats are to be used inside or outside the tray within a sterile barrier. They may significantly reduce the risk of those annual 1.7 million HAI cases previously mentioned because they do not actively shed lint like surgical towels do.

Dual UnderGuard™ Dry Mats vs UnderGuard™ Dry Advanced

In a comparison study, testing was performed to compare the absorption rate and linting between currently sold dry mats (Dual UnderGuard™ Dry Mats) and the updated dry mat (UnderGuard™ Dry Advanced).

The current Dual UnderGuard™ Dry Mats sold by Healthmark have been tested with the same process as the new UnderGuard™ Dry Advanced updated mats but the materials between them are different. Both mat types come in either green or purple color options. Both mats are approved for steam sterilization. The greatest differences noted between these two drying mats is the non-linting and absorbency rate capabilities for UnderGuard™ Dry Advanced.

- UnderGuard™ Dry Advanced has four (4) times better non-linting performance compared to the Dual UnderGuard™ Dry Mats.
- UnderGuard™ Dry Advanced is up to 2.51 times the absorption capacity of the Dual UnderGuard™ Dry Mats.
 - Target absorption of 400 percent.

- Testing exceeded the target at 405 percent.
- Updated dry mat is ≈20 percent lighter than the Dual UnderGuard™ Dry Mats.

Clearly, dry mats are the proper choice compared to the dangers of surgical towels as tray liners. With the new UnderGuard™ Dry Advanced mat, less is more. The future of tray liners inside a sterile barrier is here!

References:

1. Becker's; In Collaboration with Cardinal Health. (July 14, 2022). *Decrease hospital-acquired infections by keeping the room out of the patient: low-lint solutions for better surgical outcomes*. Becker's Healthcare. https://www.beckershospitalreview.com/infection-control/decrease-hospital-acquired-infections-by-keeping-the-room-out-of-the-patient-low-lint-solutions-for-better-surgical-outcomes.html?oly_enc_id=2559H0988923D9G
2. Sari, A., Basterzi Y., Karabacak, T., Tasdelen, B., & Demirkan, F. (December 2006). The potential of microscopic sterile sponge particles to induce foreign body reaction. *Int Wound J*, 3(4), 363-368. doi: <https://doi.org/10.1111/j.1742-481x.2006.00264.x>
3. Kovach, Stephen M. (July 2022). *Heavy Trays, Towels, and Moisture (Part 2)*. Healthcare Purchasing News (HPN). <https://www.hpnonline.com/sterile-processing/article/21271691/heavy-trays-towels-and-moisture-part-2>
4. Sifuentes, Laura Y. (Ph. D)., & Gerba, Charles P. (Ph. D)., & Weart, Ilona. (BS)., & Engelbrecht, Kathleen (MS)., & Koenig, David W. (Ph. D). (2013, October 1). Microbial contamination of hospital reusable cleaning towels. *American Journal of Infection Control*, 41(10), 912-915. Advance online publication (2013, March 25). <https://doi.org/10.1016/j.ajic.2013.01.015>