The Impact of Eliminating Plastic in Healthcare Disinfectant Wipe Substrates

Cleaning and disinfection in healthcare are essential for reducing healthcare-associated infections (HAIs). Disinfectant wipes provide a convenient solution for compliance with protocols, enhancing efficiency and reducing cross-contamination compared to reusable cloths. Healthcare facilities rely on disinfectant wipes every minute of every day to support operational efficiency by quickly killing organisms that may be on surfaces throughout the healthcare settings and are a key defense in preventing HAIs.

Choices that Come with a Cost

Unfortunately, infection prevention comes at a price. Many hospital disinfectant wipes are made with synthetic plastic fibers or a combination of these materials, which can take hundreds of years to break down. The number of disinfectant wipes used by North American healthcare facilities each year could circle the Earth approximately 58 times.[1] This staggering amount of plastic waste typically ends up in landfills or, worse, oceans. It's estimated that up to 13 million metric tons of plastic enter the ocean annually — equivalent to a garbage truck dumping a full load into the water every minute.[2]

On top of that, most disinfectant wipes sold come in plastic canisters which are seldomly recycled. Even if they were, they only account for approximately 42% of the total plastic by mass in a disinfectant wipe package. The majority, 58%, of single-use plastic comes from the wipes themselves.[3]

Steps Toward Enhanced Sustainability

Companies and businesses around the world have sustainability initiatives aiming to operate with more environmental responsibility when it comes to plastic used in their manufacturing processes. Some of these initiatives are:

- Replacing plastic with alternative materials like biodegradable plastics, recycled plastics or natural fibers
- Designing products to be easily disassembled or reused after use
- Minimizing packaging material by using alternatives like paper or cardboard that can easily be recycled
- Educating consumers about the environmental impact of plastic and encouraging responsible disposal

Initiatives like these can and will make an impact as more and more manufacturers embrace change and innovate environmentally friendlier products that perform as well, or even better, than current plastic-dependent solutions.

Hospitals and other healthcare facilities face unique challenges when it comes to sustainability initiatives due to the nature of their operations. Disinfectant wipes are used thousands of times a day at healthcare facilities worldwide. Addressing a seemingly small thing like disinfectant wipes is a major step in the right direction.

Creative Solutions are Here

The Ecolab® Disinfectant 1 Wipe is a 100% plastic-free[4] and readily degradable wipe, made with substrate derived from wood pulp fibers. It is effective against 40+ broad-spectrum organisms[5], including:

SARS-CoV-2 – 30 seconds	Mycobacterium bovis (TB) – 45 seconds
Candida auris – 75 seconds	Norovirus – 60 seconds
Influenza A virus – 60 seconds	Influenza B virus – 60 seconds

The wipe features:

- A resealable, snap-back lid to prevent wastage due to drying
- Robust material compatibility on hard non-porous surfaces
- Maintains 4x the surface area wetness compared to the leading alcohol based disinfectant wipe[6]
- Does not contain dyes and fragrance, does not require PPE when used as directed (unless cleaning up blood or body fluids or per facility policy)

Maintains

4x

the wet surface area

compared to the leading high-alcohol wipe.*

*Laboratory tests performed have demonstrated that the Ecolab Disinfectant 1 Wipe, made with substrate derived from wood pulp fibers, maintains 4x surface area wetness, for the respective recommended EPA registered contact times, when compared to the market leading alcohol based disinfectant wipe. Dry times will vary based upon actual conditions, including temperature, relative humidity, and air flow.

★★★★★

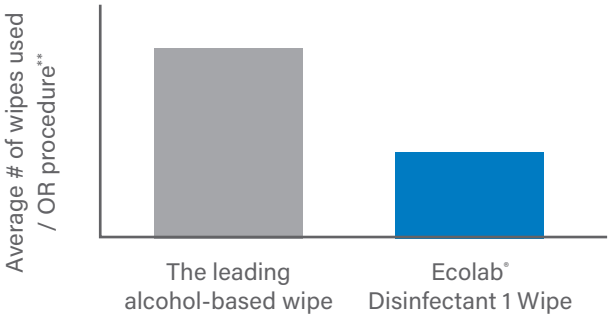
Ecolab® Disinfectant 1 Wipe scored the highest (EPA Reg. No. 1677-263) rating on plastics, engineered hard surfaces, elastomers and most metals with no perceptible change to their appearance.*

*Ecolab material compatibility testing data available upon request.

Demonstrating Effectiveness and Enhanced Sustainability

In addition to providing proven effectiveness, the Ecolab® Disinfectant 1 Wipe also allows for a significant reduction in usage compared to traditional wipes. During a 4-week observational study at North Memorial Ambulatory Surgery Center Maple Grove in Minnesota, the use of Ecolab® Disinfectant 1 Wipe resulted in a 60% reduction in wipes used compared to the leading alcohol-based disinfectant wipe.[6] These results were driven by a combination of the Ecolab® Disinfectant 1 Wipe substrate's ability to hold more liquid than plastic-based wipes and its ability to cover more surface area with one wipe. Also, the Ecolab® Disinfectant 1 Wipe active ingredient, DDBSA, does not evaporate off of surfaces as quickly, compared to the active ingredient in the leading alcohol-based wipe, helping ensure required contact times are met without having to use additional wipes. This reduction not only decreased single-use plastic wipe waste but also lowered costs associated with disinfectant wipes.

The Ecolab® Disinfectant 1 Wipe substrate derived from wood-pulp fibers is truly a game changer in helping to enhance sustainability efforts for the healthcare industry. It demonstrated a 94.3% relative biodegradation by day 15 compared to 0.6% relative biodegradation with plastic-based substrate wipes after 75 days.[7]



**>100 procedures for each test phase

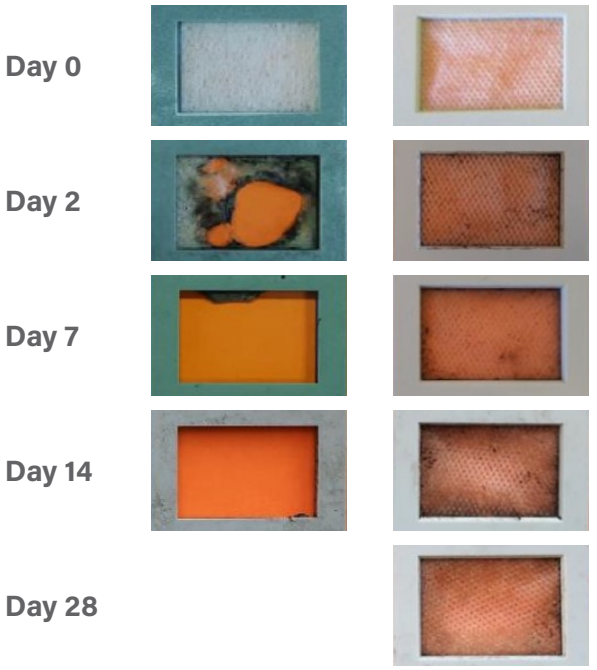
During a 4-week benchtop study, one facility was able to reduce wipes used in the OR, by

60%

— reducing both single-use plastic wipe waste and costs associated with disinfectant wipes.*

*Research conducted over a 4-week period in the OR of an ambulatory surgery center demonstrated a reduction in wipes used when compared to the market leading alcohol-based wipe. Actual results will vary based on operating conditions. Ecolab research available upon request.

Biodegradation Test[7]



Conclusion

Starting today, disinfecting can have a lower environment cost. The Ecolab® Disinfectant 1 Wipe enables hospitals to confidently reduce wipe utilization, increase efficiency, and advance sustainability efforts — all without compromising effectiveness — for the health of both patients and our planet.

[1] 2023 DRG data & internal calculations used to determine total wipe volume

[2] Reddy, S. (2018, September 24). Plastic pollution affects sea life throughout the Ocean. The Pew Charitable Trusts. https://www.pewtrusts.org/en/research-and-analysis/articles/2018/09/24/plastic-pollution-affects-sea-life-throughout-the-ocean3

[3] Based on product specifications of a 6" x 6.7" wipe, with 34 gsm substrate, 160 wipes per canister and combined canister and lid mass of 100 g.

[4] Wipe substrate is 100% plastic-free. Soft pack packaging comprised of plastic. Represents a 90%+ reduction in total plastic compared to the total plastic mass of a wipe canister containing 160 plastic wipes.

[5] Disinfectant 1 Wipe, EPA Reg. No. 1677-263, refer to product label for use directions.

[6] Research conducted over a 4-week period in the OR of an ambulatory surgery center demonstrated a reduction in wipes used when compared to the market leading alcohol-based wipe. Actual results will vary based on operating conditions. Ecolab research available upon request.

[7] ASTM D5511 quantitative third-party laboratory tests performed have demonstrated 94.3% relative biodegradation in 15 days of accelerated landfill testing, for the Ecolab Disinfectant 1 Wipe, made with substrate derived from wood pulp fibers and 0.6% relative biodegradation for a standard plastic- based wipe under the same test conditions. Pictures illustrated represent qualitative disintegration results captured under ASTM D5511conditions. Actual rates of degradation will vary based on landfill conditions.

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