

# Care for your patients, care for the planet.

## 3M™ Bair Hugger™ Temperature Management System

Throughout the journey of our products from manufacturing plant to patient, Solventum is mindful of the impact we have on the environment. We're committed to improving our carbon footprint. When it comes to measuring the sustainability of a product, everything from its manufacture, transportation, use and disposal makes a difference.

For the 3M™ Bair Hugger™ Temperature Management System, we've worked hard to reduce their overall footprint and show how maintaining normothermia can lead to faster recovery times and improved clinical outcomes that reduces the potential need for further treatment. 3M™ Bair Hugger™ Warming Blankets and Gowns provide a trusted, proven solution to help keep a patient's core body temperature within the normothermic temperature zone of 36°C to 37.5°C.<sup>1</sup>

## Reduce

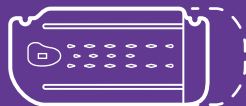
In 2023, our European manufacturing site transitioned to a local supplier for plastic packaging pouches. This change resulted in an estimated

**99%** reduction in upstream shipping emissions associated with delivering the pouches to our site, based on a shift from long-distance truck and ocean freight to regional ground transport.<sup>2</sup>

In 2023, our European manufacturing site redesigned the plastic pouch used for all Bair Hugger™ blankets produced at the facility. The updated design uses approximately 65% less plastic per pouch by weight compared to the previous version<sup>3</sup> and avoided an estimated 165 tonnes of CO<sub>2</sub>e emissions from upstream plastic production and forming processes.<sup>4</sup> This is roughly equivalent to the annual carbon footprint of 35 average people globally.<sup>5-6</sup>

In 2023, we reintroduced the 3M™ Bair Hugger™ Underbody Blanket 635 without the foot pad – a design change that reduces material use by approximately 20 grams per unit. Based on global sales volumes, this update is estimated to avoid around

**21** tonnes of biomedical waste annually.<sup>6</sup>



In 2023, we introduced a permanent packaging optimisation at our European facility – fitting more blankets per case and more cases per pallet. Based on 2024 production volumes, this change reduces outbound shipments by **30%**<sup>7</sup> and contributes to an estimated 35% reduction in downstream transport-related emissions.<sup>8</sup> The reduction is equivalent to eliminating the need for 96 trucks in transportation. For our customers, this means fewer deliveries, a smaller logistics footprint, and progress toward shared sustainability goals.

## Reuse



More than **40%** of our serviceable Bair Hugger™ warming units have been professionally cleaned, serviced, and refurbished – extending their useful life beyond 8 years. This supports our commitment to product longevity and resource efficiency through repair and refurbishment.<sup>9</sup>

## Recycle

As part of our packaging improvement efforts, we switched to a recyclable plastic pouch material in 2023.

**100%** of Bair Hugger™ blankets produced at our European facility now use packaging that is recyclable in regions with compatible collection and recycling infrastructure.<sup>11</sup>



The European Manufacturing site that produces Bair Hugger™ uses

**100%** renewable electricity.<sup>10</sup>



1 Schroeck H, Lyden AK, Benedict WL, Ramachandran SK. Time Trends and Predictors of Abnormal Postoperative Body Temperature in Infants Transported to the Intensive Care Unit. *Anesthesiology Research and Practice*. 2016;7(318137).

2 Calculated using 2023 upstream logistics data and DEFRA 2023 GHG emission factors. The estimate reflects modeled emissions from transporting packaging materials from the previous supplier (via ocean freight + long-haul trucking) versus a new regional supplier (road freight only). Assumes comparable delivery volumes and packaging specifications.

3 Plastic weight reduction based on average pouch weight before and after redesign, as produced at our European manufacturing site in 2023. Claim does not imply a full environmental lifecycle benefit. Data on file.

4 Based on a cradle-to-gate assessment using DEFRA 2023 emission factors for HDPE.

5 Comparison is based on a global average carbon footprint of 4.7 tonnes CO<sub>2</sub>e/person/year (IEA, 2023); regional footprints may vary. Emission estimates are based on upstream processes only and do not represent a full lifecycle assessment. Full methodology and calculations are available upon request.\*

\*Based on average pouch weight before and after the redesign in a cradle-to-gate assessment using DEFRA 2023 emission factors for HDPE.

6 Waste avoidance estimate based on average per-unit material reduction and total global sales volumes for model 635 in 2019. Assumes all units are disposed of as regulated medical waste.

7 Percentage based on actual installed units eligible for service and refurbishment. Actual lifespan depends on device usage, maintenance practices, and clinical setting. Refurbishment includes cleaning, part replacement, functional testing, and recertification to performance standards.

8 Emission reductions calculated using DEFRA 2023 emission factors for >33t diesel articulated HGVs at actual payload transporting from Kamen production site to Juchem Distribution Centre. Comparison assumes 2024 production volumes and pre-change packaging configurations.

9 Emission estimates are based on downstream processes only and do not represent a full lifecycle assessment. Full methodology and calculations are available upon request.

10 Based on electricity purchased through renewable electricity certificates. Claim applies to scope 2 electricity use only; does not include on-site combustion or total energy use. Renewable electricity sourcing verified via HKNR Certificate of Origin Register.

11 Packaging material changed from multi-layer polymer blend film to mono-material LDPE. Claim assumes availability of local collection systems.

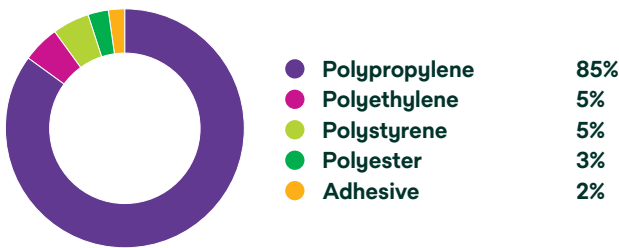
# Material used for 3M™ Bair Hugger™ Warming Blankets and Gowns

We aim to contribute to a circular economy that minimizes waste through purposeful design, increases product longevity and incorporates the use of recyclable materials. As we continuously work to solve for our customers, we seek to develop products, packaging, services and solutions that reduce our environmental impact.

3M™ Bair Hugger™ Warming Blankets and Gowns contain polypropylene, which helps the medical fabric resist liquid penetration.<sup>1</sup>

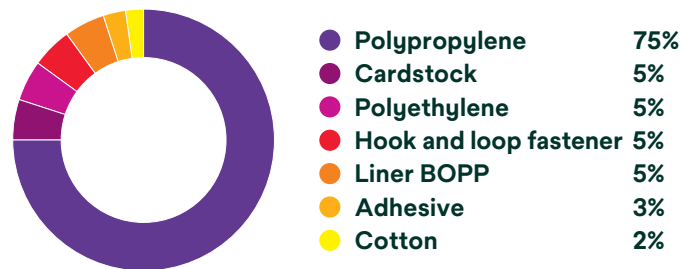


## Materials in 3M™ Bair Hugger™ Warming Blankets



Data shown is for a 63500 Underbody Blanket.

## Materials in 3M™ Bair Hugger™ Warming Gowns



Data shown is for a standard size OR Gown.

## Reusable vs. single-use

A 2001 review study published by *Infection Control and Hospital Epidemiology* found that it is difficult to determine whether single-use or reusable products have a greater effect on the environment.<sup>2</sup>

It's important to consider that reusable linens, cotton gowns and warmed cotton blankets require:

- **Energy**  
Blanket warmers, washing machines and dryers require energy resources
- **Water**  
Laundering reusable cotton gowns impacts water conservation
- **Detergent**  
Using harsh detergents when washing can contribute to wastewater concerns

On average, nine cotton blankets are used during a patient's perioperative stay in addition to a cotton patient gown. The average lifespan of a cotton blanket is 22 uses, due to wear and tear, damage and theft.<sup>3</sup>

Note: Blankets and gowns grossly contaminated with visible bodily fluids during surgery are usually incinerated with other surgical waste.



Maintaining normothermia can help to reduce the potential for prolonged patient recovery time.<sup>4</sup>

Implementing protocols that reduce the length of stay (LoS) and improve patient outcomes can be considered a sustainable strategy in healthcare.

### References

- 1 3M data on file. US-05-217572.
- 2 Rutala WA, Weber DJ. Review of single-use and reusable gowns and drapes in health care. *Infect Control Hosp Epidemiol*. 2001 Apr;22(4):248-257. doi: 10.1086/501895.
- 3 Senn, GF. Some cold, hard facts about warmed cotton blankets. *Surg Serv Manage*. 2002;8(3):19-25.
- 4 National Institute for Health and Clinical Excellence. Inadvertent perioperative hypothermia: The management of inadvertent perioperative hypothermia in adults (CG65), published April 2008, updated 2016.