



***Reusable Textiles —  
The Responsible Choice,  
Because the Future is NOT Disposable***

The American Reusable Textile Association • PO Box 1142 • Mission, KS 66222 • [www.arta1.com](http://www.arta1.com)

**FOR IMMEDIATE RELEASE**

**ARTA-IAHTM LIFE CYCLE ANALYSIS ON SURGICAL GOWNS  
GIVES THE ADVANTAGE TO REUSABLES**

*LCA research finds that reusable surgical gowns provide a significant improvement in energy, environmental footprint, water, and energy-associated emissions.  
In addition, reusable gowns offer an 83% reduction in waste stream.*

MISSION, KS, March 28, 2018 — The American Reusable Textile Association (ARTA) and The International Association for Healthcare Textile Management (IAHTM) have announced the completion of life cycle research on behalf of the textile services industry. The study was conducted by Environmental Clarity, LLC, and compared the life cycle of reusable versus disposable surgical gowns.

“The results of the surgical gown LCA support the conclusions from six other reusable/disposable studies that showed reusables provide a significant improvement in energy, environmental footprint, water, and energy-associated emissions,” said Michael Overcash, PhD, of Environmental Clarity.

**About the Study**

Disposable and reusable surgical gowns were studied from their inception as raw materials in the earth to manufacture of the coverall product, to use/reuse, then to final end-of-life disposition. The scope and the results emphasize transparent, science-based life cycle analysis. An abstract on the study is available at [www.ARTA1.com](http://www.ARTA1.com).

The study found that choosing reusable isolation gowns instead of disposable alternatives decreases the environmental footprint by:

- 64% lower natural resource energy consumption,
- 66% lower greenhouse gas emissions (measured as CO<sub>2</sub> eq emissions),
- 87% lower total water consumed (blue water<sup>1</sup>),
- 83% lower solid waste generation at healthcare facility.
  - a. End users can count these improvements as a credit toward improving their sustainability programs.

In this study, surgical gowns were first defined as single-piece, size extra-large (XL) or one-size-fits-most, long-sleeve tie-up garments with ANSI/AAMI level 3 barrier protection rating. The functional unit, or basis of comparison, was 1,000 surgical gown uses in an operating room setting. For the reusable gowns, this was 16.7 new gowns each used for 60 cycles while for the disposable gowns this was 1,000 new gowns. The reusable surgical gown market was compared to the disposable surgical gown market based on a set of representative gowns. The representative reusable gowns weighed 474 g (17 oz.) and were composed primarily of woven polyester fabric in the non-critical zones. The critical zones contained a barrier material sandwiched between two layers of knit polyester fabric. Two barrier materials were considered and weighted based on market use: an expanded polytetrafluoroethylene (ePTFE) barrier and a breathable polyurethane (PU) barrier membrane. The impact of the barrier material used was small, because the barrier materials made up only 5% by weight of the

gowns. The representative disposable gowns weighed 224 g (7.9 oz.) and were composed primarily of nonwoven polyester in the non-critical zones and laminated with polypropylene film in the critical zones.

The reusable and disposable gown systems were compared on a cradle-to-end-of-life basis. The starting point for analysis was natural resources in the earth, such as fossil materials and ores. The entire supply systems required to manufacture a final surgical gowns and packaging were included. The use phase included laundry and wastewater treatment for reusable gowns and sterilization for all gowns. The end-of-life phases included landfill for both reusable and disposable gowns. Recovery of lost instruments was also included for disposable gowns, as instruments are often sent to the landfill with disposable textiles such as drapes, towels, and gowns. A second end-of-life scenario was considered for reusable gowns in which the gowns were reused in other industries. Transportation was included within each of the applicable stages of the life cycle.

### **ARTA LCA Committee and Sponsors**

The study was organized by ARTA's LCA Committee, which contracted with the independent research firm Environmental Clarity. The research team includes Overcash, Eric Vozzola and Evan Griffing. The LCA Committee members and sponsors include:

- **Myles Noel** of International Healthcare Association for Textile Management (IAHTM)
- **Duane Houvener** of American Dawn
- **Janice Larson** of Encompass
- **Robert Long** of European Textile Services Association (ETSA)
- **Scott Delin** of Fashion Seal
- **Shelley Petrovskis** of Lac Mac Limited
- **Brendan O'Neill** of London Hospital Linen Service and ARTA President
- **Dan Sanchez** of Medline
- **Joe Ricci** of TRSA

ARTA was founded in 1982 with the mission to create greater awareness and appreciation for reusable textiles. Members represent all facets of the textile services industry — from manufacturers, suppliers, and distributors to profit and not-for-profit laundry operators, as well as allied associations. For more information: [www.ARTAI.com](http://www.ARTAI.com).

IAHTM was founded as the Association of Cooperative Hospital Laundries (ACHL) in 1969. The goal was to create an open environment where ideas and information could be shared for the mutual benefit of all members. IAHTM members provide service to approximately 7,000 healthcare facilities in the U.S and Canada and process more than 700 million pounds of clean linen each year, making it the largest healthcare central laundry organization in the world. For more information: [IAHTM.org](http://IAHTM.org).

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