Teknipure

Innovative Contamination Solutions

- Suppy Chain vs Demand
- AI Innovation Risks
- Choosing the Right Tools

# MEDICAL DEVICE MANUFACTURING

## *Contamination Control Solutions*

**Teknipure's Guide to Micro-Contamination Control Systems**

*Visit the Website*

# Extraordinary Growth is the Future of AI Innovation

## *Innovation in Demand*

**Demand is extraordinary.** The global population is aging with the number of people over 65 projected to double to more than 1.5 billion people by 2050. Worldwide business growth in "wearables" is projected to be $120 billion by 2028. Adding to this demand is almost 24 months of procedures delayed due to COVID-19. In fact, **Productivity and risk management while bring new IoT innovations online is critical to success.**

Innovations to enable artificial intelligence across various medical devices from blood glucose monitors to implants are revolutionizing medicine. Real-time monitoring and dosing are just the beginning. These devices will quickly become the global standard of care. The pressure to maximize current production despite supply chain challenges to meet intense demand is exceptional. **Add the need to fast-track complex electronic innovation to market and the pressure reaches next-level intensity.**

***"In electronic applications the effectiveness of the production cleaning process can directly affect the reliability of the finished device."***

FDA "Evaluation of Production Cleaning Processes for Electronic Medical Devices

**According to the FDA,** there are many sources of polar and non-polar contaminants present and often generated by the device manufacturing processes, which can cause electronic defects that subsequently degrade operation or cause device failure. This type of defect has led to extensive market recalls.

Processes that require soldering, plating, etching, handling, fluxing, and other tasks that modify surfaces are a continuous source of microcontamination. Once introduced, these must be removed both within the environment and on the device to control for potential contamination-related defects.

***"Wearables" make real-time medicine a reality. Projected to grow to a $20B market in 2022***

# Attacking Polar & Non-Polar Microcontamination In Your Process

**Conquering the ongoing battle against product contamination defects related to electronic failure** has never been more crucial than when bringing IoT innovation to market.

Fortunately, the role of engineered materials to remove microcontamination is a well-established science that has successfully controlled electronic defects in semiconductor and microelectronic manufacturing for many decades. Leveraging the knowledge of a partner with experience in cleaning techniques specific to microelectronic cleanrooms is a game-changer. This marries the solutions you need to address the microelectronic defect challenges you face so that you drive yield improvement that balances high demand with supply chain disruption.

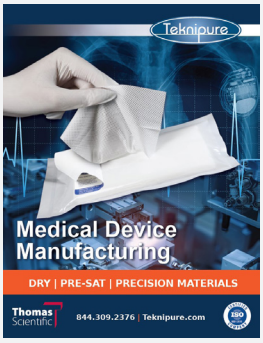
**Whether removing polar or nonpolar residues, choosing the right wiper to achieve the highest level of single pass surface cleanliness is more critical than ever.**

## *Choosing Wipers to Remove Micro-Contamination Wisely*

**Two simple choices that maximize contamination removal from your critical and controlled environments:**

1. Choose engineered materials, such as microfiber, that most effectively remove surface contamination from your process.
2. Choose the ideal delivery system that aligns process effectiveness with human productivity, such as pre-saturated solutions or high-capacity delivery systems.

### Medical Device Manufacturing Wiping Applications Guide

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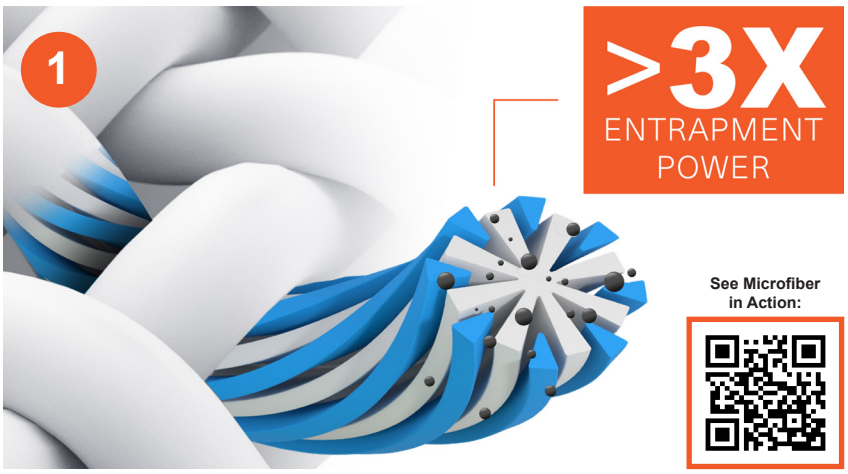


See Microfiber in Action:

**Cleaner Surface = Lower Contamination Risk**

## *Microfiber Engineered Material*

**Work smarter, not harder** by choosing wiping materials that reduce surface contamination more effectively. Engineered microfibers have **3X more fiber surface area** to capture contaminants. **Up to 93% of residues are encapsulated** in the split microfiber structure on the first wiping pass compared to standard wiping materials that remove **≤30%**.


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# Innovative Micro-Contamination Solutions


## *Precision Pre-Saturated Solutions*

**Cleanroom Studies show optimal saturation levels achieve maximum micro-contamination pick-up.** Wiper studies show that limited area wetting of a wiper results in inefficiency micro-contamination capture, while an over-saturated wiper redeposits solvent contamination and leaves chemical residues on the surface.

**Precision saturation** delivers the right amount of fluid necessary to dislodge, pull, and capture contaminates, while leaving near zero residuals behind on first pass.

**Precision saturation** also minimizes chemical use & lowers worker environmental exposure to VOC's.

"Teknipure is a proud supplier to the pharmaceutical industry as a leading innovator and manufacturer of contamination control solutions. Our products meet the most critical criteria for use in aseptic and non-aseptic environments. Proper product selection is paramount to efficiently removing bioburden, and disinfectant and API residuals from your process. We have created tools to ensure the best products are selected for the appropriate applications specific to your requirements. We are committed to delivering cleaning solutions that deliver results against your productivity goals."


*Chris Heiland, President*

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