

# trophon® EPR



## Reproducible, automated high level disinfection for ultrasound probes



## Have you trophoned today?

Join the thousands of healthcare facilities world-wide that have.



# Think twice if you are using traditional disinfection methods for reprocessing ultrasound probes

Under Irish and Scottish guidelines,<sup>2,3</sup> semi-invasive ultrasound probes are categorised as semi-critical devices; they enter body cavities and are in contact with mucous membranes, bodily fluids and potentially blood. Non-invasive ultrasound probes are also categorised as semi-critical devices when they are in contact with broken skin.

The guidance also states that high level disinfection (HLD) using the manual multi-wipe system is the least preferred option for disinfecting semi-critical ultrasound probes; semi-invasive and non-invasive probes. Instead, the guidelines recommend an automated validated process for decontaminating reusable medical devices.

## Why do I need to HLD my ultrasound probes?

There can be serious consequences if proper procedures are not followed. Patients have been put at risk of infection due to inadequate cleaning or disinfecting of reusable medical devices – and even death has been associated with improperly reprocessed ultrasound probes.<sup>4</sup>

## Local and international guidelines recommend HLD

HLD is advised in Irish, Scottish and Welsh guidelines as the minimum standard in ultrasound probe reprocessing for intracavity ultrasound probes that contact mucous membranes.<sup>2-4</sup> Additionally, the Irish and Scottish guidelines advise HLD for non-invasive surface probes used on broken skin.<sup>2,3</sup>

In the United States, the Food and Drug Administration (FDA) requires that a reusable medical device be properly reprocessed between patients to prevent the risk of infection. The Center for Disease Control (CDC) recommend HLD as the minimum standard in ultrasound probe reprocessing for semi-critical procedures.<sup>5</sup> Furthermore, the American Institute of Ultrasound Medicine (AIUM) and the Association for the Advancement of Medical Instrumentation (AAMI) Standards now recommend HLD between patients to reduce the risk of cross contamination.

## When to perform high level disinfection?

HLD should be performed on ultrasound probes that are used in semi-critical procedures (i.e. intracavity and surface ultrasound probes that contact mucous membranes or non-intact skin), as defined by the Spaulding Classification.

Applying the correct level of disinfection is based on the procedure the probe is going to be used for on the next patient

# When to HLD with an automated hydrogen peroxide system such as trophon

The decision on when to HLD an ultrasound probe is based on the Spaulding Classification: semi-critical and non-invasive. Probes that come in contact with mucous membranes, broken skin or body fluids are classified as semi-critical and must minimally undergo HLD, even if used with a sheath.

## WHAT PROCEDURE WILL YOUR PROBE BE USED FOR?

**Procedure**

**Probe used on mucous membranes or broken skin**

**Semi-Critical**  
(Semi-invasive and non-invasive)

Intracavity

- Transvaginal scans
- Transrectal scans

Surface ultrasound (broken skin)

- Wound/cavity/burn/assessment
- Venepuncture/Cannulation
- Breast biopsies
- Interventional
- Piccline insertion



**Spaulding Classification**

**Disinfection / Requirements**

**High level disinfection is assured by using trophon, a compact and automated point of care solution that is safe, versatile and simple to use.**



**Probe used on healthy intact skin**

**Non-Invasive**

- Abdominal surface ultrasound
- Pelvic surface ultrasound



**If blood or bodily fluids noted during procedure - need to high level disinfect**

**Standardise with high level disinfection**

Or low level disinfection  
Follow local IPC and manufacturer's cleaning guidance



## PROBE HAS BEEN TROPHONED AND IS READY FOR PROCEDURE

**trophon complies with all UK guidelines and audit requirements**

# trophon helps overcome the problems of traditional disinfection methods

Traditional Method	Risks	Examples
Manual wiping (exposes the operator and patient to chemicals)	<ul style="list-style-type: none"> <li>Wiping with chemicals can be a health and safety risk</li> <li>Probes may still be contaminated after disinfection</li> <li>Probe handle may remain contaminated</li> </ul>	<ul style="list-style-type: none"> <li>Chemical exposure can occur during manual wiping with skin and eye contact or inhalation of fumes</li> <li>Patients could be exposed to chemicals if probe rinsing does not occur/is not adequate</li> <li>Residual bacteria (including MRSA) remain on &gt; 80% of probe handles when not wiped during the disinfection process<sup>6</sup></li> <li>Manual wiping is unable to consistently reduce bacterial contamination on probes to background levels<sup>7</sup></li> <li>Manual processes cannot assure reproducible reprocessing every time</li> </ul>
Manual wiping (can increase the risk of operator error)	<ul style="list-style-type: none"> <li>The manual wipes method may not be as effective as an automated system</li> <li>Increased risk of contamination with a manual disinfection method</li> <li>Low disinfectant wipes or sprays are less effective than a high level disinfection method</li> </ul>	<ul style="list-style-type: none"> <li>A study showed that an automated method was significantly more efficacious than manual wipes in the high level disinfection of ultrasound probes<sup>7</sup></li> <li>Research has shown a 2.9-fold increased risk of contamination with manual disinfection methods versus an automated reprocessing solution<sup>7</sup></li> <li>A meta-analysis has shown that 12.9% of probes are contaminated with pathogenic bacteria following disinfection with low level disinfectant wipes or sprays<sup>8</sup></li> </ul>
Ultraviolet C (UVC) exposure	<ul style="list-style-type: none"> <li>Light travels in a straight line resulting in shadow areas forming where the light path is blocked and can't reach the surface</li> <li>UVC light may require two cycles to be effective against fungi</li> </ul>	<ul style="list-style-type: none"> <li>Ultrasound probe shadowing due to cracks, crevasses, or parts of probes that have unusual contours for biopsy needle placement, could result in the UVC light not being completely effective</li> <li>Some fungi are significantly resistant to UVC light and require double cycles to achieve true high level disinfection<sup>9-10</sup></li> </ul>
Protective sheaths	<ul style="list-style-type: none"> <li>Probe sheaths can often have microscopic tears</li> </ul>	<ul style="list-style-type: none"> <li>Protective sheaths (or condoms) do not negate the need for high level disinfection<sup>11</sup></li> <li>Sheaths can have microscopic perforations before use – up to 81%<sup>12-17</sup></li> </ul>



# Cutting edge technology results in a **safe, versatile** and **simple** way to high level disinfect ultrasound probes

## **trophon helps to prevent the risk of cross-infection**

With the growing global trend towards stricter ultrasound probe reprocessing guidelines, traditional systems have been falling behind in their ability to meet today's demanding requirements.

trophon's innovative automated technology has disrupted the disinfection market with its breakthrough solution that addresses current challenges across the three core areas of safety, versatility and simplicity.

### **Safe**

#### **trophon delivers safety for patients, staff and the environment – reduces risk**

- ✓ Protecting patients against healthcare acquired infections (HAIs) with powerful disinfection technology
- ✓ Safeguarding staff and the environment from the hazardous and toxic side effects of traditional disinfection methods

### **Versatile**

#### **trophon streamlines set-up, workflow and has extensive probe compatibility – reduces cost**

- ✓ Compact, self-contained design enables HLD to be conducted in a variety of spaces, including next to the ultrasound console in exam rooms
- ✓ Simple set-up – no plumbing to water required
- ✓ Validated for use with more than 1,000 ultrasound probes



### **Simple**

#### **trophon makes ultrasound probe disinfection automated, consistent and fast – increases compliance**

- ✓ Easy to operate – minimal training required
- ✓ Simple traceability system ensures all reprocessing activities are documented so you are always audit ready
- ✓ Fast 7-minute cycle

# trophon delivers safety for patients, staff and the environment – reduces risk



## Patients

### trophon reduces the risk of ultrasound related cross-infection in your facility

- ✓ Effective HLD (bactericidal, fungicidal and virucidal) greatly reduces infection risk for patients – proven to kill high-risk HPV<sup>18</sup>
- ✓ Meets a range of international standards for HLD<sup>19</sup>
- ✓ Automated closed system minimises patient exposure to chemicals



## Staff

### trophon minimising staff exposure to hazardous chemicals, fumes and spills

- ✓ Automated closed system minimises staff exposure to chemicals – disinfection cartridge is sealed until inside trophon
- ✓ No manual test strips
- ✓ May reduce the need for personal protective equipment and special ventilation



## Environment

### trophon generates environmentally friendly by-products for safe and easy disposal

- ✓ Patented system breaks down the NanoNebulant<sup>®</sup> sonicated hydrogen peroxide mist into oxygen and water
- ✓ More than 70% of trophon components are recyclable, including NanoNebulant<sup>®</sup> bottles
- ✓ Easy disposal of environmentally friendly by-products

# trophon offers versatility with streamlined set-up, workflow and extensive probe compatibility – reduces cost



## Set-up

**trophon can be installed easily in a wide range of locations, including point of care**

- ✓ Compact size fits in most examination rooms
- ✓ Installation options include wall, bench or cart-mount
- ✓ No need for sink or plumbing
- ✓ No open chemicals – eliminates need for special ventilation



## Workflow

**trophon streamlines practice workflows to maximise patient throughput and cost effectiveness**

- ✓ Simple workflows enable faster turnaround without sacrificing safety, compliance or effectiveness
- ✓ Automated closed disinfectant system
- ✓ Compact size with a plug-and-play design to fit your workflow
- ✓ Best practice for point of care workflow



## Compatibility

**trophon is validated for use with more than 1,000 surface and intracavity ultrasound probes across all major manufacturers**

- ✓ Extensive probe compatibility testing with manufacturer final approval
- ✓ Preserves the life of your valuable ultrasound probes as there is no exposure to harsh chemicals or UV light during HLD
- ✓ Check if your probe is compatible with trophon by visiting:

[www.nanosonics.co.uk/  
trophon/probe-compatibility](http://www.nanosonics.co.uk/trophon/probe-compatibility)

# trophon provides simplicity with automated, consistent and fast disinfection technology – increases compliance



## Automated

**trophon is a fully automated system that is simple to operate, requiring minimal training or intervention during operation**

- ✓ Display screen prompts each step during operation
- ✓ Start button allows one touch operation
- ✓ Auto cycle validation by sensors reduces the risk of human error in reprocessing and interpreting HLD results
- ✓ Chemical Indicator validates each and every cycle and eliminates minimum recommended concentration testing

## Consistent

**trophon delivers consistent, HLD to maximise compliance with guidelines and accreditation standards**

- ✓ Automated process for consistent HLD – critical process parameters achieved for each HLD cycle
- ✓ Each HLD cycle is monitored by sophisticated sensor technology and Chemical Indicator for accuracy
- ✓ Complies with leading disinfection guidelines to help you meet auditing and accreditation requirements



## Fast

**trophon's simple workflows allow for quicker turnaround without sacrificing safety, compliance or effectiveness**

- ✓ Fast 7-minute cycle
- ✓ Innovative, rapid-acting sonically-activated hydrogen peroxide mist delivers HLD
- ✓ Disinfects both handle and probe in one step
- ✓ No time wasted with extra personal protective equipment and probe transport

**Ultrasound technologists reported higher satisfaction with trophon's automated technology<sup>20</sup>**

# trophon's cutting-edge technology

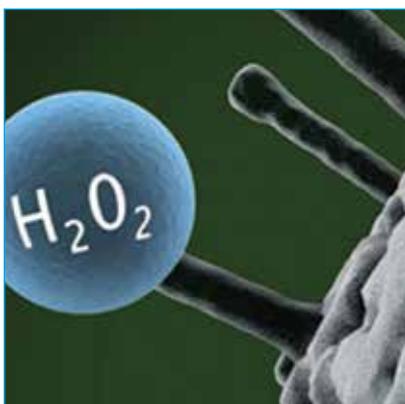
trophon's high-frequency ultrasonic vibration generates a sonically activated, supercharged hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) mist that kills bacteria, fungi and viruses.



## Sonicated

**Ultrasonic vibrations generate sound-wave energy to create an ultrafine hydrogen peroxide mist**

- ✓ Quantity-controlled hydrogen peroxide mist covers the entire surface of the probe and handle
- ✓ Mist particles can penetrate any imperfections in the probe surface – even shadowed areas formed by crevices and grooves
- ✓ Small controlled dose of sonicated hydrogen peroxide mist ensures compatibility with approved ultrasound probes



## Supercharged

**Free radicals disperse, disrupt and kill bacteria, fungi and viruses**

- ✓ Sonification creates a high performance mixture of hydrogen peroxide mist and free radicals that kills bacteria and fungi
- ✓ Free radicals disrupt viruses to prevent infection and replication
- ✓ Intelligent sensors monitor temperature, mist volume and flow rates through every cycle to maintain a stable HLD environment
- ✓ Residual hydrogen peroxide is broken-down into environmentally-friendly waste



## Success

**A global HLD breakthrough for intracavity and surface ultrasound probes**

- ✓ On screen message confirms when HLD cycle is complete
- ✓ Success is also validated by the Chemical Indicator changing colour
- ✓ We go further in microbial efficacy as trophon inactivates the mandated subset of microorganisms as required by European Standards

# Ask for additional information about these trophon benefits

## A user-friendly traceability solution to meet audit requirements

Using four optional accessories, trophon offers a traceability solution to help you to meet audit requirements:

- trophon® Printer
- trophon® Logbook
- trophon® Connect a quality assurance software tool to track information from patient to patient
- trophon® Clean Ultrasound Probe Covers that protect intracavity and surface ultrasound probes from recontamination, and allows you to link to patient

## Consumables and accessories

trophon requires just two simple consumables (NanoNebulant® Cartridges and Chemical Indicators), giving you cost-effective and easy ultrasound probe high level disinfection. There's also a choice of accessories for added set-up versatility, optimising workflow and complying with audit requirements.

## We go further in microbial efficacy

trophon inactivates the mandated subset of microorganisms as required by European Standards. trophon is proven to also eliminate an extended range of infectious pathogens, including\* sexually transmitted infections (STIs), *Clostridium difficile* spores and drug resistant bacteria.

Technical specifications	
Weight	38 lb (17 kg)
Dimensions	19.3" H x 13.6" W x 13.6" D (490mm H x 345mm W x 345mm D)
Operating Temperature	17-27°C (63-80°F)
Electrical	Rated input voltage: 230V AC Rated input current: 3Amp, 50/60Hz

Product codes			
trophon® EPR	N00020-EU4	trophon® Cart	N00041
NanoNebulant® Cartridges (6 x 80ml bottles x 2)	N00040	trophon® Wall Mount	N00017-EU1
Chemical Indicators (300 disks per box)	N00085	trophon® Connect	N00086-ROW
trophon® Printer	N00048-EU4	trophon® Logbook (pack of 5)	N00098
trophon® Printer Label Roll	N00049-ROW	trophon® Curved Probe Positioner (CCP)	N00099-ROW
trophon® Printer Wall Mount	N00104	trophon® Clean Ultrasound Probe Covers	N00102
trophon® Printer Cart Mount	N00105	trophon Cart Basket	N00108

Discover more by visiting [www.nanosonics.co.uk](http://www.nanosonics.co.uk)

# Financing options to suit all budgets

Whatever your budget, you can experience first-hand the ease of using trophon's automated HLD system in your health facility as Nanosonics has different financing options to suit all budgets. In no time at all, your health facility and patients could be enjoying the benefits of trophon which is setting new standards of care and reassurance in global ultrasound probe disinfection.

Contact Nanosonics for a free demonstration

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Nanosonics is a global innovator in infection prevention. Our unique, automated trophon HLD device is setting a new standard of care in ultrasound probe disinfection practices. trophon effectively addresses a range of global issues associated with traditional methods and offers a breakthrough solution across three core areas: safety, versatility and simplicity. Nanosonics is headquartered in Sydney, Australia with a highly experienced team of professionals dedicated to providing the best in infection prevention technology.

## References

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Safe. Versatile. Simple.



Join the increasing number of health care and specialist facilities which are protecting their patients and staff with trophon, an automated high level disinfection process which meets recently published ultrasound probe decontamination guidelines.



Infection prevention without compromise



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