

It's a subject close to our heart here at Vi. There is no substitute for good instrument care. So, in this section you'll find a guide to good instrument care along with the equipment you'll need to carry it out.

We also offer training opportunities. Call us for advice on instrument care, or to discuss training possibilities.



## Instrument Care

The majority of surgical instruments are made of Stainless Steel. There are many different types of stainless steel alloys (60+), with varying amounts of Nickel & Chromium to increase resistance to corrosion. All types of stainless steel will corrode under certain conditions – ‘stainless’ is a little misleading. The proportions of the various constituents affect the characteristics of the final steel, along with the degree of hardening applied.

Surgical instruments must be hard enough to take and keep a cutting edge (e.g. scissors) or have a certain spring (e.g. artery forceps). The steel possessing these qualities contains less chromium and more carbon than orthopaedic implants, which are made of steel with the primary characteristic of resistance to corrosion, making it too soft for instruments. The penalty is that this type of higher carbon stainless steel (called Martensitic) is much more likely to corrode and stain.

The parts of the steel likely to rust are protected by a thin layer of chromium oxide which is produced by the chromium part of the steel. Actions which encourage the production of chromium oxide minimise corrosion. Actions which either physically or chemically destroy this layer of chromium oxide encourage rusting or staining. Maximising the chromium oxide layer is the basis of sound instrument care. This layer thickens with age and increases the resistance of your instruments to corrosion – in new instruments it is relatively thin. This is why you may have marking problems with new instruments but your old ones are fine – new instruments will be more intolerant of inappropriate detergents, inadequate lubrication and the corrosive environment of the autoclave etc.

### Manual Cleaning Protocol – Stainless Instruments

1. Open all joints and rinse gross loose debris from instruments in warm water (NOT hot – this will coagulate proteins & make the instruments much harder to clean) immediately after use. They will be much harder to clean if left to dry!
2. Completely submerge instruments in an enzyme based neutral pH detergent – soak for time specified in detergent instruction.
3. Gently scrub instruments with a soft bristled brush to remove all remaining visible soil, keeping the instrument under the surface of the detergent to reduce spray. Use a pipe-cleaner brush on instruments with a lumen. Pay special attention to joints & ratchets.
4. Remove from the enzyme solution and rinse thoroughly in tap water for at least 3 minutes.
5. Ideally place the instruments in an ultrasonic cleaning bath for 10-15 minutes or as per cleaner instruction manual.
6. Remove from bath at completion of cycle, (or after step 4 if no ultrasonic available) then rinse instruments thoroughly with purified (distilled) water.
7. Dry with a clean non-shedding wipe – leaving them to air-dry will result in water spotting.
8. Lubricate with either spray surgical instrument oil or place in instrument milk bath – follow directions for product used.

To keep your instruments in peak condition, there are some basic rules which should be followed.

1. Handle your instruments with care – dropping, scratching etc. will all damage the surface of instruments and reduce their resistance to corrosion.
2. Store with care. If instruments are stored damp they will corrode. Delicate instruments should be packed with protective tips & silicone storage box inserts to stop them rattling around. Always make sure heavy instruments are not stored on top of lighter equipment.
3. Use them to do what they were designed for! Artery Forceps are not Needleholders or Wire Twisters. Bone Cutters are not designed to cut Wire, and Implant Cutters have a size rating for a reason! Inappropriate use will damage instruments and invalidate warranties.
4. Avoid mixing different metals when processing instruments – keep chrome plated, industrial finish & aluminium items separate from stainless, particularly in ultrasonic cleaners.

Cleaned lubricated instruments are ready for packaging. Always carry out a visual check at this stage – are the cutting edges of scissors free of damage, do the jaws of artery forceps & needleholders meet correctly with no signs of twisting for example. Check that all thumbscrews are tight, as in Gelpi & Stifle Distractor joints



Joint showing wear due to inadequate lubrication

Also look for fine cracks in instruments, for example across the box joints in Artery Forceps.



Needleholder with damaged jaws



Box joint showing cracking & biological debris

Damaged items should be sent for repair or disposed of. It is good practice to sterilize items being sent for repair. Many repairers require a certificate of decontamination to be sent with instruments, and instruments should never be sent out in a soiled condition.

There are many materials for packing instruments for autoclaving. Paper peel-packs are commonly used, along with nylon autoclave film. We do not recommend the use of laundered fabrics as instrument wraps, as residual detergents and bleaches can cause pH & chlorine related damage to your instruments. Disposable autoclavable instrument wrapping fabrics similar to disposable drapes are available.

### Sterilisation

The autoclave is a very hostile environment for your instruments. The combination of heat & moisture promotes corrosion and staining, particularly if there are residual detergents etc. in wrapping materials. This is also true where tap water instead of distilled or demineralised water is used in the autoclave. Mineral deposits on instruments are unsightly as well as interfering with normal joint function etc. They are difficult to remove, so prevention is better than cure.

Rust in the steam pipes of your autoclave will transfer to your instruments, so autoclave maintenance is important. Regular servicing ensures the autoclave is working correctly. Vacuum autoclaves help remove residual steam from packs, and it is important that directions are followed and cycles are completed. Regularly check the door seal is undamaged, and replace if necessary. If applicable to your machine, drain & refill the water tank regularly with distilled water. You may well be surprised what comes out!

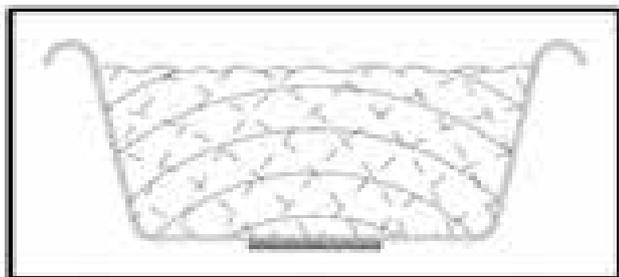
If your packs are coming out of the autoclave wet through then there is a cycle problem & you need to speak to your autoclave engineer for advice. Wet storage will result in corrosion and damage to your instruments.

So – store your instruments clean, dry, lubricated & protected and they will give you many years of service. A good, easy to follow instrument care protocol will extend instrument life, save money and result in happy surgeons!

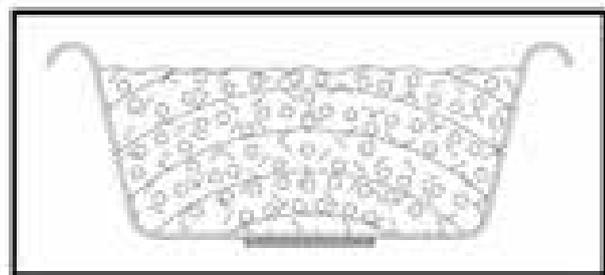
## Instrument Cleaning

### What is Ultrasonic Cleaning?

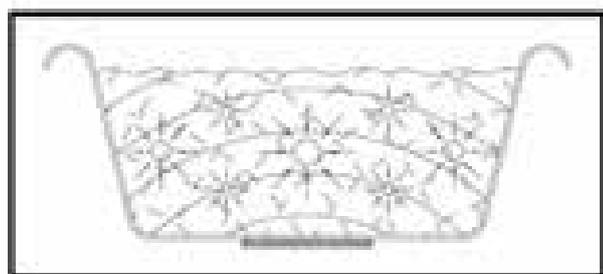
Ultrasonic cleaning is created by sound waves that are transmitted at frequencies beyond the range of human hearing. A generator located within your system develops the high frequency power which causes a transducer to radiate and produce the sound waves.



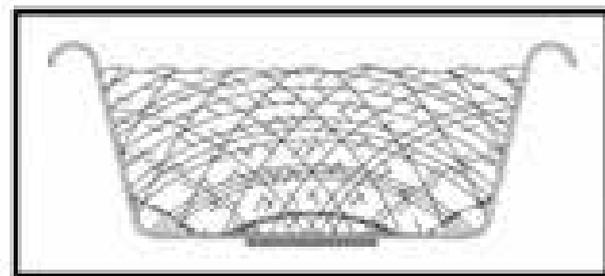
The solution in the tank and create a unique vibrational pattern causing alternating high and low pressures in the liquid.



During the low pressure stage, millions of tiny bubbles form. This process is called CAVITATION, meaning the formation of cavities.



During the high pressure stage, the bubbles collapse or implode, releasing enormous amounts of energy. Working in all directions, the bubbles attack every surface and invade all recesses and crevices, pulling debris off the object being cleaned.



Maxisweep machines utilize Sweep technology that enhances the ultrasonic activity by automatically changing frequencies, thus creating a cleaning grid which literally sweeps through the tank. A more uniform cleaning pattern and significantly shorter cleaning times result when 'hot spots' present in traditional ultrasonics are eliminated.

### Henry Schein Sweep 2000 Ultrasonic Instrument Cleaner



This updated Ultrasonic Instrument Cleaner features Sweep technology. Which automatically switches frequencies creating a 'grid' effect, sweeping the tank and eliminating the 'hot spots' and weak areas which can occur in traditional ultrasonics. This results in a more thorough cleaning outcome.

The unit has a hinged, locking lid and is designed to reduce noise levels from the cleaner when in use – noise is a common issue with ultrasonics in practice!

Controls are sited on an easy clean front panel. Timer is in increments - 6, 12, 20, 30 and 60 minute presets changed by a simple touch. Heat is also available – on and off on a separate touch-button, with indicator light.

Items to be cleaned should not be allowed to rest on the bottom of the cleaner. A basket is required (supplied separately). The accessory pack (see below) includes an extra basket and some very useful additional components.

Tank capacity is 4 litre.

External Dimensions: Width 266.7mm x Height 266.7mm x Length 374.65mm - weight 6.8kg.

Internal Dimensions: Width 139.7mm x Height 88.9mm x Length 285.75mm

Warranty is 2.5 years against manufacturing defects. Please note- running the unit dry with the heater on will result in failure – this is not a warranty issue!

### Accessory Kit

This consists of 1 x full basket, 1 x bur box, 1 x bur tray, 1 x full positioning cover, 1 x half positioning cover and 2 x 600ml beakers.

The bur accessories are useful for small components including burs & drill bits, avoiding 'losing' small items in the bottom of the tank. The beakers are used with the positioning covers which support them in the carrier solution, and are used when smaller quantities of specialist cleaning solutions are needed which may damage the cleaner unit.

### HENRY SCHEIN SWEEP 2000 ULTRASONIC INSTRUMENT CLEANER

<b>HS9006376</b>	HS Sweep 2000 Ultrasonic Cleaning Machine
<b>HS9792676</b>	HS Sweep 2000 Basket (required)
<b>HS9006470</b>	HS Sweep 2000 Accessory Kit

## Repair Service

Veterinary Instrumentation has a network of specialists who can repair any surgical instrument. Send the damaged item to us and we will advise if it is worth repairing. For some power tools, it may be necessary to send them back to the original manufacturer for assessment, which may be overseas. All carriage fees will be charged at cost.

Routine sharpening and setting of scissors is performed quickly and professionally by Len Richardson, an instrument maker with over 55 years of experience.



## Instrument Cleaning Agents

**Rapidex Cleaner - (Now supplied in bulk or water soluble sachets)**



An effective degreaser and general instrument cleaner. Some users dislike the loose powder format. The new soluble sachets are simply dropped into the ultrasonic bath. No dry powder is released.

- Ideal for Ultrasonic Cleaners.
- Also effective as a pre-soak for long standing or difficult residues
- Tested by the Royal Institute of Public Health

### RAPIDEX CLEANER

**RAPIDEX** Rapidex Soluble Sachets (Box of 50)  
**RAPIDEXBULK** Rapidex Bulk Powder 2.25kg

## Instrument Cleaning Brushes and Pipecleaners



Stainless Steel Instruments are protected from corrosion by a very thin layer of chromium oxide. This should not be damaged by regular wire brushes. Brushes available with Nylon and Stainless Bristles. Orthopaedic Cleaning Brush is Double Ended with superfine soft Stainless Steel Bristles. General instrumentation is the same with Nylon Bristles. One end has 3 rows of Bristles, the other has a single row for delicate work. Pipe Cleaners are 1/8" diameter and 12" long. Absorbant for cleaning and drying. Supplied in packs of 100.

### INSTRUMENT CLEANING BRUSH

**CB1** Cleaning Brush Nylon for Gross Contamination  
**CB2** Cleaning Brush Stainless for Large Burs & Reamers  
**CB3** Cleaning Brush Nylon for General Instrumentation  
**CB4** Cleaning Brush Stainless Steel for Orthopaedic  
**CBPIPE** Pipe cleaners 1/8" 12" Long (Pack of 100)

## Rapizyme



- Three new enzymes.
- Easy to use measured bottle.
- 2ml per litre dilution.
- Removes all organic material.
- Ideal for endoscopes.
- Low foam for ultrasonics.
- Completely rinsable.
- Biodegradeable.
- Tested by The Royal Institute of Public Health.

### RAPIZYME

**RAPIZYME** Rapizyme 1 Litre

**Micro 90 Concentrate**



Liquid general purpose Instrument Cleaner (dilute 1:100) for Ultrasonics.

**MICRO 90 CONCENTRATE**

**I00300** Micro 90 1 Litre Dilute 1:100

**Perasafe**



Perasafe is a rapid, instrument compatible, user and environmentally friendly chemical sterilant. Supplied as a safe, space-saving powder Perasafe is activated by simply dissolving in luke-warm tap water. Providing rapid sterilisation and re-use of endoscopy instruments, Perasafe gives confidence to users and patients alike. A unique aldehyde-free formulation gives efficacy without harm to instruments, health risks to nursing staff and avoids the need for special fume extraction or waste disposal systems.

Perasafe is a pale blue/ white powder which, when in solution, sterilises within 10 minutes. Suitable for all surgical instruments and fibrescopes. Formulated not to damage surgical instruments. Prepared solution lasts 24 hours. 81g pack makes 5 litres. May be subdivided to make less.

**PERASAFE**

**I00100** Perasafe Cold Sterilant 24 x 81g (5 litre size)  
**I00101** Perasafe Cold Sterilant 6 x 81g (5 litre size)

**Instrument Lubrication**

**BA Ultimate Oil Spray**



**BA ULIMATE OIL SPRAY**

**BAOIL** BA Ultimate Oil Spray

**Surgical Instrument Lubricant**



After washing and drying, a regular spray of Instrument Lubricant will prolong working life and improve the function of your jointed instruments.

**SURGICAL INSTRUMENT LUBRICANT**

**I00009** Instrument Lubricating Spray

**Instrument Oil - (Autoclavable)**

Regular lubrication will keep your instruments working longer. Failure to lubricate will result in stiff joints and ultimately breakages. Low boiling point oils are quickly lost during the autoclaving process.

Oils containing Teflon offer significant extra lubrication. Can be autoclaved.



**INSTRUMENT OIL – AUTOCLAVABLE**

**I00003** Instrument Lubricating Oil  
**I00006** Teflon Drops

## Instrument Marking

### Colour Coded Identity Rings



Strong tear-resistant Silicone Instrument Coding Rings.

#### COLOUR CODED IDENTITY RINGS

**100012** Coloured Silicone Instrument I.D. Rings x 120

### Instrument Marking Tape



Allows rogue instruments to be returned to their kits. Also useful when going on practical courses. Available as a Kit or in individual rolls.

#### INSTRUMENT MARKING TAPE

**100001** Instrument Marking Tape (Box 8 colours) (120cm)  
**100001Y** Instrument Marking Tape Single Yellow (300cm)  
**100001R** Instrument Marking Tape Single Red (300cm)  
**100001BR** Instrument Marking Tape Single Brown (300cm)  
**100001OR** Instrument Marking Tape Single Orange (300cm)  
**100001BLU** Instrument Marking Tape Single Blue (300cm)  
**100001G** Instrument Marking Tape Single Green (300cm)  
**100001W** Instrument Marking Tape Single White (300cm)  
**100001BLK** Instrument Marking Tape Single Black (300cm)

### Protective Autoclavable Tips



For Steinman, ESF pins and delicate or sharp instruments. Protect both tips and staff.

#### PROTECTIVE AUTOCLAVABLE TIPS

**100011-W** Protective Tip White  
up to 1.6 - 2.0mm Diameter Pack 20  
**100011-BL** Protective Tip Blue  
2.5 - 3mm Diameter Pack 20  
**100011-G** Protective Tip Green  
up to 3.2 - 4.0mm Diameter Pack 20  
**100011-R** Protective Tip Red  
up to 4.8mm Diameter Pack 20  
**100011-Y** Protective Tip Yellow  
up to 6.0 - 6.5mm Diameter Pack 20  
**100011-O** Protective Tip Flat Orange  
up to 10mm Wide Pack 20  
**100011-BR** Protective Tip Flat Brown  
up to 16mm Diameter Pack 20  
**100011-BLK** Protective Tip Flat Black  
up to 25mm Diameter Pack 20  
**100020** Protective Tips Silicone Multi Pack  
One pack of each colour 160 (8 x 20)

## Tube Brushes



Fine brushes are very useful for cleaning the lumen of drill guides and tissue protectors down to 2mm, particularly where ultrasonic cleaning is not available. Use to remove gross contamination and ensure patency before ultrasonic cleaning.

#### TUBE BRUSHES

**ENDO2** Tube Brush 12 Inch Long 2mm  
**ENDO3** Tube Brush 12 Inch Long 3mm  
**ENDO4** Tube Brush 12 Inch Long 4mm  
**ENDO5** Tube Brush 12 Inch Long 5mm

## Sharpening Accessories

### IM3 White Stone Slip



To work effectively both scalers and elevators need to be sharp. Regular sharpening will keep your instruments working correctly.



The Slip Stone has both flat and rounded surfaces to sharpen elevators and curettes. Use baby oil as lubricant.

#### IM3 WHITE SLIP STONE

**012150** IM3 White Slip Stone for Curettes and Elevators  
**012146** Luxator Cylindrical Sharpening Stone

### Diamond Card - Fine



This credit card sized, Diamond Covered Plate is ideal for sharpening Dental Elevators and Luxators. To work efficiently these instruments must be sharp. The diamond is virtually indestructible. An additional advantage is that the lubricant used is water rather than the oil used with sharpening stones.

#### DIAMOND CARD - FINE

**012144** Flat Diamond Sharpening Card (Fine)

### Diamond Cone



Subgingival Curettes must be kept sharp to work efficiently. They should be checked and sharpened at least weekly. The Diamond Cone is indestructible compared with stones which break very easily and uses water rather than oil as a lubricant.

#### DIAMOND CONE

**012148** Diamond Cone 205mm

### Plastic Test Stick PTS



Used to check the sharpness of curettes. The sharp curette will bite when used on the test stick at the angle used on the tooth. If it slips, it is not sharp.

#### PLASTIC TEST STICKS

**HUF-PTS** Plastic Test Sticks Pack of 6

## Autoclaves



### VetAssure Class B & Class S Autoclaves



### The VetAssure Range of Autoclaves

The VetAssure Range of Autoclaves comply with all the relevant European Directives and Standards, including BS EN13060.

Designed and manufactured in Italy, the VetAssure is built to the highest standard delivering quality, efficiency, speed, simplicity and reliability. Midmark are market leaders in the US for benchtop steam sterilisation and have a major market presence in Germany, UK Dental and Italy, proving to be the professional's choice across Europe.

Above all else we realise that what the busy veterinary surgery requires is reliability and peace of mind. The autoclave needs to perform day in day out. This is exactly what VetAssure offers. Our uptime figures are in excess of 99.5%, providing the exceptional reliability of Midmark autoclaves.

One of the unique features of the VetAssure range is that all models incorporate a steam generator, injecting steam directly into the chamber. This enables the Autoclave to operate with some of the fastest cycle times on the market whilst remaining highly energy efficient.

Both the VetAssure B and S class autoclaves meet the highest standards required for vacuum sterilisation and are suitable for all wrapped, non-wrapped, solid, hollow and porous loads, meeting the BS EN13060 standard for steam penetration and resulting in dry packs and instruments.

Both B and S class autoclaves have the following features:

- Fast sterilisation times
- Steam generator to reduce water and energy consumption by up to 50%
- Internal thermal printer as standard with last 10 cycle reprint facility
- Optional internal USB data-logger facility
- Graphic display for easy operation and control
- Practical water loading from self-priming pump
- Direct connections for automatic water fill and drainage
- Separate water loading and drainage tanks for improved hygiene
- Motor operated door closure with triple safety protection
- Suitable for all load and instrument types
- Available in 18 or 23 Litre capacity
- Up to 52cm chamber length (B&S 23L) – one of longest on market - for those larger kits
- Reversible tray holders and 5 trays as standard
- Competitively priced
- Superior build using quality materials ensure reliability and longevity of machine.

**Midmark Customer Service includes:**

- After-sales Service and Maintenance.
- Installation, Commissioning and Staff Training from £300 - please call our Vet Tech Team for further details.
- Service is recommended every 1500 cycles or at least once per year.
- Manufacturer Trained Engineers.
- BCAS Accredited.
- Two Year Warranty (5 Year Warranty on Chamber).
- Free Technical Support by phone.



An on board printer is standard to provide a permanent record of the complete cycle.  
 Reprint option on previous 10 cycles available.

The VetAssure Series of autoclaves has all the features listed opposite and meets all the regulations which cover vacuum veterinary autoclaves. Both 'Bowie and Dick' and 'Vacuum Test' parameters as specified by the NHS are met. The double-stage vacuum pump evacuates the chamber both prior to the cycle and after the sterilisation process.



The graphic display indicates current temperature and pressure plus details of cycle phases.  
 Details of operator errors also displayed.



Tray holders carry 5 trays as standard. 5 trays included.  
 Tray holder is reversible and removeable for larger packs.  
 Wrapped packs up to 4.5kg may be sterilised (B23 & S23).  
 Chamber length up to 530mm (23L).



**VETASSURE MIDMARK AUTOCLAVES**

- VS1800000** VetAssure 'S' Autoclave 18 Litre
- VS2300000** VetAssure 'S' Autoclave 23 Litre
- VB1800000** VetAssure 'B' Autoclave 18 Litre
- VB2300000** VetAssure 'B' Autoclave 23 Litre
- KROTB** Thermal Printer Paper (Pack of 10 Rolls)

The VetAssure Autoclave Range are also available with an Internal Data Logger - optional extra. Please contact the Vet Tech Team on 0845 130 9596 or email info@vetinst.com for further details.

- Installation, Commissioning and Staff Training from £300 - please call our Vet Tech Team for further details.
- Service is recommended every 1500 cycles or at least once per year.
- Manufacturer Trained Engineers.
- BCAS Accredited.
- Two Year Warranty (5 Year Warranty on Chamber).
- Free Technical Support by phone.

## Autoclaving

### Disposable Security Padlocks - No Indicator



Anti-tamper security padlock. Useful for marking instrument boxes. Single use only. Padlock has to be broken to be removed. Good value. Supplied in packs of 100

#### DISPOSABLE SECURITY PADLOCKS- NO INDICATOR

**PSS100** Disposable Security Padlocks No Indicator (x 100)

### Disposable Security Padlocks with Sterilisation Indicator



Anti-tamper Security Padlock with steam sterilisation indicator spot. Spot colour changes from pale blue to brown. Single use only. Padlock has to be broken to be removed.

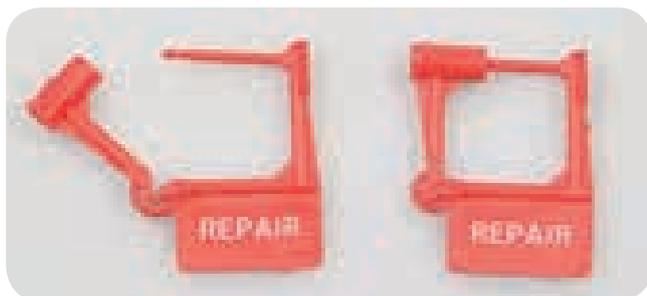
Supplied in packs of 20 and 100

#### SECURITY PADLOCKS WITH INDICATOR

**PSL20** Security Padlocks with Sterilisation Indicator (x 20)

**PSL100** Security Padlocks with Sterilisation Indicator (x 100)

### Disposable Padlocks - Instrument Repair



Useful for marking instruments which should be sent for repair. Single use only. Padlock has to be broken to be removed.

Supplied in packs of 10

#### DISPOSABLE PADLOCKS - INSTRUMENT REPAIR

**PSTR10** Disposable Padlocks - Instrument Repair (x 10)

### Process Indicator Pen (PIP)



A really handy Process Indicator Pen (PIP) - you will wonder how you did without it.

Conforms to EN ISO 11140-1. Writes on all standard sterilization wrapping materials. Changes colour from purple to green. Clear Stop/ Go colour change. Non toxic and lead free.

#### AUTOCLAVE PEN

**AUTOPEN** Autoclave Pen

### Autoclave Tape



Use to seal bags and boxes. Integral marking changes colour when passed through a full cycle. Note that a change in colour of the tape does not necessarily guarantee that the contents of the bag or pack are sterile.

Conforms to ISO 11140-1 Class I 19mm x 50m roll

#### AUTOCLAVE TAPE

**AUTOT12** Autoclave Tape 19mm x 50m roll (12 Pack)

**AUTOT48** Autoclave Tape 19mm x 50m roll (48 Pack)

### Steam Sterilization Indicators



Available in Class 4 Dual Steam Multi Parameter and Class 6 Steam Emulating indicators

Class 4 monitors all 121°C to 134°C steam sterilization cycles

Class 6 monitors critical parameters - Time, Temperature and Steam 5.3 min at 134°C and 15 mins at 121°C

Clear colour change.

#### STEAM STERILIZATION INDICATORS

**AUTOINDMP** Class 4 Dual Steam Multi Parameter Indicators (500 Pack)

**AUTOINDE** Class 6 Steam Emulating Indicators (250 Pack)