by Rick Schultz

Red, White and Blue

The Basics of Surgical Instrument Labeling

SURGICAL INSTRUMENTS ARE commonly marked with colors, symbols, letters and numbers to allow for more efficient and accurate tray assembly. These indicators, which can include tape, laser marking or acid-based etching, may be used to identify the surgical specialty, a specific instrument set or the surgeon using the instruments.

Instrument Marking Tape - A colored tape with an adhesive backing that is available on a roll or pre-cut pieces on an 8.5" x 11" sheet.

- Tape should be wrapped 1 ¼ times around the shank of a scissor.

Proper tape location

Proper tape application

- The #1 reason for tape failure is improper application, such as applying too many layers of tape or taping the ring instead of the shank of a scissor.

Improper tape application. Should not be layered.

Layering tape prevents tips from closing

Avoid taping ring handles; tape will not lie flat.

Taping the rings should be avoided because the tape does not lie flat on the instrument. There is a myth that if tape is applied to the shank, it will not completely close. This is untrue, as long as only 1 ¼ layers are applied. As with other instruments in the facility, always follow the instructions for use (IFU) for the tape.

- Pre-cut tape, with numbers and symbols, is sometimes too long for taping the shank and should be cut in half so it wraps only 1 ¼ times.
- The instrument surface must be cleaned with alcohol and allowed to dry before applying tape.
- When using multiple colors, be sure colors do not overlap and wrap 1 ¼ times.
- When applying tape, be sure to keep tension on the roll. After wrapping 1 ¼ times, cut the tape at an angle so it lies flat on the instrument.

Advantages of marking tape:

- Cost effective
- Simple application
- Many color, pattern and symbol options
- Pre-cut options (sheet tape)

Disadvantages of marking tape:

- Must be monitored, inspected and maintained
- May crack and/or fade
- Any instrument with tape that shows signs of lifting/peeling must be removed from service so tape can be removed and reapplied
- Difficult to remove by hand (residual adhesive)
- A risk of tape falling into the patient

Heat-fused Nylon Color Coding (Dipping) - A colored powder that is applied to a surgical instrument using heat to fuse the powder into a hard surface. Most often seen on clip applier ring handles. See Photos A and B for an

Photo A

Photo B

Photo C

Photo D

example of color coding on a towel clamp.

Advantages of color coding:
- Durable. Lasts three to five years
- Does not interfere with instrument function
- Highly visible to Sterile Processing

Disadvantages of color coding:
- More expensive than tape
- Must be monitored and inspected for color coding chips, which results in patient risk
- Must be applied/removed by a third party
- Limited color options
- Not able to be applied to some instrument materials (insulation)

Color Plug - A permanent, colored ceramic plug that goes into the instrument. A drill press is used to drill a hole for the plug to rest. A liquid that is ultraviolet (UV) cured may also be used on instruments with less metal thickness, such as a tissue forcep.

Advantages of color plug:
- More durable than tape/dipping
- Does not interfere with instrument function
- Easy to see/identify

Disadvantages of color plug:
- Limited color options
- Must be applied by a third party
- More expensive than tape

Colored Instrument Bands - Silicone bands are primarily used to identify and separate dental instruments.

Advantages of instrument bands:
- Can be applied by the end user
- Reusable and autoclavable

Disadvantages of instrument bands:
- Limited color options
- Not designed for ring-handled instruments
- More expensive than tape

Additional Color Markings
- **Gold handles -** These indicate a tungsten carbide jaw or tip, such as on needle holders, scissors, forceps or rasps. Tungsten carbide is harder and more durable than stainless steel. Gold indicates the working portion of the instrument contains tungsten carbide. See Photo C.

Photo E

- **Black handles -** On scissors, black handles indicate there is one flat edge (sometimes serrated) and one sharp (knife) edge. The serrations help secure the tissue from slipping while the knife edge provides a clean cut of the tissue. These scissors are known as SuperCut. See Photo D.

- **Blue Instrument Color -** Titanium surgical instruments are blue in color due to the oxidation produced during the heating process. These instruments are typically more

expensive, harder and lighter than stainless steel. See Photo E.

- **Rainbow Instrument Color -** These surgical instruments are stainless steel with a coating for aesthetic purposes. There is no functional benefit using this coating. This process has not proven to last longer.

Instrument Engraving - Method that uses an electric vibrating tool to carve into the metal to create letters/words. This is not a recommended practice.

Advantages of instrument engraving:
- None

Disadvantages of instrument engraving:
- Cannot be removed
- Creates a "trough" for blood to collect
- Removes metal
- May be difficult to read

Acid-Based Etching - This method uses an acid-based (chemical) solution, along with a stencil, to mark the instrument.

Advantages of acid-based etching:
- Can be applied by the end user
- Low-cost option
- Can be removed with high-speed buffing

Disadvantages of acid-based etching:
- Not able to be applied to some instrument materials (e.g., micro, insulated, plastic)
- Stencils must be purchased and created
- May be difficult to read

Laser Marking - A precise and more durable method of marking surgical instruments using laser technology.

Advantages of laser marking:
- More durable than acid-based etching
- Will not come off with high-speed buffing
- Clean/crisp letters are easy to read
- Able to be applied on very small instruments

Disadvantages of laser marking:
- Slightly more expensive than acid-based etching
- Applied by a third party
- Difficult to remove

Instrument identification methods can be very helpful when sorting and assembling surgical instruments, and they can assist in faster instrument turnaround for the Operating Room. In many cases, choosing the most appropriate application depends upon the individual hospital's needs. For example, it is usually not economically feasible to use heat-fused nylon on an entire hospital's inventory, but it may be perfect for select trays or specific instruments. Knowing the facts will help healthcare facilities choose the most appropriate option.

Q Our Sterile Processing Supervisor claims it is acceptable to mark instruments using a Sharpie® pen from an office supply store. Is this acceptable?

A Absolutely not. A Sharpie® pen or other brand of permanent marker has not undergone patient compatibility testing or sterilization validation.

RICK SCHULTZ, the Instrument Whisperer™, is an author, inventor and lecturer, and the retired Chief Executive Officer of Spectrum Surgical Instruments Corp. He served as contributing editor of IAHCSMM's Central Service Technical Manual (Fifth, Sixth, Seventh, Eighth Editions). Rick authored the textbooks *Inspecting Surgical Instruments: An Illustrated Guide* and *The World of Surgical Instruments: The Definitive Inspection Textbook,* which was released in June 2018. Schultz was named IAHCSMM's Educator of the Year in 2002, and in 2006, was named American Hospital Association Educator of the Year. In 2007, he was named by Healthcare Purchasing News as one of the 30 Most Influential People in Healthcare Sterile Processing. Schultz currently provides educational lectures to Central Service professionals at IAHCSMM's annual conferences and conducts operating room personnel lectures across the country.