Thompson Retractor

INSTRUMENT STAIN TROUBLESHOOTING GUIDE

Stainless Steel, Titanium, and Non-Anodized Aluminum *

Instruments may become more stain resistant over time as the passivation layer matures due to repeated handling and reprocessing.

COLOR	CAUSE OF STAIN	WHAT TO DO
Orange-brown to reddish (looks like rust)	If stain rubs off with a pencil eraser and no pitting exists, problem is most likely from: · High alkaline (>8) detergent residue on towels · High alkaline (>8) pH detergent used leaving a phosphate surface deposit · Dried blood · Iodine or betadine residue	· Change to Neutral pH detergent. · Check pH of towels with litmus to verify if detergent residues are present. · Rinse the instruments in warm water for at least 30 seconds. · If problem persists, consider changing to distilled or demineralized water. Particularly if local water supply is high in Iron or other minerals.
Black or brown and pitting	Most likely, products were subjected to an acidic low (<6) pH substance such as: · Low pH detergent residues from towels · Exposed to other chemical compounds from "cold soaking" · Exposure to Bleach	· Change to Neutral pH detergent. · Check pH of towels with litmus to verify if detergent residues are present. · Eliminate exposure to chemicals or bleach. · Rinse thoroughly and consider using distilled or demineralized water. Particularly if local water supply is high in Iron or other minerals. · If pitted, send instruments back to manufacturer for evaluation, they may need replacement.
Multi-color or "rainbow"	· Heat compromised, tensile strength is compromised.	· Check the autoclave for proper temperature.
Bluish-black or bluish-green	· Cross contamination between dissimilar metals.	· Separate instruments by type before cleaning or autoclaving.
Bluish-grey (with possible pitting)	· Reverse plating due to mixed metals during cleaning process. · Failure to follow manufacturer's care instructions.	· Follow solution manufacturer's directions closely, particularly temp. & soak times. · Use distilled or demineralized water. · Change solution per mfg's instructions. · If pitted, send instruments back to manufacturer for evaluation, they may need replacement.
Rust	· Sterilizing instruments of dissimilar metals in the same cycle. · Chemicals in detergents or excess amounts of Iron or other minerals from local water supply. · Allowing saline to dry on instruments.	· Separate instruments by metal types prior to sterilization. · Use neutral pH detergents and change to distilled or demineralized water. Particularly if local water supply is known to contain Iron or other minerals. · Wipe off as much residue leaving shiny metal underneath. · Never let saline dry on instruments. · Return to manufacturer for repair or replacement.
Light or dark spotting	· Slow evaporation of water drops with mineral content. · Instrument wraps & towels may contain detergent residue.	· Eliminate water droplets and moisture by adhering to autoclave manufacturer's operating instructions. · Change to distilled or demineralized water. Particularly if local water supply is known to contain Iron or other minerals. · Thoroughly wash & rinse wraps & towels with a neutral pH detergent.

* Due to their material properties, aluminum blades are more susceptible to staining than stainless steel or titanium.

Anodized Aluminum Care

Use of cleaning agents which are not neutral pH are specifically problematic for anodized finishes.

NOTE: Chips may appear in anodized finish due to normal wear and tear. Chipped blades are acceptable for continued use.

OK TO USE ✓	DO NOT USE ON ANODIZED ALUMINUM ⊘	WHY?
· Alcohol · Mild soap / detergent · Acetone · MEK	· Ammonia · Alkaline cleaners · Lye · Strong acids	Unapproved cleaners may remove the anodizing. If this occurs, the aluminum is no longer protected and can stain, corrode, or pit. We cannot offer reanodizing and recommend replacement to avoid further corrosion.

NOTE: Knock-off Instruments

Lower cost, lower quality instruments can be processed and sterilized alongside USA-made instruments. However, these cheaply made products rust more quickly and this rust can damage your high-quality instruments during sterilization. Therefore, if instruments begin to rust, remove them from the tray and dispose of them immediately. Always remember, when it comes to surgical instruments, the lower the price the lower the quality.

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