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POWERED BY X-static

Cleaning Instructions: Jade-X

Industrial Laundry Instructions for Fabric Containing X-Static Silver Antimicrobial Fiber

Step	Operation	Time	Temperature	Level	Conditions
1	Rinse	3 Minutes	Cold	High	N/A
2	Wash	3 Minutes	71°C (160°F)	Low	Non-Ionic Detergent and alkali pH 10, see Note 4 Below.
3	Rinse	3 Minutes	60°C (140°F)	High	N/A
4	Spin	2 Minutes	N/A	N/S	Preferably low speed
5	Rinse	2 Minutes	50°C (120°F)	High	N/A
6	Rinse	2 Minutes	40°C (100°F)	High	N/A
7	Rinse	2 Minutes	Cold	High	N/A
8	Acidify	5 Minutes	Cold	Low	Acidify to pH6
9	Spin	3-5 Minutes	N/A	N/S	Preferably low speed

Notes & Recommendations

- Non-Ionic detergent should have a cloud point above 71°C (160°F).
- pH should not exceed 10.
- Oxidative bleaching agents should not be used as these will damage X-Static silver antimicrobial fiber. These include sodium, hypochlorite, hydrogen peroxide, and per(oxy)acetic acid (PAA).
- For soiled linen, the temperature of the load is maintained as 65°C (150°F) for not less than 10 minutes or preferably at 71°C (160°F) for not less than 3 minutes. With both options, "mixing time" must be added to ensure heat penetration of the wash load. Typically, this can be 4 minutes for a lightly loaded machine, and up to 8 minutes for a machine with a heavy degree of loading.
- A thorough rinse is essential to remove traces of surfactant, as residual detergent will adversely affect the X-Static silver antimicrobial fiber.
- Do not overload the washer or dryer.
- Fabric softeners should not be used.
- Always ensure that the fabric is thoroughly dried with heat. The dryer exhaust temperature should not exceed 75°C (170°F).
- Washers and dryers should be inspected regularly to ensure there are no rough spots that could damage the fabric.
- Silver is a natural element and may tarnish. This does not affect the biocidal properties of the material.

List of Incompatible Chemicals for Use With X-Static Silver Antimicrobial Fiber

The Table below contains a general list of chemicals that are incompatible for use with X-Static filament or staple fibers. While this list is not comprehensive, it does reference the most common chemicals used in processing, dyeing and finishing that are incompatible with the X-Static technology.

Incompatible Chemicals	Effect on X-Static Silver Antimicrobial Fiber	Impact on End-Use Requirement	Recommended Substitutes
Sulfur Powder	Sulfur degrades X-Static	• Potential issue with consistency of color, luster • Potential issue with reduction in thermal and electrical properties	• Non-sulfur powder-containing chemicals • Non-sulfur-containing atmosphere (that is, away from high vehicle exhaust areas)
Ammonium Sulfide	Sulfur containing compounds degrade X-Static	• Potential issue with consistency of color, luster • Potential issue with reduction in thermal and electrical properties	• Non-ammonium sulfide-containing chemicals
Sodium Hypochlorite (Household Bleach)	Sodium hypochlorite degrades X-Static	• Potential issue with consistency of color, luster • Potential issue with reduction in thermal and electrical properties	• Non hypochlorite-containing cleaning agents
Chlorine Gas	Chlorine degrades X-Static	• Potential issue with consistency of color, luster • Potential issue with reduction in thermal and electrical properties	• Non-hypochlorite-containing cleaning agents
All Strong Acids	Strong acids degrade, dissolve and oxidize X-Static	• Potential issue with consistency of color, luster • Potential issue with reduction in thermal and electrical properties	• Alternate process that does not expose X-Static to strong acids
Strong Oxidizing Agents	Strong oxidizing agents, degrade, dissolve and oxidize X-Static	• Potential issue with consistency of color, luster • Potential issue with reduction in thermal and electrical properties	• Alternate process that does not expose X-Static to strong oxidizing agents
Sodium Silicate	Sodium Silicate reacts with X-Static	• Visual color change • Deposits of orange yellow precipitate of silver silicate on substrate	• Magnesium salts of ethylenediamine tatra acetic acid (EDTA) and tetrasodium pyrophosphate (TSPP)
Sodium Hydrosulfite (Sodium Dithionite)	Degrades X-Static and effects overall hue of fabric	• Potential issue with consistency of color, luster • Potential "tea stains" on finished fabric • Potential uniform change in hue (towards brown) • Potential issue with reduction in thermal and electrical properties	• Non hydrosulfite reducing agents such as isopropyl alcohol

Working Conditions – Temperature & pH

X-Static Silver antimicrobial fiber has been tested and approved for processing within the following guidelines:

Working, Stable pH Range: 3 to 12

Working Temperature and Time Range:

1. **20°C to 100°C in de-ionized water for 1 hour**
2. **20°C to 200°C in dry heat for 5 minutes**