

Industrial Laundering Recommendations

Stains from all soil types can be difficult to remove while preserving the attributes and appearance of the garment. Wash chemistry should be commensurate with the typical soiling and staining common to the individual user. Some special treatments may be required from time to time.

Because many chemical and processing systems are used in the textile care industry, no one formulation or process routing can be specified. The following information is intended to serve as a starting point. Always consult your chemical supplier and equipment provider for assistance in the “fine tuning” of your specific handling, laundering, finishing and quality assurance process.

Typical Wash Formula

NOTE: Consult your chemical & equipment provider for assistance with your specific process.

CYCLE	WATER LEVEL	TEMP (F)	TIME (MIN)	SUPPLIES	COMMENTS
Flush	HIGH	100	2 mins	None	
Flush	HIGH	100	2 mins	None	
Break	LOW	140-150	8 mins	Built detergent (1) Nonionic or anionic detergent Other treatment as required	PH 10.5 Max (750 PPM Max)
Carry-Over	LOW	140-150	6 mins	None	
Bleach	LOW		8 mins	Bleach (4)	See #9 below in finishing recommendations.
Rinse	HIGH	140	2 mins	None	
Rinse	HIGH	120	2 mins	None	
Rinse	HIGH	100	2 mins	None	
Rinse	HIGH	100	2 mins	None	
Sour & Retreat	LOW	100	3 mins	Sour (2) Other (3)	Ending PH 5.5 to 6.0
Extract		80	6 mins		Medium Speed

NOTE 1: DO NOT USE HIGH PH OR SOLVATED DETERGENTS.

NOTE 2: DO NOT USE RUST PREVENTIVE SOURS.

NOTE 3: VARIES WITH MANUFACTURER.

NOTE 4: BLEACHING CHEMICALS AND PROCESS REQUIREMENTS VARY.

Additional industrial laundering recommendations on next page.

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Industrial Laundering Recommendations Continued

1. Segregate soiled items by blend, colors, soil content and fabric/garment weight to avoid shortened garment life from over wash, physical damage and cross contamination of garments.
2. Avoid surfaces and conveyances which would snag or damage garments.
3. Promptly mend/repair garments to avoid extending damage (tears, snags, holes). It is recommended that garments with extending damage be removed from service. If repairs are necessary, heat seal patching from same material is the recommended process.
4. Do not overload washing equipment to avoid insufficient cleaning, rinsing or excessive garment wrinkling. Generally, load at 50% to 70% rated capacity depending on washer pocket configuration.
5. Frequently check and repair inside of washers and tumblers for damage that can snag garments.
6. Check and adjust/repair water levels, leaking drains and supply lines to avoid improper chemistry concentration and rinsing effectiveness.
7. Use chemistry commensurate with soil level and end use of the garment. Certain soils may require special pretreatments.
8. Recommended wash temperatures of 140°F to 150°F, do not exceed 160°F.
9. Non-chlorine bleaches may be used as required for stain removal and sanitizing. Always adjust wash chemistry for optimum bleaching activity. Any bleach can cause color deterioration. Chlorine bleach is not recommended, but if used, always use antichlor in one of the final rinses. Never use chlorine bleach when garment has nylon fabric components.
10. Do not use softeners or topical, anti-static finishes as they may mask the fluid resistant properties.
11. Tumble dry with cool-down cycle to minimize wrinkling.
12. Tumbler temperatures should be achieved that result in garment temperatures of 240°F to 280°F maximum. Frequently check tumblers for overheating and hot spots. Unload immediately and hang or fold garments to minimize wrinkling.
13. All loads should be soured. Sour to pH range 5.5 - 6.0. Do not use rust preventive sour.

Additional recommendations for barrier fabrics with fluid resistant finishes on next page.

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Additional Recommendations for Barrier Fabrics with Fluid Resistant Finishes

Milliken™ barrier fabrics can be laundered, sanitized and reused through a minimum of 25 industrial or home launderings without reapplying fluid resistant finish. The primary focus when laundering personal protective equipment (PPE), such as medical gowns for hospital and surgical use, should be: maintaining fluid resistance, sterility, comfort, and durability.

1. Milliken & Company barrier fabrics are manufactured with a fluid resistant finish. The fluid resistant service life of the fabric can be diminished by improper handling and laundering procedures.
2. All handling and washing procedures above should be followed to ensure performance of the fabric component of a garment.
3. No fluid resistant chemistry is permanent. Periodic evaluation should be performed. Chemistry is available to augment existing fluid resistant finishes. A retreatment process should be incorporated in normal washing procedures to maintain fluid resistance and repellence. Contact your chemical supplier for recommendations and procedures.
4. Solvents may deteriorate fluid resistant finishes. Do not dry clean. Excessive alkalinity, temperature, mechanical action and abrasion can reduce effectiveness of fluid resistant finishes.
5. Rinsing is critical to fluid resistant performance. Any remaining surfactant or detergent on the fabric will reduce the surface tension of fluids resulting in strike through.
6. Centrifugal extraction is preferable but do not exceed 100g's. Do not use hydraulic or ram type extractors. The resulting hard creases may cause fluid strike through sites.
7. Tumble drying is a necessary step to maintain best fluid resistance. Heat from a hot dry cycle is important to reactivate the fluid resistant chemistry. Normal dryer operation should allow garment temperatures of 240°F to 280°F maximum. A proper cool down is necessary to minimize wrinkling. Prompt removal of garments from dryer also minimizes compaction wrinkling.
8. Garments should be inspected for damage and small holes on a light table. Remove any damaged garments from service.
9. Fluid resistance is normally evaluated with a hydrostatic fluid resistance test method like Suter or Schmerber. Water repellence can be evaluated by an alcohol/water test.

Home Laundering Recommendations



1. Garments made with Milliken Perimeter fabrics should be sorted and washed separately from other garments



2. Machine wash in warm water with standard detergent using permanent press cycle.



3. Use non-chlorine bleach if needed



4. Do not use fabric softener or dryer sheets



5. Tumble dry with high heat using permanent press cycle, remove promptly after drying



7. Warm iron if needed