



## Home Laundering Guide for DuPont™ Nomex® Fibers by permission from the *DuPont™ Nomex® Aramid Fiber/Laundering Guide*

The fire resistance characteristics of the DuPont™ Nomex® fibers used in the Intrix Doll's Debut garments are best maximized and maintained by using proper laundering techniques. The following home laundering information is taken directly from the recommendations of DuPont, the developers and manufacturers of Nomex® fibers.

### GENERAL GUIDELINES

Items made of Nomex® can be washed and dried by any conventional home method using normal household washers and dryers followed by hand ironing if necessary. No special technology is needed for home laundering garments made of Nomex®. However, for heavily soiled clothing, home laundry procedures may not remove the last traces of very heavy, widespread or ground-in soils, which may be flammable and could adversely affect the thermal protective performance of garments made of Nomex®.

If home laundering does not remove contaminants or contaminant build-up, garments should be dry cleaned or commercially laundered. When garments are contaminated by hazardous materials, only commercial or on-site laundering or dry cleaning should be used with the appropriate wastewater treatment techniques.

Adhering to the following procedures can help provide optimum cleaning.

### SORTING

Items made of Nomex® should be sorted and washed separately from other garments to prevent contamination with lint of flammable fibers such as cotton.

### PRETREATING

Stains, as well as deep soil lines on the collars and cuffs of garments, are more readily removed if pretreated. Stains should be pretreated at the earliest opportunity and sufficient time allowed for the pretreatment material to penetrate and loosen the soil. The heavily soiled or stained areas should be rubbed with a full strength, heavy-duty liquid detergent or any off-the-shelf laundry pretreatment product.

### PREPARING THE WASH LOAD

Before laundering garments made of Nomex®, pockets should be emptied, pants cuffs cleaned out and zippers closed.

### LOAD SIZE

When laundering clothing made of Nomex®, it is important not to overload the machine. To ensure a cleaner wash and avoid setting wash wrinkles, the load size must allow clothes to move freely through the wash water and rinse cycle. Regardless of the machine's rated weight capacity, bulk—not weight—should be the limiting factor.

## WASH WATER TEMPERATURE

Moderate soil levels may be removed adequately at normal wash water temperature settings. Heavily soiled and stained garments made of Nomex® require a higher water temperature setting. Using the steam setting on a home washer will not impact the inherent flame resistance of Nomex®; however, prolonged use could cause color fading.

## DETERGENT

Synthetic, heavy-duty liquid laundry detergents are recommended for washing items made of Nomex®. These detergents do a superior job of removing soils and are less likely than soap to form sticky deposits of lime soap curds, which are difficult to rinse out. Fatty based soaps should not be used. Underuse of detergent results in poor soil removal and frequently causes suspended soils to redeposit on the clothes. Failure to use a sufficient amount of detergent is the single greatest cause of inadequate home cleaning.

## WATER AND WATER CONDITIONER

For best results, an adequate supply of "soft" water is required for home laundering garments made of Nomex®. "Hard" water contains minerals, such as calcium and magnesium salts, that combine with fatty-based soaps to form insoluble film, scum or curd. These insoluble contaminants are difficult to rinse from fabrics, may be flammable and could adversely affect the thermal protective performance of garments if not adequately removed. Soap is not recommended, but if it is used in hard wash water (more than approximately 7 grains/gal, 120 mg/L or 120 ppm), a nonprecipitating type of water conditioner should be added. Softening the water improves the quality of washing.

## BLEACHES

Only oxygen-based bleaches such as OxyClean™ should be used on clothing made of Nomex®. Chlorine bleach should not be used. Although chlorine bleach will not affect the inherent flame resistance of Nomex®, it may cause loss of strength and color in garments over time.

## FABRIC SOFTENERS AND ANTI-STATS

Under normal conditions, garments made of Nomex® IIIA, Nomex® MHP and Protera® do not require the use of anti-stats because these products contain a proprietary static-dissipative fiber. Nevertheless, numerous washer- and dryer-applied fabric softeners are available for use in home laundering. These products improve the feel of items made of Nomex® and can reduce the nuisance effects of static electricity—such as lint pick-up and clinging—that are often experienced with fabrics. However, they are not as effective as antistatic treatments applied by an industrial or commercial laundering facility.

## OTHER WASHING ADDITIVES

Commercially available laundry additives or aids, such as scent booster, fabric conditioner, odor eliminator, static guard, wrinkle release or wrinkle remover should not be used with items made of Nomex® if they are flammable. Flammable materials on the surface or within fabric made of Nomex® could adversely affect thermal protection.



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## DRYING

Clothing made of Nomex® will have a smoother appearance when tumble dried instead of being line or drip dried. If line or air drying, flatten garments to minimize wrinkles. Articles made of Nomex® should not be dried in sunlight, which can cause fading but does not affect the flame resistance protection of the garment. To ensure maximum removal of wrinkles, tumble dryers should not be overloaded. Drying time varies with garment materials and size of the load. Items made of Nomex® dry faster than all-cotton garments of the same weight. When tumble dried at the medium or high temperature setting, a properly sized load usually dries in approximately 20 minutes. The cool down or wrinkle control cycle may be helpful to minimize wrinkles. Use of the steam setting on a home dryer will not impact the inherent flame resistance of Nomex®; however, prolonged use could cause color fading.

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Commercially available laundry additives or aids, such as dryer sheets or static guard, should not be used with items made of Nomex® if they are flammable. Flammable materials on the surface or within fabric made of Nomex® could adversely affect thermal protection.

## IRONING

If clothing made of Nomex® needs pressing or ironing, a steam or dry iron may be used at the medium setting. Commercially available ironing aids such as starch, ironing spray or wrinkle spray should not be used with items made of Nomex® if they are flammable. Flammable materials on the surface or within fabric made of Nomex® could adversely affect thermal protection.\*

\*The foregoing information is excerpted by permission from the *DuPont™ Nomex® Aramid Fiber/Laundrying Guide* available on the DuPont™ website.

