



Fact sheet

Laundrying information for gloves made with Dyneema®.

Gloves made with only Dyneema®, do not show any decline in performance after laundrying several times.

Laundrying is a process with many critical parameters for textile gloves. First, high temperatures can cause shrinkage in textile gloves. Second, chemicals, like strong acids or bases, can destroy the chemical structure of textile gloves. Finally, mechanical impacts can tear a textile glove apart. Workers have to be sure that their gloves keep the performance level even after laundrying.

PH stability and chemical resistance of Dyneema®.

Dyneema® fibers are based on Ultra-High Molecular Weight Polyethylene (UHMWPE). Therefore the primary properties are not affected by water or moisture. Dyneema® fibers are inert to most kind of aggressive agents and environmental influences. Standard chemicals typically used in industrial laundrying such as detergents, ammonium/sodium hydroxides, hydrochloric acid, etc, are not known to affect the performances of the Dyneema® fiber.

Technical properties of Dyneema® are not affected when exposed to strong acids or bases.

Temperature resistance of Dyneema®.

Products containing Dyneema® should be treated with care if high temperatures are involved. The melting point of Dyneema® is between 144-152°C / 290-306°F.

For conventional laundrying this should not pose a problem. However, we recommend keeping the temperature during the process below 90°C / 194°F. Dependent on the duration of the process and temperature involved, slightly higher temperatures can be applied.

Temperatures up to 90°C / 194°F during laundrying will not affect the cut resistance of the Dyneema® fiber.

In this leaflet general recommendations are given on how to handle gloves containing Dyneema® while laundrying. However the majority (if not all) gloves or sleeves are composed of more than one fiber component. DSM Dyneema can only take responsibility for the Dyneema® fiber. Recommendations on laundrying gloves with multiple components are responsibility of the glove supplier. DSM Dyneema explicitly rejects any liability with respect to such other components.

* Since it is impossible to list the level of resistance of Dyneema® to all existing chemical products (or combinations), we advise you to contact us or your glove manufacturer/supplier in case you have specific questions.

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Laundering gloves with Dyneema®

Realizing that most commercial available gloves contain multiple components besides Dyneema®, three different glove types have been evaluated in different laundering processes. The three glove types that have been evaluated are:

- Medium cut protective PU coated glove with Dyneema®, polyamide and elastane
- High cut protective glove with Dyneema®, glass fiber and polyamide
- Food processing glove (non-coated) with Dyneema®, glass fiber and polyester

The three laundering processes the glove samples were subjected to:

- Dry Cleaning. The gloves were dry cleaned with Perchloroethylene (PER) at a PH of 6 and afterwards dried at 70°C (158°F). This process was repeated three times.
- Laundering and Tumble Drying. Gloves were laundered with water and detergents at around 60°C / 140°F, rinsed with pure cold water and then put in the tumble dryer at around 55°C / 131°F. This process was repeated three times.
- Laundering and Tumble Drying with higher temperatures. Food gloves with Dyneema® used in the food processing industry often require a higher cut resistance, need to be washable at high temperatures and have to comply with the European regulation for food contact. Therefore, the performance of laundered food gloves was tested in a separate step with higher temperatures (95°C / 203°F and 60°C / 140°F).

Results

- **The wet and dry cleaning process followed did not have a significant effect on cut and abrasion resistance of the tested gloves.**
 - **Fit, flexibility and comfort level were not affected.**

Although laundering does not have any impact on the properties of the Dyneema® fiber, it still could affect the performance of other materials used in a cut resistant glove. Coatings which are typically utilized to add grip to the glove may be sensitive to some chemical products used in dry cleaning processes. Some elastomeric materials such as Elastane could lose its retractive properties under the typical conditions used in dry cleaning process. Elastane, Polyamide or Cotton can also shrink at high temperatures. Furthermore we only tested non-used gloves. Used gloves can behave different as oils or other chemical products can affect the coating or ingredients of the gloves. We advise you to contact your glove manufacturer/supplier in case you have questions about your specific glove style.

How to contact us?

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