

ON WOOL AND CHLORINE

Chlorine-treated Wool

Small, barbed scales cover the surface of wool fibers. When wool is machine-washed and dried, these scales can become interlocked, causing the wool to felt and shrink. To prevent interlocking, wool is usually dry-cleaned or hand-washed.

Machine-washable wool was made possible by pretreating the barbed scales with chlorine, then, applying a thin polymer coating. This makes wool fibers smooth and allows them to slide against each other without interlocking. Millions of pounds of wool are processed each year in this way.

Unfortunately, this method results in wastewater with unacceptably high levels of adsorbable organohalogens (AOX) – toxins created when chlorine reacts with available carbon-based compounds. Dioxins, a group of AOX, are one of the most toxic substances known. They can be deadly to humans at levels below one part per trillion. Wastewater from the wool-chlorination process contains such high concentrations of chlorinated chemicals, that most wastewater treatment facilities in the United States do not accept it. Therefore, most chlorinated wool is processed in other countries, then, imported.

There are a few ways of removing the tips of the barbed scales without using chlorine. Ozone and hydrogen peroxide are two alternatives that break down into oxygen and water when their wastewater is treated.

Garments made from chlorine-treated wool do not pose any risk to the wearer. The final product is not the issue, but rather the environmental impacts of producing it. That's why we use chlorine-free and AOX-free methods to produce machine-washable wool garments such as our merino baselayers.

For more information about chlorine, visit the industry website www.chlorineinstitute.org

For a report about chlorination byproducts, visit the nonprofit research organization Environmental Working Group website at: www.ewg.org/research/consider-source