DWR: Durable Water Repellent

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Overview

• DWR finishes add value
  ▪ Protection: water, oil & soil repellent and release
  ▪ Life-cycle benefits

• The Challenge: Historic Long-Chain DWR technology is being replaced with more environmentally favorable Short-Chain technology
  ▪ Re-formulation and optimization required to achieve high-performance
  ▪ Re-examining performance requirements
  ▪ Regulatory and environmental drivers

• Success requires Supply Chain Collaboration
  ▪ Long, complex supply chain - many steps and players
Durable Water Repellent Polymers

Why Fluorine? **Performance**

- **Unique Surface Protection Properties:** Water and Oil Repellency, Stain and soil repellency and Stain Release

![Chemical structures](image)

*Fiber and Fabric bulk properties are unaffected*
DWR finishes add value

- Fabrics treated for repellency fight off dry soil and nasty, unpredictable spills and splashes, allowing liquids to bead up and roll off.

- Liquid spills can easily be wiped away when blotted with a clean cloth, and dry soil can be brushed off easily.
Historic Long-Chain DWR technology is being replaced with more environmentally favorable Short-Chain technology

**Long Chain Products**
- US EPA: PFOA 2010/15 Stewardship program; Chemical Action Plan
- Canada: Environmental performance agreement
- Europe: Classification & Labeling

**Short Chain Products**
- Short chain products approved by regulators as acceptable replacements
- DWR supplier commitment
- Reformulation and optimization to achieve high-performance
Success requires Supply Chain Collaboration

Chemical Supplier

Dyes, Finishes and Auxiliaries
Mfg & Formulators

Dyehouses, Finishers, Washers

Garment Makers / finishers

Agents, Vendors, Brokers, Licensees

Brand

Retailer

Working together to implement new technology and achieve required performance

Long, complex supply chain - many steps and players
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