Durable Water Repellency in Outdoor Products

One CAS fits all?

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Why Durable Water Repellency (DWR)?

Your outdoor adventures can be wet... very, very wet.
Rainwear Applications of DWR
What Matters in Rainwear?

- Water Repellency
- Waterproofness
- Moisture Vapor Transmission

“the jacket leaks” one of top reasons for rainwear returns, however frequently mis-diagnosed
- Fabric ‘wetting out’ from DWR break-down
- Over saturation on the inside of a garment from a lack of breathability
What is Acceptable Performance?

- Depends on whom you ask...

- Patagonia Torrentshell Jacket
- Marmot PreCip Rain Jacket
- Arc’teryx Theta Rain Jacket
- Sierra Designs Hurricane HP Rain Parka
- The North Face Venture Rain Jacket
- Mountain Hardwear Stretch Typhoon Rain Jacket
- Outdoor Research Stretch Foray Rain Jacket
- Isis Raindrop Rain Jacket
- REI Kimtah Rain Jacket
- Patagonia Torrentshell Jacket
- Marmot PreCip Rain Jacket
- Arc’teryx Theta Rain Jacket
- Sierra Designs Hurricane HP Rain Parka
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- REI Kimtah Rain Jacket
DWR gets further complicated...

- The North Face Denali Fleece Jacket
- Quiksilver Dry Dock Amphibian Shorts
- Patagonia Nine Trails Running Jacket
- Sierra Designs Zissou Dri-Down Sleeping Bag
- Arc’teryx Squamish Hoodie
- Mammut Infinity superDRY Rope
- The North Face Better Than Naked Hat
- Osprey Porter 65 Travel Pack
- REI Half Dome Tent
- prAna Stretch Zion Pants
- REI Half Dome Tent
Our Challenges

- Not all products types need the same level of DWR... but product sales & marketing tends to be the strongest driver.
- The most effective treatments, from a performance perspective, are also associated with the most toxic, persistent, and bioaccumulative (Long Chain PFCs) issues.
- These least desirable treatments—from a hazard perspective—also tend to be the least expensive.
- Performance requirements and their minimums are not well established, nor understood.
- A single methodology for hazard analysis, and the expectation for its use, has not been established.
The Trail Ahead...

**Needs:**

1. A universal method for hazard analysis
2. A better understanding of all the variables in all use cases
3. Universally applied methods to measure and report efficacy for each unique use case
4. **Collaboration** to make this all happen