



PFC round table - Performance Days

Munich - 12 November 2012

Fluorocarbon chemistry is in question,
but what are the alternatives?





Panelists

The Greenpeace report “Chemistry for Any Weather” sheds new light on the persistence of PFCs in waterproof apparel. This wake up call for the textile and sportswear industry was the subject of a panel discussion on the impact of the report, the evolution of chemical standards and the actions the industry should take.

Participants

Sophie Bramel - Technical Editor, WSA - moderator

Charline Ducas - Textile Sustainability Specialist, TextileExchange

Nicole Nedelev - Product Development, Sympatex Technologies

Peter Waeber - CEO, bluesign



PFC chemistry: what's the situation?

The quest for alternative DWR finishes is far from new in the sportswear industry. Research on alternative solutions has been underway for years.

Alternative water repellent finishes include: dendrimers, silicone, wax, paraffin, polyurethane... and the replacement of the traditional DWR finish based on C8 chemistry by C6 chemistry, a short-chain version of the same chemistry.

PFOS was banned in Europe in 2008 and since 2006 the chemicals industry has been working on phasing out PFOA (PFOA Stewardship program). It is useful to note that Greenpeace found no PFOS in any of the garments tested.

What does the report say?

1 > Greenpeace demands that all PFCs be banned.

(PFC = perfluorinated compounds or fluorochemicals)

This means phasing out not only C8, but also C6 compounds and fluorotelomers (a precursor of PFC chemistry) because of their suspected persistence in the environment, human body, animals, seeds, etc... Greenpeace further believes that short-chain PFCs can reach groundwater more easily because they bond less well to particles.

2 > The organisation tested 14 waterproof or water-resistant garments, 11 were made with a waterproof-breathable membrane (5 Gore-Tex, 1 Sympatex, 1 Dermizax, 4 private label products). PFCs were found in all 14 items, even the two labelled as PFC-free.

3 > Greenpeace helped fund a research project on alternative finishes at Berlin University of Applied Science in 2012.

4 > In a section called “Tips for Consumers”: the organisation warns consumers to beware of textile labels.

Question 1

The Greenpeace report indicates that traces of PFCs have been found in garments, some of which are below existing standards. This raises the first question: Are current standards as stringent as they should be?

Sophie Bramel (WSA) > The levels of PFCs found in the report conform to current standards. We also need to keep in mind that PFOA has not yet been banned from industrial processes.

Peter Waeber (bluesign) > Although different scale units in the bluesign system substances list or BSSL (all values defined in mg/kg) and in the Greenpeace report (values reported in $\mu\text{g}/\text{m}^2$) do not allow direct comparison, it can be stated that all test results in the report related to fluorochemicals meet the BSSL limits.

Question 2

C6 has been presented as a “clean” alternative to C8 chemistry DWR finishes. Is C6 chemistry good enough? Is it safer than C8 (this is what Marmot has declared), or is it potentially dangerous as Greenpeace says?

Peter Waeber (bluesign):

As the industry is well aware, there are alternative repellency products, but each one has its advantages and its disadvantages from both a performance point of view and an environmental point of view.

The traces of PFOA found by Greenpeace in garments labelled PFC-free can be attributed to impurities. The detected PFASs are impurities in fluorochemical repellents. The quantities detected are on a trace level (1 μ /kg is comparable to 1 second in 32 years).

Question 3

Sympatex has developed high-performance waterproof-breathable and water-repellent laminates without any PFCs. This means that alternatives do exist on the market. What success have you had with this solution?

Nicole Nedelev (Sympatex Technologies)

Alternatives exist, and our membrane - which does not contain any fluorine compounds - is offered with a Bionic Finish (Rudolf Chemie) that is also non-fluorochemical. We have developed this high performance solution for specific markets, such as ski and snowboarding where there is no need for oleophobic protection or dry cleaning resistance.

Question 4

On one garment made with a Sympatex membrane and Bionic finish traces of PFCs - though at very low levels - were found by Greenpeace. Do you know why they were found in the garment? Is it possible to avoid this in the future?

Nicole Nedeleev (Sympatex Technologies)

We have taken note and are investigating the question. There are lots of different possibilities how impurities can be transferred, e.g. in production lines, transport, storage, contamination in the shop or even in the lab preparing the test samples. Because customers mainly buy FC finished laminates, it is difficult to avoid contamination during production process.

Charline Ducas (Textile Exchange)

PFCs are highly volatile and can also be transferred during transportation and even in stores. This is why the issue is such a complex one for the chemical and sportswear industry.

Question 5

What should outdoor brands and their fabric buyers do? Is there a way to guarantee the absence of PFCs?

Charline Ducas (Textile Exchange)

Companies should inform themselves, connect with experts on the issue (both service providers and chemical companies), and collaborate with existing groups, such as ZDHC, Zero Discharge of Hazardous Chemicals, the Chemicals Management Working Group of the Outdoor Industry Association (of which the European Outdoor Group is a member).

Peter Waeber (bluesign)

It is important to know that even the Greenpeace requirement regarding a ban on fluorochemical finishes can be met using non-fluorine alternatives registered in the bluesign bluefinder. However it has to be taken into consideration that with non-fluorine chemical products the unique performance level of fluorochemical finishes can not be achieved.

Question 6

Greenpeace speaks of how brands seems to be engaged in an “arms race” for performance, while consumers rarely need the level of protection that is offered in outdoor clothing. Is it possible to accept lower performance levels, which may in fact correspond better to “real life” usage?

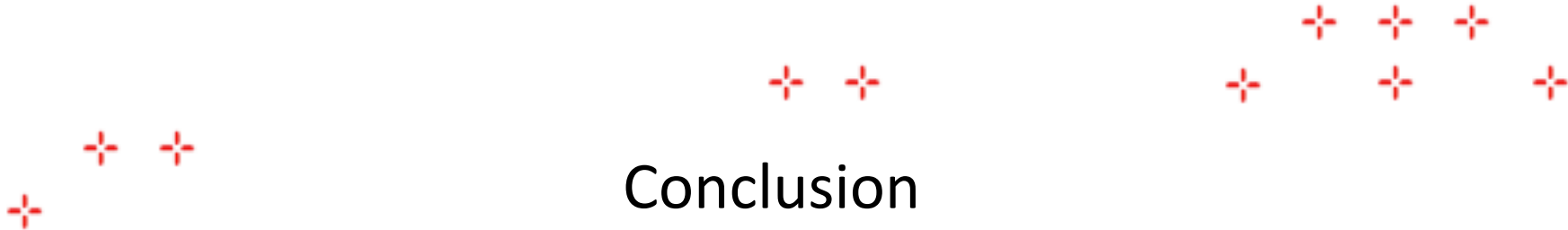
Reactions from the floor:

Many high-tech brands insist on offering the best protection and are reluctant to compromise on performance.

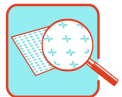
Others would like to develop cleaner products but do not know which ones are the best. The industry as a whole does not want green to mean “less”.

The report raises a number of questions that do not have simple answers.

Conclusion



- Developing high performance DWR finishes remains a real challenge for the sportswear industry. Though the Greenpeace report focuses on an issue that the chemical industry is well aware of (and has been working on for years) it does raise the question of the precautionary principle.
- We can only invite sports and outdoor brands to investigate the issue further and to encourage more research on the subject.





For further information on-line

www.sportstextiles.com

www.bluesign.com

<http://textileexchange.org/>

www.sympatex.com

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