



**ECO  
PASSPORT**

# ECO PASSPORT Findings 2025

**OEKO-TEX®**  
International Association for Research and Testing in  
the Field of Textile and Leather Ecology

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## Introduction

Within the past month we have analysed the laboratory findings for the different OEKO-TEX® ECO PASSPORT testing parameters, helping to identify which parameters exceed the threshold values most often and which product groups are affected. We have already shared this data with the OEKO-TEX® ECO PASSPORT certificate holders to support them during their ECO PASSPORT certifications and testing programs. With the publication of our annual findings, we aim to raise awareness in the industry and positively impact the change towards greener chemistry.

The findings spotlight key parameters— quinoline, aniline, dimethyl fumarate (DMFU) and total fluorine —that present potential environmental and health risks. By highlighting these substances, OEKO-TEX® seeks to support manufacturers in adhering to rigorous safety standards while fostering greater accountability and innovation across the textile, leather and chemical industries.

Below, we list the most relevant parameters that most often fail laboratory testing or would lead to a restriction.

## Substances frequently exceeding threshold values

### Quinoline

Quinoline is used in the textile industry in the production of azo dyes and other bright colours, for fluorescent effects in safety textiles and as a dye process enhancer. Some quinoline derivatives have antimicrobial properties and are used to treat textiles that are intended to be resistant to microorganisms, e.g. in medical or technical textiles.

Quinoline is classified, among others, by the IFA, the Institute for Occupational Safety of the German Social Accident Insurance, as toxic and hazardous to the environment and may only be handled with strong ventilation and only with suitable protective gloves. The release of the substance into the environment must be prevented. There is reasonable evidence that human exposure to quinoline can cause cancer. In addition, there is a reasonable suspicion of a mutagenic effect. Quinoline is classified as class 2 hazardous to water.

6.19% out of 759 tests were found to contain quinoline above the threshold value. This parameter most often failed for 2.3 Disperse dyes (12.47%).



## Aniline

Aniline was one of the first chemicals used to make synthetic dyes. Today it is mainly used as a starting material to produce dyes as well as to enhance the stability and intensity of colouring. Despite modern alternatives, it remains an indispensable component of dye chemistry.

According to various global health institutions, Aniline is classified as toxic and potentially harmful to health, which is why its use in the textile industry is strictly regulated. Production and use require measures to minimize environmental and health risks.

5.02% out of 1,793 tests were found to contain aniline above the threshold value. This parameter most often failed for 2.1 Acid dyes (21.34%), 2.8 Vat and sulfur dyes (15.15%) and 7.1 Acid dyes for leather chemicals (8.96%).

## Dimethyl Fumarate (DMFU)

Dimethyl fumarate (DMFU) is a chemical compound primarily used as a biocide and anti-mould agent. In the textile and leather industries, it has been applied as a desiccant sachet insert to prevent fungal growth during storage and transport, particularly in footwear, leather goods and upholstered furniture.

DMFU is a potent contact allergen and has been responsible for widespread cases of severe allergic contact dermatitis across Europe, prompting regulatory action. Even at extremely low concentrations, skin contact with DMFU, including through clothing or furniture, can cause serious, persistent skin reactions. The European Union banned its use in consumer products and articles in 2009 (EU Decision 2009/251/EC) and it is listed as a substance of very high concern (SVHC) under EU REACH. Its presence in finished articles is subject to strict limit values.

4.01% out of 1,022 tests were found to contain dimethyl fumarate above the threshold value. This parameter most often failed for 2.3 Disperse dyes (9.05%).

## Total Fluorine (used to detect PFAS)

Total fluorine is measured as a screening parameter to detect the potential presence of per- and polyfluoroalkyl substances (PFAS) in textile and leather articles and the chemical products used in their manufacture. Rather than targeting individual PFAS compounds, total fluorine analysis provides a broad indicator of fluorinated chemistry, flagging articles that may warrant further investigation.

PFAS are a large group of synthetic chemicals valued in textile finishing for their water-, oil- and soil-repellent properties. However, they are highly persistent in the environment and the human body – earning the designation



"forever chemicals" – and a growing body of evidence links exposure to adverse health effects, including endocrine disruption, immune system impacts and carcinogenicity. Regulatory pressure is intensifying globally, with the EU's broad PFAS restriction proposal under REACH representing one of the most significant regulatory actions in recent years.

On PFAS, ECO PASSPORT findings remain low, though the laboratories are recording an increased presence of total fluorine. 1.52% out of 1,903 tests were found to contain total fluorine above the threshold value. This parameter most often failed for 2.10.4 Pigment printing pastes and inks (4.47%) and 3.5.3 Detergents, dispersing and emulsifying agents (3.17%).

OEKO-TEX® has developed a new differentiation method to determine whether detected fluorine originates from PFAS or non-PFAS sources – a methodological advance that will provide greater clarity as regulatory scrutiny of fluorinated compounds intensifies.

## Conclusion

These findings are not atypical for the sector, but they demonstrate why analytical testing remains essential. Moving forward, OEKO-TEX® will continue to monitor these and other critical substances and their presence in textile, leather and chemical products. We continue to collaborate with stakeholders and certificate holders to achieve higher environmental standards, safety and health for employees and end-consumers and meaningful progress in chemical safety.