



Norwegian
Environment
Agency

PFOA in outdoor textiles

2022/2023

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Goal

Analyse outdoor textiles for PFOA and PFOA-related substances



11 products («water/dirt repellent» «waterproof» «coated»)



6 pillows



1 grill cover



1 umbrella



2 hammocks



1 parasol cover

7 web shops:

Rustibust AS, www.minuteplass.no

Multitrend AS, www.multitrend.no

Let's deal AS (dette er en plattform. Produktet ble kjøpt av Just Dealz (UK)), www.letsdeal.no

Twistshake of Sweden AB (NUF), <https://twistshake.com/no>

Tropical Europe ApS (DK), www.hengekoeye.no

ROYAL DESIGN NORGE (NUF), www.royaldesign.no

Trendrum AB (NUF), www.trendrom.no



Testing (ALS → GBA, Germany)

A



Targeted PFAS-test

Method: DIN 38141-14:2011-08. Uncertainty: 20%.

PFOA and other PFASs
where there exists reference standards

B

1.



TOPA (Total Oxidisable Precursor assay) (to convert oxidizable PFAS into PFAAs)

Method: PI-MA-M 02-037: 2017-10.

Eks:



Unknown substance with no reference standard
(with 8:2 FTOH side chain)

PFOA - which we can measure

2.



Targeted PFAS-test

PFOA-related substances



Limit values

PFOA (POPs)

PFOA: 0,025 mg/kg.

PFOA-related substances (sum): 1 mg/kg.

C9-C14 PFCA (into force 25th February 2023) (REACH)

C9-C14 PFCA(sum): 0,025 mg/kg og for

C9-C14 PFCA-related substances (sum): 0,260 mg/kg



Substances analysed	Before TOPA (PFOA and PFCA) A	After TOPA (PFOA and PFCA) B	Above limit (PFCA (PFNA+PFDA)) B
PFPeA PFOSA PFOS PFOA PFNA (C9 PFCA) PFHxS PFHxA PFHpS Perfluorheptansulfonat PFHpA PFDS PFDA (C10 PFCA) PFBS PFBA FTS-6:2 PF-3,7-DMOA HPPHpA PFCs totale oksidable forløpere (TOP) (M4) HFPO-DA (GenX)			

PFNA - Perfluorononan-1-oic acid (C9-PFCA) CAS 375-95-1 EC 206-801-3

PFDA - Nonadecafluorodecanoic acid (C10-PFCA) CAS 335-76-2 EC 206-400-3

Report: [Tilsynsaksjon 2022: Kontroll av PFAS-er i utendørstekstiler - miljodirektoratet.no](https://www.miljodirektoratet.no/tilsynsaksjon-2022-kontroll-av-pfas-er-i-utendørstekstiler)



Sum-up/Evaluation

- C9-C14 PFCA restriction was not in force, so we did not follow up the companies
- Uncertainty: How much was converted to PFCA? Are more products non-compliant?
- We cannot detect which PFCA-related substances there is



