

Test report ID XXXXX

Customer Example Company

Assignment Measurlabs provided testing services for food contact material as requested by the customer.

Sample(s) Sampling was performed by the customer.

Description: Plastic film

Date of reception (dd/mm/yyyy): -

Batch number or other sample identification: -

Results The results presented on the next page(s) relate to the tested sample(s) only.

Summary of the results

Tests performed	Compliance
PFAS in plastic, paper, and other solid materials (165 compounds)	Compliant ¹
Total organic fluorine (TOF) content in paper, polymers, and textiles	Compliant ¹
¹ Regulation (EU) 2025/40 of the European Parliament and of the Council of 19 December 2024 on packaging and packaging waste	

On XXXXX, issued by



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Test results - fluorine content

Test methods

Total fluorine (TF): Combustion Ion Chromatography (CIC) with reference to ASTM D7359:2023.

Total inorganic fluorine (TIF): In-house method.

Total organic fluorine (TOF): computational, TOF = TF - TIF

Non-accredited test methods. Test performed by an ISO/IEC 17025 accredited external service provider with an accreditation number xxxxx.

Substance / parameter	Unit ¹	Result	Criteria	Compliance
Total fluorine	mg/kg	< 10	≤ 50	compliant ²
Total inorganic fluorine	mg/kg	< 10	-	-
Total organic fluorine	mg/kg	< 10	≤ 50	compliant ²

¹ Content as mass in the sample

² Regulation (EU) 2025/40 of the European Parliament and of the Council of 19 December 2024 on packaging and packaging waste

Test results - perfluoroalkyl substances (PFAS) content

Extraction method

Samples were extracted in accordance with EN 17681-1:2022 (methanol extraction under sonication) to release non-polymeric PFAS from the sample.

Analysis methods

Perfluorinated Compounds (PFCs)¹: In-house LC-MS/MS method based on ISO 23702-1, CNS 15808 and CEN/TS 15968

Volatile Perfluorinated Compounds (VPFCs)¹: In-house GC-MS method

¹ Accredited test methods for textiles, leather, plastic print and wood products, and paints

Testing was performed by an ISO/IEC 17025 accredited external service provider with an accreditation number xxxxx.

Results

The results of the analyses are tabulated in **Table 1**, and the entire substance scope is tabulated in **Table 2**.

Table 1. Conclusions of the analysis results.

Substance / parameter	Unit ¹	Result	Criteria	Compliant ³
PFCs	mg/kg	not detected ²	≤ 0.025	compliant
VPFCs	mg/kg	not detected ²	≤ 0.025	compliant
Sum of detected PFAS	mg/kg	all results below limit of detection	≤ 0.25	compliant

¹ Content of substance as mass in the sample

² Detection limit: 0.01 mg/kg, per analyte

³ Regulation (EU) 2025/40 of the European Parliament and of the Council of 19 December 2024 on packaging and packaging waste, amending Regulation (EU) 2019/1020 and Directive (EU) 2019/904, and repealing Directive 94/62/EC

Table 2. Substances under the scope of the analyses performed.

Volatile Perfluorinated Compounds (GC-MS)			
No.	Analyte name	Acronym	CAS No.
Fluorotelomer alcohols (FTOH)			
1	2-Perfluorobutylethanol	4:2 FTOH	2043-47-2
2	2-Perfluorohexylethanol	6:2 FTOH	647-42-7
3	2-Perfluorooctylethanol	8:2 FTOH	678-39-7
4	2-Perfluorodecylethanol	10:2 FTOH	865-86-1
5	2-Perfluorododecylethanol	12:2 FTOH	39239-77-5
Fluorotelomer acrylates (FTAC)			
6	1H,1H,2H,2H-Perfluorooctyl acrylate	6:2 FTA	17527-29-6
7	1H,1H,2H,2H-Perfluorodecyl acrylate	8:2 FTA	27905-45-9
8	1H,1H,2H,2H-Perfluorododecyl acrylate	10:2 FTA	17741-60-5
Fluorotelomer methacrylates (FTMAC)			
9	1H,1H,2H,2H-Perfluorooctyl methacrylate	6:2 FTMA	2144-53-8
10	1H,1H,2H,2H-Perfluorodecyl methacrylate	8:2 FTMA	1996-88-9

No.	Analyte name	Acronym	CAS No.
Fluorotelomer methacrylates (FTMAC) (continued)			
11	1H,1H,2H,2H-Perfluorododecyl methacrylate	10:2 FTMA	2144-54-9
Perfluoroalkyl iodide and its telomers (PFAI)			
12	Perfluorooctyl iodide	PFOI	507-63-1
13	1H,1H,2H,2H-Perfluorododecyl iodide	10:2 FTI	2043-54-1
14	1H,1H,2H,2H-Perfluorotetradecyl iodide	12:2 FTI	30046-31-2

Perfluorinated Compounds (LC-MS/MS)			
No.	Analyte name	Acronym	CAS No.
Perfluoroalkyl carboxylic acids (PFCA, C4-C14)			
1	Perfluorobutyric acid	PFBA	375-22-4
2	Perfluoropentanoic acid	PFPeA	2706-90-3
3	Perfluorohexanoic acid	PFHxA	307-24-4
4	Perfluoroheptanoic acid	PFHpA	375-85-9
5	7H-Perfluoroheptanoic acid	HPFHpA	1546-95-8
6	Perfluorooctanoic acid	PFOA	335-67-1
7	Perfluorononanoic acid	PFNA	375-95-1
8	Perfluorodecanoic acid	PFDA	335-76-2
9	Perfluoroundecanoic acid	PFUnDA	2058-94-8
10	Perfluorododecanoic acid	PFDoDA	307-55-1
11	Perfluorotridecanoic acid	PFTrDA	72629-94-8
12	Perfluorotetradecanoic acid	PFTeDA	376-06-7
Perfluoroalkyl carboxylic acid salts and derivatives (C4)			
13	Lithium perfluorobutanoate	PFBA-Li	4146-76-3
14	Sodium perfluorobutanoate	PFBA-Na	2218-54-4
15	Potassium heptafluorobutanoate	PFBA-K	2966-54-3
16	Ammonium perfluorobutanoate	PFBA-NH ₄	10495-86-0
17	Silver perfluorobutanoate	PFBA-Ag	3794-64-7
Perfluoroalkyl carboxylic acid salts and derivatives (C5)			
18	Lithium perfluoropentanoate	PFPeA-Li	198482-22-3
19	Sodium perfluoropentanoate	PFPeA-Na	2706-89-0
20	Potassium perfluoropentanoate	PFPeA-K	336-23-2
21	Silver perfluoropentanoate	PFPeA-Ag	2795-30-4
22	Ammonium perfluoropentanoate	PFPeA-NH ₄	68259-11-0
Perfluoroalkyl carboxylic acid salts and derivatives (C6)			
23	Lithium perfluorohexanoate	PFHxA-Li	90430-61-8

No.	Analyte name	Acronym	CAS No.
Perfluoroalkyl carboxylic acid salts and derivatives (C6) (continued)			
24	Sodium perfluorohexanoate	PFHxA-Na	2923-26-4
25	Potassium perfluorohexanoate	PFHxA-K	3109-94-2
26	Silver perfluorohexanoate	PFHxA-Ag	336-02-7
27	Ammonium perfluorohexanoate	PFHxA-NH ₄	21615-47-4
28	Methyl perfluorohexanoate	Me-PFHxA	424-18-0
29	Perfluorohexanoyl fluoride	PFHxA-F	355-38-4
30	Perfluorohexanoyl chloride	PFHxA-Cl	335-53-5
31	Perfluorohexanoic anhydride	PFHxAA	308-13-4
Perfluoroalkyl carboxylic acid salts and derivatives (C7)			
32	Lithium perfluoroheptanoate	PFHpA-Li	60871-90-1
33	Sodium perfluoroheptanoate	PFHpA-Na	20109-59-5
34	Potassium perfluoroheptanoate	PFHpA-K	21049-36-5
35	Silver perfluoroheptanoate	PFHpA-Ag	424-05-5
36	Cesium perfluoroheptanoate	PFHpA-Cs	171198-24-6
37	Ammonium perfluoroheptanoate	PFHpA-NH ₄	6130-43-4
38	Sodium 7H-perfluoroheptanoate	HPFHpA-Na	2264-25-7
39	Ammonium 7H-perfluoroheptanoate	HPFHpA-NH ₄	376-34-1
Perfluoroalkyl carboxylic acid salts and derivatives (C8)			
40	Lithium perfluorooctanoate	PFOA-Li	17125-58-5
41	Sodium perfluorooctanoate	PFOA-Na	335-95-5
42	Potassium perfluorooctanoate	PFOA-K	2395-00-8
43	Silver perfluorooctanoate	PFOA-Ag	335-93-3
44	Cesium perfluorooctanoate	PFOA-Cs	17125-60-9
45	Cobalt perfluorooctanoate	PFOA-Co	35965-01-6
46	Chromium(3 ⁺) perfluorooctanoate	PFOA-Cr(3 ⁺)	68141-02-6
47	Ammonium perfluorooctanoate	PFOA-NH ₄	3825-26-1
48	Perfluorooctanoyl fluoride	PFOA-F	335-66-0
49	Perfluorooctanoyl chloride	PFOA-Cl	335-64-8
50	Methyl perfluorooctanoate	Me-PFOA	376-27-2
51	Ethyl perfluorooctanoate	Et-PFOA	3108-24-5
52	Tetramethylammonium perfluorooctanoate	PFOA-N(CH ₃) ₄	32609-65-7
53	Tetraethylammonium perfluorooctanoate	PFOA-N(C ₂ H ₅) ₄	98241-25-9
54	Tetrapropylammonium perfluorooctanoate	PFOA-N(C ₃ H ₇) ₄	277749-00-5
55	Compound of perfluorooctanoic acid and piperazine	PFOA-NH(C ₄ H ₁₀ N)	423-52-9

No.	Analyte name	Acronym	CAS No.
Perfluoroalkyl carboxylic acid salts and derivatives (C9)			
56	Lithium perfluorononanoate	PFNA-Li	60871-92-3
57	Sodium perfluorononanoate	PFNA-Na	21049-39-8
58	Potassium perfluorononanoate	PFNA-K	21049-38-7
59	Silver perfluorononanoate	PFNA-Ag	7358-16-9
60	Ammonium perfluorononanoate	PFNA-NH ₄	4149-60-4
61	Methanaminium perfluorononanoate	PFNA-NH ₃ (CH ₃)	77032-23-6
62	Piperidinium perfluorononanoate	PFNA-NH ₂ (C ₅ H ₁₀)	95682-66-9
63	Cyclohexanaminium perfluorononanoate	PFNA-NH ₃ (C ₆ H ₁₁)	328531-06-2
Perfluoroalkyl carboxylic acid salts and derivatives (C10)			
64	Lithium perfluorodecanoate	PFDA-Li	84743-32-8
65	Sodium perfluorodecanoate	PFDA-Na	3830-45-3
66	Potassium perfluorodecanoate	PFDA-K	51604-85-4
67	Silver perfluorodecanoate	PFDA-Ag	5784-82-7
68	Ammonium perfluorodecanoate	PFDA-NH ₄	3108-42-7
Perfluoroalkyl carboxylic acid salts and derivatives (C11)			
69	Sodium perfluoroundecanoate	PFUnDA-Na	60871-96-7
70	Potassium perfluoroundecanoate	PFUnDA-K	30377-53-8
71	Calcium perfluoroundecanoate	PFUnDA-Ca	97163-17-2
72	Ammonium perfluoroundecanoate	PFUnDA-NH ₄	4234-23-5
Perfluoroalkyl carboxylic acid salts and derivatives (C12 and C13)			
73	Sodium perfluorododecanoate	PFDoDA-Na	60872-01-7
74	Ammonium perfluorododecanoate	PFDoDA-NH ₄	3793-74-6
75	Ammonium perfluorotridecanoate	PFTTrDA-NH ₄	4288-72-6
Perfluoroalkyl sulfonic acids (C4, C6-C8, C10)			
76	Perfluorobutanesulfonic acid	PFBS	375-73-5
77	Perfluorohexanesulfonic acid	PFHxS	355-46-4
78	Perfluoroheptanesulfonic acid	PFHpS	375-92-8
79	Perfluorooctanesulfonic acid	PFOS	1763-23-1
80	Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluoroalkyl sulfonic acid salts and derivatives (C4)			
81	Lithium perfluorobutanesulfonate	PFBS-Li	131651-65-5
82	Sodium perfluorobutanesulfonate	PFBS-Na	60453-92-1
83	Potassium perfluorobutanesulfonate	PFBS-K	29420-49-3
84	Magnesium perfluorobutanesulfonate	PFBS-Mg	507453-86-3
85	Ammonium perfluorobutanesulfonate	PFBS-NH ₄	68259-10-9

No.	Analyte name	Acronym	CAS No.
Perfluoroalkyl sulfonic acid salts and derivatives (C4) (continued)			
86	Perfluorobutanesulfonyl chloride	PFBS-Cl	2991-84-6
87	Perfluorobutanesulfonic acid hydrate	PFBS-H ₂ O	59933-66-3
88	Tetraethylazanium perfluorobutanesulfonate	PFBS-N(C ₂ H ₅) ₄	25628-08-4
89	Dimethyl(phenyl)sulfonium perfluorobutanesulfonate	PFBS-S(CH ₃) ₂ C ₆ H ₅	220133-51-7
90	Triphenylsulfonium perfluorobutanesulfonate	TPS-PFBS	144317-44-2
91	Morpholinium perfluorobutanesulfonate	PFBS-NC ₄ H ₉ O	503155-89-3
92	Bis(4-tert-butylphenyl)iodonium perfluorobutanesulfonate	PFBS-I(C ₆ H ₄) ₂ (C ₄ H ₉) ₂	194999-85-4
93	Diethanolamine perfluorobutanesulfonate	PFBS-NH(C ₂ H ₅ O) ₂	70225-18-2
94	1-(4-butoxy-1-naphthyl)tetrahydrothiophenium perfluorobutanesulfonate	PFBS-SC ₁₈ H ₂₃ O	209482-18-8
Perfluoroalkyl sulfonic acid salts and derivatives (C6)			
95	Lithium perfluorohexanesulfonate	PFHxS-Li	55120-77-9
96	Sodium perfluorohexanesulfonate	PFHxS-Na	82382-12-5
97	Potassium perfluorohexanesulfonate	PFHxS-K	3871-99-6
98	Ammonium perfluorohexanesulfonate	PFHxS-NH ₄	68259-08-5
99	Zinc perfluorohexanesulfonate	PFHxS-Zn	70136-72-0
100	Perfluorohexylsulfonyl fluoride	PFHxS-F	423-50-7
101	Perfluorohexylsulfonyl chloride	PFHxS-Cl	55591-23-6
Perfluoroalkyl sulfonic acid salts and derivatives (C7)			
102	Lithium perfluoroheptanesulfonate	PFHpS-Li	117806-54-9
103	Sodium perfluoroheptanesulfonate	PFHpS-Na	21934-50-9
104	Potassium perfluoroheptanesulfonate	PFHpS-K	60270-55-5
105	Ammonium perfluoroheptanesulfonate	PFHpS-NH ₄	68259-07-4
106	Diethanolamine perfluoroheptanesulfonate	PFHpS-NH ₂ (C ₂ H ₄ OH) ₂	70225-15-9
Perfluoroalkyl sulfonic acid salts and derivatives (C8)			
107	Lithium perfluorooctanesulfonate	PFOS-Li	29457-72-5
108	Sodium perfluorooctanesulfonate	PFOS-Na	4021-47-0
109	Potassium perfluorooctanesulfonate	PFOS-K	2795-39-3
110	Magnesium bis(perfluorooctanesulfonate)	PFOS-Mg	91036-71-4
111	Ammonium perfluorooctanesulfonate	PFOS-NH ₄	29081-56-9
112	Perfluorooctanesulfonyl fluoride	PFOS-F	307-35-7
113	Piperidinium perfluorooctanesulfonate	PFOS-NH ₂ (C ₅ H ₁₀)	71463-74-6
114	Tetrabutylammonium perfluorooctanesulfonate	PFOS-N(C ₄ H ₉) ₄	111873-33-7
115	Diethanolamine perfluorooctanesulfonate	PFOS-NH ₂ (C ₂ H ₄ OH) ₂	70225-14-8
116	Tetraethylammonium perfluorooctanesulfonate	PFOS-N(C ₂ H ₅) ₄	56773-42-3

No.	Analyte name	Acronym	CAS No.
Perfluoroalkyl sulfonic acid salts and derivatives (C8) (continued)			
117	N-decyl-N,N-dimethyl-1-decanaminium perfluorooctanesulfonate	PFOS-N(C ₁₀ H ₂₁) ₂ (CH ₃) ₂	251099-16-8
Perfluoroalkyl sulfonic acid salts and derivatives (C10)			
118	Sodium perfluorodecanesulfonate	PFDS-Na	2806-15-7
119	Potassium perfluorodecanesulfonate	PFDS-K	2806-16-8
120	Ammonium perfluorodecanesulfonate	PFDS-NH ₄	67906-42-7
Fluorotelomer sulfonic acids			
121	1H,1H,2H,2H-Perfluorohexanesulfonic acid	4:2 FTS	757124-72-4
122	1H,1H,2H,2H-Perfluorooctanesulfonic acid	6:2 FTS	27619-97-2
123	1H,1H,2H,2H-Perfluorodecanesulfonic acid	8:2 FTS	39108-34-4
124	1H,1H,2H,2H-Perfluorododecanesulfonic acid	10:2 FTS	120226-60-0
Fluorotelomer sulfonic acid salts			
125	Sodium 1H,1H,2H,2H-Perfluorohexanesulfonate	4:2 FTS-Na	27619-93-8
126	Sodium 1H,1H,2H,2H-Perfluorooctanesulfonate	6:2 FTS-Na	27619-94-9
127	Potassium 1H,1H,2H,2H-Perfluorooctanesulfonate	6:2 FTS-K	59587-38-1
128	Ammonium 1H,1H,2H,2H-Perfluorooctanesulfonate	6:2 FTS-NH ₄	59587-39-2
129	Sodium 1H,1H,2H,2H-Perfluorodecanesulfonate	8:2 FTS-Na	27619-96-1
130	Potassium 1H,1H,2H,2H-Perfluorodecanesulfonate	8:2 FTS-K	438237-73-1
131	Ammonium 1H,1H,2H,2H-Perfluorodecanesulfonate	8:2 FTS-NH ₄	149724-40-3
Perfluorooctane sulfonamides (FOSA)			
132	Perfluorooctanesulfonamide	PFOSA	754-91-6
133	N-methyl perfluorooctanesulfonamide	NMeFOSA	31506-32-8
134	N-ethyl perfluorooctanesulfonamide	NEtFOSA	4151-50-2
Perfluorooctane sulfonamide salts			
135	Perfluorooctanesulfonamide lithium salt (1:1)	PFOSA-Li	76752-79-9
136	2-(N-ethylperfluorooctanesulfonamido) ethyl acrylate	EtFOSAC	423-82-5
Perfluorooctane sulfonamide ethanols (FOSE)			
137	N-methyl perfluorooctanesulfonamidoethanol	NMeFOSE	24448-09-7
138	N-ethyl perfluorooctanesulfonamidoethanol	NEtFOSE	1691-99-2
Perfluorooctane sulfonamidoacetic acids (FOSAA)			
139	Perfluorooctanesulfonamidoacetic acid	FOSAA	2806-24-8
140	N-methyl perfluorooctanesulfonamidoacetic acid	NMeFOSAA	2355-31-9
Per- and polyfluoroether carboxylic acids (PFECA)			
141	Perfluoro-3,7-dimethyloctanoic acid	PF-3,7-DMOA	172155-07-6
142	Perfluoro-2-methyl-3-oxahexanoic acid (common name: hexafluoropropylene oxide dimer acid)	HFPO-DA	13252-13-6

No.	Analyte name	Acronym	CAS No.
<i>Per- and polyfluoroether carboxylic acid salts and derivatives</i>			
143	Potassium perfluoro-2-methyl-3-oxahexanoate	HFPO-DA-K	67118-55-2
144	Ammonium perfluoro-2-methyl-3-oxahexanoate	HFPO-DA-NH4	62037-80-3
145	Perfluoro(2-methyl-3-oxahexanoyl) fluoride	HFPO-F	2062-98-8
<i>Fluorotelomer carboxylic acids (FTCA)</i>			
146	2H,2H-Perfluorodecanoic acid	8:2 FTCA	7854-31-5
147	2H,2H,3H,3H-Perfluoroundecanoic acid	8:3 FTCA	34598-33-9
<i>Fluorotelomer carboxylic acid salts</i>			
148	Tetrabutylphosphonium 2H,2H-perfluorodecanoate	8:2 FTCA-P(C ₄ H ₉) ₄	882489-14-7
149	Potassium 2H,2H,3H,3H-perfluoroundecanoate	8:3 FTCA-K	83310-58-1
<i>Perfluorohexane sulfonamides (FHxSA)</i>			
150	Perfluorohexanesulfonamide	PFHxSA	41997-13-1
151	N-methyl perfluorohexanesulfonamide	NMeFHxSA	68259-15-4

End of the test report