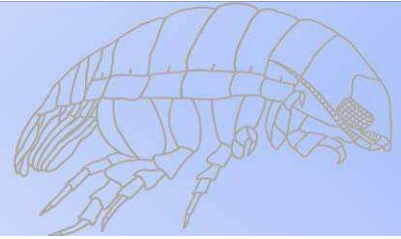


SAM e-Rapport

SAM-Marin
Uni Research, Bergen



Rapport nr. 17 -2012

*Oppfølgende undersøkelser av perfluoroalkylforbindelsene
PFOS og PFOA i albueskjell, torskelever, vann og sediment ved
Kollsnes prosessanlegg i 2011*



Silje Hadler-Jacobsen

Erling Heggøy



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Rapportens tittel: Oppfølgende undersøkelser av perfluoralkylforbindelsene PFOS og PFOA i albueskjell, torskelver, vann og sediment ved Kollsnes prosessanlegg i 2011	Dato: 10/04-2012 Antall sider og bilag: 158
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<p>Abstract:</p> <p>This report contains the results from the study of PFC components in limpets, cod liver, seawater and marine sediments carried out by UniEnvironment, SAM- Marin on behalf of Statoil Petroleum AS in Kollsnes gas processing plant in 2011.</p> <p>The aim of the study was to verify the levels of PFOS in limpets previously detected in the stations situated close to possible drainage points from the plant. In addition to reveal if any PFC component could be detected, with emphasis on PFOS and PFOA in cod liver, marine sediment and seawater.</p> <p>It was detected higher concentrations of PFOS and FTS in the stations located close to drainage points than in the stations located in further distance from the plant, and by this the enhanced levels of bioaccumulation of PFOS seems to be limited to the stations close to the plant. FTS was found in cod. PFOS concentrations in cod liver did not enhance the assumed background level. PFOS was detected in sediment samples in one station, but no PFC detected in the water samples.</p> <p>In general, the concentrations of PFC found at Kollsnes gas processing plant, is low in comparison with similar studies carried out in Norway.</p>

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SAM-Marin er en del av Uni Research AS, og er akkreditert av Norsk Akkreditering for prøvetaking, taksonomisk analyse og faglige vurdering og fortolkninger under akkrediteringsnummer Test 157.

Følgende er utført akkreditert:

Prøvetaking til vann, sediment, torskelever og albueskjell analyser, samlet av: T. Sørle, K. Hatlen og E. Heggøy

Litoralundersøkelse utført av:

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Ikke akkreditert:

Geologiske analyser utført av: -

LEVERANDØRER

Toktfartøy: F/F Aurelia

Kjemiske analyser utført av: Eurifins Norsk Miljøanalyse **akkrediteringsnummer** Test 003

Akkreditert: PFOA, PFOS, FTS, PFBS, PFBA, PFDS, PFDA, PFDoA, PFHxS, PFHxA, PFHpS, PFHpA, PFNA, PFOSA, PFPeA, PFTA, PFTrA og PFUnA

Ikke akkreditert: -

Andre: -

SAMMENDRAG

Denne rapporten inneholder resultatene fra undersøkelsen av PFC forbindelser i albueskjell, torskelever, vann og sediment utført av UniMiljø, SAM-Marin på vegne av Statoil Petroleum AS ved Kollsnes prosessanlegg i 2011. Det ble for første gang inkludert analyser for PFOS og PFOA ved Kollsnes i 2010, og da påvist bioakkumulering av PFOS i albueskjell.

Undersøkelsen i 2011 var en oppfølgende undersøkelse og sammenlignet data fra den tidligere utførte undersøkelsen med nye målinger.

Formålet med undersøkelsen var å få verifisert PFOS verdier funnet i albueskjell fra 2010 og kartlegge utbredelsesområde hvor PFC forbindelser blir detektert ved stasjoner i nærheten av sannsynlige avrenningspunkt fra anlegget. Det ble i tillegg undersøkt om torsk i området hadde forhøyede verdier av disse miljøgiftene og da spesielt PFOS/PFOA. Det ble også inkludert undersøkelser for PFC forbindelser i vann og sediment. Det var med dette ønskelig å framskaffe et målegrunnlag som kan følges opp i kommende år for å overvåke trender i utbredelse og opptak av PFOS/PFOA i organismer.

Ved stasjonene som lokalisert ved avrenningspunkt ble det påvist høyere konsentrasjoner av PFOS og FTS enn ved stasjonene lengre borte fra anlegget og det ser dermed ut til at man har avgrenset området hvor av PFOS fra anlegget fører til bioakkumulering i organismer. Man fant FTS i torsk utenfor anlegget. Det ble ikke påvist PFOS konsentrasjoner i torskelever utover det som antas å være et bakgrunnsnivå langs kysten av Norge. I sedimentprøven ved avrenningspunktet ble det påvist PFOS og FTS, men det ikke ble påvist noen PFC i vannprøvene.

Generelt er verdiene funnet ved Kollsnes i 2011 lave sett i sammenheng med tilsvarende undersøkelser i Norge. Det anbefales at fremtidige undersøkelser viderefører analysene av disse komponentene for å danne målegrunnlaget som kan følges opp i kommende år for å overvåke trender i utbredelse og opptak av PFOS/PFOA og FTS i organismer og dermed gi et bedre bilde av utviklingen av PFC-konsentrasjonene i miljøet over tid.

Man bør i fremtiden vurdere å inkludere vannprøver direkte fra sivevannet for om mulig å kunne kvantifisere mengden PFC som blir tilført sjøen nedenfor anlegget.

SUMMARY

This report contains results from the study of PFC components in limpets, cod liver, seawater and marine sediments. The study was carried out by UniEnvironment, SAM- Marin on behalf of Statoil Petroleum AS in Kollsnes gas processing plant in 2011. Analysis of limpet tissue in 2010 detected increased levels of PFOS at the two stations connected to runoff from the plant. This shows that the previous use of fire-fighting foam has probably led to the bioaccumulation of PFOS in marine organisms in the immediate area of the plant. This survey compares data and results from 2010 with new data.

The aim of the study was to verify the levels of PFOS in limpets detected in the stations situated close to possible drainage points from the plant. In addition, liver from cod caught close to the plant was analysed to reveal if any PFC component could be detected, with emphasis on PFOS and PFOA. Analyses of PFC components in water and sediment samples were also carried out. These combined results form a background study to be used in future studies as reference material to monitor trends and accumulation of PFOS/PFOS in organisms.

Enhanced levels of bioaccumulation of PFOS and FTS appear to be limited to the stations close to the plant with higher concentrations of these compound detected in the stations located close to drainage points than in the stations located a further distance from the plant. and by this the

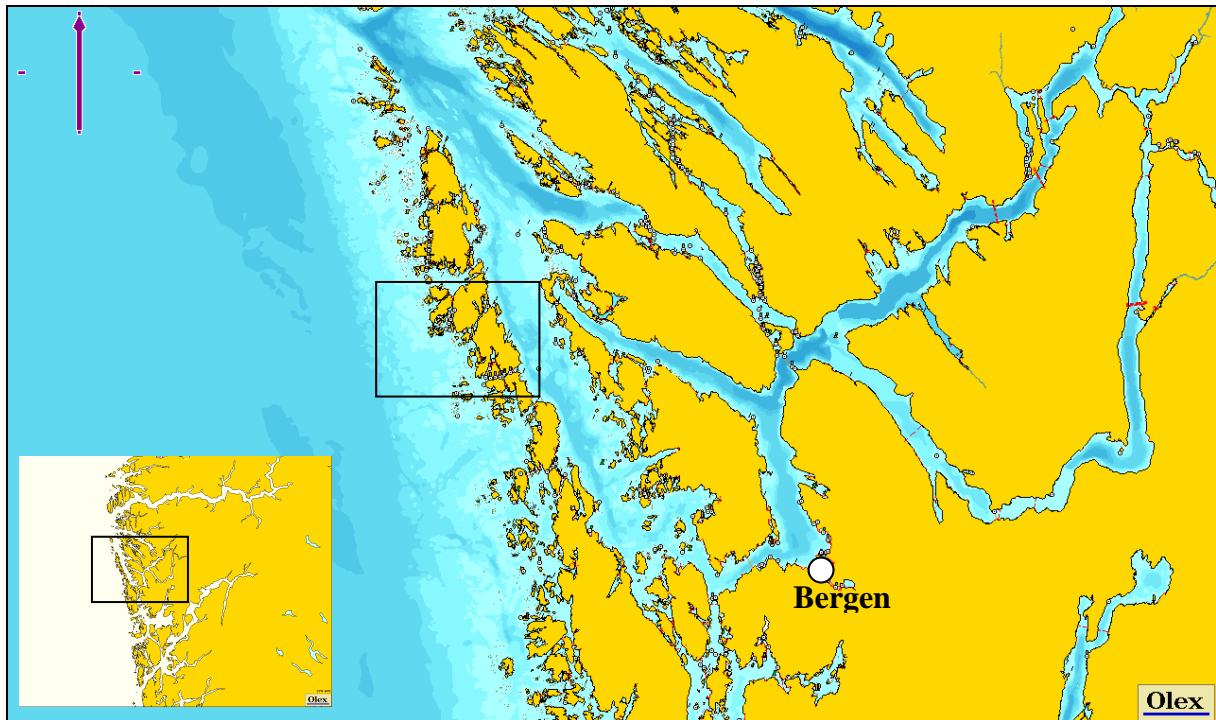
FTS was detected in cod liver. PFOS concentrations in cod liver did not enhance the assumed background level. PFOS and FTS were detected in sediment samples in one station, but no PFC detected in the water samples.

The concentrations of PFC found at Kollsnes gas processing plant, is low in comparison with similar studies carried out in Norway. However, it is still recommended to include analysis of PFC components in future studies to monitor trends in distribution and accumulation of PFOS and other PFCs in organisms, to gain a better understanding of the distribution of PFC components in the environment over time. In consideration, water sampled directly from runoff from the plant should be included in future studies.

1. INNLEDNING

Denne rapporten bygger på undersøkelser utført av SAM-Marin på oppdrag fra Statoil Petroleum AS i 2011.

Kollsnes prosessanlegg åpnet i 1996, og tar imot og behandler gass fra feltene Troll, Kvitebjørn og Visund. En grunnlagsundersøkelse ble utført i forkant av Moe et al. i 1991-92 for sammenligning med seinere undersøkelser. I tillegg til grunnlagsundersøkelsen er undersøkelser i 1993, 1995, 1998, 2001 og 2004 utført av Rogalandforskning (Myhrvold et al. 1995; Eriksen et al. 1999; Eriksen et al. 2002; Tvedten et al. 2005). Videre undersøkelse i 2007 er utført av Multiconsult (Alvsvåg et al. 2008) og i 2010 av Uni Research AS ved SAM Marin (Hestetun et al. 2010). En separat resipientundersøkelse ble også utført i 1991 av daværende institutt for fiskeri- og marinbiologi ved Universitetet i Bergen i forbindelse med etablering av kloakkutslipp i Kvaliosen (Johannessen et al. 1991).



Figur 1.1 Oversikt over plasseringen av Kollsnes prosessanlegg i Øygarden kommune. Kartkilde: Olex.

Kollsnes prosessanlegg benyttet frem til 2006-2007 PFOS-holdig brannskum i forbindelse med årlig funksjonstest av slukkesystemene, som også innebære test av skumsystemet. Bruken av PFOS ble faset ut før 2007 og har ikke blitt tilført området siden den gang. Avrenning fra

land antas å være hovedkilden til eventuell detektert konsentrasjon av PFOS/PFOA i prøvene tatt i sjøområdet rundt anlegget.

I de marine miljøundersøkelsene i området rundt Kollsnes prosessanlegg i 2010 ble det inkludert analyser av perfluorerte forbindelser representert ved PFOS og PFOA i albueskjell (*Patella vulgata*), på tre lokaliteter (Hestetun et al. 2010). PFOS er det stabile nedbrytningsproduktet av alle PFOS-relaterte stoffer og den av de perfluorerte organiske forbindelser, heretter kalt PFC-forbindelser, man generelt har funnet i høyest konsentrasjoner i miljøet (Berger og Thomsen, 2006). PFOS er påvist miljøskadelig og akkumuleres i levende organismer (Herzke et al. 2007) og har en antatt halveringstid på over 40 år (Berger og Thomsen, 2006).

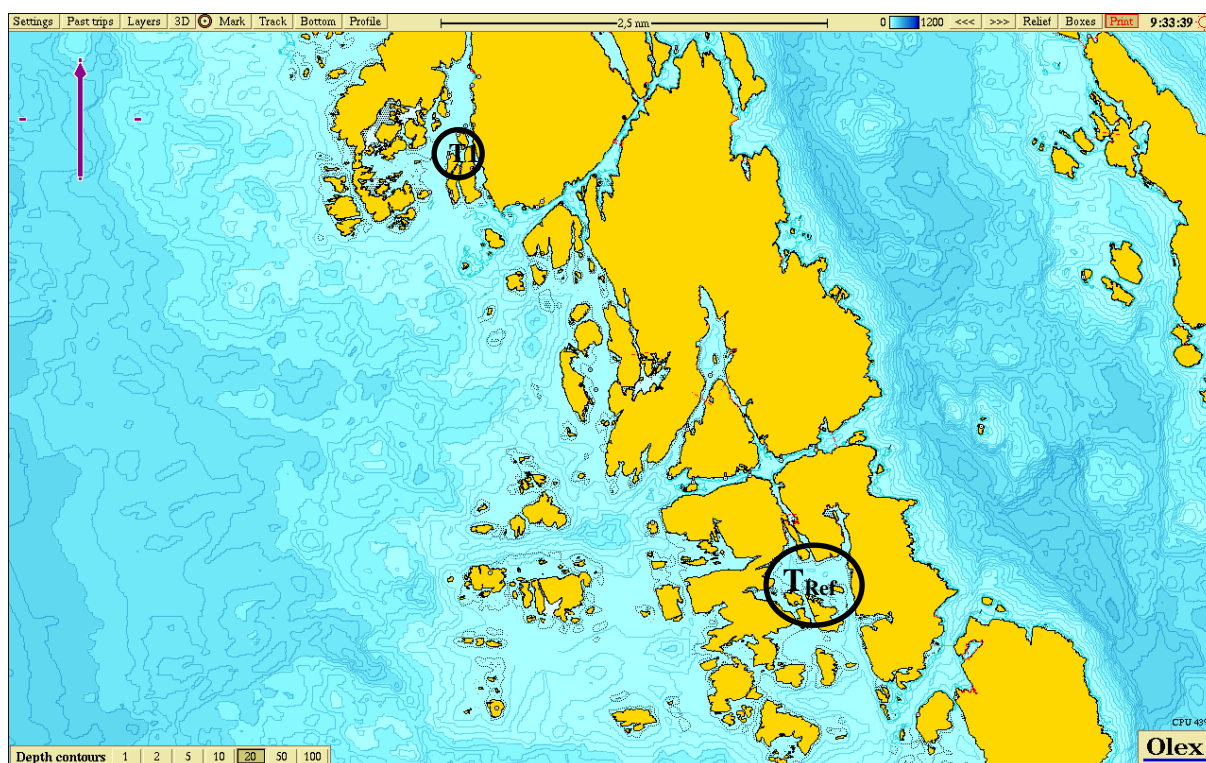
Formålet med undersøkelsen i 2011 var å få verifisert verdier fra 2010 og prøve å kartlegge utbredelseområde hvor PFC forbindelser blir detektert ved stasjoner i nærheten av sannsynlige avrenningspunkt fra anlegget.

Det ble også undersøkt om torsk i området hadde forhøyede verdier av disse miljøgiftene og da spesielt PFOS/PFOA. I tillegg ble analyser av PFC-forbindelsene i sediment og sjøvann ved prosessanlegget inkludert. Det var med dette ønskelig å framskaffe et målegrunnlag som kan følges opp i kommende år for å overvåke trender i utbredelse og opptak av PFOS/PFOA i organismer.

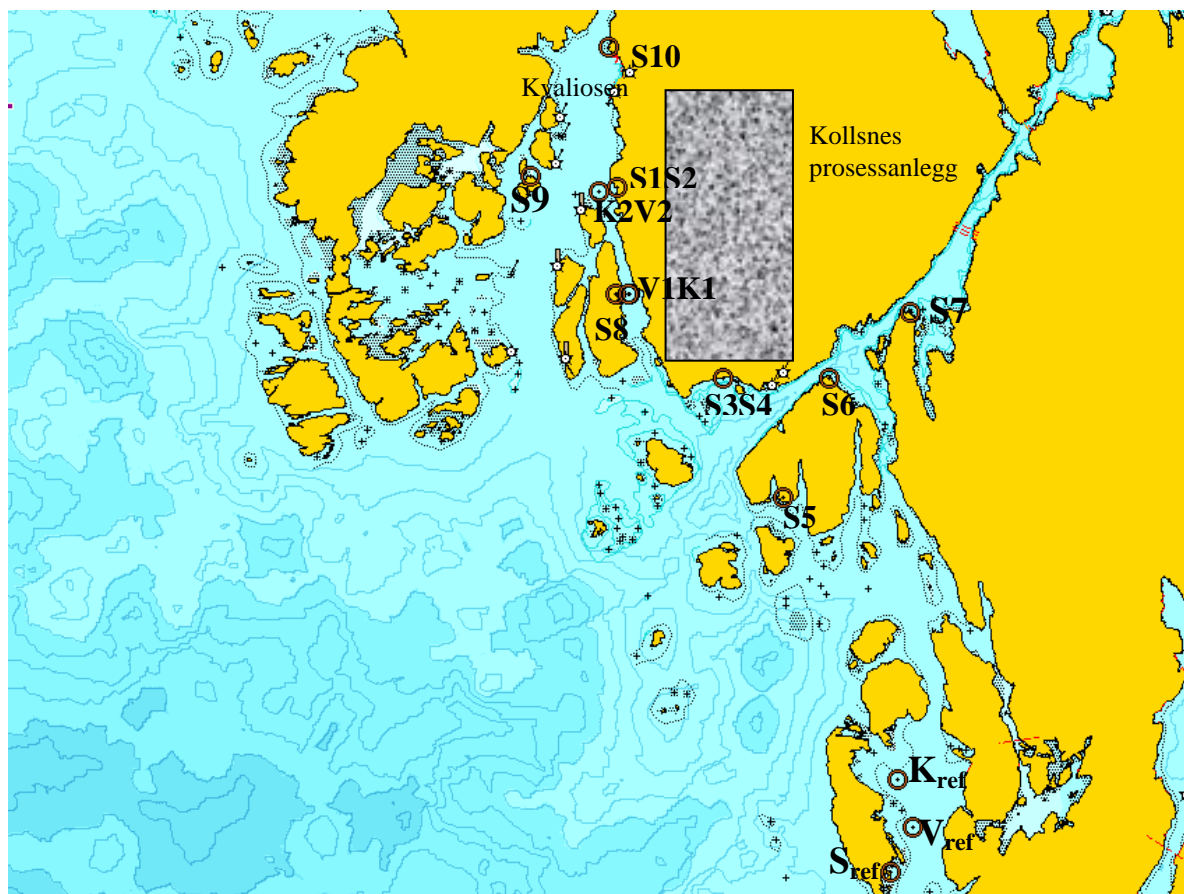
SAM-Marin (Seksjon for anvendt miljøforskning) er en del av Uni Research AS, og er akkreditert av Norsk Akkreditering for prøvetaking, faglige vurdering og fortolkninger under akkrediteringsnummer Test 157. Kjemiske analyser er foretatt av Eurofins Norsk Miljøanalyse AS, akkrediteringsnummer Test 003.

2. MATERIAL OG METODER

Det ble i 2011 tatt prøver av albueskjell, torskelever, sediment og sjøvann. De ulike prøvene ble analysert for perfluoroktylsulfonat (PFOS) og perfluoroktansyre (PFOA) og de resterende PFC forbindelsene listet i Tabell 2.1. Figur 2.1 og 2.2 viser en oversikt over prøvetakingstasjonene.



Figur 2.1. Oversikt over områdene hvor man fanget torsk med garn og ruser ved Kollsnes i 2011 for analyser av PFC i torskelever. T₁ angir området ved terminalen og T_{Ref} angir området ved Rong.



Figur 2.2. Oversikt over stasjonsplasseringene i 2011. S: Albueskjell. K: Sediment og V: Vannprøver. Kartkilde Olex.

Tabell 2.1 Oversikt over PFC forbindelser inkludert i analysene av albueskjell, torskelever, sediment og vann.

PFC-forbindelser inkludert i analyser	
Kjemisk navn	Forkortelse
Perfluoroktansyre	PFOA
Perfluoroktylsulfonat	PFOS
6:2 Fluorotelomer sulfonate	FTS
Perfluorbutansulfonat	PFBS
Perfluorbutansyre	PFBA
Perfluordekansulfonat	PFDS
Perfluordekansyre	PFDA
Perfluordodekansyre	PFDaA
Perfluorheksansulfonat	PFHxS
Perfluorheksansyre	PFHxA
Perfluorheptansulfonat	PFHpS
Perfluorheptansyre	PFHpA
Perfluornonansyre	PFNA
Perfluoroktansulfonamid	PFOSA
Perfluorpentansyre	PFPeA
Perfluortetradekansyre	PFTA
Perfluortridekansyre	PFTra
Perfluorundekansyre	PFUnA

2.1 Albueskjell

Albueskjell (*Patella vulgata*) er en bevegelig, men stedfast snegl som er svært vanlig i fjæra langs kysten. Den kan få en diameter på 60 mm og det er registrert individer som har vært over 16 år gamle. Gytingen skjer i perioden oktober til desember (Moen og Svendsen, 2008). Det ble plukket individer tilsvarende over 50 gram bløtdeler i tre replikater fra 8 stasjoner i nærheten av Kollsnes og én referansestasjon sør for prosessanlegget (Tabell 2.2; Fig 2.2). Prøvene ble tatt den 14. og 25. oktober 2011.. Stasjon S1S2 og stasjon S3S4 ligger i to områder hvor det er størst sannsynlighet for å finne forhøyede verdier av PFOS på grunn av sig fra anlegget og disse stasjonene ble også undersøkt i 2010. De resterende stasjonene er valgt for å kunne avgrense forekomsten av PFOS/PFOA forbindelser i nærområdet til anlegget.

Tabell 2.2 Oversikt over stasjoner for prøvetaking av albueskjell, vann og sediment rundt Kollsnes prosessanlegg i 2011.

Dato	Prøvetype	Stasjon	Sted	Posisjon (WGS-84)	Kommentar
25.10.2011	Albueskjell	S1S2	60°33,161'N 004°49,616'Ø		Avrenning fra anlegg
25.10.2011		S3S4	60°32,654'N 004°50,196'Ø		Avrenning fra anlegg
25.10.2011		S5	60°32,333'N 004°50,526'Ø		
25.10.2011		S6	60°32,652'N 004°50,773'Ø		
25.10.2011		S7	60°32,830'N 004°51,221'Ø		
25.10.2011		S8	60°32,877'N 004°49,606'Ø		
25.10.2011		S9	60°33,191'N 004°49,146'Ø		
25.10.2011		S10	60°33,539'N 004°49,571'Ø		
14.10.2011		Sref	60°31,334'N 004°51,109'Ø		Referansestasjon(Nautøyna).
14.10.2011	Vann	V1	60°32,878'N 004°49,680'Ø		
14.10.2011		V2	60°33,152'N 004°49,514'Ø		
14.10.2011		Vref	60°31,451'N 004°51,231'Ø		Referansestasjon(Nautøyna).
14.10.2011	Sediment	K1	60°32,878'N 004°49,680'Ø		
14.10.2011		K2	60°33,152'N 004°49,514'Ø		
14.10.2011		Kref	60°31,579'N 004°51,151'Ø		Referansestasjon(Nautøyna).
Uke 43	Torsk	T1	Område vist i figur 2.1		Vardholmbukti/Kvaliosen
Uke 41		Tref	Område vist i figur 2.1		Nordosen, Referansestasjon

2.2 Torskelever

Det ble fisket torsk fra området ved prosessanlegget med garn i uke 43 (T1) og med ruser i uke 41 (T_{Ref}), Figur 2.1. Fiskene ble veid, lengdemålt og kjønnsbestemt (Tabell 2.2). Lever fra hver fisk ble pakket i separate merkede rilsanposer, og frosset ned til minus 20 °C frem til analyse.

Tabell 2.3 Vekt, lengde, kjønn og identitet for torsk brukt i leveranalyser

Torsk (<i>Gadus morhua</i>)				
Fisk nr	Vekt (g)	Lengde (cm)	Kjønn	Lokalitet
1	600	40	♀	Ref
2	800	47	♂	Ref
3	900	47	♀	Ref
5	1000	51	♂	Ref
6	1200	52	♂	Ref
7	400	32	♂	Ref
8	1100	52	♂	Ref
9	600	41	♀	Ref
10	500	40	♂	Ref
11	1300	49	♂	Ref
12	900	49	♀	Ref
13	1000	49	♂	Ref
14	1000	48	♂	Ref
15	700	41	♂	Ref
1	1100	53	♀	Kollsnes
2	1800	102	♀	Kollsnes
3	900	49	♀	Kollsnes
4	800	49	♂	Kollsnes
5	1700	64	♂	Kollsnes
6	1000	51	♀	Kollsnes
7	1600	58	♀	Kollsnes
8	700	42	♂	Kollsnes
9	1000	51	♂	Kollsnes
10	900	50	♂	Kollsnes
11	800	46	♀	Kollsnes
12	1300	59	♀	Kollsnes
13	1000	50	♀	Kollsnes
14	1600	58	♀	Kollsnes
15	1100	56	♀	Kollsnes

2.3 Sediment

Sedimentprøver ble tatt fra to stasjoner like nedenfor prosessanlegget. (K1 ligger i et smalt og grunt sund og K2 ved et avrenningspunkt for sigevann fra anlegget. I tillegg ble det tatt prøve fra en referansestasjon(K_{Ref}) (Figur 2.2, Tabell 2.2). Prøvene ble samlet 14. oktober med en 0,1m² van Veen grabb fra FF *Aurelia* med Thomas Sørliie som båtfører. Den øverste

centimeteren av sedimentprøven ble pakket i en Rilsanpose og frosset ned til 20 °C frem til analyse. Det ble tatt tre paralleller fra hvert hugg.

2.4 Sjøvann

Vannprøver fra tre stasjoner (V1, V2 og V_{Ref}) ble hentet fra overflaten ved hjelp av Rutner vannhenter den 14. oktober. Det ble tatt tre replikater fra hver stasjon (Tabell 2.2, Figur 2.2). En liter av prøvematerialet ble oppbevart på plastflaske og frosset ned frem til videre analyse.

2.5 Inkludert og ekskludert LOQ (limit of quantification):

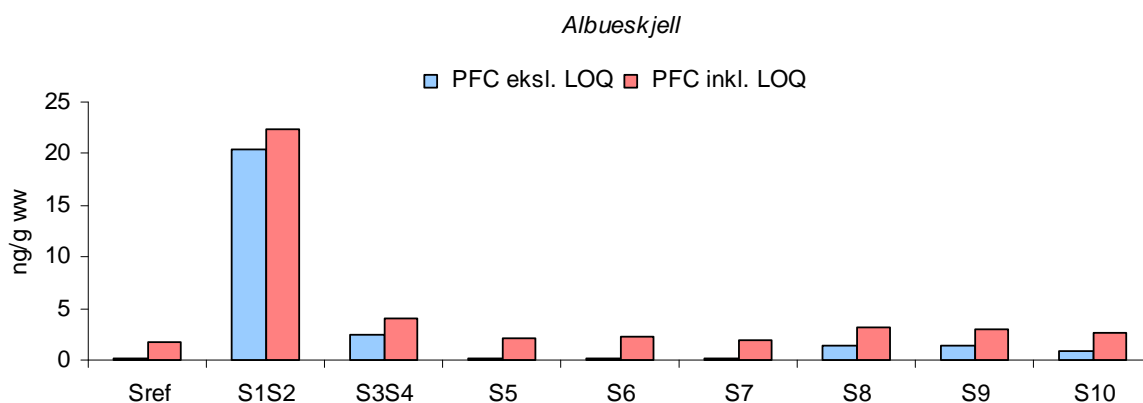
LOQ står for ”limit of quantification” og angir den konsentrasjonen hvor kvantifiserbar mengde av analyseproduktet kan detekteres. Det skiller seg fra LOD (limit of detection) ved at LOD angir mengden som trengs for å detektere produktet i analysen, men ikke nødvendigvis i kvantifiserbare mengder. Resultatene fra analysene av PFC i våre analyser blir rapportert på to måter, med og uten LOQ. Dette må tas hensyn til i tolkningen av resultatene. Når man oppgir resultat inkludert LOQ betyr det at den teoretiske mengden forbindelse som faller under den kvantifiserbare konsentrasjonsgrensen er inkludert i prøvesvaret. Dette er vanlig praksis ved analyse av miljøgifter og gjøres fordi analyselaboratorier er pålagt å operere med såkalt ”verste fall resultat” når man snakker om miljøgifter som man eksponeres for gjennom mat, hvilket er tilfellet for PFC-forbindelser.

Dette betyr at verdier inkludert LOQ viser den høyeste konsentrasjonen man teoretisk kan risikere å ha, men som tilgjengelige analysemetoder ikke klarer å måle. Når man oppgir resultater ekskludert LOQ har man utelukket de verdiene som faller under laveste kvantifiseringsgrense fra analysen. Det vil ikke gi et mer nøyaktig resultat å rapportere den ene fremfor den andre benevnelsen. Den faktiske verdien i prøvene vil ligge innenfor intervallet mellom ekskludert og inkludert LOQ.

3. RESULTAT

3.1 PFC i albueskjell (*Patella vulgata*)

Den totale mengden PFC-forbindelser for de enkelte undersøkte stasjonen er presentert i Figur 3.1. I denne figuren er verdier med og uten LOQ (limit of quantification) vist.



Figur 3.1 Summen av PFC-forbindelser i Albueskjell

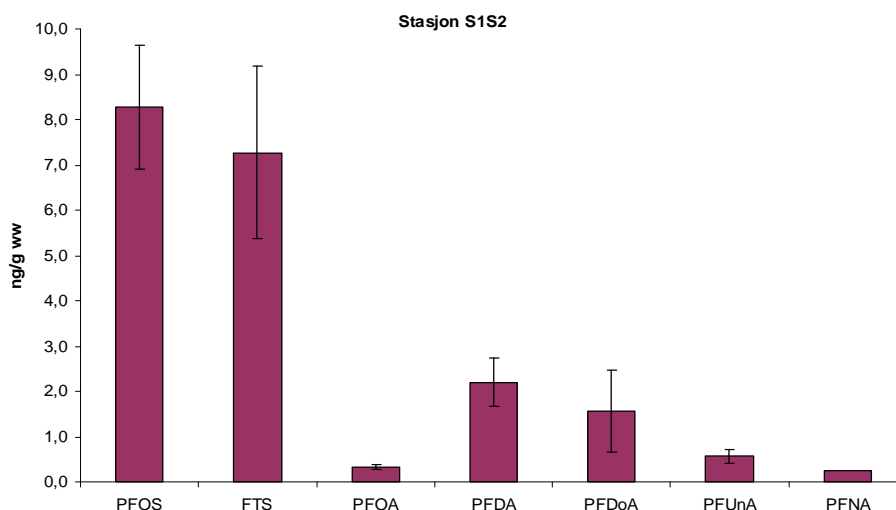
PFC konsentrasjoner er her gjengitt i ng/g våtvekt (heretter w.w, forkortet eng. wet weight). Av de undersøkte parametrene fant man kvantifiserbare konsentrasjoner av to av forbindelsene, PFOS og FTS. PFOA blir også diskutert, da den tidligere har blitt kvantifisert i albueskjell i det undersøkte området. Målte konsentrasjoner av PFOS, PFOA og FTS i bløtvev fra albueskjell er gjengitt i Tabell 3.1.

Tabell 3.1 Albueskjell: PFOA og PFOS konsentrasjoner i fra 2010 og 2011 og FTS konsentrasjoner i fra 2011

Stasjon	PFOA ng/g ww		PFOS ng/g ww		FTS ng/g ww	
	2010	2011	2010	2011	2010	2011
S _{ref}	0,4	< 0,1	0,4	0,1	-*	< 0,1
S1S2	0,7	0,3	18,5	8,3	-*	7,3
S3S4	0,4	< 0,1	11,1	1,3	-*	1,1
S5	-*	< 0,1	-*	0,1	-*	< 0,1
S6	-*	< 0,1	-*	0,2	-*	< 0,1
S7	-*	< 0,1	-*	0,2	-*	< 0,1
S8	-*	< 0,1	-*	1	-*	0,3
S9	-*	< 0,1	-*	0,8	-*	0,3
S10	-*	< 0,1	-*	0,5	-*	0,3

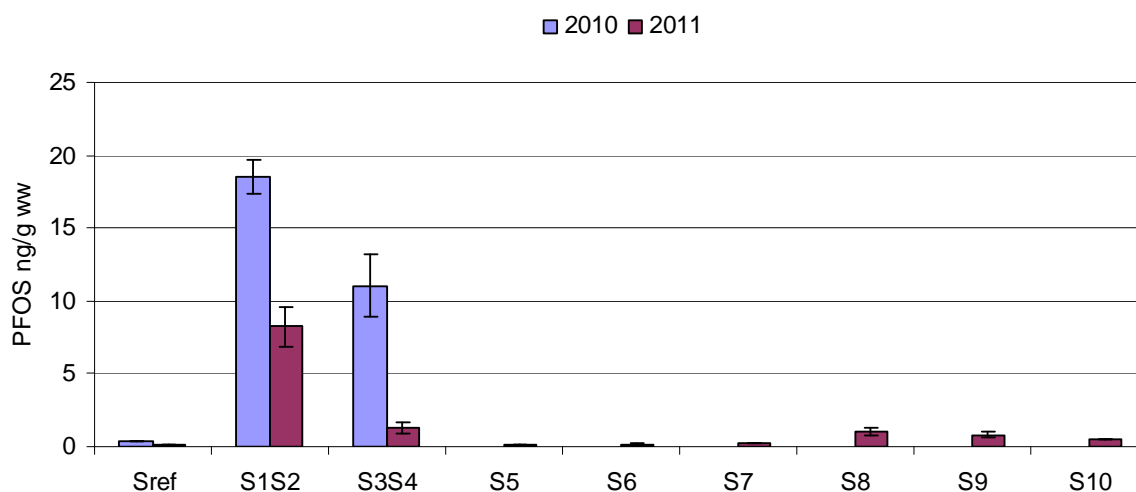
*Ikke tatt prøver fra stasjonen

Det ble også inkludert analyser for de resterende PFC-forbindelsene listet i tabell 2.1. Med unntak av på stasjon S1S2 var konsentrasjonene av disse forbindelsene på eller under kvantifiseringsgrensen. På stasjon S1S2 var det kvantifiserbare verdier av PFDA, PFDoA, PFNA og PFUnA i tillegg til PFOS, PFOA og FTS. Verdiene er oppsummert i Figur 3.2.



Figur 3.2 PFC-forbindelser funnet i albueskjell på stasjon SIS2.

PFOS (Perfluoroktylsulfonat):

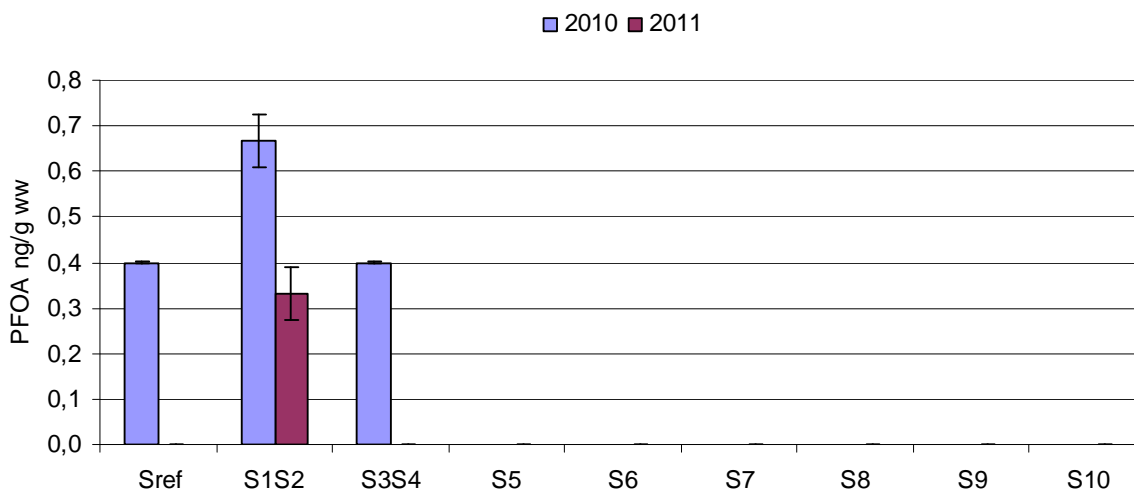


Figur 3.3. PFOS i albueskjell i 2010 og 2011.

I 2011 ble det funnet detekterbare PFOS-verdier i albueskjell fra alle de undersøkte stasjonene (Fig 3.3, Tabell 3.1). Den høyeste konsentrasjonen ble funnet på stasjon S1S2 (8,5 ng/g). Det

var imidlertid lavere enn det som ble målt i 2010 (18,5 ng/g). På stasjon S3S4 ble det også funnet en reduksjon i innholdet av PFOS fra 11,1 ng/g til 1,3 ng/g, henholdsvis 2010 og 2011. Disse to stasjonene er lokalisert ved antatte avrenningspunkt for overflatevann ved anlegget. Ved de resterende undersøkte stasjonene fant man lavere verdier som varierte fra 0,1 ng/g ww til 1,0 ng/g. Årets referanseverdi (S_{ref} 0,1 ng/g) ligger lavere enn fjordårets målte referanseverdi (0,4 ng/g). Det er brukt samme analysemetode for begge årene

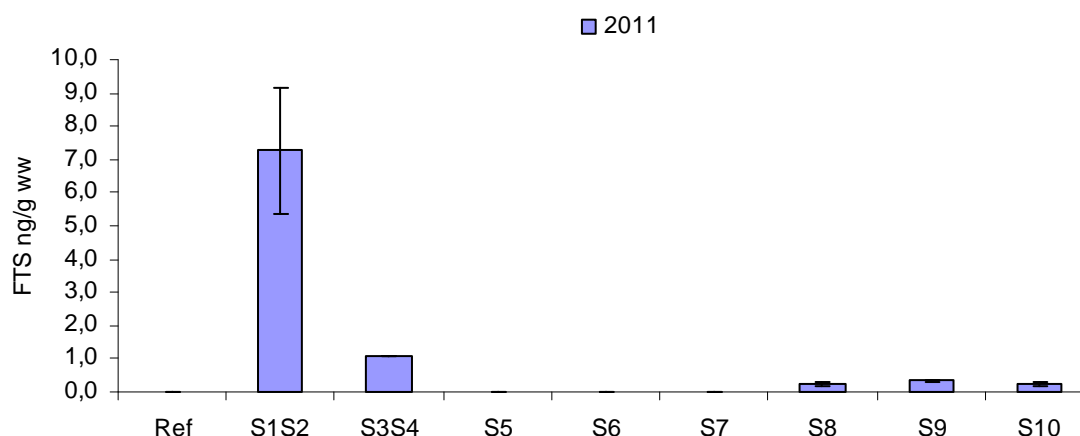
PFOA (Perfluoroktansyre):



Figur 3.4 PFOA i albueskjell i 2010 og 2011.

Målt konsentrasjon av PFOA viste så vidt detekterbar verdi på stasjon S1S2 i 2011 (Figur 3.4, Tabell 3.1). Den målte verdien på 0,3 ng/g var lavere enn verdien på samme stasjon i 2010, da målt til 0,7 ng/g (Tabell 3.1).

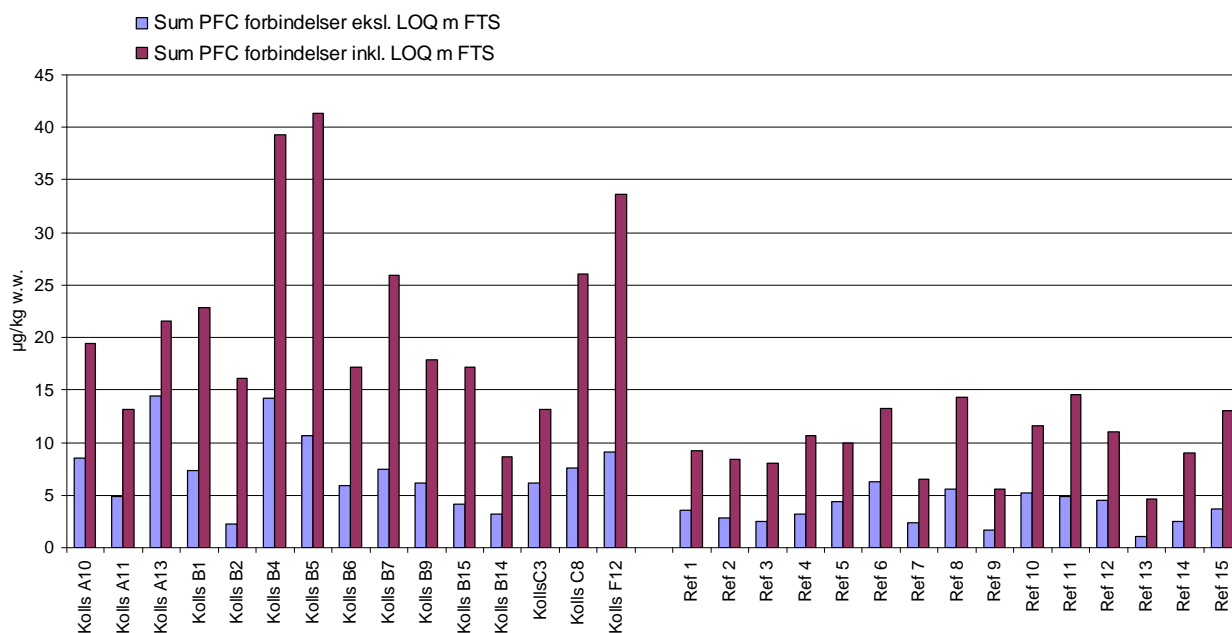
Analysene fra 2010 viste at PFOA fantes i detekterbare mengder på alle de tre undersøkte stasjonene, inkludert referansestasjonen. Resultatene fra 2011 viser derimot kun detekterbar verdi på S1S2.

FTS (6:2 Fluorotelomer sulfonat):**Figur 3.5:** FTS i albueskjell 2011.

Det ble funnet FTS i albueskjell på stasjon S1S2, S3S4, S8, S9 og S10. (Tabell 3.1, Figur 3.5). Den høyeste konsentrasjonen ble funnet på stasjon S1S2 (7,3 ng/g). Nest høyeste konsentrasjon finner man på stasjon S3S4 (1,1 ng/g). Disse to stasjonene er lokalisert ved antatte avrenningspunkt for overflatevann ved anlegget. På S8, S9 og S10 fant man lavere verdi på 0,3 ng/g ww. På referansestasjonen påvises ikke FTS i kvantifiserbare mengder.

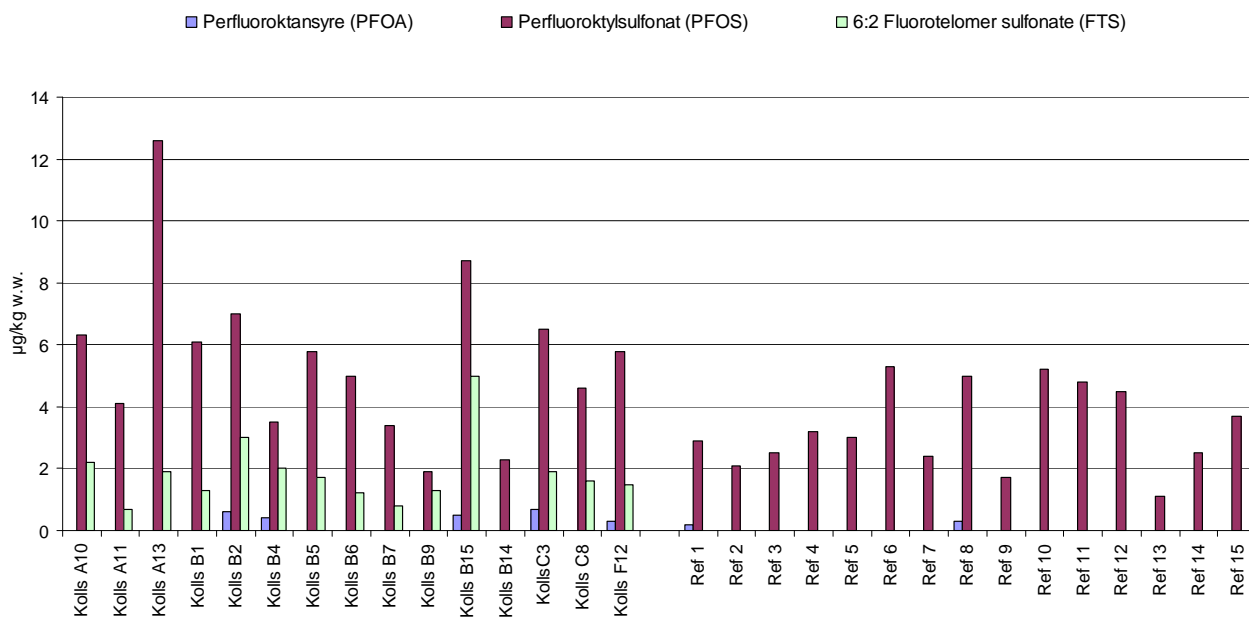
3. 2 PFC i torskelever

Analyser av torskelever viste detekterbare mengder av PFC forbindelser i alle de undersøkte fiskene. Figur 3.6 viser summen av alle PFC-forbindelser ekskludert LOQ i forhold til summen av alle PFC-forbindelser inkludert LOQ. Vi ser her at forskjellen mellom verdier inkludert og ekskludert LOQ er tydelig. Grunnen til dette er at tilgjengelige analysemetoder for å kvantifisere PFOS i torskelever gir kvantifiseringsgrenser som ligger relativt høyt. Til sammenligning ligger deteksjonsgrensene for PFC i albueskjell på 0,1-0,2 ng/g, men den for PFC i torskelever kan være 7,2µg/kg (ng/g = µg/kg) (Kolls F12 PFDoA, Vedlegg 1). Dette gjenspeiler seg som en usikkerhet ved disse resultatene. De faktiske verdiene som finnes i torskelever vil ligge innenfor intervallet mellom verdier ekskludert og inkludert LOQ.



Figur 3.6 PFC forbindelser i torskelerver, inkludert og ekskludert LOQ.

Analysene viste at det også i dette materialet er PFOS og FTS som er dominerende (Figur 3.7). Resultatene vil bli tolket med hovedvekt på disse.



Figur 3.7 PFOS, PFOA og FTS i torskelerver

Tabell 3.3 PFOS og FTS i Torskelever gitt i mikrogram på kilo våtvekt

Fisk	PFOS µg/kg	FTS µg/kg
Kolls B1	6,1	1,3
Kolls B2	7	3,0
Kolls C3	6,5	1,9
Kolls B4	3,5	2,0
Kolls B5	5,8	1,7
Kolls B6	5	1,2
Kolls B7	3,4	0,8
Kolls C8	4,6	1,6
Kolls B9	1,9	1,3
Kolls A10	6,3	2,2
Kolls A11	4,1	0,7
Kolls F12	5,8	1,5
Kolls A13	12,6	1,9
Kolls B14	2,3	<0,4
Kolls B15	8,7	5,0
Medianverdi	5,8	1,6
Middelverdi	5,6	1,7
Ref 1	2,9	<0,2
Ref 2	2,1	<0,2
Ref 3	2,5	<0,3
Ref 4	3,2	<0,3
Ref 5	3	<0,2
Ref 6	5,3	<0,2
Ref 7	2,4	<0,2
Ref 8	5	<0,2
Ref 9	1,7	<0,2
Ref 10	5,2	<0,2
Ref 11	4,8	<0,2
Ref 12	4,5	<0,2
Ref 13	1,1	<0,2
Ref 14	2,5	<0,3
Ref 15	3,7	<0,2
Medianverdi	3	<0,2
Middelverdi	3,3	<0,2

Resultatene er gitt i mikrogram pr kilo våtvekt (µg/kg w.w.). Målt konsentrasjon av PFOS i torskelever varierer fra 1,9µg/kg (Kolls B9) til 12,6 µg/kg (Kolls A13). Middelverdien i materialet er 5,6 µg/kg og medianverdien er 5,8 µg/kg. For referansematerialet varierer PFOS-verdiene fra 1,1 µg/kg (Ref 13) til 5,3 µg/kg (Ref 5) med en middelverdi på 3,3 µg/kg og medianverdi 3,0 µg/kg (Tab3.3).

Målt konsentrasjon av FTS i torskelever varierer fra 0,7 µg/kg (Kolls A11) til 5,0 µg/kg (Kolls B15). Middelerdien i materialet er 1,7 µg/kg og medianverdien er 1,6 µg/kg. I referansematerialet påvises ikke FTS i kvantifiserbare mengder.

PFOA ble kun detektert i små mengder og var ikke kvantifiserbar i de fleste fiskene. I 5 av 15 var det detekterbar verdi. I referansematerialet fant man detekterbar verdi i 2 av de 15 undersøkte fiskene (Tabell 3.3, Figur 3.7).

Det ble inkludert analyser av PFC forbindelsene listet i Tabell 2.1. Med unntak av PFOS, FTS og til dels PFOA lå konsentrasjonen av de andre analyserte PFC-forbindelsene under deteksjonsgrensen.

3. 3 PFC i sedimentprøver

Analysene viste at av de undersøkte PFC forbindelsene (Tabell2.1) var det PFOS (11,4 µg/kg tv) og FTS (3,6 µg/kg ts) som ble funnet i kvantifiserbare mengder i sedimentet, og da kun på stasjon K2.

Tabell 3.4 Utdrag av analyserapport for sedimentprøver.

Stasjon	PFOA (µg/kg tv)	PFOS (µg/kg tv)	FTS (µg/kg ts)
K1	<2,3	<2,1	<3,5
K2	<2,1	11,4	3,6
K ref	<2,1	<2,1	<3,2

3.4 PFC i sjøvann

Utenfor Kollsnes prosessanlegg ble det hentet opp to vannprøver, i tillegg til en vannprøve fra referansestasjonen. Det ble analysert for PFC forbindelsene listet i Tabell 2.1.

Det ble ikke påvist kvantifiserbare konsentrasjoner av noen av forbindelsene inkludert i analysene.

4. DISKUSJON

4.1 Albueskjell (*Patella vulgata*)

Stasjon S1S2 har den høyeste av de målte konsentrasjonene av PFC i forhold til de resterende stasjonene (Figur 3.1). I tillegg er det den eneste av de undersøkte stasjonene der vi får utslag av andre PFC, foruten PFOS, PFOS og FTS, analysert for i denne rapporten (Figur 3.2).

Av de målte PFC-forbindelsene vil det i denne rapporten bli lagt hovedvekt på PFOS. Dette fordi denne forbindelsen ble påvist i albuesnegl nedenfor Kollsnes prosessanlegg i 2010, og hadde de høyeste konsentrasjonene i 2011.

I våre resultater ble det funnet detekterbare PFOS-verdier i albueskjell fra alle de undersøkte stasjonene (Fig 3.3). Den høyeste konsentrasjonen ble funnet på stasjon S1S2 (8,5 ng/g). Det var imidlertid lavere enn det som ble målt i 2010 (18,5 ng/g). På stasjon S3S4 ble det også funnet en reduksjon i innholdet av PFOS fra 11,1 ng/g til 1,3 ng/g, henholdsvis 2010 og 2011 (Tabell 3.1 og Figur 3.3). Disse to stasjonene er lokalisert ved antatte avrennings punkt for overflatevann fra området rundt anlegget (Figur 2.2). På stasjon S8, S9 og S9 finner man konsentrasjoner på henholdsvis 1,0 ng/g, 0,8 ng/g og 0,5 ng/g. Disse stasjonene ligger også i nær tilknytting til anlegget og mer innelukket i bukten nedenfor anlegget (Figur 2.2), mens de resterende stasjonene S5, S6 og S7 ligger i et område med mer strøm og har konsentrasjoner på nivå med referansestasjonen (Tabell 3.1).

PFOS er den PFC man finner i forhøyede konsentrasjoner i organismer. Brook et al.2004 konkluderer med at PFOS ikke er nedbrytbar i naturen. Ut i fra tilgjengelig forskning antar man derfor at PFOS sirkulerer i det biologiske systemet. Nedgangen fra 2010 til 2011 skyldes derfor trolig ikke biologisk nedbryting. Tidligere analyser av jordsmonn har vist at PFOS-konsentrasjoner generelt har en ujevn utbredelse og kan opptre flekkvis fra forurensningskilde. Om dette er tilfelle også i marint miljø finnes det til nå ikke data på og kan dermed ikke utelukkes som en faktor som spiller inn på opptak av PFOS hos organismene og dermed også resultatene i denne undersøkelsen. For verdier av PFOS i vann og sediment har KLIF utarbeidet tilstansklasser som gir en pekepinn på hvilken innvirkning forurensingen har på det undersøkte miljøet, TA-2229/2007. Tilsvarende klasser for verdier funnet i organismer har til nå ikke blitt utarbeidet.

Det er generelt ikke gjort mange PFOS/PFOA-undersøkelser, og nøyaktig skadevirkning av gitte konsentrasjoner i ulike typer prøver slik som sediment eller vev er ikke godt kjent. En tidligere undersøkelse av Amundsen et al. i 2008 undersøkte fire andre anlegg i Norge som hadde brukt PFOS holdige kjemikalier. De målte i hovedsak konsentrasjoner av PFOS i jordsmonn men kartla i tillegg forekomsten av PFC forbindelser i vann og biologiske organismer. Dette studiet viste at man fant forhøyede verdier av PFC-forbindelser, da spesielt PFOS, i umiddelbar nærhet til steder hvor PFC holdig brannskum hadde vært i bruk. Som et sammenligningsgrunnlag viste resultatene her at PFC nivået i jord rundt de undersøkte anleggene var opptil 700 ganger høyere enn de foreslåtte normalverdier for PFOS og at fremdeles så mye som 10-40 % av tilført PFC fremdeles lå tilgjengelig i jordsmonnet rundt anleggene. Det at disse stoffene spres i jord, kombinert med et høyt bioakkumuleringspotensial, gjør at man må regne med at disse forbindelse vil utgjøre et miljøproblem i framtiden (Amundsen et al. 2008).

Man finner lite litteratur som omtaler albueskjell (*Patella vulgata*) brukt som referanseorganisme/mål på forurensing. Et av anleggene i Amundsen et al.s rapport var Solberg Scandinavian AS, som tidligere var leverandør av PFOS-holdig brannskum. Ved dette anlegget ble PFOS konsentrasjoner i vev hos *Patellidae* (Albueskjell) inkludert som en del av prosjektet. PFOS verdiene i sjøsneglene rangerte her fra 12 ng/g til 206 ng/g. Amundsen (et al. 2008) konkluderte med at årsaken til forhøyede konsentrasjoner av PFOS i vev hos sjøsnegl kom fra avsig fra anlegget. Nivået av PFOS i sneglene var høyere enn såkalt estimert effekt-nivå (PNEC- predicted no effect concentration) for mollusker, noe som indikerte at sig fra anlegget utgjorde en mulig risiko for organismer i fjæresonen (Amundsen et al. 2008). En annen organisme som tidligere har blitt brukt til dette formålet er blåskjell (*Mytilus edulis*). I studiet gjort av Amundsen et al. 2008 sammenlignet man målte forskjellige PFC i blant annet blåskjell og albueskjell. Man ser her at konsentrasjonene ligger vesentlig høyere hos albueskjell enn hos blåskjell. I tillegg til at det er naturlig liten forekomst av blåskjell rundt anlegget, tyder dette studiet på at albueskjell er en bedre referanseorganisme for dette formålet.

Tabell 4.1 oppsummerer PFOS verdier målt i albuesnegl i 2008, 2010 og 2011. Undersøkelsen gjort ved Kollsnes i 2010 viste at man fant bioakkumulering av PFOS i marin fauna ved avrenningslokalitetene rundt Kollsnes prosessanlegg (Hestetun et al. 2010). Når man ser på

resultatet fra 2011 sammenlignet med undersøkelsen i 2010 ser man at tallene fra 2011 ligger lavere enn tallene fra 2010. Tabell 4.1 viser målte konsentrasjoner fra de tre undersøkelsene i Norge som har brukt albueskjell som referanseorganisme. Vi ser her at albueskjellene ved Solberg Scandinavian AS har PFOS konsentrasjoner som ligger høyere enn det som er funnet i albueskjell på Kollsnes både i 2010 og 2011.

Tabell 4.1 PFOS i Albueskjell i Norge

<i>Lokalitet:</i>	PFOS i Patella ng/g ww:	<i>Kilde:</i>
Kollsnes 2011	0,1-8,3	Denne rapporten
Kollsnes 2010	0,4- 18,5	Hestetun et.al 2010
Solberg Scandinavian 2008	12-206	Amundsen et al. 2008

Hva som er årsaken til forskjellen mellom undersøkelsene i 2010 og 2011 er vanskelig å si noe sikkert om. Albuesnegl kan bli over 16 år gamle og man kan dermed anta at de fleste sneglene plukket til analyse 2011 satt i nærheten av sneglene plukket til analyse 2010, og at flere av dem også satt der i tidsrommet når PFOS holdig brannskum fremdeles var i bruk. Materialet analysert 2011 og 2010 skal i teorien hatt samme utgangspunkt som gjør det vanskelig å forklare den målte nedgangen i konsentrasjonen fra 2010 til 2011. De to undersøkelsene utgjør ikke et godt grunnlag for å si noe sikkert om årsaken til dette og det er for tidlig å konkludere noe ut i fra disse to undersøkelsene alene. Det er vanskelig å anslå betydningen av forurensingen da sammenligningsgrunnlag fra flere tilsvarende undersøkelser over tid er begrenset. Det anbefales derfor at man som planlagt følger opp PFOS analyser hos albuesnegl under kommende miljøundersøkelser ved anlegget. Med framtidige undersøkelser vil man tydeligere kunne se trenden i systemet og da få en bedre forståelse om hvordan det henger sammen.

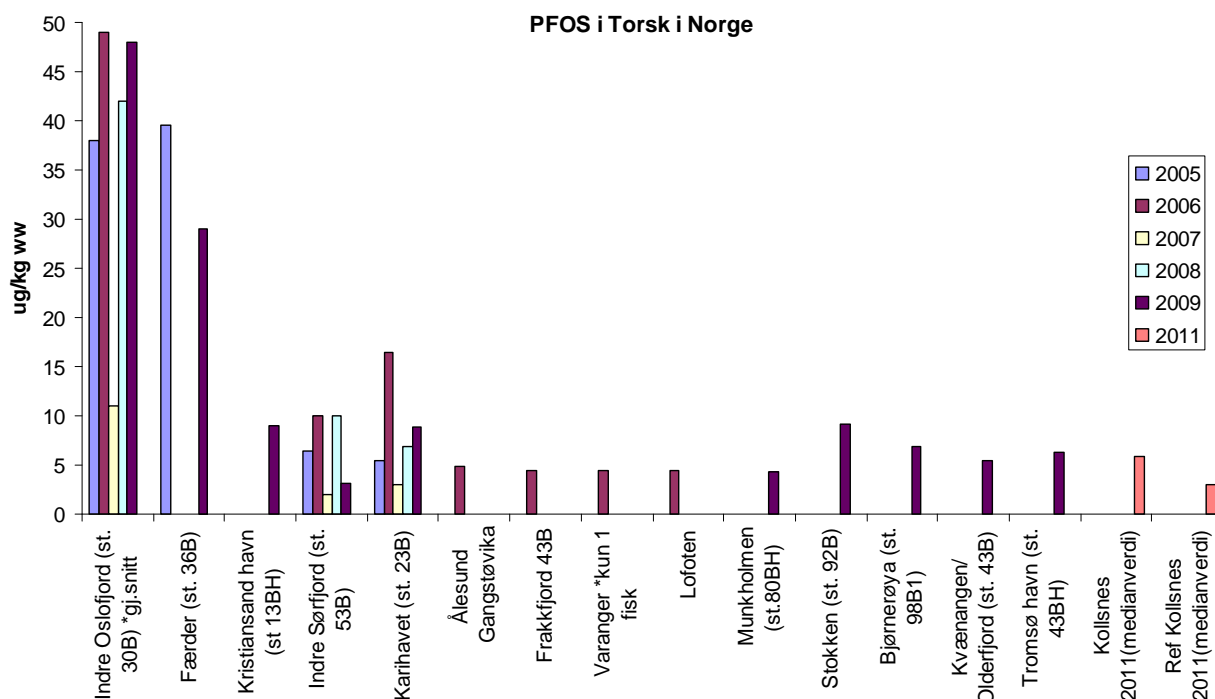
For FTS finnes det relativt lite sammenligningsgrunnlag og det er begrenset med bakgrunnsdata. Stubberud (2006) konkluderer med at FTS bioakkumuleres i jord og brytes sakte ned. FTS ble brukt som en erstatning for PFOS i brannskum (Herzke 2007). I det tidligere nevnte studiet til Amundsen et al. i 2008, påviste man også FTS i albueskjell. Konsentrasjonene her varierte fra 2,4 – 129 ng/g, og verdiene målt i albueskjell ved Kollsnes ligger i nedre del av dette intervallet.

Det man kan si ut i fra undersøkelsene i 2011 er at man ser ut til å ha begrenset det påvirkede området til å ligge innenfor stasjon S10, S9, S8 og S3S4, altså de stasjonene som ligger i umiddelbar nærhet til anlegget (Figur 2.2) og at de målte konsentrasjonene ser ut til å ligge lavt i forhold til andre tilsvarende undersøkelser i Norge.

4.2 PFC i torskelever (*Gadus morhua*)

Det har, som en del av det Norske CEMP-programmet, blitt gjort undersøkelser av PFC-nivå i torskelever siden 2005 (Green et al. 2010). Resultatene fra disse undersøkelsene er oppsummert i Figur 4.1.

En undersøkelse gjort av NIVA for Klima og forurensings direktoratet (heretter KLIF) i 2009, viste at av syv PFC forbindelser, var det PFOS, PFOSA og PFNA som gav målbare utslag i fisk (Green et al. 2010). Av disse forbindelsene er det PFOS som er den dominerende i torskelever (Green et al. 2010). Av stasjonene undersøkt i perioden 2005 til 2009, ble stasjonene Indre Oslofjord (30B) Færder (36B) i ytre del av oslofjorden antatt å være forurensingsutsatte og påvirkede områder (Green et al. 2010). Vi ser av Figur 4.1 at verdiene for disse to områdene ligger klart høyere enn ved de andre undersøkte stasjonene. Årsaken til de forhøyede verdiene til Indre Oslofjord er trolig befolkningstettheten rundt fjorden og dermed større forurensingspress (Green et al. 2010).



Figur 4.1 Tallene i denne tabellen er medianverdier hentet fra Green et al. 2010, Fjeld et al. 2005, Bakke et al. 2007 og fra denne rapporten.

Det ble tidligere indikert at bakgrunnsverdien for PFOS i torskelever lå på rundt 30 µg/kg (Fjeld et al. 2005). Men Bakke et al. 2007 fant at PFOS i torskelver fra områder som ikke er direkte påvirket av utslipp varierte fra 3,4-29µg/kg. Man antar derfor at bakgrunnsverdien for PFOS i tosk ligger på rundt 10 µg/kg. (Bakke et al. 2007).

Stasjon 23B Karihavet (Bømlø) er geografisk sett den nærmeste stasjonen i forhold til Kollsnes. Fremstillingen av de historiske data over PFOS i torskelever i Norge viser at de fleste undersøkte stasjonene har PFOS verdier under 10 µg/kg. Den høyeste verdien i torsk fra Kollsnesområdet i 2011 var 12,6 µg/kg og medianverdien for materialet var 5,8 µg/kg w.w. Vi ser at disse verdiene, i liket med stasjon 23B Karihavet, synes å ligge under det nivået som har blitt anslått for å være et bakgrunnsnivå for PFOS i torskelever i Norge.

Dette kan indikere at torsk i nærheten av Kollsnes prosessanlegg ikke er direkte påvirket av anlegget.

I et studie av Møskeland et al. 2010, fant man kvantifiserbare konsentrasjoner av FTS i ferskvann, sediment, jord og fiskelever. FTS ble blant annet funnet i fisk fra Langavaten, Flesland flyplass Bergen. Her rangerte konsentrasjonene i fiskelever fra 37-138 ng/g. Disse resultatene ble gjengitt med en stor grad av usikkerhet på grunn av usikkerhet rundt metodene, og man kan her kun sammenligne i liten grad på grunn av at disse fiskene var ferskvannsfisk. Det man kan si er at det er interessant å følge opp konsentrasjonene av FTS i torskelever ved framtidige undersøkelser, da man under denne undersøkelsen påviste nivåer i fisk fra nærområdet til anlegget, mens man ikke finner det i referansematerialet.

Undersøkelsene gjort på innhold av PFC forbindelser i torskelever fra området rundt Kollsnes prosessanlegg ble første gang gjennomført i 2011. Av den grunn er det derfor vanskelig å konkludere med at fisk fra området ikke er påvirket av anlegget. Det anbefales derfor at disse undersøkelsene følges opp ved kommende undersøkelser, spesielt med tanke på forbindelsene FTS og PFOS.

4.3 PFC i sediment

Av PFC forbindelsene analysert for i 2011, var det PFOS og FTS man kunne kvantifisere og da kun på stasjon K2. Her målte man konsentrasjonen av PFOS til 11,4 µg/kg og FTS 3,6 µg/kg tørrvekt i sedimentet. PFOS verdien ligger innenfor intervallet i KLIFs tilstandsklasse II-God. Hvis vi sammenligner med tidligere studier, for eksempel med undersøkelsen ved Solberg Scandinavian AS, ser man at verdiene for PFOS i marint sediment rangerer fra 34-41 ng/g (ng/g = µg/kg). Intervallet holder seg innenfor tilstandsklasse II-God, og man kan dermed anta at disse nivåene av PFOS i sedimentet ikke vil ha en toksisk effekt på miljøet. Dette anlegget har til sammenligning forhøyede verdier av PFOS i albuesnegl, men altså ikke påvist kontaminering av marint sediment utenfor anlegget.

Tabell 4.2 Tilstandsklasser for PFOS i sediment, Utdrag fra TA-2229/2007 (Bakke et al. 2007). Tallene er angitt som µg/kg

Tilstandsklasse	I Bakgrunn	II God	III Moderat	IV Dårlig	V Svært dårlig
PFOS (µg/kg)	<0,17	0,17-220	220-630	630-3100	>3100

I KLIFs veileder angis bakgrunnsnivå for PFOS i sediment til å ligge under 0,17 µg/kg, Tabell 4.2. Deteksjonsgrensene i denne undersøkelsen havner dermed også i tilstandsklasse II- God. Grunnen til dette er at bakgrunnsnivået ikke lar seg måle med kommersielt tilgjengelige analysemetoder. Det finnes pr dags dato ingen alternative metoder der man opererer med lavere deteksjonsgrense i Eurofins.

Vi har fått opplyst fra Eurofins at det skjer endringer i metodikken fra år til år hvor deteksjonsgrensene blir endret som følge av den måleusikkerhet som kan aksepteres i lavområdene. Analyselaboratoriet brukt i denne rapporten analyserer også de fleste andre PFOS-prøvene i Europa.

For FTS er det ikke opparbeidet tilstandsklasser. Generelt er det begrenset med studier på denne forbindelsen. Møskeland et al. (2010) fant, som tidligere nevnt, kvantifiserbare konsentrasjoner av FTS i ferskvann, sediment, jord og fiskelever. De målte konsentrasjonene i de akvatiske sedimentprøvene fra dette studiet varierte mellom 1,5 til 379 ng/g tørrvekt. Konsentrasjonene målt ved Kollsnes ligger i nedre del av dette intervallet. Det er interessant å følge opp denne forbindelsen ved kommende undersøkelser.

4.4 PFC i sjøvann

Ingen av forbindelsene det ble analysert for opptrådte i kvantifiserbare konsentrasjoner, og man kan dermed ikke påvise påvirkning fra anlegget. Deteksjonsgrensene ble oppgitt av analyselaboratoriet å være <10 ng/L og våre prøver inneholder altså mindre enn 10 ng/L som da vil ligge i tilstandsklasse II- God i henhold til KLIFs miljøstandard (Tabell 4.3).

Tabell 4.3 Tilstandsklasser for PFOS i vann, Utdrag fra TA-2229/2007 (Bakke et al. 2007). Tallene er angitt som µg/L

Tilstandsklasse	I Bakgrunn	II God	III Moderat	IV Dårlig	V Svært dårlig
PFOS (µg/L)	-	<25	25-72	72-360	>360

Selv om man i dette studiet ikke kunne påvise PFC i vannprøver i sjøen utenfor Kollsnes prosessanlegg, vil det i framtiden likevel være interessant å inkludere vannprøver i analysene for å spore en eventuell ending i forholdene. Man kan eventuelt vurdere om man heller bør inkludere vannprøver direkte fra sigevannet for om mulig å kunne kvantifisere mengden PFC som blir tilført sjøen nedenfor anlegget.

5. KONKLUSJON

Stasjon S1S2 lokalisert rett nedenfor anlegget ved et avrenningspunkt for overflatevann er den stasjonen hvor man kan finne de høyeste konsentrasjonene av PFOS og FTS, og også den eneste stasjonen der andre PFC blir målt i kvantitative mengder. Det er også målbare konsentrasjoner av PFOS og FTS i sediment her. Målte verdier av PFOS i albueskjell ligger lavt i sammenlignet med tilsvarende studier i Norge. Torsk i nærområdet ser ut til å inneholde konsentrasjoner av PFOS i lever på et bakgrunnsnivå, mens man påviste FTS. Prøver av sjøvannet nedenfor anlegget viste ikke kvantifiserbare mengder av noen av PFC forbindelsene. Man har begrenset området hvor man finner PFOS i organismer til nærområdet i sjøen utenfor anlegget. Generelt er de målte verdiene i denne rapporten lave i forholdt til

andre studier i Norge. Oppfølgende undersøkelser er viktig for å verifisere funnene i denne rapporten, spesielt med tanke på PFOS og FTS.

LITTERATUR

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Vedlegg

1.Analyserapporter



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NORWEGEN

Person in charge Mr. B. Homburg
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Report date 16.03.2012
Page 1/6

Analytical report AR-11-GF-026388-02

This report will replace report number: AR-11-GF-026388-01

Sample Code 710-2011-19069001

Reference	Sedimenter
	K 1
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-010
Number	1
Reception temperature	gekühlt
End analysis	16.03.2012

Test results

CYP07	dry matter (%) (#)		
Method	EN 12880, dry matter of original sample		
	dry residue	73.9	%
GF02J	PFC (17) ~ environment (%) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	< 2.3	µg/kg dm
	Perfluorooctanoic acid (PFOA)	< 2.3	µg/kg dm
	total PFOS / PFOA excl. LOQ	ND	µg/kg dm
	total PFOS / PFOA incl. LOQ	4.7	µg/kg dm

The results of examination refer exclusively to the checked samples.
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Perfluorbutansulfonate (PFBS)	< 3.5	µg/kg dm
Perfluorobutanoic acid (PFBA)	< 2.3	µg/kg dm
Perfluoropentane acid (PFPeA)	< 2.3	µg/kg dm
Perfluorohexane sulfonate (PFHxS)	< 3.5	µg/kg dm
Perfluorohexanoic acid (PFHxA)	< 2.3	µg/kg dm
Perfluoroheptane sulphonate (PFHpS)	< 3.5	µg/kg dm
Perfluoroheptanoic acid (PFHpA)	< 2.3	µg/kg dm
Perfluorooctane-sulfonamide (PFOSA)	< 2.3	µg/kg dm
Perfluorononanoic acid (PFNA)	< 2.3	µg/kg dm
Perfluorodecane sulphonate (PFDS)	< 3.5	µg/kg dm
Perfluorodecanoic acid (PFDA)	< 2.3	µg/kg dm
Perfluoroundecanoic acid (PFUnA)	< 2.3	µg/kg dm
Perfluorododecane acid (PFDoA)	< 2.3	µg/kg dm
Perfluorotridecane acid (PFTrA)	< 2.3	µg/kg dm
Perfluorotetradecane acid (PFTA)	< 2.3	µg/kg dm
total PFC compounds excl. LOQ	ND	µg/kg dm
total PFC compounds incl. LOQ	44.3	µg/kg dm

GF05Q PFC (H4PFOS) ~ environment (*) (#)

Method	Internal Method, LC-MS/MS	
6:2 Fluorotelomer sulfonate (FTS)	< 3.5	µg/kg dm
total PFC compounds excl. LOQ	ND	µg/kg dm
total PFC compounds incl. LOQ	47.8	µg/kg dm

(*) = The test was performed at the site Hamburg.

#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

ND - not determined since none of the corresponding congeners was above the LOQ

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This report will replace report number: AR-11-GF-026388-01

Sample Code 710-2011-19069002

Reference	Sedimenter
Sample sender	K 2
Reception date time	Mr. Joakim Skovly
Transport by	10.11.2011
Client Purchase order nr.	Merged from order eunobe00000130.dbf
Purchase order date	EUNOBE00000130
Client sample code	09.11.2011
Number	441-2011-1109-011
Reception temperature	1
End analysis	gekühlt
	16.03.2012

Test results

CYP07	dry matter (%) (#)		
Method	EN 12880, dry matter of original sample		
dry residue		46.2	%
GF02J	PFC (17) ~ environment (%) (#)		
Method	AIR OC 150, LC-MS/MS		
Perfluorooctane sulfonate (PFOS)		11.4	µg/kg dm
Perfluorooctanoic acid (PFOA)		< 2.1	µg/kg dm
total PFOS / PFOA excl. LOQ		11.4	µg/kg dm
total PFOS / PFOA incl. LOQ		13.5	µg/kg dm
Perfluorbutansulfonate (PFBS)		< 3.2	µg/kg dm
Perfluorobutanoic acid (PFBA)		< 2.1	µg/kg dm
Perfluoropentane acid (PFPeA)		< 2.1	µg/kg dm
Perfluorohexane sulfonate (PFHxS)		< 3.2	µg/kg dm
Perfluorohexanoic acid (PFHxA)		< 2.1	µg/kg dm
Perfluoroheptane sulphonate (PFHpS)		< 3.2	µg/kg dm
Perfluoroheptanoic acid (PFHpA)		< 2.1	µg/kg dm
Perfluorooctane-sulfonamide (PFOSA)		< 2.1	µg/kg dm
Perfluorononanoic acid (PFNA)		< 2.1	µg/kg dm
Perfluorodecane sulphonate (PFDS)		< 3.2	µg/kg dm
Perfluorodecanoic acid (PFDA)		< 2.1	µg/kg dm
Perfluoroundecanoic acid (PFUnA)		< 2.1	µg/kg dm
Perfluorododecane acid (PFDoA)		< 2.1	µg/kg dm
Perfluorotridecane acid (PFTrA)		< 2.1	µg/kg dm
Perfluorotetradecane acid (PFTA)		< 2.1	µg/kg dm

The results of examination refer exclusively to the checked samples.
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This report will replace report number: AR-11-GF-026388-01

total PFC compounds excl. LOQ	11.4	µg/kg dm
total PFC compounds incl. LOQ	49.5	µg/kg dm
GF05Q PFC (H4PFOS) ~ environment (*) (#)		
Method Internal Method, LC-MS/MS		
6:2 Fluorotelomer sulfonate (FTS)	3.6	µg/kg dm
total PFC compounds excl. LOQ	15.0	µg/kg dm
total PFC compounds incl. LOQ	53.1	µg/kg dm

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

ND - not determined since none of the corresponding congeners was above the LOQ

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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 aufgeführten Prüfverfahren

This report will replace report number: AR-11-GF-026388-01

Sample Code 710-2011-19069003

Reference	Sedimenter
Sample sender	K Ref
Reception date time	Mr. Joakim Skovly
Transport by	10.11.2011
Client Purchase order nr.	Merged from order eunobe00000130.dbf
Purchase order date	EUNOBE00000130
Client sample code	09.11.2011
Number	441-2011-1109-012
Reception temperature	1
End analysis	gekühlt
	16.03.2012

Test results

CYP07	dry matter (%) (#)		
Method	EN 12880, dry matter of original sample		
	dry residue	49.9	%
GF02J	PFC (17) ~ environment (%) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	< 2.1	µg/kg dm
	Perfluorooctanoic acid (PFOA)	< 2.1	µg/kg dm
	total PFOS / PFOA excl. LOQ	ND	µg/kg dm
	total PFOS / PFOA incl. LOQ	4.3	µg/kg dm
	Perfluorbutansulfonate (PFBS)	< 3.2	µg/kg dm
	Perfluorobutanoic acid (PFBA)	< 2.3	µg/kg dm
	Perfluoropentane acid (PFPeA)	< 2.1	µg/kg dm
	Perfluorohexane sulfonate (PFHxS)	< 3.2	µg/kg dm
	Perfluorohexanoic acid (PFHxA)	< 2.1	µg/kg dm
	Perfluoroheptane sulphonate (PFHpS)	< 3.2	µg/kg dm
	Perfluoroheptanoic acid (PFHpA)	< 2.1	µg/kg dm
	Perfluorooctane-sulfonamide (PFOSA)	< 2.1	µg/kg dm
	Perfluorononanoic acid (PFNA)	< 2.1	µg/kg dm
	Perfluorodecane sulphonate (PFDS)	< 3.2	µg/kg dm
	Perfluorodecanoic acid (PFDA)	< 2.1	µg/kg dm
	Perfluoroundecanoic acid (PFUnA)	< 2.1	µg/kg dm
	Perfluorododecane acid (PFDoA)	< 2.1	µg/kg dm
	Perfluorotridecane acid (PFTTrA)	< 2.1	µg/kg dm
	Perfluorotetradecane acid (PFTTA)	< 2.1	µg/kg dm

The results of examination refer exclusively to the checked samples.
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This report will replace report number: AR-11-GF-026388-01

total PFC compounds excl. LOQ	ND	µg/kg dm
total PFC compounds incl. LOQ	40.8	µg/kg dm
GF05Q PFC (H4PFOS) ~ environment (*) (#)		
Method Internal Method, LC-MS/MS		
6:2 Fluorotelomer sulfonate (FTS)	< 3.2	µg/kg dm
total PFC compounds excl. LOQ	ND	µg/kg dm
total PFC compounds incl. LOQ	44.1	µg/kg dm

(*) = The test was performed at the site Hamburg.

#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

ND - not determined since none of the corresponding congeners was above the LOQ

This electronically generated test report has been checked and approved. It is also valid without signature.

Dipl.-Ing. Burkhard Homburg
(Analytical Services Manager)



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Person in charge Mr. B. Homburg
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Report date 16.03.2012

Page 1/6

Analytical report AR-11-GF-026911-02

This report will replace report number: AR-11-GF-026911-01

**Sample Code** 710-2011-19067001**Reference**

Naturlig forekommende vann
V 1

Sample sender

Mr. Joakim Skovly

Reception date time

10.11.2011

Transport by

Merged from order eunobe00000130.dbf

Client Purchase order nr.

EUNOBE00000130

Purchase order date

09.11.2011

Client sample code

441-2011-1109-007

Number

1

Reception temperature

gekøht

End analysis

16.03.2012

Test results**GF02J PFC (17) ~ environment (*) (#)**

Method AIR OC 150, LC-MS/MS

Perfluorooctane sulfonate (PFOS)	< 5.0	ng/l
Perfluorooctanoic acid (PFOA)	< 5.0	ng/l
total PFOS / PFOA excl. LOQ	ND	ng/l
total PFOS / PFOA incl. LOQ	10.0	ng/l
Perfluorbutansulfonate (PFBS)	< 7.5	ng/l
Perfluorbutanoic acid (PFBA)	< 12.6	ng/l
Perfluoropentane acid (PFPeA)	< 5.0	ng/l
Perfluorohexane sulfonate (PFHxS)	< 7.5	ng/l
Perfluorohexanoic acid (PFHxA)	< 5.0	ng/l
Perfluoroheptane sulphonate (PFHpS)	< 7.5	ng/l
Perfluoroheptanoic acid (PFHpA)	< 5.0	ng/l
Perfluorooctane-sulfonamide (PFOSA)	< 5.0	ng/l

The results of examination refer exclusively to the checked samples.
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This report will replace report number: AR-11-GF-026911-01

Perfluorononanoic acid (PFNA)	< 5.0	ng/l
Perfluorodecane sulphonate (PFDS)	< 7.5	ng/l
Perfluorodecanoic acid (PFDA)	< 5.0	ng/l
Perfluoroundecanoic acid (PFUnA)	< 5.0	ng/l
Perfluorododecane acid (PFDoA)	< 5.0	ng/l
Perfluorotridecane acid (PFTTrA)	< 5.0	ng/l
Perfluorotetradecane acid (PFTA)	< 5.0	ng/l
total PFC compounds excl. LOQ	ND	ng/l
total PFC compounds incl. LOQ	103	ng/l
GF05Q PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS	
6:2 Fluorotelomer sulfonate (FTS)	< 7.5	ng/l
total PFC compounds excl. LOQ	ND	ng/l
total PFC compounds incl. LOQ	110	ng/l

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

ND - not determined since none of the corresponding congeners was above the LOQ

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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aufgeführten Prüfverfahren

This report will replace report number: AR-11-GF-026911-01

Sample Code 710-2011-19067002

Reference	Naturlig forekommende vann V 2
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-008
Number	1
Reception temperature	gekøhit
End analysis	16.03.2012

Test results

GF02J Method	PFC (17) ~ environment (°) (#) AIR OC 150, LC-MS/MS		
Perfluorooctane sulfonate (PFOS)		< 10.0	ng/l
Perfluorooctanoic acid (PFOA)		< 10.0	ng/l
total PFOS / PFOA excl. LOQ		ND	ng/l
total PFOS / PFOA incl. LOQ		20.0	ng/l
Perfluorbutansulfonate (PFBS)		< 15.0	ng/l
Perfluorobutanoic acid (PFBA)		< 26.3	ng/l
Perfluoropentane acid (PFPeA)		< 18.0	ng/l
Perfluorohexane sulfonate (PFHxS)		< 15.0	ng/l
Perfluorohexanoic acid (PFHxA)		< 10.0	ng/l
Perfluoroheptane sulphonate (PFHpS)		< 15.0	ng/l
Perfluoroheptanoic acid (PFHpA)		< 10.0	ng/l
Perfluorooctane-sulfonamide (PFOSA)		< 10.0	ng/l
Perfluorononanoic acid (PFNA)		< 10.0	ng/l
Perfluorodecane sulphonate (PFDS)		< 15.0	ng/l
Perfluorodecanoic acid (PFDA)		< 10.0	ng/l
Perfluoroundecanoic acid (PFUnA)		< 10.0	ng/l
Perfluorododecane acid (PFDoA)		< 10.0	ng/l
Perfluorotridecane acid (PFTrA)		< 10.0	ng/l
Perfluorotetradecane acid (PFTA)		< 10.0	ng/l
total PFC compounds excl. LOQ		ND	ng/l
total PFC compounds incl. LOQ		214	ng/l

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This report will replace report number: AR-11-GF-026911-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 15.0	ng/l
	total PFC compounds excl. LOQ	ND	ng/l
	total PFC compounds incl. LOQ	229	ng/l

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

ND - not determined since none of the corresponding congeners was above the LOQ

The results of examination refer exclusively to the checked samples.
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This report will replace report number: AR-11-GF-026911-01

Sample Code 710-2011-19067003

Reference	Naturlig forekommende vann
Sample sender	V Ref
Reception date time	Mr. Joakim Skovly
Transport by	10.11.2011
Client Purchase order nr.	Merged from order eunobe00000130.dbf
Purchase order date	EUNOBE00000130
Client sample code	09.11.2011
Number	441-2011-1109-009
Reception temperature	1
End analysis	gekühlt
	16.03.2012

Test results

GF02J Method	PFC (17) ~ environment (°) (#) AIR OC 150, LC-MS/MS		
Perfluorooctane sulfonate (PFOS)		< 5.0	ng/l
Perfluorooctanoic acid (PFOA)		< 5.0	ng/l
total PFOS / PFOA excl. LOQ		ND	ng/l
total PFOS / PFOA incl. LOQ		10.0	ng/l
Perfluorbutansulfonate (PFBS)		< 7.5	ng/l
Perfluorbutanoic acid (PFBA)		< 20.0	ng/l
Perfluoropentane acid (PFPeA)		< 5.0	ng/l
Perfluorohexane sulfonate (PFHxS)		< 7.5	ng/l
Perfluorohexanoic acid (PFHxA)		< 5.0	ng/l
Perfluoroheptane sulphonate (PFHpS)		< 7.5	ng/l
Perfluoroheptanoic acid (PFHpA)		< 5.0	ng/l
Perfluorooctane-sulfonamide (PFOSA)		< 5.0	ng/l
Perfluorononanoic acid (PFNA)		< 5.0	ng/l
Perfluorodecane sulphonate (PFDS)		< 7.5	ng/l
Perfluorodecanoic acid (PFDA)		< 5.0	ng/l
Perfluoroundecanoic acid (PFUnA)		< 5.0	ng/l
Perfluorododecane acid (PFDoA)		< 5.0	ng/l
Perfluorotridecane acid (PFTrA)		< 5.0	ng/l
Perfluorotetradecane acid (PFTA)		< 5.0	ng/l
total PFC compounds excl. LOQ		ND	ng/l
total PFC compounds incl. LOQ		110	ng/l

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This report will replace report number: AR-11-GF-026911-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 7.5	ng/l
	total PFC compounds excl. LOQ	ND	ng/l
	total PFC compounds incl. LOQ	118	ng/l

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

ND - not determined since none of the corresponding congeners was above the LOQ

This electronically generated test report has been checked and approved. It is also valid without signature.

Dipl.-Ing. Burkhard Homburg
(Analytical Services Manager)

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GfA Lab Service

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Eurofins Norsk Miljøanalyse AS, avd. Bergen
attn. Joakim Skovly
PO Box 17 Sandviken
N-5812 Bergen
NORWEGEN

Person in charge Mr. B. Homburg
ASM Mr. B. Homburg - 102

Report date 26.03.2012

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Analytical report AR-11-GF-027379-02

This report will replace report number: AR-11-GF-027379-01

**Sample Code** 710-2011-19065001

Reference	albueskjell
Sample sender	S1S2 A
Reception date time	Mr. Joakim Skovly
Transport by	10.11.2011
Client Purchase order nr.	Merged from order eunobe00000130.dbf
Purchase order date	EUNOBE00000130
Client sample code	09.11.2011
Number	441-2011-1109-013
Reception temperature	1
End analysis	cooled
	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (%) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	6.7	ng/g
	Perfluorooctanoic acid (PFOA)	0.3	ng/g
	total PFOS / PFOA excl. LOQ	7.0	ng/g
	total PFOS / PFOA incl. LOQ	7.0	ng/g
	Perfluorobutansulfonate (PFBS)	< 0.1	ng/g
	Perfluorobutanoic acid (PFBA)	< 0.1	ng/g
	Perfluoropentane acid (PFPeA)	< 0.1	ng/g
	Perfluorohexane sulfonate (PFHxS)	< 0.1	ng/g
	Perfluorohexanoic acid (PFHxA)	< 0.1	ng/g
	Perfluoroheptane sulphonate (PFHpS)	< 0.1	ng/g
	Perfluoroheptanoic acid (PFHpA)	< 0.1	ng/g
	Perfluorooctane-sulfonamide (PFOSA)	< 0.2	ng/g

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This report will replace report number: AR-11-GF-027379-01

Perfluorononanoic acid (PFNA)	0.2	ng/g
Perfluorodecane sulphonate (PFDS)	< 0.1	ng/g
Perfluorodecanoic acid (PFDA)	1.6	ng/g
Perfluoroundecanoic acid (PFUnA)	0.4	ng/g
Perfluorododecane acid (PFDoA)	0.7	ng/g
Perfluorotridecane acid (PFTrA)	< 0.3	ng/g
Perfluorotetradecane acid (PFTTA)	< 0.2	ng/g
total PFC compounds excl. LOQ	9.9	ng/g
total PFC compounds incl. LOQ	11.4	ng/g

GF05Q PFC (H4PFOS) ~ environment (*) (#)
 Method Internal Method, LC-MS/MS

6:2 Fluorotelomer sulfonate (FTS)	5.1	µg/kg
total PFC compounds excl. LOQ	15.0	µg/kg
total PFC compounds incl. LOQ	16.5	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-027379-01

Sample Code 710-2011-19065002

Reference	albueskjell S1S2 B
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-014
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	8.9	ng/g
	Perfluorooctanoic acid (PFOA)	0.4	ng/g
	total PFOS / PFOA excl. LOQ	9.2	ng/g
	total PFOS / PFOA incl. LOQ	9.2	ng/g
	Perfluorbutansulfonate (PFBS)	< 0.1	ng/g
	Perfluorbutanoic acid (PFBA)	< 0.3	ng/g
	Perfluoropentane acid (PFPeA)	< 0.1	ng/g
	Perfluorohexane sulfonate (PFHxS)	< 0.1	ng/g
	Perfluorohexanoic acid (PFHxA)	< 0.2	ng/g
	Perfluoroheptane sulphonate (PFHpS)	< 0.1	ng/g
	Perfluoroheptanoic acid (PFHpA)	< 0.1	ng/g
	Perfluorooctane-sulfonamide (PFOSA)	< 0.4	ng/g
	Perfluorononanoic acid (PFNA)	0.3	ng/g
	Perfluorodecane sulphonate (PFDS)	< 0.1	ng/g
	Perfluorodecanoic acid (PFDA)	2.6	ng/g
	Perfluoroundecanoic acid (PFUnA)	0.7	ng/g
	Perfluorododecane acid (PFDoA)	2.5	ng/g
	Perfluorotridecane acid (PFTrA)	< 0.5	ng/g
	Perfluorotetradecane acid (PFTA)	< 0.3	ng/g
	total PFC compounds excl. LOQ	15.3	ng/g
	total PFC compounds incl. LOQ	17.6	ng/g

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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This report will replace report number: AR-11-GF-027379-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	8.0	µg/kg
	total PFC compounds excl. LOQ	23.3	µg/kg
	total PFC compounds incl. LOQ	25.6	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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This report will replace report number: AR-11-GF-027379-01

Sample Code 710-2011-19065003

Reference	albueskjell
	S1S2 C
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-015
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (%) (#)		
Method	AIR OC 150, LC-MS/MS		
Perfluorooctane sulfonate (PFOS)		9.2	ng/g
Perfluorooctanoic acid (PFOA)		0.3	ng/g
total PFOS / PFOA excl. LOQ		9.4	ng/g
total PFOS / PFOA incl. LOQ		9.4	ng/g
Perfluorbutansulfonate (PFBS)		< 0.1	ng/g
Perfluorobutanoic acid (PFBA)		< 0.1	ng/g
Perfluoropentane acid (PFPeA)		< 0.1	ng/g
Perfluorohexane sulfonate (PFHxS)		< 0.1	ng/g
Perfluorohexanoic acid (PFHxA)		< 0.2	ng/g
Perfluoroheptane sulphonate (PFHpS)		< 0.1	ng/g
Perfluoroheptanoic acid (PFHpA)		< 0.1	ng/g
Perfluorooctane-sulfonamide (PFOSA)		< 0.5	ng/g
Perfluorononanoic acid (PFNA)		0.2	ng/g
Perfluorodecane sulphonate (PFDS)		< 0.1	ng/g
Perfluorodecanoic acid (PFDA)		2.4	ng/g
Perfluoroundecanoic acid (PFUnA)		0.6	ng/g
Perfluorododecane acid (PFDoA)		1.5	ng/g
Perfluorotridecane acid (PFTrA)		< 0.3	ng/g
Perfluorotetradecane acid (PFTA)		< 0.2	ng/g
total PFC compounds excl. LOQ		14.2	ng/g
total PFC compounds incl. LOQ		16.1	ng/g

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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 HRB: 115907 AG Hamburg
 General Manager: Jochen Schulte
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This report will replace report number: AR-11-GF-027379-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	8.7	µg/kg
	total PFC compounds excl. LOQ	22.9	µg/kg
	total PFC compounds incl. LOQ	24.8	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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This report will replace report number: AR-11-GF-027379-01

Sample Code 710-2011-19065004

Reference	albueskjell S3S4 A
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-016
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (°) (#)		
Method	AIR OC 150, LC-MS/MS		
Perfluorooctane sulfonate (PFOS)		1	ng/g
Perfluorooctanoic acid (PFOA)		< 0.1	ng/g
total PFOS / PFOA excl. LOQ		1	ng/g
total PFOS / PFOA incl. LOQ		1.1	ng/g
Perfluorbutansulfonate (PFBS)		< 0.1	ng/g
Perfluorobutanoic acid (PFBA)		< 0.1	ng/g
Perfluoropentane acid (PFPeA)		< 0.1	ng/g
Perfluorohexane sulfonate (PFHxS)		< 0.1	ng/g
Perfluorohexanoic acid (PFHxA)		< 0.1	ng/g
Perfluoroheptane sulphonate (PFHpS)		< 0.1	ng/g
Perfluoroheptanoic acid (PFHpA)		< 0.1	ng/g
Perfluorooctane-sulfonamide (PFOSA)		< 0.1	ng/g
Perfluorononanoic acid (PFNA)		< 0.1	ng/g
Perfluorodecane sulphonate (PFDS)		< 0.1	ng/g
Perfluorodecanoic acid (PFDA)		< 0.1	ng/g
Perfluoroundecanoic acid (PFUnA)		< 0.1	ng/g
Perfluorododecane acid (PFDoA)		< 0.1	ng/g
Perfluorotridecane acid (PFTrA)		< 0.1	ng/g
Perfluorotetradecane acid (PFTA)		< 0.1	ng/g
total PFC compounds excl. LOQ		1	ng/g
total PFC compounds incl. LOQ		2.6	ng/g

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.1	µg/kg
	total PFC compounds excl. LOQ	1	µg/kg
	total PFC compounds incl. LOQ	2.7	µg/kg

(*) = The test was performed at the site Hamburg.

#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

The results of examination refer exclusively to the checked samples.
 Duplicates - even in pairs - must be authorized by the test laboratory in written form.
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This report will replace report number: AR-11-GF-027379-01

Sample Code 710-2011-19065005

Reference	albueskjell
Sample sender	S3S4 B
Reception date time	Mr. Joakim Skovly
Transport by	10.11.2011
Client Purchase order nr.	Merged from order eunobe00000130.dbf
Purchase order date	EUNOBE00000130
Client sample code	09.11.2011
Number	441-2011-1109-017
Reception temperature	1
End analysis	cooled
	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	1.2	ng/g
	Perfluorooctanoic acid (PFOA)	< 0.1	ng/g
	total PFOS / PFOA excl. LOQ	1.2	ng/g
	total PFOS / PFOA incl. LOQ	1.3	ng/g
	Perfluorbutansulfonate (PFBS)	< 0.1	ng/g
	Perfluorobutanoic acid (PFBA)	< 0.1	ng/g
	Perfluoropentane acid (PFPeA)	< 0.1	ng/g
	Perfluorohexane sulfonate (PFHxS)	< 0.1	ng/g
	Perfluorohexanoic acid (PFHxA)	< 0.1	ng/g
	Perfluoroheptane sulphonate (PFHpS)	< 0.1	ng/g
	Perfluoroheptanoic acid (PFHpA)	< 0.1	ng/g
	Perfluorooctane-sulfonamide (PFOSA)	< 0.1	ng/g
	Perfluorononanoic acid (PFNA)	< 0.1	ng/g
	Perfluorodecane sulphonate (PFDS)	< 0.1	ng/g
	Perfluorodecanoic acid (PFDA)	0.2	ng/g
	Perfluoroundecanoic acid (PFUnA)	< 0.1	ng/g
	Perfluorododecane acid (PFDoA)	< 0.1	ng/g
	Perfluorotridecane acid (PFTrA)	< 0.1	ng/g
	Perfluorotetradecane acid (PFTA)	< 0.1	ng/g
	total PFC compounds excl. LOQ	1.3	ng/g
	total PFC compounds incl. LOQ	2.8	ng/g

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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 HRS 119827 AG Hamburg
 General Manager: Jochen Schulte
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This report will replace report number: AR-11-GF-027379-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	1.1	µg/kg
	total PFC compounds excl. LOQ	2.4	µg/kg
	total PFC compounds incl. LOQ	3.9	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-027379-01

Sample Code 710-2011-19065006

Reference	albueskjell
	S3S4 C
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-018
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	1.7	ng/g
	Perfluorooctanoic acid (PFOA)	< 0.1	ng/g
	total PFOS / PFOA excl. LOQ	1.7	ng/g
	total PFOS / PFOA incl. LOQ	1.8	ng/g
	Perfluorbutansulfonate (PFBS)	< 0.1	ng/g
	Perfluorobutanoic acid (PFBA)	< 0.1	ng/g
	Perfluoropentane acid (PFPeA)	< 0.1	ng/g
	Perfluorohexane sulfonate (PFHxS)	< 0.2	ng/g
	Perfluorohexanoic acid (PFHxA)	< 0.1	ng/g
	Perfluoroheptane sulphonate (PFHpS)	< 0.1	ng/g
	Perfluoroheptanoic acid (PFHpA)	< 0.1	ng/g
	Perfluorooctane-sulfonamide (PFOSA)	< 0.1	ng/g
	Perfluorononanoic acid (PFNA)	< 0.1	ng/g
	Perfluorodecane sulphonate (PFDS)	< 0.1	ng/g
	Perfluorodecanoic acid (PFDA)	< 0.1	ng/g
	Perfluoroundecanoic acid (PFUnA)	< 0.1	ng/g
	Perfluorododecane acid (PFDoA)	< 0.1	ng/g
	Perfluorotridecane acid (PFTrA)	< 0.1	ng/g
	Perfluorotetradecane acid (PFTA)	< 0.1	ng/g
	total PFC compounds excl. LOQ	1.7	ng/g
	total PFC compounds incl. LOQ	3.4	ng/g

The results of examination refer exclusively to the checked samples.
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This report will replace report number: AR-11-GF-027379-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.1	µg/kg
	total PFC compounds excl. LOQ	1.7	µg/kg
	total PFC compounds incl. LOQ	3.5	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-027379-01

Sample Code 710-2011-19065007

Reference	albueskjell
Sample sender	SS A
Reception date time	Mr. Joakim Skovly
Transport by	10.11.2011
Client Purchase order nr.	Merged from order eunobe00000130.dbf
Purchase order date	EUNOBE00000130
Client sample code	09.11.2011
Number	441-2011-1109-019
Reception temperature	1
End analysis	cooled
	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	0.1	ng/g
	Perfluorooctanoic acid (PFOA)	< 0.1	ng/g
	total PFOS / PFOA excl. LOQ	0.1	ng/g
	total PFOS / PFOA incl. LOQ	0.2	ng/g
	Perfluorbutansulfonate (PFBS)	< 0.1	ng/g
	Perfluorobutanoic acid (PFBA)	< 0.5	ng/g
	Perfluoropentane acid (PFPeA)	< 0.1	ng/g
	Perfluorohexane sulfonate (PFHxS)	< 0.3	ng/g
	Perfluorohexanoic acid (PFHxA)	< 0.1	ng/g
	Perfluoroheptane sulphonate (PFHpS)	< 0.1	ng/g
	Perfluoroheptanoic acid (PFHpA)	< 0.1	ng/g
	Perfluorooctane-sulfonamide (PFOSA)	< 0.1	ng/g
	Perfluorononanoic acid (PFNA)	< 0.1	ng/g
	Perfluorodecane sulphonate (PFDS)	< 0.1	ng/g
	Perfluorodecanoic acid (PFDA)	< 0.1	ng/g
	Perfluoroundecanoic acid (PFUnA)	< 0.1	ng/g
	Perfluorododecane acid (PFDoA)	< 0.1	ng/g
	Perfluorotridecane acid (PFTrA)	< 0.1	ng/g
	Perfluorotetradecane acid (PFTA)	< 0.1	ng/g
	total PFC compounds excl. LOQ	0.1	ng/g
	total PFC compounds incl. LOQ	2.3	ng/g

The results of examination refer exclusively to the checked samples.
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This report will replace report number: AR-11-GF-027379-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.1	µg/kg
	total PFC compounds excl. LOQ	0.1	µg/kg
	total PFC compounds incl. LOQ	2.4	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-027379-01

Sample Code 710-2011-19065008

Reference	albueskjell
	S5 B
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-020
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	0.1	ng/g
	Perfluorooctanoic acid (PFOA)	< 0.1	ng/g
	total PFOS / PFOA excl. LOQ	0.1	ng/g
	total PFOS / PFOA incl. LOQ	0.2	ng/g
	Perfluorbutansulfonate (PFBS)	< 0.1	ng/g
	Perfluorobutanoic acid (PFBA)	< 0.2	ng/g
	Perfluoropentane acid (PFPeA)	< 0.1	ng/g
	Perfluorohexane sulfonate (PFHxS)	< 0.1	ng/g
	Perfluorohexanoic acid (PFHxA)	< 0.1	ng/g
	Perfluoroheptane sulphonate (PFHpS)	< 0.1	ng/g
	Perfluoroheptanoic acid (PFHpA)	< 0.1	ng/g
	Perfluorooctane-sulfonamide (PFOSA)	< 0.1	ng/g
	Perfluorononanoic acid (PFNA)	< 0.1	ng/g
	Perfluorodecane sulphonate (PFDS)	< 0.1	ng/g
	Perfluorodecanoic acid (PFDA)	< 0.1	ng/g
	Perfluoroundecanoic acid (PFUnA)	< 0.1	ng/g
	Perfluorododecane acid (PFDoA)	< 0.1	ng/g
	Perfluorotridecane acid (PFTrA)	< 0.1	ng/g
	Perfluorotetradecane acid (PFTA)	< 0.1	ng/g
	total PFC compounds excl. LOQ	0.1	ng/g
	total PFC compounds incl. LOQ	1.8	ng/g

The results of examination refer exclusively to the checked samples.
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GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.1	µg/kg
	total PFC compounds excl. LOQ	0.1	µg/kg
	total PFC compounds incl. LOQ	1.9	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-027379-01

Sample Code 710-2011-19065009

Reference	albueskjell
Sample sender	S5 C Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-021
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF06I	PFC (17) ~ food / feed (%) (#)		
Method	AIR OC 150, LC-MS/MS		
Perfluorooctane sulfonate (PFOS)		0.1	ng/g
Perfluorooctanoic acid (PFOA)		< 0.1	ng/g
total PFOS / PFOA excl. LOQ		0.1	ng/g
total PFOS / PFOA incl. LOQ		0.2	ng/g
Perfluorbutansulfonate (PFBS)		< 0.1	ng/g
Perfluorobutanoic acid (PFBA)		< 0.5	ng/g
Perfluoropentane acid (PFPeA)		< 0.1	ng/g
Perfluorohexane sulfonate (PFHxS)		< 0.2	ng/g
Perfluorohexanoic acid (PFHxA)		< 0.1	ng/g
Perfluoroheptane sulphonate (PFHpS)		< 0.1	ng/g
Perfluoroheptanoic acid (PFHpA)		< 0.1	ng/g
Perfluorooctane-sulfonamide (PFOSA)		< 0.1	ng/g
Perfluorononanoic acid (PFNA)		< 0.1	ng/g
Perfluorodecane sulphonate (PFDS)		< 0.1	ng/g
Perfluorodecanoic acid (PFDA)		< 0.1	ng/g
Perfluoroundecanoic acid (PFUnA)		< 0.1	ng/g
Perfluorododecane acid (PFDoA)		< 0.1	ng/g
Perfluorotridecane acid (PFTrA)		< 0.1	ng/g
Perfluorotetradecane acid (PFTA)		< 0.1	ng/g
total PFC compounds excl. LOQ		0.1	ng/g
total PFC compounds incl. LOQ		2.2	ng/g

The results of examination refer exclusively to the checked samples.
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 General Manager: Jochen Schulte
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GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.1	µg/kg
	total PFC compounds excl. LOQ	0.1	µg/kg
	total PFC compounds incl. LOQ	2.3	µg/kg

(*) = The test was performed at the site Hamburg.

#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

The results of examination refer exclusively to the checked samples.
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 HHS 115807 AG Hamburg
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This report will replace report number: AR-11-GF-027379-01

Sample Code 710-2011-19065010

Reference	albueskjell S6 A
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-023
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	0.2	ng/g
	Perfluorooctanoic acid (PFOA)	< 0.1	ng/g
	total PFOS / PFOA excl. LOQ	0.2	ng/g
	total PFOS / PFOA incl. LOQ	0.3	ng/g
	Perfluorobutansulfonate (PFBS)	< 0.1	ng/g
	Perfluorobutanoic acid (PFBA)	< 1.1	ng/g
	Perfluoropentane acid (PFPeA)	< 0.1	ng/g
	Perfluorohexane sulfonate (PFHxS)	< 0.2	ng/g
	Perfluorohexanoic acid (PFHxA)	< 0.1	ng/g
	Perfluoroheptane sulphonate (PFHpS)	< 0.1	ng/g
	Perfluoroheptanoic acid (PFHpA)	< 0.1	ng/g
	Perfluorooctane-sulfonamide (PFOSA)	< 0.1	ng/g
	Perfluorononanoic acid (PFNA)	< 0.1	ng/g
	Perfluorodecane sulphonate (PFDS)	< 0.1	ng/g
	Perfluorodecanoic acid (PFDA)	< 0.1	ng/g
	Perfluoroundecanoic acid (PFUnA)	< 0.1	ng/g
	Perfluorododecane acid (PFDoA)	< 0.1	ng/g
	Perfluorotridecane acid (PFTra)	< 0.1	ng/g
	Perfluorotetradecane acid (PFTTA)	< 0.1	ng/g
	total PFC compounds excl. LOQ	0.2	ng/g
	total PFC compounds incl. LOQ	2.9	ng/g

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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 General Manager: Jochen Schulte
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This report will replace report number: AR-11-GF-027379-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.09	µg/kg
	total PFC compounds excl. LOQ	0.2	µg/kg
	total PFC compounds incl. LOQ	3.0	µg/kg

(*) = The test was performed at the site Hamburg.

#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-027379-01

Sample Code 710-2011-19065011

Reference	albueskjell
	S6 B
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-024
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF06I	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
Perfluorooctane sulfonate (PFOS)		0.1	ng/g
Perfluorooctanoic acid (PFOA)		< 0.1	ng/g
total PFOS / PFOA excl. LOQ		0.1	ng/g
total PFOS / PFOA incl. LOQ		0.2	ng/g
Perfluorobutansulfonate (PFBS)		< 0.1	ng/g
Perfluorobutanoic acid (PFBA)		< 0.2	ng/g
Perfluoropentane acid (PFPeA)		< 0.1	ng/g
Perfluorohexane sulfonate (PFHxS)		< 0.1	ng/g
Perfluorohexanoic acid (PFHxA)		< 0.1	ng/g
Perfluoroheptane sulphonate (PFHpS)		< 0.1	ng/g
Perfluoroheptanoic acid (PFHpA)		< 0.1	ng/g
Perfluorooctane-sulfonamide (PFOSA)		< 0.1	ng/g
Perfluorononanoic acid (PFNA)		< 0.1	ng/g
Perfluorodecane sulphonate (PFDS)		< 0.1	ng/g
Perfluorodecanoic acid (PFDA)		< 0.1	ng/g
Perfluoroundecanoic acid (PFUnA)		< 0.1	ng/g
Perfluorododecane acid (PFDoA)		< 0.1	ng/g
Perfluorotridecane acid (PFTrA)		< 0.1	ng/g
Perfluorotetradecane acid (PFTA)		< 0.1	ng/g
total PFC compounds excl. LOQ		0.1	ng/g
total PFC compounds incl. LOQ		1.8	ng/g

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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 HHS 115807 AG Hamburg
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This report will replace report number: AR-11-GF-027379-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.1	µg/kg
	total PFC compounds excl. LOQ	0.1	µg/kg
	total PFC compounds incl. LOQ	1.9	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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 HRB: 115807 AG Hamburg
 General Manager: Jochen Schulte
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This report will replace report number: AR-11-GF-027379-01

Sample Code 710-2011-19065012

Reference	albueskjell
	S6 C
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-025
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF06I	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	0.2	ng/g
	Perfluorooctanoic acid (PFOA)	< 0.1	ng/g
	total PFOS / PFOA excl. LOQ	0.2	ng/g
	total PFOS / PFOA incl. LOQ	0.2	ng/g
	Perfluorbutansulfonate (PFBS)	< 0.1	ng/g
	Perfluorobutanoic acid (PFBA)	< 0.1	ng/g
	Perfluoropentane acid (PFPeA)	< 0.1	ng/g
	Perfluorohexane sulfonate (PFHxS)	< 0.2	ng/g
	Perfluorohexanoic acid (PFHxA)	< 0.1	ng/g
	Perfluoroheptane sulphonate (PFHpS)	< 0.1	ng/g
	Perfluoroheptanoic acid (PFHpA)	< 0.1	ng/g
	Perfluorooctane-sulfonamide (PFOSA)	< 0.1	ng/g
	Perfluorononanoic acid (PFNA)	< 0.1	ng/g
	Perfluorodecane sulphonate (PFDS)	< 0.1	ng/g
	Perfluorodecanoic acid (PFDA)	< 0.1	ng/g
	Perfluoroundecanoic acid (PFUnA)	< 0.1	ng/g
	Perfluorododecane acid (PFDoA)	< 0.1	ng/g
	Perfluorotridecane acid (PFTrA)	< 0.1	ng/g
	Perfluorotetradecane acid (PFTA)	< 0.1	ng/g
	total PFC compounds excl. LOQ	0.2	ng/g
	total PFC compounds incl. LOQ	1.9	ng/g

The results of examination refer exclusively to the checked samples.
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This report will replace report number: AR-11-GF-027379-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.1	µg/kg
	total PFC compounds excl. LOQ	0.2	µg/kg
	total PFC compounds incl. LOQ	2.0	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-027379-01

Sample Code 710-2011-19065013

Reference	albueskjell S7 A
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-026
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF06I	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	0.2	ng/g
	Perfluorooctanoic acid (PFOA)	< 0.1	ng/g
	total PFOS / PFOA excl. LOQ	0.2	ng/g
	total PFOS / PFOA incl. LOQ	0.3	ng/g
	Perfluorobutansulfonate (PFBS)	< 0.1	ng/g
	Perfluorobutanoic acid (PFBA)	< 0.1	ng/g
	Perfluoropentane acid (PFPeA)	< 0.2	ng/g
	Perfluorohexane sulfonate (PFHxS)	< 0.1	ng/g
	Perfluorohexanoic acid (PFHxA)	< 0.1	ng/g
	Perfluoroheptane sulphonate (PFHpS)	< 0.1	ng/g
	Perfluoroheptanoic acid (PFHpA)	< 0.1	ng/g
	Perfluorooctane-sulfonamide (PFOSA)	< 0.1	ng/g
	Perfluorononanoic acid (PFNA)	< 0.1	ng/g
	Perfluorodecane sulphonate (PFDS)	< 0.1	ng/g
	Perfluorodecanoic acid (PFDA)	< 0.1	ng/g
	Perfluoroundecanoic acid (PFUnA)	< 0.1	ng/g
	Perfluorododecane acid (PFDoA)	< 0.1	ng/g
	Perfluorotridecane acid (PFTrA)	< 0.1	ng/g
	Perfluorotetradecane acid (PFTA)	< 0.1	ng/g
	total PFC compounds excl. LOQ	0.2	ng/g
	total PFC compounds incl. LOQ	1.9	ng/g

The results of examination refer exclusively to the checked samples.
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This report will replace report number: AR-11-GF-027379-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.1	µg/kg
	total PFC compounds excl. LOQ	0.2	µg/kg
	total PFC compounds incl. LOQ	2.0	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-027379-01

Sample Code 710-2011-19065014

Reference	albueskjell S7 B
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-027
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	0.2	ng/g
	Perfluorooctanoic acid (PFOA)	< 0.1	ng/g
	total PFOS / PFOA excl. LOQ	0.2	ng/g
	total PFOS / PFOA incl. LOQ	0.3	ng/g
	Perfluorbutansulfonate (PFBS)	< 0.1	ng/g
	Perfluorobutanoic acid (PFBA)	< 0.2	ng/g
	Perfluoropentane acid (PFPeA)	< 0.1	ng/g
	Perfluorohexane sulfonate (PFHxS)	< 0.1	ng/g
	Perfluorohexanoic acid (PFHxA)	< 0.1	ng/g
	Perfluoroheptane sulphonate (PFHpS)	< 0.1	ng/g
	Perfluoroheptanoic acid (PFHpA)	< 0.1	ng/g
	Perfluorooctane-sulfonamide (PFOSA)	< 0.1	ng/g
	Perfluorononanoic acid (PFNA)	< 0.1	ng/g
	Perfluorodecane sulphonate (PFDS)	< 0.1	ng/g
	Perfluorodecanoic acid (PFDA)	< 0.1	ng/g
	Perfluoroundecanoic acid (PFUnA)	< 0.1	ng/g
	Perfluorododecane acid (PFDoA)	< 0.1	ng/g
	Perfluorotridecane acid (PFTrA)	< 0.1	ng/g
	Perfluorotetradecane acid (PFTA)	< 0.1	ng/g
	total PFC compounds excl. LOQ	0.2	ng/g
	total PFC compounds incl. LOQ	1.9	ng/g

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.1	µg/kg
	total PFC compounds excl. LOQ	0.2	µg/kg
	total PFC compounds incl. LOQ	2.0	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-027379-01

Sample Code 710-2011-19065015

Reference	albueskjell
	S7 C
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-028
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	0.2	ng/g
	Perfluorooctanoic acid (PFOA)	< 0.1	ng/g
	total PFOS / PFOA excl. LOQ	0.2	ng/g
	total PFOS / PFOA incl. LOQ	0.3	ng/g
	Perfluorbutansulfonate (PFBS)	< 0.1	ng/g
	Perfluorobutanoic acid (PFBA)	< 0.1	ng/g
	Perfluoropentane acid (PFPeA)	< 0.1	ng/g
	Perfluorohexane sulfonate (PFHxS)	< 0.1	ng/g
	Perfluorohexanoic acid (PFHxA)	< 0.1	ng/g
	Perfluoroheptane sulphonate (PFHpS)	< 0.1	ng/g
	Perfluoroheptanoic acid (PFHpA)	< 0.1	ng/g
	Perfluorooctane-sulfonamide (PFOSA)	< 0.1	ng/g
	Perfluorononanoic acid (PFNA)	< 0.1	ng/g
	Perfluorodecane sulphonate (PFDS)	< 0.1	ng/g
	Perfluorodecanoic acid (PFDA)	< 0.1	ng/g
	Perfluoroundecanoic acid (PFUnA)	< 0.1	ng/g
	Perfluorododecane acid (PFDoA)	< 0.1	ng/g
	Perfluorotridecane acid (PFTrA)	< 0.1	ng/g
	Perfluorotetradecane acid (PFTA)	< 0.1	ng/g
	total PFC compounds excl. LOQ	0.2	ng/g
	total PFC compounds incl. LOQ	1.8	ng/g

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.1	µg/kg
	total PFC compounds excl. LOQ	0.2	µg/kg
	total PFC compounds incl. LOQ	1.9	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-027379-01

Sample Code 710-2011-19065016

Reference	albueskjell
Sample sender	S8 A
Reception date time	Mr. Joakim Skovly
Transport by	10.11.2011
Client Purchase order nr.	Merged from order eunobe00000130.dbf
Purchase order date	EUNOBE00000130
Client sample code	09.11.2011
Number	441-2011-1109-029
Reception temperature	1
End analysis	cooled
	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	1.2	ng/g
	Perfluorooctanoic acid (PFOA)	< 0.1	ng/g
	total PFOS / PFOA excl. LOQ	1.2	ng/g
	total PFOS / PFOA incl. LOQ	1.3	ng/g
	Perfluorbutansulfonate (PFBS)	< 0.1	ng/g
	Perfluorobutanoic acid (PFBA)	< 0.1	ng/g
	Perfluoropentane acid (PFPeA)	< 0.1	ng/g
	Perfluorohexane sulfonate (PFHxS)	< 0.1	ng/g
	Perfluorohexanoic acid (PFHxA)	< 0.1	ng/g
	Perfluoroheptane sulphonate (PFHpS)	< 0.1	ng/g
	Perfluoroheptanoic acid (PFHpA)	< 0.1	ng/g
	Perfluorooctane-sulfonamide (PFOSA)	< 0.1	ng/g
	Perfluorononanoic acid (PFNA)	< 0.1	ng/g
	Perfluorodecane sulphonate (PFDS)	< 0.1	ng/g
	Perfluorodecanoic acid (PFDA)	0.2	ng/g
	Perfluoroundecanoic acid (PFUnA)	< 0.2	ng/g
	Perfluorododecane acid (PFDoA)	< 0.2	ng/g
	Perfluorotridecane acid (PFTrA)	< 0.2	ng/g
	Perfluorotetradecane acid (PFTA)	< 0.1	ng/g
	total PFC compounds excl. LOQ	1.4	ng/g
	total PFC compounds incl. LOQ	3.2	ng/g

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	0.3	µg/kg
	total PFC compounds excl. LOQ	1.7	µg/kg
	total PFC compounds incl. LOQ	3.5	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-027379-01

Sample Code 710-2011-19065017

Reference	albueskjell
	S8 B
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-030
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF06I	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	0.8	ng/g
	Perfluorooctanoic acid (PFOA)	< 0.1	ng/g
	total PFOS / PFOA excl. LOQ	0.8	ng/g
	total PFOS / PFOA incl. LOQ	0.9	ng/g
	Perfluorbutansulfonate (PFBS)	< 0.1	ng/g
	Perfluorobutanoic acid (PFBA)	< 0.2	ng/g
	Perfluoropentane acid (PFPeA)	< 0.1	ng/g
	Perfluorohexane sulfonate (PFHxS)	< 0.2	ng/g
	Perfluorohexanoic acid (PFHxA)	< 0.1	ng/g
	Perfluoroheptane sulphonate (PFHpS)	< 0.1	ng/g
	Perfluoroheptanoic acid (PFHpA)	< 0.1	ng/g
	Perfluorooctane-sulfonamide (PFOSA)	< 0.1	ng/g
	Perfluorononanoic acid (PFNA)	< 0.1	ng/g
	Perfluorodecane sulphonate (PFDS)	< 0.1	ng/g
	Perfluorodecanoic acid (PFDA)	0.1	ng/g
	Perfluoroundecanoic acid (PFUnA)	< 0.1	ng/g
	Perfluorododecane acid (PFDoA)	< 0.1	ng/g
	Perfluorotridecane acid (PFTrA)	< 0.1	ng/g
	Perfluorotetradecane acid (PFTA)	< 0.1	ng/g
	total PFC compounds excl. LOQ	1	ng/g
	total PFC compounds incl. LOQ	2.7	ng/g

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the lead laboratory in written form.
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GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	0.2	µg/kg
	total PFC compounds excl. LOQ	1.1	µg/kg
	total PFC compounds incl. LOQ	2.8	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-027379-01

Sample Code 710-2011-19065018

Reference	albueskjell
	S8 C
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-031
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	1.1	ng/g
	Perfluorooctanoic acid (PFOA)	< 0.1	ng/g
	total PFOS / PFOA excl. LOQ	1.1	ng/g
	total PFOS / PFOA incl. LOQ	1.2	ng/g
	Perfluorbutansulfonate (PFBS)	< 0.1	ng/g
	Perfluorobutanoic acid (PFBA)	< 0.2	ng/g
	Perfluoropentane acid (PFPeA)	< 0.1	ng/g
	Perfluorohexane sulfonate (PFHxS)	< 0.2	ng/g
	Perfluorohexanoic acid (PFHxA)	< 0.1	ng/g
	Perfluoroheptane sulphonate (PFHpS)	< 0.1	ng/g
	Perfluoroheptanoic acid (PFHpA)	< 0.1	ng/g
	Perfluorooctane-sulfonamide (PFOSA)	< 0.1	ng/g
	Perfluorononanoic acid (PFNA)	< 0.1	ng/g
	Perfluorodecane sulphonate (PFDS)	< 0.1	ng/g
	Perfluorodecanoic acid (PFDA)	0.1	ng/g
	Perfluoroundecanoic acid (PFUnA)	< 0.1	ng/g
	Perfluorododecane acid (PFDoA)	< 0.1	ng/g
	Perfluorotridecane acid (PFTrA)	< 0.1	ng/g
	Perfluorotetradecane acid (PFTA)	< 0.1	ng/g
	total PFC compounds excl. LOQ	1.2	ng/g
	total PFC compounds incl. LOQ	2.9	ng/g

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 HRB: 115807 AG Hamburg
 General Manager: Jochem Schulte
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This report will replace report number: AR-11-GF-027379-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	0.3	µg/kg
	total PFC compounds excl. LOQ	1.5	µg/kg
	total PFC compounds incl. LOQ	3.2	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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 IBAN: DE37 2505 0000 0139 8799 06



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This report will replace report number: AR-11-GF-027379-01

Sample Code 710-2011-19065019

Reference	albueskjell S9 A
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-032
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF06I	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	0.9	ng/g
	Perfluorooctanoic acid (PFOA)	< 0.1	ng/g
	total PFOS / PFOA excl. LOQ	0.9	ng/g
	total PFOS / PFOA incl. LOQ	1	ng/g
	Perfluorbutansulfonate (PFBS)	< 0.1	ng/g
	Perfluorobutanoic acid (PFBA)	< 0.2	ng/g
	Perfluoropentane acid (PFPeA)	< 0.1	ng/g
	Perfluorohexane sulfonate (PFHxS)	< 0.2	ng/g
	Perfluorohexanoic acid (PFHxA)	< 0.1	ng/g
	Perfluoroheptane sulphonate (PFHpS)	< 0.1	ng/g
	Perfluoroheptanoic acid (PFHpA)	< 0.1	ng/g
	Perfluorooctane-sulfonamide (PFOSA)	< 0.1	ng/g
	Perfluorononanoic acid (PFNA)	< 0.1	ng/g
	Perfluorodecane sulphonate (PFDS)	< 0.1	ng/g
	Perfluorodecanoic acid (PFDA)	0.2	ng/g
	Perfluoroundecanoic acid (PFUnA)	< 0.1	ng/g
	Perfluorododecane acid (PFDoA)	< 0.1	ng/g
	Perfluorotridecane acid (PFTrA)	< 0.1	ng/g
	Perfluorotetradecane acid (PFTA)	< 0.1	ng/g
	total PFC compounds excl. LOQ	1.1	ng/g
	total PFC compounds incl. LOQ	2.8	ng/g

The results of examination refer exclusively to the checked samples.
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 HRB: 119837 AG Hamburg
 General Manager: Jochen Schulte
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 BIC: BFSW33HAN
 IBAN: DE37 2505 0000 0130 0789 06



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This report will replace report number: AR-11-GF-027379-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	0.4	µg/kg
	total PFC compounds excl. LOQ	1.5	µg/kg
	total PFC compounds incl. LOQ	3.2	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-027379-01

Sample Code 710-2011-19065020

Reference	albueskjell
	S9 B
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-033
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	0.9	ng/g
	Perfluorooctanoic acid (PFOA)	< 0.1	ng/g
	total PFOS / PFOA excl. LOQ	0.9	ng/g
	total PFOS / PFOA incl. LOQ	1	ng/g
	Perfluorbutansulfonate (PFBS)	< 0.1	ng/g
	Perfluorobutanoic acid (PFBA)	< 0.1	ng/g
	Perfluoropentane acid (PFPeA)	< 0.1	ng/g
	Perfluorohexane sulfonate (PFHxS)	< 0.1	ng/g
	Perfluorohexanoic acid (PFHxA)	< 0.1	ng/g
	Perfluoroheptane sulphonate (PFHpS)	< 0.1	ng/g
	Perfluoroheptanoic acid (PFHpA)	< 0.1	ng/g
	Perfluorooctane-sulfonamide (PFOSA)	< 0.1	ng/g
	Perfluorononanoic acid (PFNA)	< 0.1	ng/g
	Perfluorodecane sulphonate (PFDS)	< 0.1	ng/g
	Perfluorodecanoic acid (PFDA)	0.2	ng/g
	Perfluoroundecanoic acid (PFUnA)	< 0.1	ng/g
	Perfluorododecane acid (PFDoA)	< 0.2	ng/g
	Perfluorotridecane acid (PFTrA)	< 0.1	ng/g
	Perfluorotetradecane acid (PFTA)	< 0.1	ng/g
	total PFC compounds excl. LOQ	1.1	ng/g
	total PFC compounds incl. LOQ	2.7	ng/g

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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 General Manager: Jochem Schulte
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GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	0.3	µg/kg
	total PFC compounds excl. LOQ	1.4	µg/kg
	total PFC compounds incl. LOQ	3.0	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-027379-01

Sample Code 710-2011-19065021

Reference	albueskjell
	S9 C
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-034
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	0.6	ng/g
	Perfluorooctanoic acid (PFOA)	< 0.1	ng/g
	total PFOS / PFOA excl. LOQ	0.6	ng/g
	total PFOS / PFOA incl. LOQ	0.7	ng/g
	Perfluorbutansulfonate (PFBS)	< 0.1	ng/g
	Perfluorobutanoic acid (PFBA)	< 0.2	ng/g
	Perfluoropentane acid (PFPeA)	< 0.1	ng/g
	Perfluorohexane sulfonate (PFHxS)	< 0.1	ng/g
	Perfluorohexanoic acid (PFHxA)	< 0.1	ng/g
	Perfluoroheptane sulphonate (PFHpS)	< 0.1	ng/g
	Perfluoroheptanoic acid (PFHpA)	< 0.1	ng/g
	Perfluorooctane-sulfonamide (PFOSA)	< 0.1	ng/g
	Perfluorononanoic acid (PFNA)	< 0.1	ng/g
	Perfluorodecane sulphonate (PFDS)	< 0.1	ng/g
	Perfluorodecanoic acid (PFDA)	0.2	ng/g
	Perfluoroundecanoic acid (PFUnA)	< 0.1	ng/g
	Perfluorododecane acid (PFDoA)	< 0.1	ng/g
	Perfluorotridecane acid (PFTrA)	< 0.1	ng/g
	Perfluorotetradecane acid (PFTA)	< 0.1	ng/g
	total PFC compounds excl. LOQ	0.8	ng/g
	total PFC compounds incl. LOQ	2.4	ng/g

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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 General Manager: Jochem Schulte
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This report will replace report number: AR-11-GF-027379-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	0.3	µg/kg
	total PFC compounds excl. LOQ	1.1	µg/kg
	total PFC compounds incl. LOQ	2.7	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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This report will replace report number: AR-11-GF-027379-01

Sample Code 710-2011-19065022

Reference	albueskjell
Sample sender	S10 A
Reception date time	Mr. Joakim Skovly
Transport by	10.11.2011
Client Purchase order nr.	Merged from order eunobe00000130.dbf
Purchase order date	EUNOBE00000130
Client sample code	09.11.2011
Number	441-2011-1109-035
Reception temperature	1
End analysis	cooled
	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	0.5	ng/g
	Perfluorooctanoic acid (PFOA)	< 0.1	ng/g
	total PFOS / PFOA excl. LOQ	0.5	ng/g
	total PFOS / PFOA incl. LOQ	0.6	ng/g
	Perfluorbutansulfonate (PFBS)	< 0.1	ng/g
	Perfluorobutanoic acid (PFBA)	< 0.3	ng/g
	Perfluoropentane acid (PFPeA)	< 0.1	ng/g
	Perfluorohexane sulfonate (PFHxS)	< 0.2	ng/g
	Perfluorohexanoic acid (PFHxA)	< 0.1	ng/g
	Perfluoroheptane sulphonate (PFHpS)	< 0.1	ng/g
	Perfluoroheptanoic acid (PFHpA)	< 0.1	ng/g
	Perfluorooctane-sulfonamide (PFOSA)	< 0.1	ng/g
	Perfluorononanoic acid (PFNA)	< 0.1	ng/g
	Perfluorodecane sulphonate (PFDS)	< 0.1	ng/g
	Perfluorodecanoic acid (PFDA)	0.1	ng/g
	Perfluoroundecanoic acid (PFUnA)	< 0.1	ng/g
	Perfluorododecane acid (PFDoA)	< 0.1	ng/g
	Perfluorotridecane acid (PFTrA)	< 0.1	ng/g
	Perfluorotetradecane acid (PFTA)	< 0.1	ng/g
	total PFC compounds excl. LOQ	0.6	ng/g
	total PFC compounds incl. LOQ	2.4	ng/g

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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This report will replace report number: AR-11-GF-027379-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	0.2	µg/kg
	total PFC compounds excl. LOQ	0.6	µg/kg
	total PFC compounds incl. LOQ	2.6	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

The results of examination refer exclusively to the checked samples.
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This report will replace report number: AR-11-GF-027379-01

Sample Code 710-2011-19065023

Reference	albueskjell
Sample sender	S10 B Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-036
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	0.5	ng/g
	Perfluorooctanoic acid (PFOA)	< 0.1	ng/g
	total PFOS / PFOA excl. LOQ	0.5	ng/g
	total PFOS / PFOA incl. LOQ	0.6	ng/g
	Perfluorbutansulfonate (PFBS)	< 0.1	ng/g
	Perfluorobutanoic acid (PFBA)	< 0.1	ng/g
	Perfluoropentane acid (PFPeA)	< 0.1	ng/g
	Perfluorohexane sulfonate (PFHxS)	< 0.1	ng/g
	Perfluorohexanoic acid (PFHxA)	< 0.1	ng/g
	Perfluoroheptane sulphonate (PFHpS)	< 0.1	ng/g
	Perfluoroheptanoic acid (PFHpA)	< 0.1	ng/g
	Perfluorooctane-sulfonamide (PFOSA)	< 0.1	ng/g
	Perfluorononanoic acid (PFNA)	< 0.1	ng/g
	Perfluorodecane sulphonate (PFDS)	< 0.1	ng/g
	Perfluorodecanoic acid (PFDA)	0.2	ng/g
	Perfluoroundecanoic acid (PFUnA)	< 0.1	ng/g
	Perfluorododecane acid (PFDoA)	< 0.1	ng/g
	Perfluorotridecane acid (PFTrA)	< 0.1	ng/g
	Perfluorotetradecane acid (PFTA)	< 0.1	ng/g
	total PFC compounds excl. LOQ	0.6	ng/g
	total PFC compounds incl. LOQ	2.1	ng/g

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	0.3	µg/kg
	total PFC compounds excl. LOQ	0.9	µg/kg
	total PFC compounds incl. LOQ	2.4	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

The results of examination refer exclusively to the checked samples.
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This report will replace report number: AR-11-GF-027379-01

Sample Code 710-2011-19065024

Reference	albueskjell
Sample sender	S10 C Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-037
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF06I	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	0.5	ng/g
	Perfluorooctanoic acid (PFOA)	< 0.1	ng/g
	total PFOS / PFOA excl. LOQ	0.5	ng/g
	total PFOS / PFOA incl. LOQ	0.6	ng/g
	Perfluorbutansulfonate (PFBS)	< 0.1	ng/g
	Perfluorobutanoic acid (PFBA)	< 0.2	ng/g
	Perfluoropentane acid (PFPeA)	< 0.1	ng/g
	Perfluorohexane sulfonate (PFHxS)	< 0.2	ng/g
	Perfluorohexanoic acid (PFHxA)	< 0.1	ng/g
	Perfluoroheptane sulphonate (PFHpS)	< 0.1	ng/g
	Perfluoroheptanoic acid (PFHpA)	< 0.1	ng/g
	Perfluorooctane-sulfonamide (PFOSA)	< 0.1	ng/g
	Perfluorononanoic acid (PFNA)	< 0.1	ng/g
	Perfluorodecane sulphonate (PFDS)	< 0.1	ng/g
	Perfluorodecanoic acid (PFDA)	0.2	ng/g
	Perfluoroundecanoic acid (PFUnA)	< 0.1	ng/g
	Perfluorododecane acid (PFDoA)	< 0.1	ng/g
	Perfluorotridecane acid (PFTrA)	< 0.1	ng/g
	Perfluorotetradecane acid (PFTA)	< 0.1	ng/g
	total PFC compounds excl. LOQ	0.7	ng/g
	total PFC compounds incl. LOQ	2.4	ng/g

The results of examination refer exclusively to the checked samples.
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GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	0.3	µg/kg
	total PFC compounds excl. LOQ	1.0	µg/kg
	total PFC compounds incl. LOQ	2.7	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-027379-01

Sample Code 710-2011-19065025

Reference	albueskjell
	Ref A
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-038
Number	1
Reception temperature	cooled
End analysis	26.03.2012

Test results

GF06I	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	0.1	ng/g
	Perfluorooctanoic acid (PFOA)	< 0.1	ng/g
	total PFOS / PFOA excl. LOQ	0.1	ng/g
	total PFOS / PFOA incl. LOQ	0.2	ng/g
	Perfluorbutansulfonate (PFBS)	< 0.1	ng/g
	Perfluorobutanoic acid (PFBA)	< 0.1	ng/g
	Perfluoropentane acid (PFPeA)	< 0.1	ng/g
	Perfluorohexane sulfonate (PFHxS)	< 0.1	ng/g
	Perfluorohexanoic acid (PFHxA)	< 0.1	ng/g
	Perfluoroheptane sulphonate (PFHpS)	< 0.1	ng/g
	Perfluoroheptanoic acid (PFHpA)	< 0.1	ng/g
	Perfluorooctane-sulfonamide (PFOSA)	< 0.1	ng/g
	Perfluorononanoic acid (PFNA)	< 0.1	ng/g
	Perfluorodecane sulphonate (PFDS)	< 0.1	ng/g
	Perfluorodecanoic acid (PFDA)	< 0.1	ng/g
	Perfluoroundecanoic acid (PFUnA)	< 0.1	ng/g
	Perfluorododecane acid (PFDoA)	< 0.1	ng/g
	Perfluorotridecane acid (PFTrA)	< 0.1	ng/g
	Perfluorotetradecane acid (PFTTA)	< 0.1	ng/g
	total PFC compounds excl. LOQ	0.1	ng/g
	total PFC compounds incl. LOQ	1.7	ng/g

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GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.1	µg/kg
	total PFC compounds excl. LOQ	0.1	µg/kg
	total PFC compounds incl. LOQ	1.8	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-027379-01

Sample Code 710-2011-19065026

Reference	albueskjell
	Ref B
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-039
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	0.1	ng/g
	Perfluorooctanoic acid (PFOA)	< 0.1	ng/g
	total PFOS / PFOA excl. LOQ	0.1	ng/g
	total PFOS / PFOA incl. LOQ	0.2	ng/g
	Perfluorbutansulfonate (PFBS)	< 0.1	ng/g
	Perfluorobutanoic acid (PFBA)	< 0.2	ng/g
	Perfluoropentane acid (PFPeA)	< 0.1	ng/g
	Perfluorohexane sulfonate (PFHxS)	< 0.1	ng/g
	Perfluorohexanoic acid (PFHxA)	< 0.1	ng/g
	Perfluoroheptane sulphonate (PFHpS)	< 0.1	ng/g
	Perfluoroheptanoic acid (PFHpA)	< 0.1	ng/g
	Perfluorooctane-sulfonamide (PFOSA)	< 0.1	ng/g
	Perfluorononanoic acid (PFNA)	< 0.1	ng/g
	Perfluorodecane sulphonate (PFDS)	< 0.1	ng/g
	Perfluorodecanoic acid (PFDA)	< 0.1	ng/g
	Perfluoroundecanoic acid (PFUnA)	< 0.1	ng/g
	Perfluorododecane acid (PFDoA)	< 0.1	ng/g
	Perfluorotridecane acid (PFTrA)	< 0.1	ng/g
	Perfluorotetradecane acid (PFTA)	< 0.1	ng/g
	total PFC compounds excl. LOQ	0.1	ng/g
	total PFC compounds incl. LOQ	1.8	ng/g

The results of examination refer exclusively to the checked samples.
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This report will replace report number: AR-11-GF-027379-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.1	µg/kg
	total PFC compounds excl. LOQ	0.1	µg/kg
	total PFC compounds incl. LOQ	1.9	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-027379-01

Sample Code 710-2011-19065027

Reference	albueskjell
	Ref C
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-040
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	0.1	ng/g
	Perfluorooctanoic acid (PFOA)	< 0.1	ng/g
	total PFOS / PFOA excl. LOQ	0.1	ng/g
	total PFOS / PFOA incl. LOQ	0.2	ng/g
	Perfluorbutansulfonate (PFBS)	< 0.1	ng/g
	Perfluorobutanoic acid (PFBA)	< 0.1	ng/g
	Perfluoropentane acid (PFPeA)	< 0.1	ng/g
	Perfluorohexane sulfonate (PFHxS)	< 0.1	ng/g
	Perfluorohexanoic acid (PFHxA)	< 0.1	ng/g
	Perfluoroheptane sulphonate (PFHpS)	< 0.1	ng/g
	Perfluoroheptanoic acid (PFHpA)	< 0.1	ng/g
	Perfluorooctane-sulfonamide (PFOSA)	< 0.1	ng/g
	Perfluorononanoic acid (PFNA)	< 0.1	ng/g
	Perfluorodecane sulphonate (PFDS)	< 0.1	ng/g
	Perfluorodecanoic acid (PFDA)	< 0.1	ng/g
	Perfluoroundecanoic acid (PFUnA)	< 0.1	ng/g
	Perfluorododecane acid (PFDoA)	< 0.1	ng/g
	Perfluorotridecane acid (PFTrA)	< 0.1	ng/g
	Perfluorotetradecane acid (PFTA)	< 0.1	ng/g
	total PFC compounds excl. LOQ	0.1	ng/g
	total PFC compounds incl. LOQ	1.7	ng/g

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GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.1	µg/kg
	total PFC compounds excl. LOQ	0.1	µg/kg
	total PFC compounds incl. LOQ	1.8	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

This electronically generated test report has been checked and approved. It is also valid without signature.

Dr. Dieter Stegemann
(Analytical Services Manager)

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GfA Lab Service

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Eurofins GfA Lab Service GmbH · Otto-Hahn-Str.22 · D-48161 Münster

Eurofins Norsk Miljøanalyse AS, avd. Bergen
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PO Box 17 Sandviken
N-5812 Bergen
NORWEGEN

Person in charge Mr. B. Homburg
ASM Mr. B. Homburg - 102

Report date 26.03.2012
Page 1/60

Analytical report AR-11-GF-028904-02

This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063001**Reference****Sample sender****Reception date time****Transport by****Client Purchase order nr.****Purchase order date****Client sample code****Number****Reception temperature****End analysis**

Lever

Ref 1

Mr. Joakim Skovly

10.11.2011

Merged from order eunobe00000130.dbf

EUNOBE00000130

09.11.2011

441-2011-1109-041

1

cooled

24.03.2012

Test results**GF061 PFC (17) ~ food / feed (*) (#)**

Method	AIR OC 150, LC-MS/MS		
Perfluorooctane sulfonate (PFOS)		2.9	µg/kg
Perfluorooctanoic acid (PFOA)		0.2	µg/kg
total PFOS / PFOA excl. LOQ		3.1	µg/kg
total PFOS / PFOA incl. LOQ		3.1	µg/kg
Perfluorbutansulfonate (PFBS)		< 0.2	µg/kg
Perfluorbutanoic acid (PFBA)		0.5	µg/kg
Perfluoropentane acid (PFPeA)		< 1.2	µg/kg
Perfluorohexane sulfonate (PFHxS)		< 0.2	µg/kg
Perfluorohexanoic acid (PFHxA)		< 0.3	µg/kg
Perfluoroheptane sulphonate (PFHpS)		< 0.2	µg/kg
Perfluoroheptanoic acid (PFHpA)		< 0.4	µg/kg
Perfluorooctane-sulfonamide (PFOSA)		< 0.2	µg/kg

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Perfluorononanoic acid (PFNA)	< 0.2	µg/kg
Perfluorodecane sulphonate (PFDS)	< 0.2	µg/kg
Perfluorodecanoic acid (PFDA)	< 0.3	µg/kg
Perfluoroundecanoic acid (PFUnA)	< 0.6	µg/kg
Perfluorododecane acid (PFDoA)	< 0.4	µg/kg
Perfluorotridecane acid (PFTrA)	< 0.4	µg/kg
Perfluorotetradecane acid (PFTA)	< 0.4	µg/kg
total PFC compounds excl. LOQ	3.6	µg/kg
total PFC compounds incl. LOQ	9.0	µg/kg

GF05Q PFC (H4PFOS) ~ environment (*) (#)

Method	Internal Method, LC-MS/MS	
6:2 Fluorotelomer sulfonate (FTS)	< 0.2	µg/kg
total PFC compounds excl. LOQ	3.6	µg/kg
total PFC compounds incl. LOQ	9.2	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063002

Reference	Lever
	Ref 2
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-042
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	2.1	µg/kg
	Perfluorooctanoic acid (PFOA)	< 0.2	µg/kg
	total PFOS / PFOA excl. LOQ	2.1	µg/kg
	total PFOS / PFOA incl. LOQ	2.3	µg/kg
	Perfluorbutansulfonate (PFBS)	< 0.2	µg/kg
	Perfluorobutanoic acid (PFBA)	0.7	µg/kg
	Perfluoropentane acid (PFPeA)	< 0.6	µg/kg
	Perfluorohexane sulfonate (PFHxS)	< 0.2	µg/kg
	Perfluorohexanoic acid (PFHxA)	< 0.3	µg/kg
	Perfluoroheptane sulphonate (PFHpS)	< 0.2	µg/kg
	Perfluoroheptanoic acid (PFHpA)	< 0.8	µg/kg
	Perfluorooctane-sulfonamide (PFOSA)	< 0.2	µg/kg
	Perfluorononanoic acid (PFNA)	< 0.2	µg/kg
	Perfluorodecane sulphonate (PFDS)	< 0.2	µg/kg
	Perfluorodecanoic acid (PFDA)	< 0.4	µg/kg
	Perfluoroundecanoic acid (PFUnA)	< 0.6	µg/kg
	Perfluorododecane acid (PFDoA)	< 0.3	µg/kg
	Perfluorotridecane acid (PFTrA)	< 0.4	µg/kg
	Perfluorotetradecane acid (PFTA)	< 0.4	µg/kg
	total PFC compounds excl. LOQ	2.8	µg/kg
	total PFC compounds incl. LOQ	8.2	µg/kg

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.2	µg/kg
	total PFC compounds excl. LOQ	2.6	µg/kg
	total PFC compounds incl. LOQ	8.5	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063003

Reference	Lever
	Ref 3
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-043
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	2.5	µg/kg
	Perfluorooctanoic acid (PFOA)	< 0.3	µg/kg
	total PFOS / PFOA excl. LOQ	2.5	µg/kg
	total PFOS / PFOA incl. LOQ	2.7	µg/kg
	Perfluorbutansulfonate (PFBS)	< 0.3	µg/kg
	Perfluorobutanoic acid (PFBA)	< 0.3	µg/kg
	Perfluoropentane acid (PFPeA)	< 0.7	µg/kg
	Perfluorohexane sulfonate (PFHxS)	< 0.3	µg/kg
	Perfluorohexanoic acid (PFHxA)	< 0.3	µg/kg
	Perfluoroheptane sulphonate (PFHpS)	< 0.3	µg/kg
	Perfluoroheptanoic acid (PFHpA)	< 0.3	µg/kg
	Perfluorooctane-sulfonamide (PFOSA)	< 0.3	µg/kg
	Perfluorononanoic acid (PFNA)	< 0.3	µg/kg
	Perfluorodecane sulphonate (PFDS)	< 0.3	µg/kg
	Perfluorodecanoic acid (PFDA)	< 0.4	µg/kg
	Perfluoroundecanoic acid (PFUnA)	< 0.6	µg/kg
	Perfluorododecane acid (PFDoA)	< 0.3	µg/kg
	Perfluorotridecane acid (PFTrA)	< 0.3	µg/kg
	Perfluorotetradecane acid (PFTA)	< 0.3	µg/kg
	total PFC compounds excl. LOQ	2.5	µg/kg
	total PFC compounds incl. LOQ	7.8	µg/kg

The results of examination refer exclusively to the checked samples.
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 Headquarters: Eurofins GfA Lab Service GmbH - Neukircher Kamp 1 D-21079 Hamburg
 HRB: 115807 AG Hamburg
 General Manager: Jochem Schulte
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 BIC: BFSW33HAN
 IBAN: DE37 2505 0000 0120 0000 0000



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This report will replace report number: AR-11-GF-028904-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.3	µg/kg
	total PFC compounds excl. LOQ	2.5	µg/kg
	total PFC compounds incl. LOQ	8.0	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063004

Reference	Lever
	Ref 5
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-044
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
Perfluorooctane sulfonate (PFOS)		3.0	µg/kg
Perfluorooctanoic acid (PFOA)		< 0.2	µg/kg
total PFOS / PFOA excl. LOQ		3.0	µg/kg
total PFOS / PFOA incl. LOQ		3.2	µg/kg
Perfluorbutansulfonate (PFBS)		< 0.2	µg/kg
Perfluorobutanoic acid (PFBA)		1.4	µg/kg
Perfluoropentane acid (PFPeA)		< 1	µg/kg
Perfluorohexane sulfonate (PFHxS)		< 0.2	µg/kg
Perfluorohexanoic acid (PFHxA)		< 0.3	µg/kg
Perfluoroheptane sulphonate (PFHpS)		< 0.2	µg/kg
Perfluoroheptanoic acid (PFHpA)		< 0.4	µg/kg
Perfluorooctane-sulfonamide (PFOSA)		< 0.2	µg/kg
Perfluorononanoic acid (PFNA)		< 0.2	µg/kg
Perfluorodecane sulphonate (PFDS)		< 0.2	µg/kg
Perfluorodecanoic acid (PFDA)		< 0.4	µg/kg
Perfluoroundecanoic acid (PFUnA)		< 0.6	µg/kg
Perfluorododecane acid (PFDoA)		< 0.4	µg/kg
Perfluorotridecane acid (PFTrA)		< 0.3	µg/kg
Perfluorotetradecane acid (PFTA)		< 0.3	µg/kg
total PFC compounds excl. LOQ		4.4	µg/kg
total PFC compounds incl. LOQ		9.8	µg/kg

The results of examination refer exclusively to the checked samples.
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This report will replace report number: AR-11-GF-028904-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.2	µg/kg
	total PFC compounds excl. LOQ	4.4	µg/kg
	total PFC compounds incl. LOQ	10	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063005

Reference	Lever
	Ref 6
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-045
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	5.3	µg/kg
	Perfluorooctanoic acid (PFOA)	< 0.2	µg/kg
	total PFOS / PFOA excl. LOQ	5.3	µg/kg
	total PFOS / PFOA incl. LOQ	5.5	µg/kg
	Perfluorbutansulfonate (PFBS)	< 0.2	µg/kg
	Perfluorobutanoic acid (PFBA)	1	µg/kg
	Perfluoropentane acid (PFPeA)	< 1.3	µg/kg
	Perfluorohexane sulfonate (PFHxS)	< 0.4	µg/kg
	Perfluorohexanoic acid (PFHxA)	< 0.5	µg/kg
	Perfluoroheptane sulphonate (PFHpS)	< 0.2	µg/kg
	Perfluoroheptanoic acid (PFHpA)	< 0.8	µg/kg
	Perfluorooctane-sulfonamide (PFOSA)	< 0.2	µg/kg
	Perfluorononanoic acid (PFNA)	< 0.3	µg/kg
	Perfluorodecane sulphonate (PFDS)	< 0.2	µg/kg
	Perfluorodecanoic acid (PFDA)	< 0.4	µg/kg
	Perfluoroundecanoic acid (PFUnA)	< 0.9	µg/kg
	Perfluorododecane acid (PFDoA)	< 0.6	µg/kg
	Perfluorotridecane acid (PFTrA)	< 0.3	µg/kg
	Perfluorotetradecane acid (PFTA)	< 0.3	µg/kg
	total PFC compounds excl. LOQ	6.3	µg/kg
	total PFC compounds incl. LOQ	13.1	µg/kg

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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This report will replace report number: AR-11-GF-028904-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.2	µg/kg
	total PFC compounds excl. LOQ	6.3	µg/kg
	total PFC compounds incl. LOQ	13.3	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063006

Reference	Lever
	Ref 7
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-046
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF06I	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	2.4	µg/kg
	Perfluorooctanoic acid (PFOA)	< 0.2	µg/kg
	total PFOS / PFOA excl. LOQ	2.4	µg/kg
	total PFOS / PFOA incl. LOQ	2.6	µg/kg
	Perfluorobutansulfonate (PFBS)	< 0.2	µg/kg
	Perfluorobutanoic acid (PFBA)	< 0.2	µg/kg
	Perfluoropentane acid (PFPeA)	< 0.2	µg/kg
	Perfluorohexane sulfonate (PFHxS)	< 0.2	µg/kg
	Perfluorohexanoic acid (PFHxA)	< 0.2	µg/kg
	Perfluoroheptane sulphonate (PFHpS)	< 0.2	µg/kg
	Perfluoroheptanoic acid (PFHpA)	< 0.2	µg/kg
	Perfluorooctane-sulfonamide (PFOSA)	< 0.3	µg/kg
	Perfluorononanoic acid (PFNA)	< 0.2	µg/kg
	Perfluorodecane sulphonate (PFDS)	< 0.2	µg/kg
	Perfluorodecanoic acid (PFDA)	< 0.3	µg/kg
	Perfluoroundecanoic acid (PFUnA)	< 0.5	µg/kg
	Perfluorododecane acid (PFDoA)	< 0.2	µg/kg
	Perfluorotridecane acid (PFTrA)	< 0.2	µg/kg
	Perfluorotetradecane acid (PFTTA)	< 0.2	µg/kg
	total PFC compounds excl. LOQ	2.4	µg/kg
	total PFC compounds incl. LOQ	6.3	µg/kg

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.2	µg/kg
	total PFC compounds excl. LOQ	2.4	µg/kg
	total PFC compounds incl. LOQ	6.5	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063007

Reference	Lever
	Ref 8
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-047
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF06I	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	5.0	µg/kg
	Perfluorooctanoic acid (PFOA)	0.3	µg/kg
	total PFOS / PFOA excl. LOQ	5.3	µg/kg
	total PFOS / PFOA incl. LOQ	5.3	µg/kg
	Perfluorbutansulfonate (PFBS)	< 0.2	µg/kg
	Perfluorobutanoic acid (PFBA)	0.3	µg/kg
	Perfluoropentane acid (PFPeA)	< 1.1	µg/kg
	Perfluorohexane sulfonate (PFHxS)	< 0.2	µg/kg
	Perfluorohexanoic acid (PFHxA)	< 0.3	µg/kg
	Perfluoroheptane sulphonate (PFHpS)	< 0.2	µg/kg
	Perfluoroheptanoic acid (PFHpA)	< 1.0	µg/kg
	Perfluorooctane-sulfonamide (PFOSA)	< 0.2	µg/kg
	Perfluorononanoic acid (PFNA)	< 0.5	µg/kg
	Perfluorodecane sulphonate (PFDS)	< 0.2	µg/kg
	Perfluorodecanoic acid (PFDA)	< 0.6	µg/kg
	Perfluoroundecanoic acid (PFUnA)	< 1.3	µg/kg
	Perfluorododecane acid (PFDoA)	< 1.2	µg/kg
	Perfluorotridecane acid (PFTrA)	< 0.7	µg/kg
	Perfluorotetradecane acid (PFTTA)	< 0.7	µg/kg
	total PFC compounds excl. LOQ	5.6	µg/kg
	total PFC compounds incl. LOQ	14.1	µg/kg

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.2	µg/kg
	total PFC compounds excl. LOQ	5.6	µg/kg
	total PFC compounds incl. LOQ	14.4	µg/kg

(*) = The test was performed at the site Hamburg.

#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

The results of examination refer exclusively to the checked samples.
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 HHS 115807 AG Hamburg
 General Manager: Jochen Schulte
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 IBAN: DE37 2505 0000 0199 8796 06



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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063008

Reference	Lever
	Ref 9
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-048
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	1.7	µg/kg
	Perfluorooctanoic acid (PFOA)	< 0.2	µg/kg
	total PFOS / PFOA excl. LOQ	1.7	µg/kg
	total PFOS / PFOA incl. LOQ	1.9	µg/kg
	Perfluorbutansulfonate (PFBS)	< 0.2	µg/kg
	Perfluorobutanoic acid (PFBA)	< 0.2	µg/kg
	Perfluoropentane acid (PFPeA)	< 0.2	µg/kg
	Perfluorohexane sulfonate (PFHxS)	< 0.2	µg/kg
	Perfluorohexanoic acid (PFHxA)	< 0.2	µg/kg
	Perfluoroheptane sulphonate (PFHpS)	< 0.2	µg/kg
	Perfluoroheptanoic acid (PFHpA)	< 0.2	µg/kg
	Perfluorooctane-sulfonamide (PFOSA)	< 0.3	µg/kg
	Perfluorononanoic acid (PFNA)	< 0.2	µg/kg
	Perfluorodecane sulphonate (PFDS)	< 0.2	µg/kg
	Perfluorodecanoic acid (PFDA)	< 0.2	µg/kg
	Perfluoroundecanoic acid (PFUnA)	< 0.4	µg/kg
	Perfluorododecane acid (PFDoA)	< 0.3	µg/kg
	Perfluorotridecane acid (PFTrA)	< 0.2	µg/kg
	Perfluorotetradecane acid (PFTA)	< 0.2	µg/kg
	total PFC compounds excl. LOQ	1.7	µg/kg
	total PFC compounds incl. LOQ	5.4	µg/kg

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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 General Manager: Jochem Schulte
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GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.2	µg/kg
	total PFC compounds excl. LOQ	1.7	µg/kg
	total PFC compounds incl. LOQ	5.6	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063009

Reference	Lever
	Ref 10
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-049
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	5.2	µg/kg
	Perfluorooctanoic acid (PFOA)	< 0.2	µg/kg
	total PFOS / PFOA excl. LOQ	5.2	µg/kg
	total PFOS / PFOA incl. LOQ	5.5	µg/kg
	Perfluorbutansulfonate (PFBS)	< 0.2	µg/kg
	Perfluorobutanoic acid (PFBA)	< 0.2	µg/kg
	Perfluoropentane acid (PFPeA)	< 1.3	µg/kg
	Perfluorohexane sulfonate (PFHxS)	< 0.4	µg/kg
	Perfluorohexanoic acid (PFHxA)	< 0.2	µg/kg
	Perfluoroheptane sulphonate (PFHpS)	< 0.2	µg/kg
	Perfluoroheptanoic acid (PFHpA)	< 0.2	µg/kg
	Perfluorooctane-sulfonamide (PFOSA)	< 0.2	µg/kg
	Perfluorononanoic acid (PFNA)	< 0.2	µg/kg
	Perfluorodecane sulphonate (PFDS)	< 0.2	µg/kg
	Perfluorodecanoic acid (PFDA)	< 0.4	µg/kg
	Perfluoroundecanoic acid (PFUnA)	< 0.7	µg/kg
	Perfluorododecane acid (PFDoA)	< 0.4	µg/kg
	Perfluorotridecane acid (PFTrA)	< 0.4	µg/kg
	Perfluorotetradecane acid (PFTA)	< 0.4	µg/kg
	total PFC compounds excl. LOQ	5.2	µg/kg
	total PFC compounds incl. LOQ	11.4	µg/kg

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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 HRB: 111967 AG Hamburg
 General Manager: Jochem Schulte
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 BIC: BFSW33HAN
 IBAN: DE37 2505 0000 0130 0789 06



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This report will replace report number: AR-11-GF-028904-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.2	µg/kg
	total PFC compounds excl. LOQ	5.2	µg/kg
	total PFC compounds incl. LOQ	11.6	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063010

Reference	Lever
	Ref 11
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-050
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	4.8	µg/kg
	Perfluorooctanoic acid (PFOA)	< 0.2	µg/kg
	total PFOS / PFOA excl. LOQ	4.8	µg/kg
	total PFOS / PFOA incl. LOQ	5.0	µg/kg
	Perfluorbutansulfonate (PFBS)	< 0.2	µg/kg
	Perfluorobutanoic acid (PFBA)	< 1.8	µg/kg
	Perfluoropentane acid (PFPeA)	< 1.5	µg/kg
	Perfluorohexane sulfonate (PFHxS)	< 0.5	µg/kg
	Perfluorohexanoic acid (PFHxA)	< 0.4	µg/kg
	Perfluoroheptane sulphonate (PFHpS)	< 0.2	µg/kg
	Perfluoroheptanoic acid (PFHpA)	< 0.8	µg/kg
	Perfluorooctane-sulfonamide (PFOSA)	< 0.2	µg/kg
	Perfluorononanoic acid (PFNA)	< 0.6	µg/kg
	Perfluorodecane sulphonate (PFDS)	< 0.2	µg/kg
	Perfluorodecanoic acid (PFDA)	< 0.4	µg/kg
	Perfluoroundecanoic acid (PFUnA)	< 0.8	µg/kg
	Perfluorododecane acid (PFDoA)	< 0.6	µg/kg
	Perfluorotridecane acid (PFTrA)	< 0.6	µg/kg
	Perfluorotetradecane acid (PFTA)	< 0.6	µg/kg
	total PFC compounds excl. LOQ	4.8	µg/kg
	total PFC compounds incl. LOQ	14.4	µg/kg

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This report will replace report number: AR-11-GF-028904-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.2	µg/kg
	total PFC compounds excl. LOQ	4.6	µg/kg
	total PFC compounds incl. LOQ	14.6	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063011

Reference	Lever
	Ref 12
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-051
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	4.5	µg/kg
	Perfluorooctanoic acid (PFOA)	< 0.2	µg/kg
	total PFOS / PFOA excl. LOQ	4.5	µg/kg
	total PFOS / PFOA incl. LOQ	4.7	µg/kg
	Perfluorbutansulfonate (PFBS)	< 0.2	µg/kg
	Perfluorobutanoic acid (PFBA)	< 0.2	µg/kg
	Perfluoropentane acid (PFPeA)	< 0.6	µg/kg
	Perfluorohexane sulfonate (PFHxS)	< 0.3	µg/kg
	Perfluorohexanoic acid (PFHxA)	< 0.2	µg/kg
	Perfluoroheptane sulphonate (PFHpS)	< 0.2	µg/kg
	Perfluoroheptanoic acid (PFHpA)	< 0.2	µg/kg
	Perfluorooctane-sulfonamide (PFOSA)	< 0.2	µg/kg
	Perfluorononanoic acid (PFNA)	< 0.3	µg/kg
	Perfluorodecane sulphonate (PFDS)	< 0.2	µg/kg
	Perfluorodecanoic acid (PFDA)	< 0.8	µg/kg
	Perfluoroundecanoic acid (PFUnA)	< 1.6	µg/kg
	Perfluorododecane acid (PFDoA)	< 0.5	µg/kg
	Perfluorotridecane acid (PFTrA)	< 0.3	µg/kg
	Perfluorotetradecane acid (PFTA)	< 0.3	µg/kg
	total PFC compounds excl. LOQ	4.5	µg/kg
	total PFC compounds incl. LOQ	10.8	µg/kg

The results of examination refer exclusively to the checked samples.
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This report will replace report number: AR-11-GF-028904-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.2	µg/kg
	total PFC compounds excl. LOQ	4.5	µg/kg
	total PFC compounds incl. LOQ	11.0	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063012

Reference	Lever
	Ref 13
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-052
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF06I	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	1.1	µg/kg
	Perfluorooctanoic acid (PFOA)	< 0.2	µg/kg
	total PFOS / PFOA excl. LOQ	1.1	µg/kg
	total PFOS / PFOA incl. LOQ	1.3	µg/kg
	Perfluorobutansulfonate (PFBS)	< 0.2	µg/kg
	Perfluorobutanoic acid (PFBA)	< 0.2	µg/kg
	Perfluoropentane acid (PFPeA)	< 0.2	µg/kg
	Perfluorohexane sulfonate (PFHxS)	< 0.2	µg/kg
	Perfluorohexanoic acid (PFHxA)	< 0.2	µg/kg
	Perfluoroheptane sulphonate (PFHpS)	< 0.2	µg/kg
	Perfluoroheptanoic acid (PFHpA)	< 0.2	µg/kg
	Perfluorooctane-sulfonamide (PFOSA)	< 0.2	µg/kg
	Perfluorononanoic acid (PFNA)	< 0.2	µg/kg
	Perfluorodecane sulphonate (PFDS)	< 0.2	µg/kg
	Perfluorodecanoic acid (PFDA)	< 0.2	µg/kg
	Perfluoroundecanoic acid (PFUnA)	< 0.3	µg/kg
	Perfluorododecane acid (PFDoA)	< 0.2	µg/kg
	Perfluorotridecane acid (PFTrA)	< 0.2	µg/kg
	Perfluorotetradecane acid (PFTA)	< 0.2	µg/kg
	total PFC compounds excl. LOQ	1.1	µg/kg
	total PFC compounds incl. LOQ	4.4	µg/kg

The results of examination refer exclusively to the checked samples.
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This report will replace report number: AR-11-GF-028904-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.2	µg/kg
	total PFC compounds excl. LOQ	1.1	µg/kg
	total PFC compounds incl. LOQ	4.6	µg/kg

(*) = The test was performed at the site Hamburg.

#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063013

Reference	Lever
	Ref 14
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-053
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF06I	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	2.5	µg/kg
	Perfluorooctanoic acid (PFOA)	< 0.3	µg/kg
	total PFOS / PFOA excl. LOQ	2.5	µg/kg
	total PFOS / PFOA incl. LOQ	2.7	µg/kg
	Perfluorobutansulfonate (PFBS)	< 0.3	µg/kg
	Perfluorobutanoic acid (PFBA)	< 0.3	µg/kg
	Perfluoropentane acid (PFPeA)	< 0.5	µg/kg
	Perfluorohexane sulfonate (PFHxS)	< 0.3	µg/kg
	Perfluorohexanoic acid (PFHxA)	< 0.4	µg/kg
	Perfluoroheptane sulphonate (PFHpS)	< 0.3	µg/kg
	Perfluoroheptanoic acid (PFHpA)	< 1.4	µg/kg
	Perfluorooctane-sulfonamide (PFOSA)	< 0.3	µg/kg
	Perfluorononanoic acid (PFNA)	< 0.3	µg/kg
	Perfluorodecane sulphonate (PFDS)	< 0.3	µg/kg
	Perfluorodecanoic acid (PFDA)	< 0.3	µg/kg
	Perfluoroundecanoic acid (PFUnA)	< 0.4	µg/kg
	Perfluorododecane acid (PFDoA)	< 0.3	µg/kg
	Perfluorotridecane acid (PFTrA)	< 0.3	µg/kg
	Perfluorotetradecane acid (PFTTA)	< 0.3	µg/kg
	total PFC compounds excl. LOQ	2.5	µg/kg
	total PFC compounds incl. LOQ	8.7	µg/kg

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GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.3	µg/kg
	total PFC compounds excl. LOQ	2.5	µg/kg
	total PFC compounds incl. LOQ	9.0	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063014

Reference	Lever
	Ref 15
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-054
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	3.7	µg/kg
	Perfluorooctanoic acid (PFOA)	< 0.2	µg/kg
	total PFOS / PFOA excl. LOQ	3.7	µg/kg
	total PFOS / PFOA incl. LOQ	3.9	µg/kg
	Perfluorbutansulfonate (PFBS)	< 0.2	µg/kg
	Perfluorobutanoic acid (PFBA)	< 2.3	µg/kg
	Perfluoropentane acid (PFPeA)	< 1.6	µg/kg
	Perfluorohexane sulfonate (PFHxS)	< 0.4	µg/kg
	Perfluorohexanoic acid (PFHxA)	< 0.5	µg/kg
	Perfluoroheptane sulphonate (PFHpS)	< 0.2	µg/kg
	Perfluoroheptanoic acid (PFHpA)	< 1.2	µg/kg
	Perfluorooctane-sulfonamide (PFOSA)	< 0.2	µg/kg
	Perfluorononanoic acid (PFNA)	< 0.2	µg/kg
	Perfluorodecane sulphonate (PFDS)	< 0.2	µg/kg
	Perfluorodecanoic acid (PFDA)	< 0.2	µg/kg
	Perfluoroundecanoic acid (PFUnA)	< 0.7	µg/kg
	Perfluorododecane acid (PFDoA)	< 0.2	µg/kg
	Perfluorotridecane acid (PFTrA)	< 0.3	µg/kg
	Perfluorotetradecane acid (PFTA)	< 0.3	µg/kg
	total PFC compounds excl. LOQ	3.7	µg/kg
	total PFC compounds incl. LOQ	12.8	µg/kg

The results of examination refer exclusively to the checked samples.
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GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.2	µg/kg
	total PFC compounds excl. LOQ	3.7	µg/kg
	total PFC compounds incl. LOQ	13.1	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063015

Reference	Lever
Sample sender	Kolls A10
Reception date time	Mr. Joakim Skovly
Transport by	10.11.2011
Client Purchase order nr.	Merged from order eunobe00000130.dbf
Purchase order date	EUNOBE00000130
Client sample code	09.11.2011
Number	441-2011-1109-055
Reception temperature	1
End analysis	cooled
	24.03.2012

Test results

GF06I	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
Perfluorooctane sulfonate (PFOS)		6.3	µg/kg
Perfluorooctanoic acid (PFOA)		< 0.2	µg/kg
total PFOS / PFOA excl. LOQ		6.3	µg/kg
total PFOS / PFOA incl. LOQ		6.5	µg/kg
Perfluorobutansulfonate (PFBS)		< 0.2	µg/kg
Perfluorobutanoic acid (PFBA)		< 2.4	µg/kg
Perfluoropentane acid (PFPeA)		< 1.8	µg/kg
Perfluorohexane sulfonate (PFHxS)		< 0.8	µg/kg
Perfluorohexanoic acid (PFHxA)		< 0.4	µg/kg
Perfluoroheptane sulphonate (PFHpS)		< 0.2	µg/kg
Perfluoroheptanoic acid (PFHpA)		< 0.3	µg/kg
Perfluorooctane-sulfonamide (PFOSA)		< 0.2	µg/kg
Perfluorononanoic acid (PFNA)		< 0.5	µg/kg
Perfluorodecane sulphonate (PFDS)		< 0.2	µg/kg
Perfluorodecanoic acid (PFDA)		< 0.6	µg/kg
Perfluoroundecanoic acid (PFUnA)		< 1.2	µg/kg
Perfluorododecane acid (PFDoA)		< 0.9	µg/kg
Perfluorotridecane acid (PFTrA)		< 0.5	µg/kg
Perfluorotetradecane acid (PFTTA)		< 0.5	µg/kg
total PFC compounds excl. LOQ		6.3	µg/kg
total PFC compounds incl. LOQ		17.2	µg/kg

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	2.2	µg/kg
	total PFC compounds excl. LOQ	8.5	µg/kg
	total PFC compounds incl. LOQ	19.4	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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 Headquarters: Eurofins GfA Lab Service GmbH – Neuländer Kamp 1 D-21079 Hamburg
 HRG 115907 AG Hamburg
 General Manager: Joachim Schulte
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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063016

Reference	Lever
Sample sender	Kolls A11
Reception date time	Mr. Joakim Skovly
Transport by	10.11.2011
Client Purchase order nr.	Merged from order eunobe00000130.dbf
Purchase order date	EUNOBE00000130
Client sample code	09.11.2011
Number	441-2011-1109-056
Reception temperature	1
End analysis	cooled
	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	4.1	µg/kg
	Perfluorooctanoic acid (PFOA)	< 0.3	µg/kg
	total PFOS / PFOA excl. LOQ	4.1	µg/kg
	total PFOS / PFOA incl. LOQ	4.4	µg/kg
	Perfluorbutansulfonate (PFBS)	< 0.3	µg/kg
	Perfluorobutanoic acid (PFBA)	< 0.3	µg/kg
	Perfluoropentane acid (PFPeA)	< 0.6	µg/kg
	Perfluorohexane sulfonate (PFHxS)	< 0.3	µg/kg
	Perfluorohexanoic acid (PFHxA)	< 0.3	µg/kg
	Perfluoroheptane sulphonate (PFHpS)	< 0.3	µg/kg
	Perfluoroheptanoic acid (PFHpA)	< 0.3	µg/kg
	Perfluorooctane-sulfonamide (PFOSA)	< 0.3	µg/kg
	Perfluorononanoic acid (PFNA)	< 0.3	µg/kg
	Perfluorodecane sulphonate (PFDS)	< 0.3	µg/kg
	Perfluorodecanoic acid (PFDA)	< 1.3	µg/kg
	Perfluoroundecanoic acid (PFUnA)	< 0.7	µg/kg
	Perfluorododecane acid (PFDoA)	< 2.4	µg/kg
	Perfluorotridecane acid (PFTrA)	< 0.3	µg/kg
	Perfluorotetradecane acid (PFTA)	< 0.3	µg/kg
	total PFC compounds excl. LOQ	4.1	µg/kg
	total PFC compounds incl. LOQ	12.5	µg/kg

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 HRB: 115807 AG Hamburg
 General Manager: Jochem Schulte
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 BIC: BFSW33HAN
 IBAN: DE37 2505 0000 0128 9789 06



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This report will replace report number: AR-11-GF-028904-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	0.7	µg/kg
	total PFC compounds excl. LOQ	4.9	µg/kg
	total PFC compounds incl. LOQ	13.2	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063017

Reference	Lever
Sample sender	Kolls A13
Reception date time	Mr. Joakim Skovly
Transport by	10.11.2011
Client Purchase order nr.	Merged from order eunobe00000130.dbf
Purchase order date	EUNOBE00000130
Client sample code	09.11.2011
Number	441-2011-1109-057
Reception temperature	1
End analysis	cooled
	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	12.6	µg/kg
	Perfluorooctanoic acid (PFOA)	< 0.4	µg/kg
	total PFOS / PFOA excl. LOQ	12.6	µg/kg
	total PFOS / PFOA incl. LOQ	13.0	µg/kg
	Perfluorbutansulfonate (PFBS)	< 0.3	µg/kg
	Perfluorobutanoic acid (PFBA)	< 0.3	µg/kg
	Perfluoropentane acid (PFPeA)	< 0.6	µg/kg
	Perfluorohexane sulfonate (PFHxS)	< 0.3	µg/kg
	Perfluorohexanoic acid (PFHxA)	< 0.6	µg/kg
	Perfluoroheptane sulphonate (PFHpS)	< 0.3	µg/kg
	Perfluoroheptanoic acid (PFHpA)	< 0.9	µg/kg
	Perfluorooctane-sulfonamide (PFOSA)	< 0.3	µg/kg
	Perfluorononanoic acid (PFNA)	< 0.3	µg/kg
	Perfluorodecane sulphonate (PFDS)	< 0.3	µg/kg
	Perfluorodecanoic acid (PFDA)	< 0.8	µg/kg
	Perfluoroundecanoic acid (PFUnA)	< 0.5	µg/kg
	Perfluorododecane acid (PFDoA)	< 0.7	µg/kg
	Perfluorotridecane acid (PFTrA)	< 0.3	µg/kg
	Perfluorotetradecane acid (PFTA)	< 0.3	µg/kg
	total PFC compounds excl. LOQ	12.6	µg/kg
	total PFC compounds incl. LOQ	19.6	µg/kg

The results of examination refer exclusively to the checked samples.
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This report will replace report number: AR-11-GF-028904-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	1.9	µg/kg
	total PFC compounds excl. LOQ	14.6	µg/kg
	total PFC compounds incl. LOQ	21.6	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063018

Reference	Lever
	Kolls B1
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-058
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	6.1	µg/kg
	Perfluorooctanoic acid (PFOA)	< 0.4	µg/kg
	total PFOS / PFOA excl. LOQ	6.1	µg/kg
	total PFOS / PFOA incl. LOQ	6.5	µg/kg
	Perfluorbutansulfonate (PFBS)	< 0.3	µg/kg
	Perfluorobutanoic acid (PFBA)	< 0.8	µg/kg
	Perfluoropentane acid (PFPeA)	< 1.2	µg/kg
	Perfluorohexane sulfonate (PFHxS)	< 0.3	µg/kg
	Perfluorohexanoic acid (PFHxA)	< 0.5	µg/kg
	Perfluoroheptane sulphonate (PFHpS)	< 0.3	µg/kg
	Perfluoroheptanoic acid (PFHpA)	< 0.8	µg/kg
	Perfluorooctane-sulfonamide (PFOSA)	< 0.3	µg/kg
	Perfluorononanoic acid (PFNA)	< 0.4	µg/kg
	Perfluorodecane sulphonate (PFDS)	< 0.3	µg/kg
	Perfluorodecanoic acid (PFDA)	< 2.0	µg/kg
	Perfluoroundecanoic acid (PFUnA)	< 1.4	µg/kg
	Perfluorododecane acid (PFDoA)	< 3.7	µg/kg
	Perfluorotridecane acid (PFTrA)	< 1.5	µg/kg
	Perfluorotetradecane acid (PFTA)	< 1.5	µg/kg
	total PFC compounds excl. LOQ	6.1	µg/kg
	total PFC compounds incl. LOQ	21.6	µg/kg

The results of examination refer exclusively to the checked samples.
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GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	1.3	µg/kg
	total PFC compounds excl. LOQ	7.3	µg/kg
	total PFC compounds incl. LOQ	22.9	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063019

Reference	Lever
	Kolls B2
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-059
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	7.0	µg/kg
	Perfluorooctanoic acid (PFOA)	0.6	µg/kg
	total PFOS / PFOA excl. LOQ	7.6	µg/kg
	total PFOS / PFOA incl. LOQ	7.6	µg/kg
	Perfluorbutansulfonate (PFBS)	< 0.2	µg/kg
	Perfluorobutanoic acid (PFBA)	< 2.2	µg/kg
	Perfluoropentane acid (PFPeA)	< 0.8	µg/kg
	Perfluorohexane sulfonate (PFHxS)	< 0.2	µg/kg
	Perfluorohexanoic acid (PFHxA)	< 0.5	µg/kg
	Perfluoroheptane sulphonate (PFHpS)	< 0.2	µg/kg
	Perfluoroheptanoic acid (PFHpA)	< 0.6	µg/kg
	Perfluorooctane-sulfonamide (PFOSA)	< 0.2	µg/kg
	Perfluorononanoic acid (PFNA)	< 0.6	µg/kg
	Perfluorodecane sulphonate (PFDS)	< 0.2	µg/kg
	Perfluorodecanoic acid (PFDA)	< 3.3	µg/kg
	Perfluoroundecanoic acid (PFUnA)	< 2.2	µg/kg
	Perfluorododecane acid (PFDoA)	< 6.5	µg/kg
	Perfluorotridecane acid (PFTrA)	< 6.5	µg/kg
	Perfluorotetradecane acid (PFTA)	< 6.5	µg/kg
	total PFC compounds excl. LOQ	7.6	µg/kg
	total PFC compounds incl. LOQ	38.3	µg/kg

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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This report will replace report number: AR-11-GF-028904-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	3.0	µg/kg
	total PFC compounds excl. LOQ	10.6	µg/kg
	total PFC compounds incl. LOQ	41.3	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

The results of examination refer exclusively to the checked samples.
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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063020

Reference	Lever
Sample sender	Kolls B4
Reception date time	Mr. Joakim Skovly
Transport by	10.11.2011
Client Purchase order nr.	Merged from order eunobe00000130.dbf
Purchase order date	EUNOBE00000130
Client sample code	09.11.2011
Number	441-2011-1109-060
Reception temperature	1
End analysis	cooled
	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (%) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	3.5	µg/kg
	Perfluorooctanoic acid (PFOA)	0.4	µg/kg
	total PFOS / PFOA excl. LOQ	3.9	µg/kg
	total PFOS / PFOA incl. LOQ	3.9	µg/kg
	Perfluorbutansulfonate (PFBS)	< 0.2	µg/kg
	Perfluorobutanoic acid (PFBA)	< 3.2	µg/kg
	Perfluoropentane acid (PFPeA)	< 1.0	µg/kg
	Perfluorohexane sulfonate (PFHxS)	< 0.3	µg/kg
	Perfluorohexanoic acid (PFHxA)	< 0.4	µg/kg
	Perfluoroheptane sulphonate (PFHpS)	< 0.2	µg/kg
	Perfluoroheptanoic acid (PFHpA)	< 0.5	µg/kg
	Perfluorooctane-sulfonamide (PFOSA)	< 0.2	µg/kg
	Perfluorononanoic acid (PFNA)	< 0.7	µg/kg
	Perfluorodecane sulphonate (PFDS)	< 0.2	µg/kg
	Perfluorodecanoic acid (PFDA)	< 1.2	µg/kg
	Perfluoroundecanoic acid (PFUnA)	< 0.5	µg/kg
	Perfluorododecane acid (PFDoA)	< 1.1	µg/kg
	Perfluorotridecane acid (PFTrA)	< 0.7	µg/kg
	Perfluorotetradecane acid (PFTA)	< 0.7	µg/kg
	total PFC compounds excl. LOQ	3.9	µg/kg
	total PFC compounds incl. LOQ	15.2	µg/kg

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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This report will replace report number: AR-11-GF-028904-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	2.0	µg/kg
	total PFC compounds excl. LOQ	5.9	µg/kg
	total PFC compounds incl. LOQ	17.2	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

The results of examination refer exclusively to the checked samples.
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 HHS 115807 AG Hamburg
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DIN EN ISO/IEC 17025:2005

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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063021

Reference	Lever
	Kolls B5
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-061
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	5.8	µg/kg
	Perfluorooctanoic acid (PFOA)	< 0.3	µg/kg
	total PFOS / PFOA excl. LOQ	5.8	µg/kg
	total PFOS / PFOA incl. LOQ	6.1	µg/kg
	Perfluorbutansulfonate (PFBS)	< 0.3	µg/kg
	Perfluorobutanoic acid (PFBA)	< 0.3	µg/kg
	Perfluoropentane acid (PFPeA)	< 0.3	µg/kg
	Perfluorohexane sulfonate (PFHxS)	< 0.3	µg/kg
	Perfluorohexanoic acid (PFHxA)	< 0.3	µg/kg
	Perfluoroheptane sulphonate (PFHpS)	< 0.3	µg/kg
	Perfluoroheptanoic acid (PFHpA)	< 0.3	µg/kg
	Perfluorooctane-sulfonamide (PFOSA)	< 0.3	µg/kg
	Perfluorononanoic acid (PFNA)	< 0.4	µg/kg
	Perfluorodecane sulphonate (PFDS)	< 0.3	µg/kg
	Perfluorodecanoic acid (PFDA)	< 2.5	µg/kg
	Perfluoroundecanoic acid (PFUnA)	< 1.7	µg/kg
	Perfluorododecane acid (PFDoA)	< 7.1	µg/kg
	Perfluorotridecane acid (PFTrA)	< 2.0	µg/kg
	Perfluorotetradecane acid (PFTA)	< 2.0	µg/kg
	total PFC compounds excl. LOQ	5.8	µg/kg
	total PFC compounds incl. LOQ	24.2	µg/kg

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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 HRB: 115807 AG Hamburg
 General Manager: Jochem Schulte
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This report will replace report number: AR-11-GF-028904-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	1.7	µg/kg
	total PFC compounds excl. LOQ	7.5	µg/kg
	total PFC compounds incl. LOQ	25.8	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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 HRB: 115807 AG Hamburg
 General Manager: Jochen Schulte
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 IBAN: DE44 2505 0000 0120 0709 06



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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063022

Reference	Lever
Sample sender	Kolls B6
Reception date time	Mr. Joakim Skovly
Transport by	10.11.2011
Client Purchase order nr.	Merged from order eunobe00000130.dbf
Purchase order date	EUNOBE00000130
Client sample code	09.11.2011
Number	441-2011-1109-062
Reception temperature	1
End analysis	cooled
	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
Perfluorooctane sulfonate (PFOS)	5.0	µg/kg	
Perfluorooctanoic acid (PFOA)	< 0.3	µg/kg	
total PFOS / PFOA excl. LOQ	5.0	µg/kg	
total PFOS / PFOA incl. LOQ	5.3	µg/kg	
Perfluorobutansulfonate (PFBS)	< 0.3	µg/kg	
Perfluorobutanoic acid (PFBA)	< 1.8	µg/kg	
Perfluoropentane acid (PFPeA)	< 1.4	µg/kg	
Perfluorohexane sulfonate (PFHxS)	< 0.3	µg/kg	
Perfluorohexanoic acid (PFHxA)	< 1	µg/kg	
Perfluoroheptane sulphonate (PFHpS)	< 0.3	µg/kg	
Perfluoroheptanoic acid (PFHpA)	< 1	µg/kg	
Perfluorooctane-sulfonamide (PFOSA)	< 0.3	µg/kg	
Perfluorononanoic acid (PFNA)	< 0.4	µg/kg	
Perfluorodecane sulphonate (PFDS)	< 0.3	µg/kg	
Perfluorodecanoic acid (PFDA)	< 0.9	µg/kg	
Perfluoroundecanoic acid (PFUnA)	< 0.5	µg/kg	
Perfluorododecane acid (PFDoA)	< 2.3	µg/kg	
Perfluorotridecane acid (PFTrA)	< 0.4	µg/kg	
Perfluorotetradecane acid (PFTTA)	< 0.4	µg/kg	
total PFC compounds excl. LOQ	5.0	µg/kg	
total PFC compounds incl. LOQ	16.7	µg/kg	

The results of examination refer exclusively to the checked samples.
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This report will replace report number: AR-11-GF-028904-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	1.2	µg/kg
	total PFC compounds excl. LOQ	6.3	µg/kg
	total PFC compounds incl. LOQ	17.9	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063023

Reference	Lever
	Kolls B7
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-063
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	3.4	µg/kg
	Perfluorooctanoic acid (PFOA)	< 0.3	µg/kg
	total PFOS / PFOA excl. LOQ	3.4	µg/kg
	total PFOS / PFOA incl. LOQ	3.7	µg/kg
	Perfluorbutansulfonate (PFBS)	< 0.3	µg/kg
	Perfluorobutanoic acid (PFBA)	< 0.3	µg/kg
	Perfluoropentane acid (PFPeA)	< 0.3	µg/kg
	Perfluorohexane sulfonate (PFHxS)	< 0.3	µg/kg
	Perfluorohexanoic acid (PFHxA)	< 0.3	µg/kg
	Perfluoroheptane sulphonate (PFHpS)	< 0.3	µg/kg
	Perfluoroheptanoic acid (PFHpA)	< 0.3	µg/kg
	Perfluorooctane-sulfonamide (PFOSA)	< 0.3	µg/kg
	Perfluorononanoic acid (PFNA)	< 0.4	µg/kg
	Perfluorodecane sulphonate (PFDS)	< 0.3	µg/kg
	Perfluorodecanoic acid (PFDA)	< 2.3	µg/kg
	Perfluoroundecanoic acid (PFUnA)	< 1	µg/kg
	Perfluorododecane acid (PFDoA)	< 5.5	µg/kg
	Perfluorotridecane acid (PFTrA)	< 0.5	µg/kg
	Perfluorotetradecane acid (PFTA)	< 0.5	µg/kg
	total PFC compounds excl. LOQ	3.4	µg/kg
	total PFC compounds incl. LOQ	16.4	µg/kg

The results of examination refer exclusively to the checked samples.
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This report will replace report number: AR-11-GF-028904-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	0.8	µg/kg
	total PFC compounds excl. LOQ	4.1	µg/kg
	total PFC compounds incl. LOQ	17.1	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063024

Reference	Lever
	Kolls B9
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-064
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	1.9	µg/kg
	Perfluorooctanoic acid (PFOA)	< 0.3	µg/kg
	total PFOS / PFOA excl. LOQ	1.9	µg/kg
	total PFOS / PFOA incl. LOQ	2.2	µg/kg
	Perfluorbutansulfonate (PFBS)	< 0.3	µg/kg
	Perfluorobutanoic acid (PFBA)	< 0.3	µg/kg
	Perfluoropentane acid (PFPeA)	< 0.7	µg/kg
	Perfluorohexane sulfonate (PFHxS)	< 0.3	µg/kg
	Perfluorohexanoic acid (PFHxA)	< 0.3	µg/kg
	Perfluoroheptane sulphonate (PFHpS)	< 0.3	µg/kg
	Perfluoroheptanoic acid (PFHpA)	< 0.3	µg/kg
	Perfluorooctane-sulfonamide (PFOSA)	< 0.3	µg/kg
	Perfluorononanoic acid (PFNA)	< 0.3	µg/kg
	Perfluorodecane sulphonate (PFDS)	< 0.3	µg/kg
	Perfluorodecanoic acid (PFDA)	< 0.4	µg/kg
	Perfluoroundecanoic acid (PFUnA)	< 0.3	µg/kg
	Perfluorododecane acid (PFDoA)	< 0.3	µg/kg
	Perfluorotridecane acid (PFTrA)	< 0.3	µg/kg
	Perfluorotetradecane acid (PFTA)	< 0.3	µg/kg
	total PFC compounds excl. LOQ	1.9	µg/kg
	total PFC compounds incl. LOQ	7.4	µg/kg

The results of examination refer exclusively to the checked samples.
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This report will replace report number: AR-11-GF-028904-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	1.3	µg/kg
	total PFC compounds excl. LOQ	3.2	µg/kg
	total PFC compounds incl. LOQ	8.6	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063025

Reference	Lever
Sample sender	Kolls B14
Reception date time	Mr. Joakim Skovly
Transport by	10.11.2011
Client Purchase order nr.	Merged from order eunobe00000130.dbf
Purchase order date	EUNOBE00000130
Client sample code	09.11.2011
Number	441-2011-1109-065
Reception temperature	1
End analysis	cooled
	24.03.2012

Test results

GF06I	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	2.3	µg/kg
	Perfluorooctanoic acid (PFOA)	< 0.3	µg/kg
	total PFOS / PFOA excl. LOQ	2.3	µg/kg
	total PFOS / PFOA incl. LOQ	2.6	µg/kg
	Perfluorobutansulfonate (PFBS)	< 0.3	µg/kg
	Perfluorobutanoic acid (PFBA)	< 0.3	µg/kg
	Perfluoropentane acid (PFPeA)	< 0.9	µg/kg
	Perfluorohexane sulfonate (PFHxS)	< 0.3	µg/kg
	Perfluorohexanoic acid (PFHxA)	< 0.3	µg/kg
	Perfluoroheptane sulphonate (PFHpS)	< 0.3	µg/kg
	Perfluoroheptanoic acid (PFHpA)	< 0.3	µg/kg
	Perfluorooctane-sulfonamide (PFOSA)	< 0.3	µg/kg
	Perfluorononanoic acid (PFNA)	< 0.3	µg/kg
	Perfluorodecane sulphonate (PFDS)	< 0.3	µg/kg
	Perfluorodecanoic acid (PFDA)	< 1.3	µg/kg
	Perfluoroundecanoic acid (PFUnA)	< 0.9	µg/kg
	Perfluorododecane acid (PFDoA)	< 4.6	µg/kg
	Perfluorotridecane acid (PFTrA)	< 1.4	µg/kg
	Perfluorotetradecane acid (PFTTA)	< 1.4	µg/kg
	total PFC compounds excl. LOQ	2.3	µg/kg
	total PFC compounds incl. LOQ	15.7	µg/kg

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.4	µg/kg
	total PFC compounds excl. LOQ	2.3	µg/kg
	total PFC compounds incl. LOQ	16.1	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063026

Reference	Lever
	Kolls B15
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-066
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	8.7	µg/kg
	Perfluorooctanoic acid (PFOA)	0.5	µg/kg
	total PFOS / PFOA excl. LOQ	9.2	µg/kg
	total PFOS / PFOA incl. LOQ	9.2	µg/kg
	Perfluorbutansulfonate (PFBS)	< 0.2	µg/kg
	Perfluorobutanoic acid (PFBA)	< 5.9	µg/kg
	Perfluoropentane acid (PFPeA)	< 1.9	µg/kg
	Perfluorohexane sulfonate (PFHxS)	< 0.4	µg/kg
	Perfluorohexanoic acid (PFHxA)	< 0.7	µg/kg
	Perfluoroheptane sulphonate (PFHpS)	< 0.2	µg/kg
	Perfluoroheptanoic acid (PFHpA)	< 1.2	µg/kg
	Perfluorooctane-sulfonamide (PFOSA)	< 0.2	µg/kg
	Perfluorononanoic acid (PFNA)	< 1.2	µg/kg
	Perfluorodecane sulphonate (PFDS)	< 0.2	µg/kg
	Perfluorodecanoic acid (PFDA)	< 1.9	µg/kg
	Perfluoroundecanoic acid (PFUnA)	< 1.3	µg/kg
	Perfluorododecane acid (PFDoA)	< 4.6	µg/kg
	Perfluorotridecane acid (PFTrA)	< 2.6	µg/kg
	Perfluorotetradecane acid (PFTA)	< 2.6	µg/kg
	total PFC compounds excl. LOQ	9.2	µg/kg
	total PFC compounds incl. LOQ	34.3	µg/kg

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	5.0	µg/kg
	total PFC compounds excl. LOQ	14.2	µg/kg
	total PFC compounds incl. LOQ	39.4	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

The results of examination refer exclusively to the checked samples.
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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063027

Reference	Lever
	KollsC3
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-067
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	6.5	µg/kg
	Perfluorooctanoic acid (PFOA)	0.7	µg/kg
	total PFOS / PFOA excl. LOQ	7.1	µg/kg
	total PFOS / PFOA incl. LOQ	7.1	µg/kg
	Perfluorbutansulfonate (PFBS)	< 0.2	µg/kg
	Perfluorobutanoic acid (PFBA)	< 6.6	µg/kg
	Perfluoropentane acid (PFPeA)	< 2.2	µg/kg
	Perfluorohexane sulfonate (PFHxS)	< 0.3	µg/kg
	Perfluorohexanoic acid (PFHxA)	< 0.5	µg/kg
	Perfluoroheptane sulphonate (PFHpS)	< 0.2	µg/kg
	Perfluoroheptanoic acid (PFHpA)	< 0.8	µg/kg
	Perfluorooctane-sulfonamide (PFOSA)	< 0.2	µg/kg
	Perfluorononanoic acid (PFNA)	< 0.9	µg/kg
	Perfluorodecane sulphonate (PFDS)	< 0.2	µg/kg
	Perfluorodecanoic acid (PFDA)	< 1.4	µg/kg
	Perfluoroundecanoic acid (PFUnA)	< 1.2	µg/kg
	Perfluorododecane acid (PFDoA)	< 5.2	µg/kg
	Perfluorotridecane acid (PFTrA)	< 2.3	µg/kg
	Perfluorotetradecane acid (PFTA)	< 2.3	µg/kg
	total PFC compounds excl. LOQ	7.1	µg/kg
	total PFC compounds incl. LOQ	31.7	µg/kg

The results of examination refer exclusively to the checked samples.
 Duplicates - even in parts - must be authorized by the test laboratory in written form.
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This report will replace report number: AR-11-GF-028904-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	1.9	µg/kg
	total PFC compounds excl. LOQ	9.1	µg/kg
	total PFC compounds incl. LOQ	33.6	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063028

Reference	Lever
	Kolls C8
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-068
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	4.6	µg/kg
	Perfluorooctanoic acid (PFOA)	< 0.3	µg/kg
	total PFOS / PFOA excl. LOQ	4.6	µg/kg
	total PFOS / PFOA incl. LOQ	4.8	µg/kg
	Perfluorbutansulfonate (PFBS)	< 0.3	µg/kg
	Perfluorobutanoic acid (PFBA)	< 0.8	µg/kg
	Perfluoropentane acid (PFPeA)	< 0.8	µg/kg
	Perfluorohexane sulfonate (PFHxS)	< 0.3	µg/kg
	Perfluorohexanoic acid (PFHxA)	< 0.6	µg/kg
	Perfluoroheptane sulphonate (PFHpS)	< 0.3	µg/kg
	Perfluoroheptanoic acid (PFHpA)	< 0.8	µg/kg
	Perfluorooctane-sulfonamide (PFOSA)	< 0.3	µg/kg
	Perfluorononanoic acid (PFNA)	< 0.4	µg/kg
	Perfluorodecane sulphonate (PFDS)	< 0.3	µg/kg
	Perfluorodecanoic acid (PFDA)	< 0.5	µg/kg
	Perfluoroundecanoic acid (PFUnA)	< 0.3	µg/kg
	Perfluorododecane acid (PFDoA)	< 0.8	µg/kg
	Perfluorotridecane acid (PFTrA)	< 0.3	µg/kg
	Perfluorotetradecane acid (PFTA)	< 0.3	µg/kg
	total PFC compounds excl. LOQ	4.6	µg/kg
	total PFC compounds incl. LOQ	11.6	µg/kg

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 Duplicates - even in parts - must be authorized by the test laboratory in written form.
 Eurofins GfA Lab Service GmbH - Otto-Hahn-Str. 22 - D-48151 Münster
 Headquarters: Eurofins GfA Lab Service GmbH - Neukircher Kamp 1 D-21079 Hamburg
 HRB: 115807 AG Hamburg
 General Manager: Jochem Schulte
 Our General Terms & Conditions of Sale are applicable.
 VAT No.: DE 275812372
 BIC: BFSW33HAN
 IBAN: DE37 2505 0000 0130 8789 06



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 akkreditiertes Prüflaboratorium

DNV EN ISO/IEC 17025:2005

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This report will replace report number: AR-11-GF-028904-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	1.6	µg/kg
	total PFC compounds excl. LOQ	6.2	µg/kg
	total PFC compounds incl. LOQ	13.2	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

< - Concentration below the indicated limit of quantification (LOQ)

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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063029

Reference	Lever
Sample sender	Kolls F12
Reception date time	Mr. Joakim Skovly
Transport by	10.11.2011
Client Purchase order nr.	Merged from order eunobe00000130.dbf
Purchase order date	EUNOBE00000130
Client sample code	09.11.2011
Number	441-2011-1109-069
Reception temperature	1
End analysis	cooled
	24.03.2012

Test results

GF06I	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	5.8	µg/kg
	Perfluorooctanoic acid (PFOA)	0.3	µg/kg
	total PFOS / PFOA excl. LOQ	6.1	µg/kg
	total PFOS / PFOA incl. LOQ	6.1	µg/kg
	Perfluorobutansulfonate (PFBS)	< 0.2	µg/kg
	Perfluorobutanoic acid (PFBA)	< 2.5	µg/kg
	Perfluoropentane acid (PFPeA)	< 1.3	µg/kg
	Perfluorohexane sulfonate (PFHxS)	< 0.3	µg/kg
	Perfluorohexanoic acid (PFHxA)	< 0.3	µg/kg
	Perfluoroheptane sulphonate (PFHpS)	< 0.2	µg/kg
	Perfluoroheptanoic acid (PFHpA)	< 0.6	µg/kg
	Perfluorooctane-sulfonamide (PFOSA)	< 0.2	µg/kg
	Perfluorononanoic acid (PFNA)	< 0.5	µg/kg
	Perfluorodecane sulphonate (PFDS)	< 0.2	µg/kg
	Perfluorodecanoic acid (PFDA)	< 1.6	µg/kg
	Perfluoroundecanoic acid (PFUnA)	< 1.1	µg/kg
	Perfluorododecane acid (PFDoA)	< 7.2	µg/kg
	Perfluorotridecane acid (PFTrA)	< 1.0	µg/kg
	Perfluorotetradecane acid (PFTTA)	< 1.0	µg/kg
	total PFC compounds excl. LOQ	6.1	µg/kg
	total PFC compounds incl. LOQ	24.5	µg/kg

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This report will replace report number: AR-11-GF-028904-01

GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	1.5	µg/kg
	total PFC compounds excl. LOQ	7.6	µg/kg
	total PFC compounds incl. LOQ	26.0	µg/kg

(*) = The test was performed at the site Hamburg.

(#) = Eurofins GfA Lab Service GmbH (Hamburg) is accredited for this test.

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This report will replace report number: AR-11-GF-028904-01

Sample Code 710-2011-19063030

Reference	Lever
	Ref 4
Sample sender	Mr. Joakim Skovly
Reception date time	10.11.2011
Transport by	Merged from order eunobe00000130.dbf
Client Purchase order nr.	EUNOBE00000130
Purchase order date	09.11.2011
Client sample code	441-2011-1109-071
Number	1
Reception temperature	cooled
End analysis	24.03.2012

Test results

GF061	PFC (17) ~ food / feed (*) (#)		
Method	AIR OC 150, LC-MS/MS		
	Perfluorooctane sulfonate (PFOS)	3.2	µg/kg
	Perfluorooctanoic acid (PFOA)	< 0.3	µg/kg
	total PFOS / PFOA excl. LOQ	3.2	µg/kg
	total PFOS / PFOA incl. LOQ	3.5	µg/kg
	Perfluorbutansulfonate (PFBS)	< 0.3	µg/kg
	Perfluorobutanoic acid (PFBA)	< 0.7	µg/kg
	Perfluoropentane acid (PFPeA)	< 0.7	µg/kg
	Perfluorohexane sulfonate (PFHxS)	< 0.3	µg/kg
	Perfluorohexanoic acid (PFHxA)	< 0.4	µg/kg
	Perfluoroheptane sulphonate (PFHpS)	< 0.3	µg/kg
	Perfluoroheptanoic acid (PFHpA)	< 1.3	µg/kg
	Perfluorooctane-sulfonamide (PFOSA)	< 0.3	µg/kg
	Perfluorononanoic acid (PFNA)	< 0.3	µg/kg
	Perfluorodecane sulphonate (PFDS)	< 0.3	µg/kg
	Perfluorodecanoic acid (PFDA)	< 0.3	µg/kg
	Perfluoroundecanoic acid (PFUnA)	< 0.7	µg/kg
	Perfluorododecane acid (PFDoA)	< 0.3	µg/kg
	Perfluorotridecane acid (PFTrA)	< 0.3	µg/kg
	Perfluorotetradecane acid (PFTA)	< 0.3	µg/kg
	total PFC compounds excl. LOQ	3.2	µg/kg
	total PFC compounds incl. LOQ	10.3	µg/kg

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GF05Q	PFC (H4PFOS) ~ environment (*) (#)		
Method	Internal Method, LC-MS/MS		
	6:2 Fluorotelomer sulfonate (FTS)	< 0.3	µg/kg
	total PFC compounds excl. LOQ	3.2	µg/kg
	total PFC compounds incl. LOQ	10.6	µg/kg

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Please note that all this results have been verified by multiple determination.

Partly higher detection limits due to matrix interferences on some samples.

This electronically generated test report has been checked and approved. It is also valid without signature.

Dr. Dieter Stegemann
(Analytical Services Manager)

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