



This document contains brochures of Wellington Reporters from the year **2014**. We have created a combined file that includes them all for the specified year:

- March 2014 - Native Polyfluorinated Phosphate Esters (SAmPAPs)
- March 2014 - Native Polyfluorinated Phosphate Ester
- April 2014 - Native 8-Chloroperfluorooctylphosphonic Acid
- May 2014 - Native and Mass-labelled Reference Standards
- May 2014 - Mass-Labelled Telomer Sulfonates
- June 2014 - Native and Mass-labelled Tetrachlorodibenzothiophenes
- September 2014 - Native and Mass-Labelled Halogenated Carbazoles
- September 2014 - Native Telomer Acrylates, Telomer Acetates, Chloro-PFOS, and a branched PFCA

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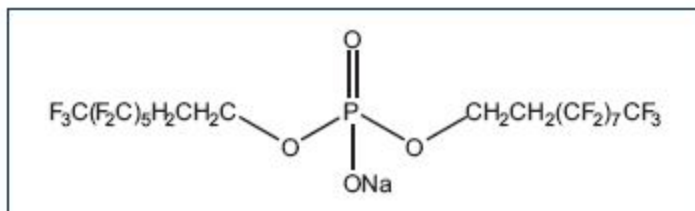


March 29, 2014

NEW PRODUCT**6:2/8:2diPAP**

The application of polyfluorinated phosphate esters (PAPs) to food-contact paper products, as well as their subsequent detection in the environment, is well-known. In fact, **Wellington** offers multiple certified reference standards based on the most commonly reported homologues of mono- and di-PAPs currently found in environmental samples based on published articles. All of the disubstituted PAP standards that we currently offer are symmetrical, that is both polyfluorinated substituents have the same chain length. However, unsymmetrical diPAPs are also being reported.

In order to provide a more comprehensive line of diPAP products, **Wellington** has produced an unsymmetrical diPAP reference standard, specifically native sodium (1H,1H,2H,2H-perfluorooctyl-1H,1H,2H,2H-perfluorodecyl)phosphate (**6:2/8:2diPAP**).

**6:2/8:2diPAP**

Since PAPs can leach out of packaging materials and into food that is consumed, it is important that they are accurately quantified in multiple matrices. PAPs have also been identified as possible precursors to perfluoroalkylcarboxylic acids during biotransformation processes, therefore interest in these compounds is likely going to continue to be high.

A full list of the native and mass-labelled mono- and di-PAP certified reference standards that **Wellington** currently offers is available on the next page.



NATIVE MONO-SUBSTITUTED POLYFLUORINATED PHOSPHATE ESTERS

Catalogue Number	Product (methanol)	Qty	Conc
6:2PAP	Sodium 1H,1H,2H,2H-perfluorooctylphosphate	1.2 ml	50 µg/ml
8:2PAP	Sodium 1H,1H,2H,2H-perfluorodecylphosphate	1.2 ml	50 µg/ml

MASS-LABELLED MONO-SUBSTITUTED POLYFLUORINATED PHOSPHATE ESTERS

Catalogue Number	Product (methanol)	Qty	Conc
M2-6:2PAP	Sodium 1H,1H,2H,2H-[1,2- ¹³ C ₂]perfluorooctylphosphate	1.2 ml	50 µg/ml
M2-8:2PAP	Sodium 1H,1H,2H,2H-[1,2- ¹³ C ₂]perfluorodecylphosphate	1.2 ml	50 µg/ml

NATIVE DI-SUBSTITUTED POLYFLUORINATED PHOSPHATE ESTERS

NEW

Catalogue Number	Product (methanol)	Qty	Conc
6:2diPAP	Sodium bis(1H,1H,2H,2H-perfluorooctyl)phosphate	1.2 ml	50 µg/ml
6:2/8:2diPAP	Sodium (1H,1H,2H,2H-perfluorooctyl)-1H,1H,2H,2H-perfluorodecyl)phosphate	1.2 ml	50 µg/ml
8:2diPAP	Sodium bis(1H,1H,2H,2H-perfluorodecyl)phosphate	1.2 ml	50 µg/ml

MASS-LABELLED DI-SUBSTITUTED POLYFLUORINATED PHOSPHATE ESTERS

Catalogue Number	Product (methanol)	Qty	Conc
M4-6:2diPAP	Sodium bis(1H,1H,2H,2H-[1,2- ¹³ C ₂]perfluorooctyl)phosphate	1.2 ml	50 µg/ml
M4-8:2diPAP	Sodium bis(1H,1H,2H,2H-[1,2- ¹³ C ₂]perfluorodecyl)phosphate	1.2 ml	50 µg/ml

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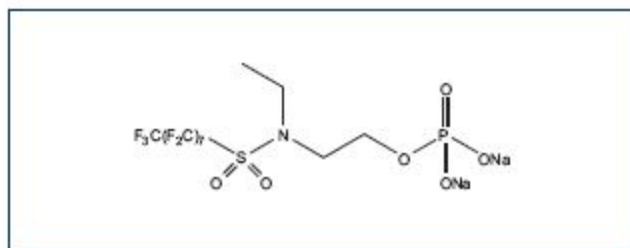


March 29, 2014

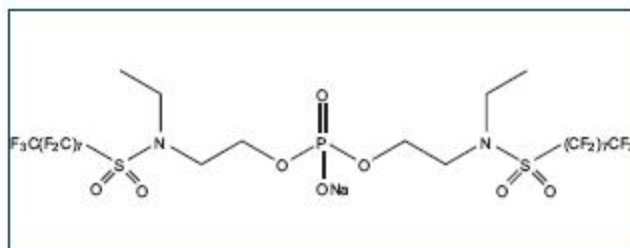
NEW PRODUCTS**SAmPAP: Mono- and Di-Ester**

From 1974 until 2002, phosphate surfactants known as SAmPAPs, based on 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol (N-EtFOSE), were produced in North America and incorporated into paper food packaging. Although SAmPAPs were a high production-volume chemical for almost 30 years, these compounds have only recently been detected in environmental samples as mono- and di-esters (SAmPAP and diSAmPAP respectively). Not only do the SAmPAP esters appear to be persistent in the environment, but they are also potential Perfluorooctane sulfonate (PFOS) precursors. Unfortunately very little data is currently available in the scientific literature on the lifetime and transformation pathways of these compounds.

In order to aid researchers in the analysis and quantification of these compounds, Wellington has synthesized two native SAmPAP esters, **SAmPAP** and **diSAmPAP**, to complement our inventory of existing poly- and per-fluorinated reference standards.



SAmPAP



diSAmPAP

Catalogue Number	Product (methanol)	Qty/Conc
SAmPAP	Sodium 2-(N-ethylperfluorooctane-1-sulfonamido)ethyl phosphate	1.2 ml 50 µg/ml
diSAmPAP	Sodium bis-[2-(N-ethylperfluorooctane-1-sulfonamido)ethyl] phosphate	1.2 ml 50 µg/ml

Please note that Wellington also offers native and mass-labelled certified reference standards for N-EtFOSE, FOSA, and PFOS as well as many other perfluorinated compounds.

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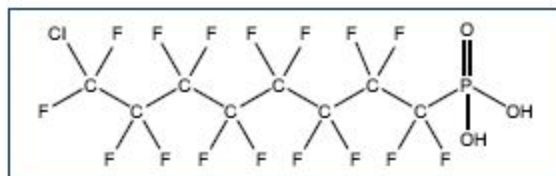


April 6, 2014

NEW PRODUCT**Cl-PFOPA**

Perfluoroalkylphosphonic acids (PFAPAs) have been used as antifoaming agents in pesticide formulations and are also active ingredients in certain windshield washer fluids. These compounds differ from other perfluoroalkyl acids in that they contain two acidic hydrogens with different pKa values. This property may produce unusual or unexpected behaviour during sample extraction, clean-up, and instrumental analysis.

In order to assist scientists in the accurate quantification of PFAPAs in environment samples, **Wellington** has added a monochloroperfluorooctylphosphonic acid surrogate (**Cl-PFOPA**) to our inventory of certified PFAPA reference standards.



8-Chloroperfluorooctylphosphonic acid

Catalogue Number	Product (methanol solution)	Qty/Conc
PFH _x PA	Perfluorohexylphosphonic acid	1.2 ml 50 µg/ml
PFOPA	Perfluorooctylphosphonic acid	1.2 ml 50 µg/ml
PFDPA	Perfluorodecylphosphonic acid	1.2 ml 50 µg/ml
CIPFH _x PA	6-Chloroperfluorohexylphosphonic acid	1.2 ml 50 µg/ml
NEW CIPFOPA	8-Chloroperfluorooctylphosphonic acid	1.2 ml 50 µg/ml

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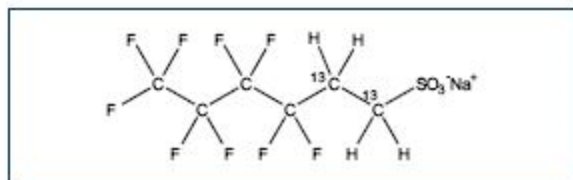
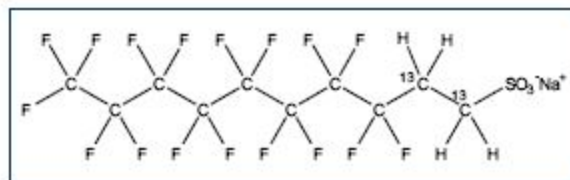


April 13, 2014

NEW PRODUCTS**Mass-Labelled Telomer Sulfonates**
M2-4:2FTS & M2-8:2FTS

Polyfluorinated sulfonates (commonly referred to as telomer sulfonates) have been incorporated into aqueous film-forming foams (AFFFs) which are used to extinguish hydrocarbon-fueled fires. The effectiveness of the developed formulations for fighting Class B flammable liquid fires resulted in their widespread use and subsequent release into the environment.

Analytical laboratories developing methods for monitoring the levels of these compounds in environmental samples have reported matrix effects leading to ionization enhancement during LCMS analysis of water samples. For this reason, **Wellington** has prepared mass-labelled ($^{13}\text{C}_2$) reference standard solutions of 4:2FTS (**M2-4:2FTS**) and 8:2FTS (**M2-8:2FTS**) to complement our existing telomer sulfonate standards and aid researchers in the generation of accurate data.

Sodium 1H,1H,2H,2H-perfluoro-[1,2- $^{13}\text{C}_2$]hexane sulfonateSodium 1H,1H,2H,2H-perfluoro-[1,2- $^{13}\text{C}_2$]decane sulfonate

	Catalogue Number	Product (methanol)	Qty/Conc
NEW	M2-4:2FTS	Sodium 1H,1H,2H,2H-perfluoro-[1,2- $^{13}\text{C}_2$]hexane sulfonate	1.2 ml 50 µg/ml
	M2-6:2FTS	Sodium 1H,1H,2H,2H-perfluoro-[1,2- $^{13}\text{C}_2$]octane sulfonate	1.2 ml 50 µg/ml
NEW	M2-8:2FTS	Sodium 1H,1H,2H,2H-perfluoro-[1,2- $^{13}\text{C}_2$]decane sulfonate	1.2 ml 50 µg/ml

The following native telomer sulfonates are also available...

Catalogue Number	Product (methanol)	Qty/Conc
4:2FTS	Sodium 1H,1H,2H,2H-perfluorohexane sulfonate	1.2 ml 50 µg/ml
6:2FTS	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate	1.2 ml 50 µg/ml
8:2FTS	Sodium 1H,1H,2H,2H-perfluorodecane sulfonate	1.2 ml 50 µg/ml

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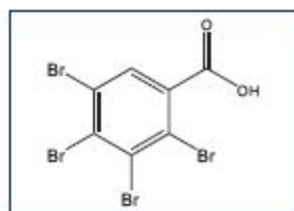
ISO 9001



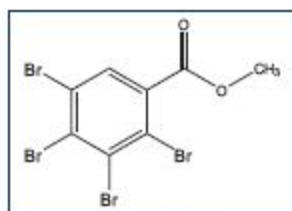
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**NEW PRODUCTS****Native & Mass-Labelled TBBA and TBPAn**

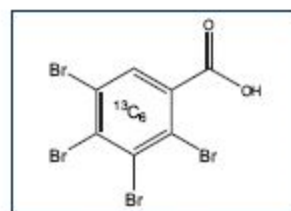
Although structurally similar, 2,3,4,5-tetrabromobenzoic acid (TBBA) and tetrabromophthalic anhydride (TBPAn) have very different origins in environmental samples. TBBA does not have a known commercial application; it appears to be arising as a metabolite of 2-ethylhexyl-2,3,4,5-tetrabromobenzoate (a component of several popular flame retardant mixtures). Conversely, TBPAn has been marketed as both an additive and reactive flame retardant. TBPAn appears to be most commonly used as a reactive intermediate during the production of saturated and unsaturated polyesters, polyols, esters, and imides. In order to aid researchers in the accurate quantification of these compounds in environmental samples, Wellington has synthesized the following native and mass-labelled reference standards:



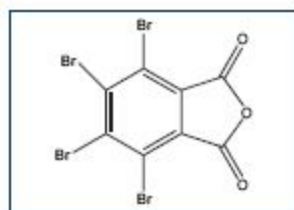
TBBA



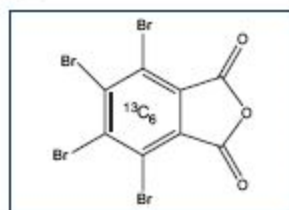
MeTBBA



MTBBA



TBPAn



MTBPAn

Catalogue Number	Product (methanol)	Qty	Conc
TBBA	2,3,4,5-Tetrabromobenzoic acid	1.2 ml	50 µg/ml
MTBBA	2,3,4,5-Tetrabromobenzoic acid [¹³ C ₆ ring]	1.2 ml	50 µg/ml

Catalogue Number	Product (toluene)	Qty	Conc
MeTBBA	Methyl-2,3,4,5-tetrabromobenzoate	1.2 ml	50 µg/ml
TBPAn	Tetrabromophthalic anhydride	1.2 ml	50 µg/ml
MTBPAn	Tetrabromo[¹³ C ₆]phthalic anhydride	1.2 ml	50 µg/ml

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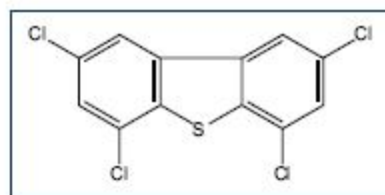




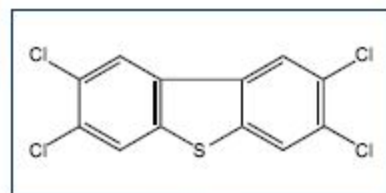
June 3, 2014

NEW PRODUCTS**Native & Mass-Labelled
Tetrachlorodibenzothiophenes**

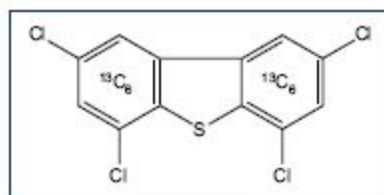
Polychlorinated dibenzothiophenes (PCDTs) are sulphur-containing analogues of polychlorinated dibenzofurans (PCDFs). They have been detected in the effluent of pulp and paper mills and in sediment samples taken near industrially active areas. They have also been reported in stack gas and fly ash from waste combustion processes and are known to form during the incineration of polychlorinated biphenyls (PCBs). Even though PCDTs can be produced through multiple routes, very few reference standards are available for proper identification and method development. With structures similar to PCDFs, their effects on human health could be significant. For this reason, **Wellington** has synthesized two native tetrachlorinated dibenzothiophenes (**TCDT-83** and **TCDT-85**) as well as a mass-labelled reference standard (**MTCDT-85**) to aid researchers in the detection of these potentially toxic compounds in the environment.



TCDT-85



TCDT-83



MTCDT-85

Catalogue Number	Product (toluene)	Qty	Conc
TCDT-83	2,3,7,8-Tetrachlorodibenzothiophene	1.2 ml	50 µg/ml
TCDT-85	2,4,6,8-Tetrachlorodibenzothiophene	1.2 ml	50 µg/ml
MTCDT-85	2,4,6,8-Tetrachloro[¹³ C ₁₂]dibenzothiophene	1.2 ml	50 µg/ml

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**NEW PRODUCTS****NATIVE/MASS-LABELLED HALOGENATED CARBAZOLES**

Halogenated carbazoles have recently been recognized as emerging environmental contaminants, but research groups have been reporting their existence in environmental samples since 1984. There may be multiple sources of these pollutants, but it has recently been suggested that they were produced as by-products during the synthesis of halogenated indigo dyes. Since unsubstituted carbazoles are known to be lost during acid silica clean-up, it is very important that reference standards be used when processing samples.

In order to aid researchers in the detection of halogenated carbazoles in environmental samples, Wellington has produced certified reference standards of selected halogenated carbazoles (CCZ-3, CCZ-36, CCZ-1368, CCZ-2367, BCZ-3, BCZ-27, BCZ-136, BCZ-1368, 1-B-36-CCZ, and 18-B-36-CCZ) as well as two certified reference standards of mass-labelled chlorinated carbazoles (MCCZ-36 and MCCZ-1368).

Catalogue Number	Product (nonane)	Qty	Conc
MCCZ-36	3,6-Dichloro-9H-[¹³ C ₁₂]carbazole	1.2 ml	50 µg/ml
MCCZ-1368	1,3,6,8-Tetrachloro-9H-[¹³ C ₁₂]carbazole	1.2 ml	50 µg/ml

Catalogue Number	Product (nonane)	Qty	Conc
CCZ-3	3-Chloro-9H-carbazole	1.2 ml	50 µg/ml
CCZ-36	3,6-Dichloro-9H-carbazole	1.2 ml	50 µg/ml
CCZ-1368	1,3,6,8-Tetrachloro-9H-carbazole	1.2 ml	50 µg/ml
CCZ-2367	2,3,6,7-Tetrachloro-9H-carbazole	1.2 ml	50 µg/ml

Catalogue Number	Product (nonane)	Qty	Conc
BCZ-3	3-Bromo-9H-carbazole	1.2 ml	50 µg/ml
BCZ-27	2,7-Dibromo-9H-carbazole	1.2 ml	50 µg/ml
BCZ-136	1,3,6-Tribromo-9H-carbazole	1.2 ml	50 µg/ml
BCZ-1368	1,3,6,8-Tetrabromo-9H-carbazole	1.2 ml	50 µg/ml

Catalogue Number	Product (nonane)	Qty	Conc
1-B-36-CCZ	1-Bromo-3,6-Dichloro-9H-carbazole	1.2 ml	50 µg/ml
18-B-36-CCZ	1,8-Dibromo-3,6-Dichloro-9H-carbazole	1.2 ml	50 µg/ml

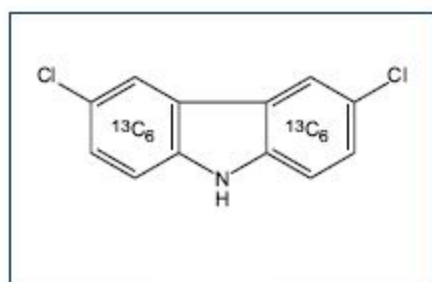
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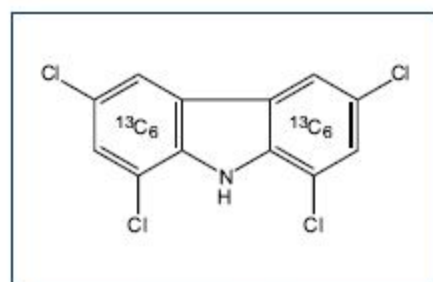
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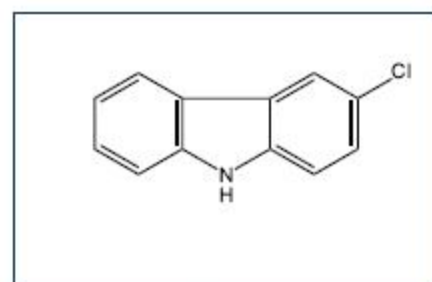
NATIVE & MASS-LABELLED HALOGENATED CARBAZOLES



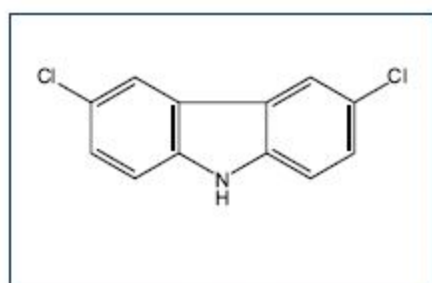
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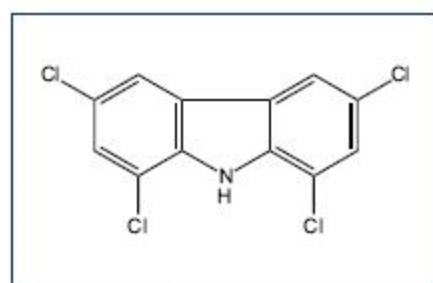
MCCZ-1368



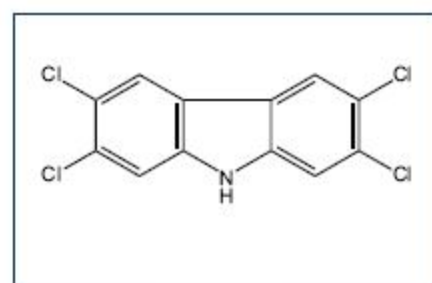
CCZ-3



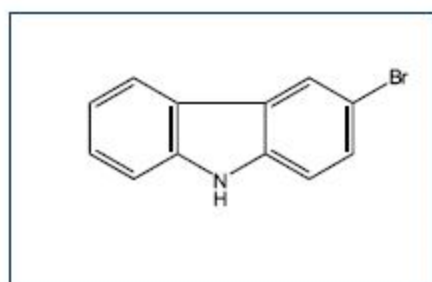
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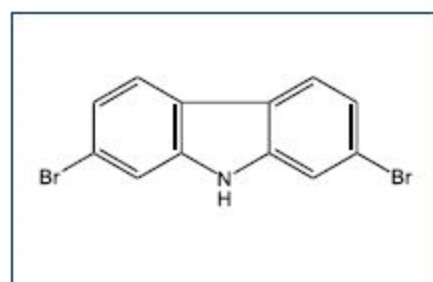
CCZ-1368



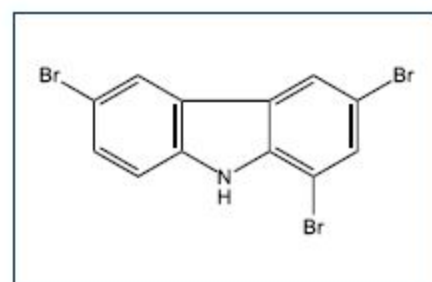
CCZ-2367



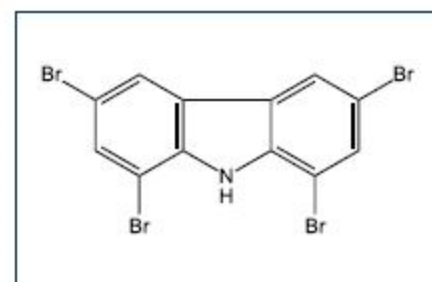
BCZ-3



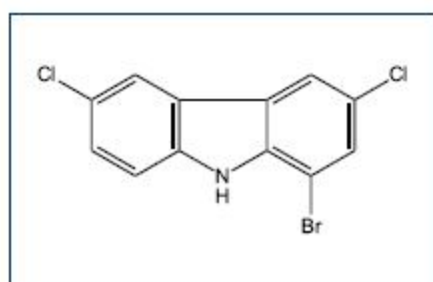
BCZ-27



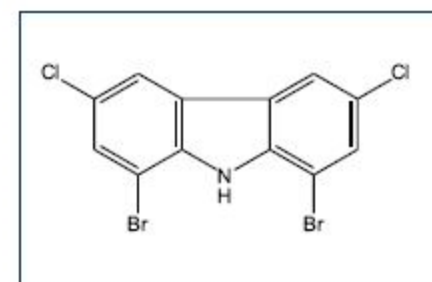
BCZ-136



BCZ-1368



1-B-36-CCZ



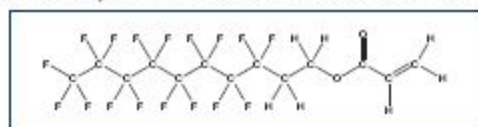
18-B-36-CCZ



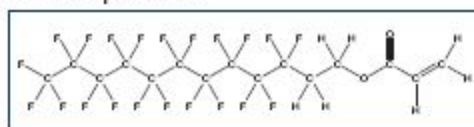


NEW PERFLUORINATED PRODUCTS Native Telomer Acrylates and Acetates

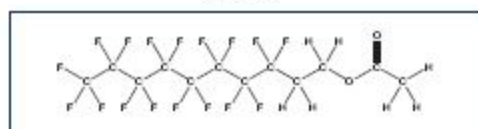
The production, use, and widespread distribution of fluorinated polymers has raised exposure concerns relating to both residual compounds (telomer alcohols, acrylates, and acetates) as well as potential degradation products (perfluoroalkylcarboxylic acids). Indeed, fluorotelomer acrylates have been found in indoor air samples presumably from residual off-gasing of fluorochemical products. In order to aid researchers in the analysis of these compounds, **Wellington** is adding native telomer acrylate (**8:2FTAcr** and **10:2FTAcr**) and native telomer acetate (**8:2FTOAc** and **10:2FTOAc**) reference standards to our line of perfluorinated compounds.



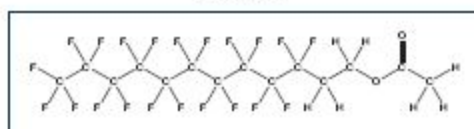
8:2FTAcr



10:2FTAcr



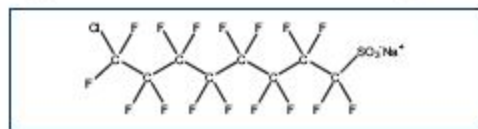
8:2FTOAc



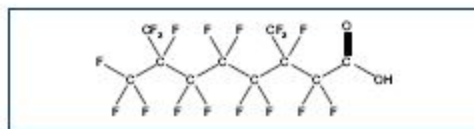
10:2FTOAc

Catalogue Number	Product (Isooctane)	Qty/Conc
8:2FTAcr	1H,1H,2H,2H-Perfluorodecyl acrylate	1.2 ml 50 µg/ml
10:2FTAcr	1H,1H,2H,2H-Perfluorododecyl acrylate (97%)	1.2 ml 48.5 µg/ml
8:2FTOAc	1H,1H,2H,2H-Perfluorodecyl acetate	1.2 ml 50 µg/ml
10:2FTOAc	1H,1H,2H,2H-Perfluorododecyl acetate	1.2 ml 50 µg/ml

Also, to supplement our existing inventory of perfluorinated compounds, we are introducing a chloro-perfluoro-1-octanesulfonate reference standard (**8Cl-PFOS**) and a branched perfluoroalkyl-carboxylic acid reference standard (**P37DMOA**).



8Cl-PFOS



P37DMOA

Catalogue Number	Product (methanol)	Qty/Conc
8Cl-PFOS	Sodium 8-chloroperfluoro-1-octanesulfonate	1.2 ml 50 µg/ml
P37DMOA	Perfluoro-3,7-dimethyloctanoic acid	1.2 ml 50 µg/ml

Distributed Throughout Europe and Middle East By-



ISO 9001



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