



This document contains brochures of Wellington Reporters from the year **2013**. We have created a combined file that includes them all for the specified year:

- February 2013 - Native and Mass-labelled Hexafluoropropylene Oxide Dimer Acid
- March 2013 - Native and Mass-Labelled HBCD Solution/Mixtures
- March 2013 - Halogenated Flame Retardant
- May 2013 - Native & Mass-Labelled Organophosphorus Compounds
- August 2013 - Native and Mass-Labelled Bisphenol A & Native Bisphenol Analogues
- August 2013 - Mass-Labelled Reference Standards

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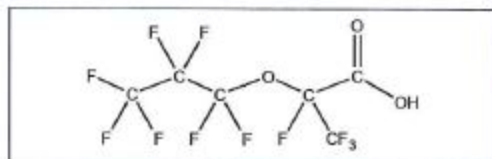
February 20, 2013

NEW PRODUCTS

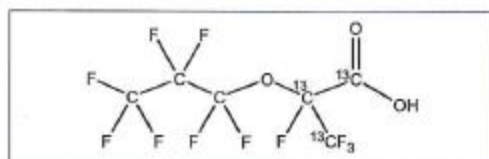
Native and Mass-labelled Hexafluoropropylene Oxide Dimer Acid

Hexafluoropropylene oxide (HFPO) is a well-known versatile synthetic building block in the manufacturing of fluoropolymers (such as perfluoroalkoxy plastics) as well as a number of poly- and per-fluorinated intermediates. Although it is used to produce a vast number of commercial products, its reactivity makes its survival in the environment unlikely. However, HFPO can react to form a stable dimer acid during oligomerization, or other manufacturing processes, which could lead to its detection in environmental samples. The presence of this HFPO dimer acid (HFPO-DA) in the environment could be due to residual leaching from commercial products or direct release during the manufacturing processes.

For this reason, **Wellington** has synthesized a native and mass-labelled ($^{13}\text{C}_3$) hexafluoropropylene oxide dimer acid reference standard, **HFPO-DA** and **M3HFPO-DA** respectively, to aid researchers in their quantification of this potential environmental contaminant.



HFPO-DA



M3HFPO-DA

Catalogue Number	Product (methanol)	Qty/Conc
HFPO-DA	2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)propanoic acid	1.2 ml 50 µg/ml
M3HFPO-DA	2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)- $^{13}\text{C}_3$ -propanoic acid	1.2 ml 50 µg/ml

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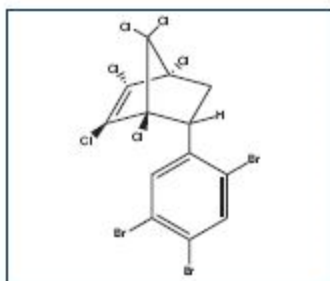


ISO 9001

WELLINGTON LABORATORIES

**NEW HALOGENATED FLAME RETARDANT****Dechlorane 604 Component B**

A number of fire retardant compositions have been investigated and patented since the early 1970's when the addition of flame retardants to plastics, electrical equipment, and synthetic fibers became more common. Halogenated hexachlorocyclopentadiene-styrene adducts have been patented for the fireproofing of plastics and polyesters, but their detection in environmental samples has only recently been reported. For instance, the presence of Dechlorane 604 has been cited in a series of scientific publications, but a structurally related compound, hexachlorocyclopentadiene-tribromostyrene also known as Dechlorane 604 Component B, may be present at even higher levels. In order to aid researchers in the identification and quantification of these compounds, Wellington has synthesized Dechlorane 604 Component B.



Dechlorane 604 Component B

Catalogue Number	Product (toluene)	Qty	Conc
1,3-DPMA	1,3-Dechlorane Plus® Mono Adduct	1.2 ml	50 µg/ml
DBCD	Dibromochlordene	1.2 ml	50 µg/ml
Dec-601	Dechlorane 601	1.2 ml	50 µg/ml
Dec-602	Dechlorane 602	1.2 ml	50 µg/ml
Dec-603	Dechlorane 603	1.2 ml	50 µg/ml
Dec-604	Dechlorane 604	1.2 ml	50 µg/ml
NEW Dec-604CB	Dechlorane 604 Component B	1.2 ml	50 µg/ml
CPlus	Chlordene Plus	1.2 ml	50 µg/ml
DBALD	Dibromoaldrin	1.2 ml	50 µg/ml
HCPN	Hexachloro(phenyl)norbornene	1.2 ml	50 µg/ml

Dechlorane Plus® is a registered trademark of Occidental Chemical Corporation.

Dec-604CB = *endo*-5-(2,4,5-tribromophenyl)-1,2,3,4,7,7-hexachloro-bicyclo[2.2.1]hept-2-ene

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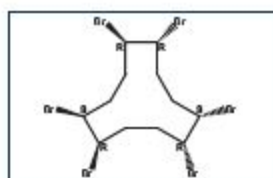
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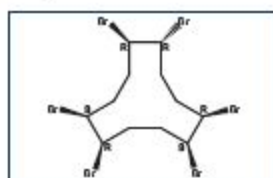
**NEW PRODUCTS****Solution/Mixtures of
Native & Mass-Labelled Hexabromocyclododecane Isomers**

Hexabromocyclododecane (HBCD) is a widely used brominated flame retardant (BFR) that is primarily utilized as an additive in textiles and extruded polystyrene foams. Commercial HBCD is a mixture consisting mainly of three diastereomeric pairs of enantiomers; alpha(α)-, beta(β)- and gamma(γ)-HBCD, however **Wellington** currently offers all 10 possible isomers of HBCD (alpha(α)-, beta(β)-, gamma(γ)-, delta(δ)-, epsilon(ϵ)-, zeta(ζ)-, eta(η)-, theta(θ)-, iota(ι)-, and kappa(κ)-HBCD) as individual reference standards.

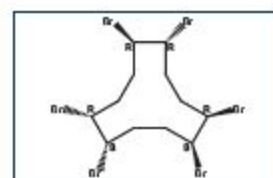
In response to recent customer requests, **Wellington** has prepared native and mass-labelled solution/mixtures of the major HBCD isomers (alpha, beta, and gamma), with product codes of HBCD-MXA and MHBCD-MXA respectively.



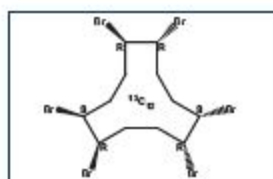
aHBCD



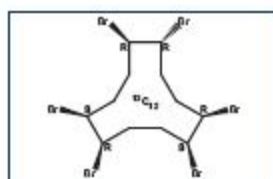
bHBCD



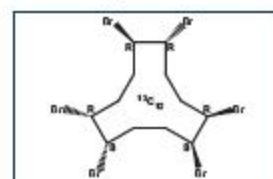
gHBCD



MaHBCD



MbHBCD



MgHBCD

Table A: **HBCD-MXA**; Components and Concentrations ($\mu\text{g/ml}$, $\pm 5\%$ in toluene, 1.2 ml)

	Native HBCD Isomers	Concentration ($\mu\text{g/ml}$)
aHBCD	α -1,2,3,6,9,10-Hexabromocyclododecane	10
bHBCD	β -1,2,3,6,9,10-Hexabromocyclododecane	10
gHBCD	γ -1,2,3,6,9,10-Hexabromocyclododecane	10

Table B: **MHBCD-MXA**; Components and Concentrations ($\mu\text{g/ml}$, $\pm 5\%$ in toluene, 1.2 ml)

	Mass-Labelled HBCD Isomers	Concentration ($\mu\text{g/ml}$)
MaHBCD	α -1,2,3,6,9,10-Hexabromo[$^{13}\text{C}_{12}$]cyclododecane	10
MbHBCD	β -1,2,3,6,9,10-Hexabromo[$^{13}\text{C}_{12}$]cyclododecane	10
MgHBCD	γ -1,2,3,6,9,10-Hexabromo[$^{13}\text{C}_{12}$]cyclododecane	10



INDIVIDUAL NATIVE HEXABROMOCYCLODODECANE ISOMERS

Catalogue Number	Product (toluene solution)	Qty/Conc
aHBCD	alpha(α)-1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml 50 μ g/ml
bHBCD	beta(β)-1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml 50 μ g/ml
gHBCD	gamma(γ)-1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml 50 μ g/ml
dHBCD	delta(δ)-1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml 50 μ g/ml
eHBCD	epsilon(ϵ)-1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml 50 μ g/ml
zHBCD	zeta(ζ)-1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml 50 μ g/ml
etaHBCD	eta(η)-1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml 50 μ g/ml
thHBCD	theta(θ)-1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml 50 μ g/ml
iHBCD	iota(ι)-1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml 50 μ g/ml
kHBCD	kappa(κ)-1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml 50 μ g/ml

¹³C-LABELLED HEXABROMOCYCLODODECANE ISOMERS

Catalogue Number	Product (toluene solution)	Qty/Conc
MaHBCD	α -1,2,5,6,9,10-Hexabromo[¹³ C ₁₂]cyclododecane	1.2 ml 50 μ g/ml
MbHBCD	β -1,2,5,6,9,10-Hexabromo[¹³ C ₁₂]cyclododecane	1.2 ml 50 μ g/ml
MgHBCD	γ -1,2,5,6,9,10-Hexabromo[¹³ C ₁₂]cyclododecane	1.2 ml 50 μ g/ml

DEUTERATED HEXABROMOCYCLODODECANE ISOMERS

Catalogue Number	Product (toluene solution)	Qty/Conc
DaHBCD	d18- α -1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml 50 μ g/ml
DbHBCD	d18- β -1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml 50 μ g/ml
DgHBCD	d18- γ -1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml 50 μ g/ml

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**NEW PRODUCTS****NATIVE & MASS-LABELLED**
ORGANOPHOSPHORUS COMPOUNDS

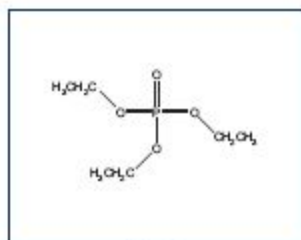
Organophosphorus compounds (OPs) are commonly utilized as flame retardants and plasticizers, but have also found use as antifoaming agents and additives in products such as lubricants and hydraulic fluids. Halogenated OPs are mainly used as flame retardants whereas non-halogenated OPs are typically utilized as plasticizers. In either case, since OPs are chemical additives, it is possible for them to migrate into the environment through volatilization, abrasion, and dissolution with relative ease. The release of these compounds into the environment is troubling because they are also known to be relatively stable toward biodegradation (especially the chlorinated OPs) and have been detected in a variety of matrices. In order to aid researchers in the detection of OPs in environmental samples, Wellington has produced a series of native and mass-labelled organophosphorus compounds to supplement our existing inventory.

Catalogue Number	Product (toluene)	Qty	Conc
TEP	Tri-ethyl phosphate	1.2 ml	50 µg/ml
TPrP	Tri-n-propyl phosphate	1.2 ml	50 µg/ml
TBP	Tri-n-butyl phosphate	1.2 ml	50 µg/ml
TBEP	Tris(2-butoxyethyl) phosphate	1.2 ml	50 µg/ml
EHDP	2-Ethylhexyl diphenyl phosphate	1.2 ml	50 µg/ml
TEHP	Tris(2-ethylhexyl) phosphate	1.2 ml	50 µg/ml
TCEP	Tris(2-chloroethyl) phosphate	1.2 ml	50 µg/ml
TCPP	Tris[(2R)-1-chloro-2-propyl] phosphate	1.2 ml	50 µg/ml
TDCPP	Tris(1,3-dichloro-2-propyl) phosphate	1.2 ml	50 µg/ml

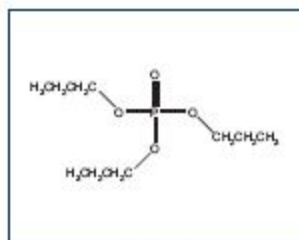
Catalogue Number	Product (toluene)	Qty	Conc
M6TBEP	Tris(2-butoxy-[¹³ C ₂]-ethyl) phosphate	1.2 ml	50 µg/ml
dTEP	Tri-ethyl phosphate-d ₁₅	1.2 ml	50 µg/ml
dTPrP	Tri-n-propyl phosphate-d ₂₁	1.2 ml	50 µg/ml
dTBP	Tri-n-butyl phosphate-d ₂₇	1.2 ml	50 µg/ml
dTPP	Triphenyl phosphate-d ₁₅	1.2 ml	50 µg/ml
dTCEP	Tris(2-chloroethyl) phosphate-d ₁₂	1.2 ml	50 µg/ml
dTDCPP	Tris(1,3-dichloro-2-propyl) phosphate-d ₁₅	1.2 ml	50 µg/ml
dBDCP	Bis(1,3-dichloro-2-propyl) phosphate-d ₁₀ (in acetonitrile)	1.2 ml	50 µg/ml



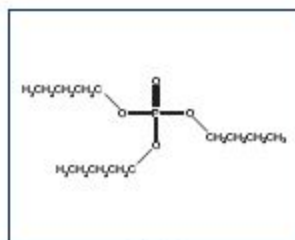
NATIVE OPs



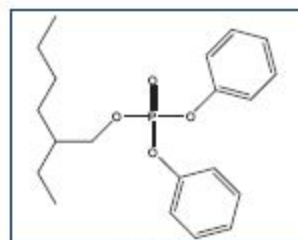
TEP



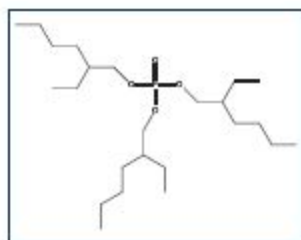
TPrP



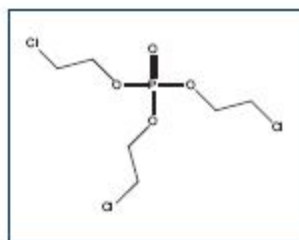
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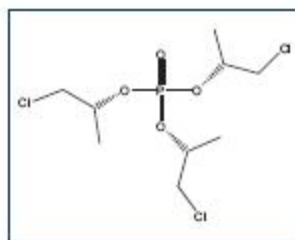
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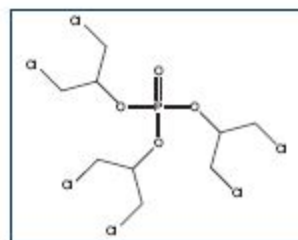
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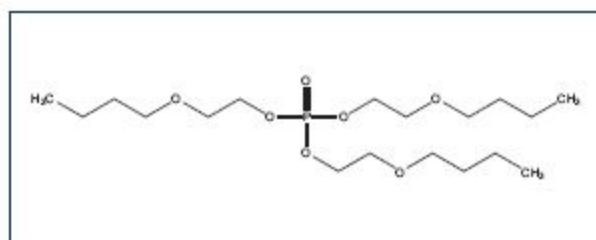
TCEP



TCP

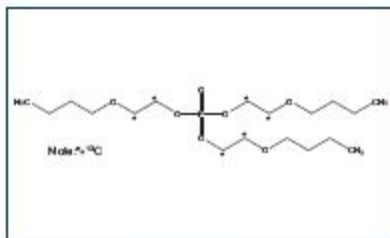


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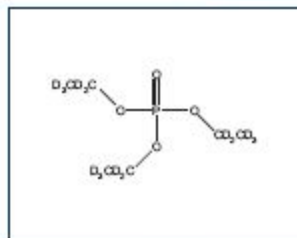


TBEP

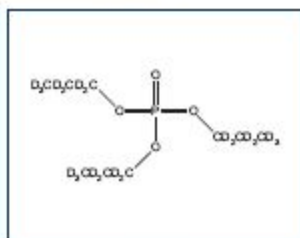
MASS-LABELLED OPs



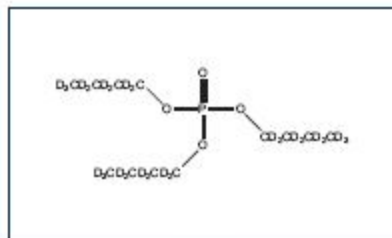
M6TBEP



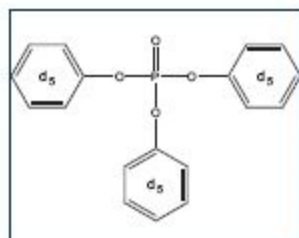
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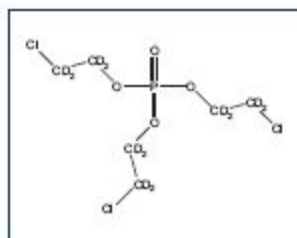
dTPrP



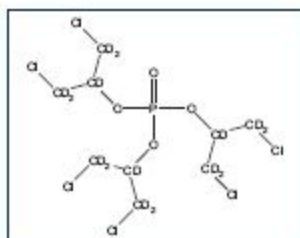
dTBP



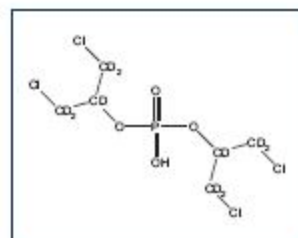
dTPP



dTCEP



dTDCPP



dBDCP

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**NEW PRODUCTS****NATIVE/MASS-LABELLED BISPHENOL A**
& NATIVE BISPHENOL ANALOGUES

Bisphenol A (BPA) is a high production volume chemical with over 8 billion pounds being produced on a global scale annually. Its use in polycarbonate plastics and epoxy resins has resulted in its incorporation into a vast number of consumer products. Concerns have been raised regarding the leaching of residual BPA from packaging and storage containers into food and beverages due to its reported endocrine disrupting effects. Although BPA is the most widely recognized bisphenol on the market, there are a number of analogues that are currently in production to replace it. In fact, recent studies have reported the detection of Bis(4-hydroxyphenyl) sulfone (BPS) and 2,2-Bis(4-hydroxyphenyl)butane (BPB) in canned food products. Due to the structural similarity between BPA and its analogues, it is believed that this family of compounds will exhibit similar environmental behaviour and toxicity. In order to aid researchers in the detection of BPA and BPA analogues in environmental samples, Wellington has produced native and mass-labelled standards of Bisphenol A (BPA and MBPA respectively) as well as seven native bisphenol analogues (BPAF, BPAP, BPB, BPF, BPP, BPS, and BPZ).

Catalogue Number	Product (methanol)	Qty	Conc
BPA	2,2-Bis(4-hydroxyphenyl)propane	1.2 ml	50 µg/ml
MBPA	2,2-Bis(4-hydroxy- ¹³ C ₆ -phenyl)propane	1.2 ml	50 µg/ml

Catalogue Number	Product (methanol)	Qty	Conc
BPAF	2,2-Bis(4-hydroxyphenyl)hexafluoropropane	1.2 ml	50 µg/ml
BPAP	4,4'-(1-Phenylethylidene)bisphenol	1.2 ml	50 µg/ml
BPB	2,2-Bis(4-hydroxyphenyl)butane	1.2 ml	50 µg/ml
BPF	4,4'-Dihydroxydiphenylmethane	1.2 ml	50 µg/ml
BPP	4,4'-(1,4-Phenylenediisopropylidene)bisphenol	1.2 ml	50 µg/ml
BPS	Bis(4-hydroxyphenyl) sulfone	1.2 ml	50 µg/ml
BPZ	1,1-Bis(4-hydroxyphenyl)cyclohexane	1.2 ml	50 µg/ml

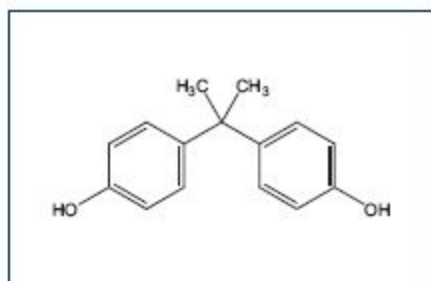
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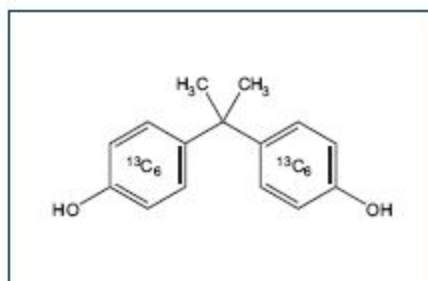
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NATIVE & MASS-LABELLED BISPHENOL A

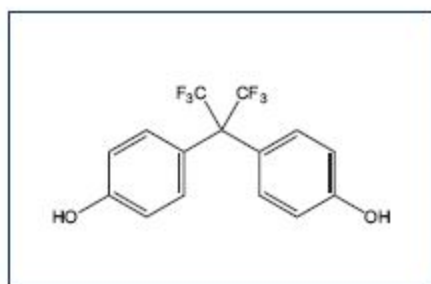


BPA

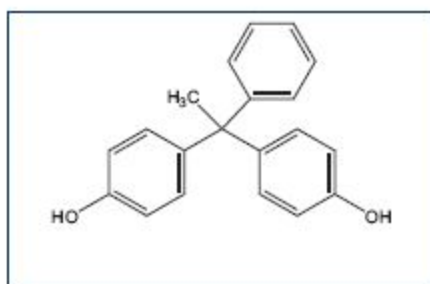


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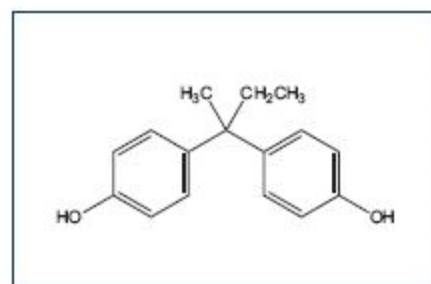
NATIVE BISPHENOL ANALOGUES



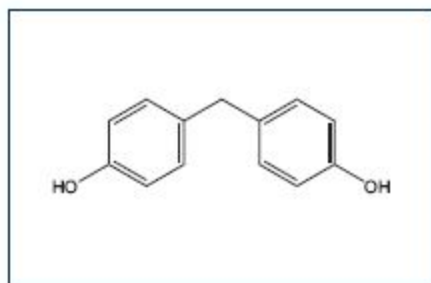
BPAF



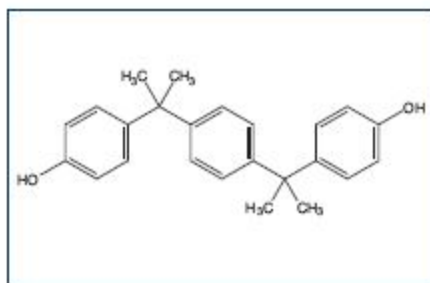
BPAP



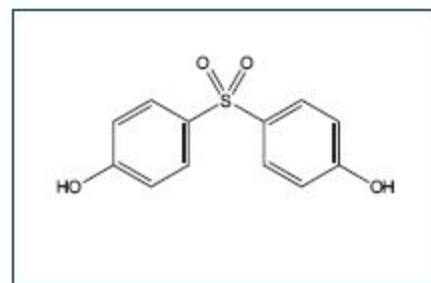
BPB



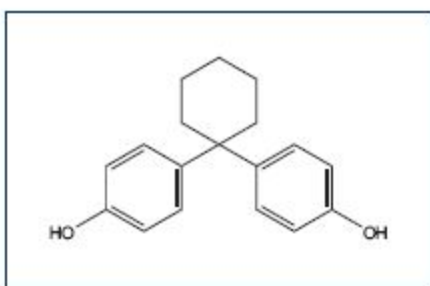
BPF



BPP



BPS

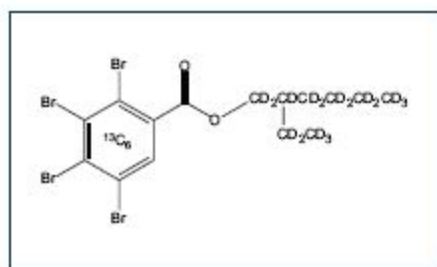


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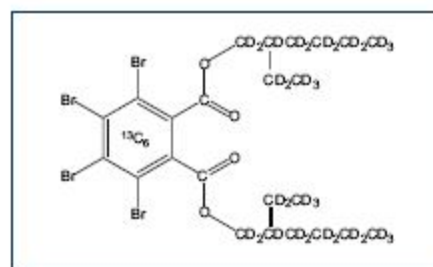


**NEW MASS-LABELLED REFERENCE STANDARDS****MEHTBB & MBEHTBP**

The restrictions that have been imposed globally on the production and utilization of polybrominated diphenyl ethers as flame retardants has led to the emergence of alternative flame retardants that meet the requirements of regional fire safety standards. Recently, 2-ethylhexyl-2,3,4,5-tetrabromobenzoate (EHTBB or TBB) and bis(2-ethylhexyl)tetrabromophthalate (BEHTBP or TBPH) have garnered a significant amount of attention due to the growing number of matrices in which they are being detected. The concern associated with these replacement flame retardants has been heightened by recent reports detailing their potential for bioaccumulation, possible health effects, and wide-spread use in multiple commercial flame retardant mixtures. In order to aid researchers in the identification and quantification of these compounds in environmental samples, Wellington has synthesized 2-ethylhexyl-d₁₇-2,3,4,5-tetrabromo[¹³C₆]benzoate (MEHTBB) and bis(2-ethylhexyl-d₁₇)-tetrabromo[¹³C₆]phthalate (MBEHTBP) to complement our existing native EHTBB and BEHTBP reference standards.



MEHTBB



MBEHTBP

Catalogue Number	Product (toluene)	Qty	Conc
MEHTBB	2-Ethylhexyl-d ₁₇ -2,3,4,5-tetrabromo[¹³ C ₆]benzoate	1.2 ml	50 µg/ml
MBEHTBP	Bis(2-ethylhexyl-d ₁₇)-tetrabromo[¹³ C ₆]phthalate	1.2 ml	50 µg/ml

Native Reference Standard Solutions are also available...

Catalogue Number	Product (toluene)	Qty	Conc
EHTBB	2-Ethylhexyl-2,3,4,5-tetrabromobenzoate	1.2 ml	50 µg/ml
BEHTBP	Bis(2-ethylhexyl)-tetrabromophthalate	1.2 ml	50 µg/ml

Distributed Throughout Europe and Middle East By-



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