



This document contains brochures of Wellington Reporters from the year **2017**. We have created a combined file that includes them all for the specified year:

- April 2017 – Native HBCD Enantiomer Reference Standards
- August 2017 – Mass-Labelled Dichloro[13C12]dibenzo-p-dioxins
- August 2017 – Native Reference Standard for Perfluoro-4-ethylcyclohexanesulfonate

Distributed By



Greyhound Chromatography and Allied Chemicals
6 Kelvin Park
Birkenhead
Merseyside, CH41 1LT

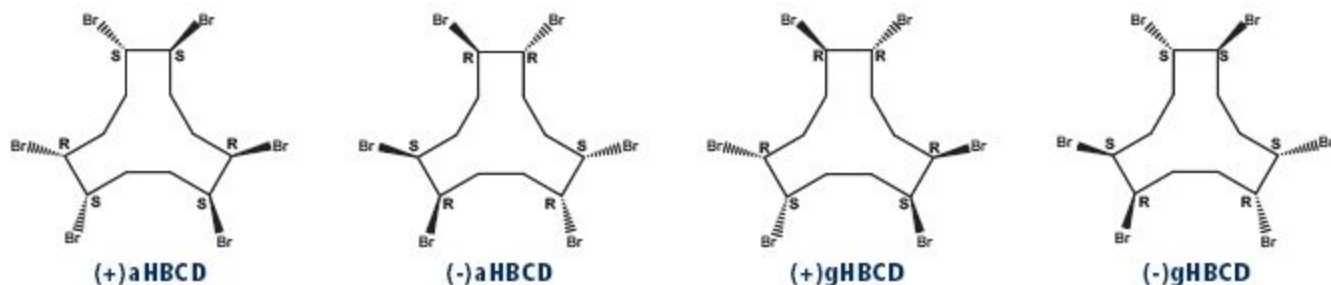
Tel: 0151 649 4000 Fax: 0151 649 4001
Email: info@greyhoundchrom.com
Web: <https://www.greyhoundchrom.com>



April 28, 2017

NEW PRODUCTS**Certified Reference Standards of Native HBCD Enantiomers**
(+)aHBCD, (-)aHBCD, (+)gHBCD, & (-)gHBCD

1,2,5,6,9,10-Hexabromocyclododecane (HBCD) is an additive flame retardant that is listed under Annex A of the Stockholm Convention for elimination due to its potential persistence and toxicity. It has been reported to be present at percent levels in extruded and high-impact polystyrene foams and to a lesser extent in electrical equipment housings. The HBCD technical product is composed of three main diastereomers (alpha, beta, and gamma) which are routinely analyzed for in environmental matrices. Variation in the physicochemical properties among these stereoisomers leads to differential biological uptake and degradation rates resulting in the measurement of non-racemic HBCD distributions. For this reason, **Wellington** has produced certified reference standards for the enantiomers of alpha-HBCD (which is typically dominant in biotic matrices) and gamma-HBCD (which is typically dominant in abiotic matrices as well as the commercial mixture) to aid researchers in the accurate determination of these stereoisomers.



Catalogue Number	Product (toluene)	Qty	Conc
(+)aHBCD	(+)- α -1S,2S,5R,6S,9S,10R-Hexabromocyclododecane	1.2 ml	50 μ g/ml
(-)aHBCD	(-)- α -1R,2R,5S,6R,9R,10S-Hexabromocyclododecane	1.2 ml	50 μ g/ml
(+)gHBCD	(+)- γ -1R,2R,5R,6S,9S,10R-Hexabromocyclododecane	1.2 ml	50 μ g/ml
(-)gHBCD	(-)- γ -1S,2S,5S,6R,9R,10S-Hexabromocyclododecane	1.2 ml	50 μ g/ml

Distributed Throughout Europe and Middle East By-

Greyhound Chromatography & Allied Chemicals
6 Kelvin Park, Birkenhead,
Merseyside, CH41 1LT, U.K.
Tel: (+44)-0-151-649-4000 Fax: (+44)-0-151-649-4001
E-mail: info@greyhoundchrom.com
Web: www.greyhoundchrom.com

Quality
ISO 9001

These standard solutions complement our existing lines of racemic HBCD reference standards:

Catalogue Number	Product (toluene)	Qty	Conc
aHBCD	α -1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml	50 μ g/ml
bHBCD	β -1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml	50 μ g/ml
gHBCD	γ -1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml	50 μ g/ml
dHBCD	δ -1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml	50 μ g/ml
eHBCD	ϵ -1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml	50 μ g/ml
zHBCD	ζ -1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml	50 μ g/ml
etaHBCD	η -1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml	50 μ g/ml
tHBCD	θ -1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml	50 μ g/ml
iHBCD	ι -1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml	50 μ g/ml
kHBCD	κ -1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml	50 μ g/ml

Mass-labelled HBCD reference standards:

Catalogue Number	Product (toluene)	Qty	Conc
MaHBCD	α -1,2,5,6,9,10-Hexabromo[$^{13}\text{C}_{12}$]cyclododecane	1.2 ml	50 μ g/ml
MbHBCD	β -1,2,5,6,9,10-Hexabromo[$^{13}\text{C}_{12}$]cyclododecane	1.2 ml	50 μ g/ml
MgHBCD	γ -1,2,5,6,9,10-Hexabromo[$^{13}\text{C}_{12}$]cyclododecane	1.2 ml	50 μ g/ml
DaHBCD	α -1,2,5,6,9,10-Hexabromocyclododecane- d_{18}	1.2 ml	50 μ g/ml
DbHBCD	β -1,2,5,6,9,10-Hexabromocyclododecane- d_{18}	1.2 ml	50 μ g/ml
DgHBCD	γ -1,2,5,6,9,10-Hexabromocyclododecane- d_{18}	1.2 ml	50 μ g/ml

Native and mass-labelled HBCD solution/mixtures:

Catalogue Number	Product (toluene)	Qty	Conc
HBCD-MXA	Mixture of aHBCD, bHBCD, & gHBCD	1.2 ml	10 μ g/ml ea
MHBCD-MXA	Mixture of MaHBCD, MbHBCD, & MgHBCD	1.2 ml	10 μ g/ml ea

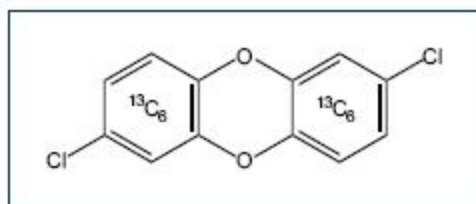
And related reference standard:

Catalogue Number	Product (toluene)	Qty	Conc
PBCD	<i>rac</i> -(1,5 <i>R</i> ,6,9,10 <i>R</i>)-pentabromocyclododecene	1.2 ml	50 μ g/ml

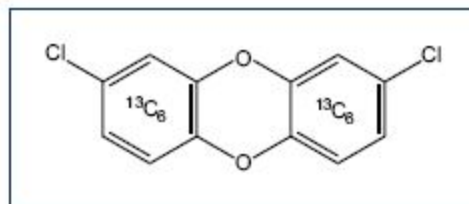


**NEW PRODUCTS****Certified Reference Standards for
Mass-Labelled 2,7- and 2,8-Dichlorodibenzo-*p*-dioxin**

The widespread use of triclosan (5-chloro-2-(2,4-dichlorophenoxy)phenol) in personal care products such as toothpastes and soaps has resulted in its release into the environment and subsequent detection in various water, sediment, and biological samples. The photochemical conversion of this commonly used antibacterial agent to 2,8-dichlorodibenzo-*p*-dioxin is well documented, but other degradation products are possible based on the chemical behaviour of structurally related polychlorinated phenols. When investigating triclosan degradation processes, the inability to separate the 2,7 and 2,8 positional isomers by gas chromatography has resulted in the analysis for these particular compounds being primarily performed using liquid chromatography coupled to mass spectrometry. In order to aid researchers in the study of degradation products of triclosan, **Wellington** has prepared certified mass-labelled reference standards for 2,7- and 2,8-dichlorodibenzo-*p*-dioxin.



MDD-27



MDD-28

Catalogue Number	Product (toluene)	Qty/Conc
MDD-27	2,7-Dichloro[¹³ C ₁₂]dibenzo- <i>p</i> -dioxin	1.2 ml 50 µg/ml
MDD-28	2,8-Dichloro[¹³ C ₁₂]dibenzo- <i>p</i> -dioxin	1.2 ml 50 µg/ml

Wellington also offers a variety of reference standards related to triclosan including mass-labelled and native versions of methyl triclosan (a biotransformation product) and native polychlorinated triclosan isomers (possibly formed during wastewater treatment processes). We also sell a wide range of native and mass-labelled polychlorinated dibenzo-*p*-dioxin reference standards to meet your analytical needs.

Distributed Throughout Europe and Middle East By-

Greyhound Chromatography & Allied Chemicals
6 Kelvin Park, Birkenhead,
Merseyside, CH41 1LT, U.K.
Tel: (+44)-0-151-649-4000 Fax: (+44)-0-151-649-4001
E-mail: info@greyhoundchrom.com
Web: www.greyhoundchrom.com

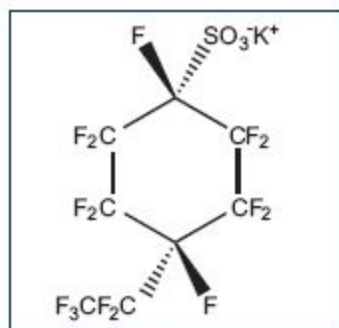
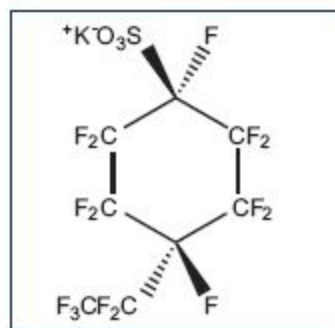
Quality
ISO 9001



August 16, 2017

NEW PRODUCT**Native Potassium Perfluoro-4-ethylcyclohexanesulfonate**
PFECHS

Perfluoro-4-ethylcyclohexanesulfonate has been primarily used as an additive in hydraulic fluid formulations that are designed to inhibit erosion in hydraulic systems. The use of these hydraulic fluids in commercial aircraft was identified as a likely source of this compound in surface waters and fish from the Great Lakes of North America; PFECHS contamination is now being reported internationally. PFECHS itself exists as a pair of *cis* and *trans* isomers, but commercial materials also contain substantial percentages of impurities including constitutional isomers that exhibit the same mass-to-charge ratio as PFECHS during mass spectrometric detection. Unfortunately, the use of inadequately characterized reference standards increases the uncertainty associated with the generated data. For this reason, **Wellington** has prepared a certified reference standard (chemical purity > 98%) which contains a known ratio of the *cis/trans* isomers of PFECHS (as determined by ^{19}F NMR).

*cis* isomer*trans* isomer

Catalogue Number	Product (methanol)	Qty	Conc
PFECHS	Perfluoro-4-ethylcyclohexanesulfonate	1.2 ml	50 µg/ml

Distributed Throughout Europe and Middle East By-

Greyhound Chromatography & Allied Chemicals
6 Kelvin Park, Birkenhead,
Merseyside, CH41 1LT, U.K.
Tel: (+44)-0-151-649-4000 Fax: (+44)-0-151-649-4001
E-mail: info@greyhoundchrom.com
Web: www.greyhoundchrom.com

Quality
ISO 9001