

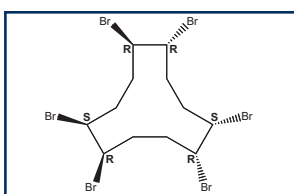


## **NEW PRODUCTS**

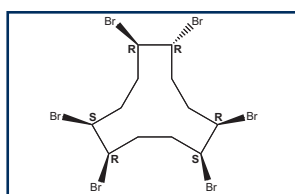
### **Solution/Mixtures of Native & Mass-Labelled Hexabromocyclododecane Isomers**

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( $\alpha$ )-, beta( $\beta$ )- and gamma( $\gamma$ )-HBCD, however **Wellington** currently offers all 10 possible isomers of HBCD (alpha( $\alpha$ )-, beta( $\beta$ )-, gamma( $\gamma$ )-, delta( $\delta$ )-, epsilon( $\epsilon$ ), zeta( $\zeta$ )-, eta( $\eta$ )-, theta( $\theta$ )-, iota( $\iota$ )-, and kappa( $\kappa$ )-HBCD) as individual reference standards.

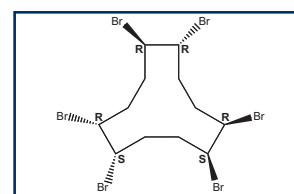
In response to recent customer requests, **Wellington** has prepared native and mass-labelled solution/mixtures of the major HBCD isomers (alpha, beta, and gamma), with product codes of HBCD-MXA and MHBCD-MXA respectively.



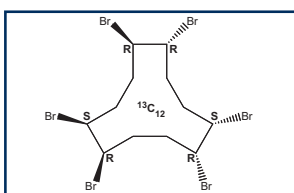
aHBCD



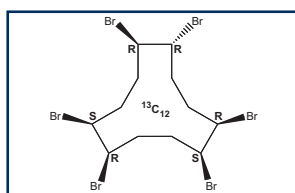
bHBCD



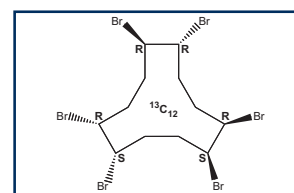
gHBCD



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	$\alpha$ -1,2,3,6,9,10-Hexabromocyclododecane	10
bHBCD	$\beta$ -1,2,3,6,9,10-Hexabromocyclododecane	10
gHBCD	$\gamma$ -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	$\alpha$ -1,2,3,6,9,10-Hexabromo[ $^{13}\text{C}_{12}$ ]cyclododecane	10
MbHBCD	$\beta$ -1,2,3,6,9,10-Hexabromo[ $^{13}\text{C}_{12}$ ]cyclododecane	10
MgHBCD	$\gamma$ -1,2,3,6,9,10-Hexabromo[ $^{13}\text{C}_{12}$ ]cyclododecane	10



## INDIVIDUAL NATIVE HEXABROMOCYCLODODECANE ISOMERS

Catalogue Number	Product (toluene solution)	Qty/Conc
<b>aHBCD</b>	alpha( $\alpha$ )-1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml 50 $\mu$ g/ml
<b>bHBCD</b>	beta( $\beta$ )-1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml 50 $\mu$ g/ml
<b>gHBCD</b>	gamma( $\gamma$ )-1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml 50 $\mu$ g/ml
<b>dHBCD</b>	delta( $\delta$ )-1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml 50 $\mu$ g/ml
<b>eHBCD</b>	epsilon( $\epsilon$ )-1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml 50 $\mu$ g/ml
<b>zHBCD</b>	zeta( $\zeta$ )-1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml 50 $\mu$ g/ml
<b>etaHBCD</b>	eta( $\eta$ )-1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml 50 $\mu$ g/ml
<b>thHBCD</b>	theta( $\theta$ )-1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml 50 $\mu$ g/ml
<b>iHBCD</b>	iota( $\iota$ )-1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml 50 $\mu$ g/ml
<b>kHBCD</b>	kappa( $\kappa$ )-1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml 50 $\mu$ g/ml

## <sup>13</sup>C-LABELLED HEXABROMOCYCLODODECANE ISOMERS

Catalogue Number	Product (toluene solution)	Qty/Conc
<b>MaHBCD</b>	$\alpha$ -1,2,5,6,9,10-Hexabromo[ <sup>13</sup> C <sub>12</sub> ]cyclododecane	1.2 ml 50 $\mu$ g/ml
<b>MbHBCD</b>	$\beta$ -1,2,5,6,9,10-Hexabromo[ <sup>13</sup> C <sub>12</sub> ]cyclododecane	1.2 ml 50 $\mu$ g/ml
<b>MgHBCD</b>	$\gamma$ -1,2,5,6,9,10-Hexabromo[ <sup>13</sup> C <sub>12</sub> ]cyclododecane	1.2 ml 50 $\mu$ g/ml

## DEUTERATED HEXABROMOCYCLODODECANE ISOMERS

Catalogue Number	Product (toluene solution)	Qty/Conc
<b>DaHBCD</b>	d18- $\alpha$ -1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml 50 $\mu$ g/ml
<b>DbHBCD</b>	d18- $\beta$ -1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml 50 $\mu$ g/ml
<b>DgHBCD</b>	d18- $\gamma$ -1,2,5,6,9,10-Hexabromocyclododecane	1.2 ml 50 $\mu$ g/ml

*Please contact your local distributor or [info@well-labs.com](mailto:info@well-labs.com) for pricing and delivery.*

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