

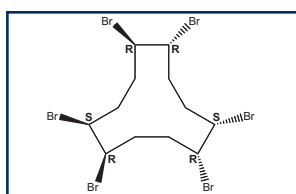


NEW PRODUCTS

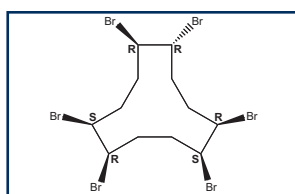
Solution/Mixtures of Native & Mass-Labelled Hexabromocyclododecane Isomers

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.

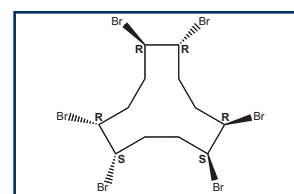
In response to recent customer requests, **Wellington** has prepared native and mass-labelled solution/mixtures of the major HBCD isomers (alpha, beta, and gamma), with product codes of HBCD-MXA and MHBCD-MXA respectively.



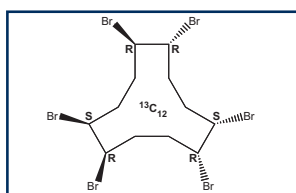
aHBCD



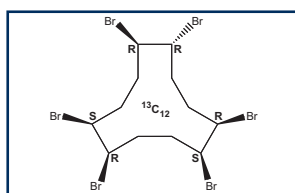
bHBCD



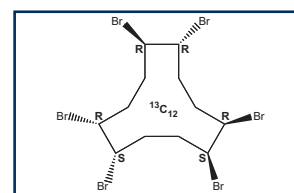
gHBCD



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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