

## Pesticides - Optically Active Enantiomers

The activity of each enantiomer of a pesticide with optical activity is often different. They do not only differ in their degree of activity, but also in their toxicological properties (2,3). Professor W.A. König and co-workers have purified and characterised the enantiomer content of the following optically active pesticides using derivatised cyclodextrin columns( 1). Solvent "CY" is cyclohexane.

- 1 W.A.König, D.Icheln, T.Runge, B.Pfaffenberger, P.Ludwig, H.Hühnerfuss, J. of High Res. Chrom. 14 (1991), 530.
- 2 R.Kallenbom, H.Hühnerfuss, W.A.König, Angew. Chem. 103 (1991), 328; Agnew. Chem. Int. Ed. Engl. 30 (1991), 20
- 3 J.Faller, H.Hühnerfuss, W.A.König, R.Krebber, P.Ludwig, Environ. Sci. Technol. 25(1991), 676.

Description	Composition			Conc.	Unit	Cat No.	Price
	% (+) enantiomer	% (-) enantiomer	% ee				
(+)-Bromocyclen	76.9	23.1	53.8	1ng/µl	1ml	ZA10726100CY	GK
(-)-Bromocyclen	25.4	74.7	49.3	1ng/µl	1ml	ZA10726200CY	GK
(+)-cis-Chlordane	75.2	24.8	50.5	1ng/µl	1ml	ZA11201100CY	GK
(-)-cis-Chlordane	15.3	85.8	70.5	1ng/µl	1ml	ZA11201200CY	GK
(+)-trans-Chlordane	96.3	3.7	92.6	1ng/µl	1ml	ZA11202100CY	GK
(-)-trans-Chlordane	0.79	99.2	98.3	1ng/µl	1ml	ZA11202200CY	GK
(+)-Oxychlordane	75.1	25.0	50.1	1ng/µl	1ml	ZA11203100CY	GK
(-)-Oxychlordane	28.6	71.4	42.8	1ng/µl	1ml	ZA11203200CY	GK
(+)-alpha-HCH	> 99	< 1	> 99	1ng/µl	1ml	ZA14071100CY	GK
(-)-alpha-HCH	< 1	> 99	> 99	1ng/µl	1ml	ZA14071200CY	GK
(+)-Heptachlor	75.6	24.4	51.2	1ng/µl	1ml	ZA14090100CY	GK
(-)-Heptachlor	17.4	82.6	65.2	1ng/µl	1ml	ZA14090200CY	GK
(+)-cis-Heptachlorepoxyde	97.3	2.7	94.6	1ng/µl	1ml	ZA14101100CY	GK
(-)-cis-Heptachlorepoxyde	0.6	99.4	98.8	1ng/µl	1ml	ZA14101200CY	GK
(+)-trans-Heptachlorepoxyde	80.5	19.5	61.0	1ng/µl	1ml	ZA14102100CY	GK
(-)-trans-Heptachlorepoxyde	8.4	91.6	83.2	1ng/µl	1ml	ZA14102200CY	GK

## Pesticides - Stable Isotopes

With the emergence of GC/MS and LC/MS as a routine analytical tool, stable isotopes offer the ideal solution to the problem of choosing a suitable internal standard. If you require a product that is not listed below, please telephone, fax or email us with your requirements and we will do our utmost to help. Solvent "AC" is acetone, "AD" acetone deuterated, "CY" cyclohexane, "DO" deuterium oxide, "ME" methanol, "IO" isooctane.

Description	CAS	Formula	MW	Cat.No.	Conc.	Unit	Price
<b>Adipic acid(3,3,4,4-D4)-bis-2-ethylhexyl ester D4</b>		$C_{22}H_{38}D_4O_4$	374.58	C 10046010 XA10046010AC	certified 10 mg 100 ng/µl 1.1 ml	DGA BDK	
<b>AHTN (Tonalide) D3</b>		$C_{18}H_{23}OD_3$	261.4	XA10048600IO	100 ng/µl 1.1 ml	BBA	
<b>Aldicarb D3</b>		$C_7H_{11}N_2O_2SD_3$	193.27	XA10070100AC	100 ng/µl 1.1 ml	HD	
<b>Amidosulfuron D6 (dimethoxy D6)</b>		$C_9H_9N_5O_7S_2D_6$	375.41	C 10162100	certified 10 mg	DGA	
<b>4-Aminobiphenyl D9</b>		$C_{12}H_9ND_9$	178.23	XA10173041AC	100 ng/µl 1 ml	LE	
<b>Aminomethyl phosphonic acid <math>^{13}C</math> <math>^{15}N</math></b>		$CH_6NO_3P$	113.03	XA10205100WA	100 ng/µl 1.1 ml	CFA	
<b>3-Amino-5-morpholinomethyl-2-oxazolidinone D5</b>		$C_8H_{10}N_3O_3D_5$	206.2	E 10206310	neat 50 mg	CGA	
<b>3-Amino-2-oxazolidinone D4</b>		$C_3H_2N_2O_2D_4$	106.1	E 10209010	neat 50 mg	GFA	
<b>Amitraz D12 (2,2',4,4'-tetramethyl D3)</b>		$C_{19}H_{11}N_3D_{12}$	305.4	XA10230100AC	100 ng/µl 1.1 ml	BBK	
<b>Aniline D5</b>	4165-61-1	$C_6H_5D_5N$	98.17	C 10262600 XA10262600AC YA10262600MB	certified 0.1 g 100 ng/µl 1 ml 2000 ng/µl 1 ml	FK CE DF	
<b>Atrazine D5 (ethylamino D5)</b>	163165-75-1	$C_8H_9ClN_3D_5$	220.69	C 10330100 XA10330100AC	certified 10 mg 100 ng/µl 1.1 ml	BHL GD	
<b>Atrazine <math>^{13}C_3</math> (ring <math>^{13}C_3</math>)</b>		$C_8H_{14}ClN_3$	218.69	XA10330200AC	100 ng/µl 1.1 ml	EBA	
<b>Atrazine-desethyl D6</b>		$C_6H_4ClN_3D_6$	193.6	XA10331100AC	100 ng/µl 1.1 ml	KL	
<b>Atrazine-desisopropyl D5</b>		$C_5H_3ClN_3D_5$	178.6	XA10332100AC	100 ng/µl 1.1 ml	BBK	
<b>Atrazine-2-hydroxy D5</b>		$C_8H_{10}N_3OD_5$	202.2	XA10333100ME	100 ng/µl 1.1 ml	KL	
<b>Azinphos-methyl D6</b>		$C_{10}H_6N_3O_3PS_2D_6$	323.3	XA10365100AC	100 ng/µl 1.1 ml	BBK	
<b>Bentazone (isopropyl-1,1,1,3,3,3) D6</b>		$C_{10}H_{16}N_2O_3SD_6$	246.28	C 10510100 XA10510100AC	certified 10 mg 100 ng/µl 1.1 ml	CGA HL	
<b>Benzene D6</b>	1076-43-3	$C_6D_6$	84.16	CA10535200 YA10535200ME	certified 2 ml 2000 ng/µl 1 ml	CE DF	
<b>Bromopropylate D7 (isopropyl D7)</b>		$C_{17}H_{15}Br_2O_3D_7$	435.1	XA10762100AC	100 ng/µl 1.1 ml	BCK	
<b>Captan D6</b>		$C_9H_2Cl_3NO_2SD_6$	306.61	XA10960100AC	100 ng/µl 1.1 ml	BCK	

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Description	CAS	Formula	MW	Cat.No.	Conc.	Unit	Price
<b>Carbaryl D3 (methyl D3)</b>		C <sub>12</sub> H <sub>8</sub> NO <sub>2</sub> D <sub>3</sub>	213.23	XA10980010AC	100 ng/µl	1.1 ml	HD
<b>Carbaryl D7 (naphthyl D7)</b>		C <sub>12</sub> H <sub>4</sub> NO <sub>2</sub> D <sub>7</sub>	217.23	XA10980100AC	100 ng/µl	1.1 ml	KE
<b>Carbendazim D3</b>		C <sub>9</sub> H <sub>6</sub> N <sub>3</sub> O <sub>2</sub> D <sub>3</sub>	194.2	C 10990100 XA10990100AD	certified 5 mg 100 ng/µl	5 mg 1.1 ml	FAA BAA
<b>Carbendazim D4 (ring)</b>		C <sub>9</sub> H <sub>5</sub> N <sub>3</sub> O <sub>2</sub> D <sub>4</sub>	195.2	C 10990200 XA10990200AC	certified 5 mg 100 ng/µl	5 mg 1.1 ml	HGA BCK
<b>Carbetamide D5 (phenyl D5)</b>		C <sub>12</sub> H <sub>11</sub> N <sub>2</sub> O <sub>3</sub> D <sub>5</sub>	241.27	XA11000100AC	100 ng/µl	1.1 ml	BAA
<b>Carbofuran D3 (N-methyl D3)</b>		C <sub>12</sub> H <sub>12</sub> NO <sub>3</sub> D <sub>3</sub>	224.26	C 11010100 XA11010100AC	certified 10 mg 100 ng/µl	10 mg 1.1 ml	BGL KE
<b>Carbophenothion D10 (di(ethyl D5))</b>		C <sub>11</sub> H <sub>6</sub> ClO <sub>2</sub> PS <sub>3</sub> D <sub>10</sub>	352.96	XA11020100AC	100 ng/µl	1.1 ml	LE
<b>Chloramphenicol D5 (ring D4, benzyl D)</b>				XA11120100AC	100 ng/µl	1.1 ml	LE
<b>Chlorfenvinphos (ethyl) D10</b>		C <sub>12</sub> H <sub>4</sub> Cl <sub>3</sub> O <sub>4</sub> PD <sub>10</sub>	369.6	XA11290100AC	100 ng/µl	1.1 ml	BBK
<b>Chlormequat chloride D4</b>		C <sub>5</sub> H <sub>9</sub> Cl <sub>2</sub> ND <sub>4</sub>	162.1	X 11340100DO XA11340100DO	100 ng/µl 100 ng/µl	10 ml 1.1 ml	DBA GD
<b>2-Chlorobiphenyl D5</b>	51624-35-2	C <sub>12</sub> H <sub>4</sub> ClD <sub>5</sub>	193.66	XA20000101IO	100 ng/µl	1.1 ml	CE
<b>Chlorotoluron D6</b>		C <sub>10</sub> H <sub>7</sub> ClN <sub>2</sub> OD <sub>6</sub>	218.7	XA11530100AC	100 ng/µl	1.1 ml	GD
<b>Chlorpyrifos D10</b>	285138-81-0		360.6	C 11600100 XA11600100AC	certified 10 mg 100 ng/µl	10 mg 1.1 ml	DGA HL
<b>Chlorpyrifos-methyl D6</b>		C <sub>7</sub> H <sub>7</sub> Cl <sub>3</sub> NO <sub>3</sub> PSD <sub>6</sub>	328.5	C 11601100 XA11601100AC	certified 10 mg 100 ng/µl	10 mg 1.1 ml	DGA HL
<b>Clenbuterol D9</b>	129138-58-5	C <sub>12</sub> H <sub>9</sub> D <sub>9</sub> Cl <sub>2</sub> N <sub>2</sub> O	286.12	XA11668561AC	100 ng/µl	1 ml	BDK
<b>trans-Cypermethrin D6 (dimethyl D6)</b>	82523-65-7	C <sub>22</sub> D <sub>6</sub> H <sub>13</sub> Cl <sub>2</sub> NO <sub>3</sub>	422.3	XA11890400AC	100 ng/µl	1.1 ml	BCK
<b>2,4-D <sup>13</sup>C<sub>6</sub></b>	150907-52-1	C <sub>2</sub> H <sub>6</sub> Cl <sub>2</sub> O <sub>3</sub> - <sup>13</sup> C <sub>6</sub>	227	XA11940200AC	100 ng/µl	1.1 ml	CEA
<b>Daminozide D6</b>		C <sub>6</sub> H <sub>6</sub> N <sub>2</sub> O <sub>3</sub> D <sub>6</sub>	166.2	XA11960100AL	100 ng/µl	1.1 ml	HL
<b>4,4'-DDE D8</b>	93952-19-2	C <sub>14</sub> Cl <sub>4</sub> D <sub>8</sub>	326	XA12041100AC	100 ng/µl	1.1 ml	KL
<b>2,4'-DDT D8</b>	221899-88-3	C <sub>14</sub> HCl <sub>3</sub> D <sub>8</sub>	362.54	C 12081100 XA12081100AC	certified 5 mg 100 ng/µl	5 mg 1.1 ml	DGA BDK
<b>4,4'-DDT D8</b>	93952-18-2	C <sub>14</sub> HCl <sub>3</sub> D <sub>8</sub>	362.50	C 12082100 XA12082100AC	certified 5 mg 100 ng/µl	5 mg 1.1 ml	DGA HD
<b>4,4'-DDT <sup>13</sup>C<sub>12</sub></b>	104215-84-1	C <sub>14</sub> H <sub>3</sub> Cl <sub>5</sub> - <sup>13</sup> C <sub>12</sub>	366.50	XA12082200AC	100 ng/µl	1.1 ml	BAF
<b>Diazinon D10 (diethyl D10)</b>	100155-47-3	C <sub>12</sub> H <sub>11</sub> N <sub>2</sub> O <sub>3</sub> PSD <sub>10</sub>	314.3	C 12210100 XA12210100AC	certified 10 mg 100 ng/µl	10 mg 1.1 ml	GFA HL
<b>Dicamba D3 (methoxy D3)</b>	349553-95-3			C 12260100 XA12260100AC	certified 10 mg 100 ng/µl	10 mg 1.1 ml	DBA HD
<b>1,4-Dichlorobenzene D4</b>	3855-82-1	C <sub>6</sub> D <sub>4</sub> Cl <sub>2</sub>	151.04	C 12372100 YA12372100ME	certified 0.1 g 2000 ng/µl	0.1 g 1 ml	EF CE
<b>1,2-Dichloroethane D4</b>	17060-07-0	C <sub>2</sub> D <sub>4</sub> Cl <sub>2</sub>	102	CA12422300 YA12422300ME	certified 0.1 g 2000 ng/µl	0.1 g 1 ml	DC DF
<b>2,4-Dichlorophenol-3,5,6 D3</b>	93951-74-7	C <sub>6</sub> HCl <sub>2</sub> OD <sub>3</sub>	165.0	XA12451100AC	100 ng/µl	1.1 ml	FK
<b>2,4-Dichlorophenol <sup>13</sup>C<sub>6</sub></b>		<sup>13</sup> C <sub>6</sub> H <sub>3</sub> Cl <sub>2</sub> O	168.9	XA12451200AC	100 ng/µl	1.1 ml	BBK
<b>Dichlorprop D6 (ring D3, 3,3,3-D3)</b>		C <sub>9</sub> H <sub>2</sub> Cl <sub>2</sub> O <sub>3</sub> D <sub>6</sub>	241.07	XA12510100AC	100 ng/µl	1.1 ml	BBK
<b>Dichlorprop-methyl ester D6 (ring D3, 3,3,3-D3)</b>		C <sub>10</sub> H <sub>4</sub> Cl <sub>2</sub> O <sub>3</sub> D <sub>6</sub>	255.02	XA12514100AC	100 ng/µl	1.1 ml	BAF
<b>Dichlorvos D6 (dimethyl D6)</b>		C <sub>4</sub> HCl <sub>2</sub> O <sub>4</sub> PD <sub>6</sub>	226.98	C 12530100 XA12530100CY	certified 10 mg 100 ng/µl	10 mg 1.1 ml	DBA KE
<b>Dimethoate D6 (O,O dimethyl D6)</b>		C <sub>5</sub> H <sub>6</sub> NO <sub>3</sub> PS <sub>2</sub> D <sub>6</sub>	235.28	XA12700100AC	100 ng/µl	1.1 ml	GK
<b>N,N'-Diphenylurea D10</b>	108009-46-7	C <sub>13</sub> H <sub>2</sub> N <sub>2</sub> OD <sub>10</sub>	222.25	C 12921510	certified 5 mg	5 mg	DGA
<b>Diquat dibromide D4 monohydrate</b>	85-00-7	C <sub>12</sub> H <sub>8</sub> D <sub>4</sub> Br <sub>2</sub> N <sub>2</sub> x H <sub>2</sub> O	366.1	C 12960010 XA12960010DO	certified 50 mg 100 ng/µl	50 mg 1.1 ml	DBA KE
<b>Disulfoton D10 (Di-ethyl D10)</b>		C <sub>8</sub> H <sub>9</sub> O <sub>2</sub> PS <sub>3</sub> D <sub>10</sub>	284.4	XA12980100AC	100 ng/µl	1.1 ml	HL
<b>Diuron D6 (dimethyl D6)</b>		C <sub>9</sub> H <sub>4</sub> Cl <sub>2</sub> N <sub>2</sub> OD <sub>6</sub>	239.1	C 13020100 XA13020100AC	certified 10 mg 100 ng/µl	10 mg 1.1 ml	BGL GK
<b>DNOC D5 (ring D2, methyl D3)</b>		C <sub>7</sub> HN <sub>2</sub> O <sub>5</sub> D <sub>5</sub>	203.1	XA13050100AC	100 ng/µl	1.1 ml	BBK
<b>beta-Endosulfan D4</b>	203716-99-8	C <sub>9</sub> H <sub>2</sub> Cl <sub>6</sub> O <sub>3</sub> SD <sub>4</sub>	406.93	C 13122100 XA13122100AC	certified 10 mg 100 ng/µl	10 mg 1.1 ml	EKF KE
<b>Ethion D20</b>		C <sub>9</sub> H <sub>2</sub> O <sub>4</sub> P <sub>2</sub> S <sub>4</sub> D <sub>20</sub>	404.48	XA13270100AC	100 ng/µl	1.1 ml	LE
<b>Fenbuconazole (phenyl D5)</b>		C <sub>19</sub> H <sub>12</sub> ClN <sub>4</sub> D <sub>5</sub>	341.8	XA13448510AC	100 ng/µl	1.1 ml	BDK
<b>Fenitrothion D6 (O,O-dimethyl D6)</b>		C <sub>9</sub> H <sub>6</sub> NO <sub>3</sub> PSD <sub>6</sub>	283.2	C 13480100 XA13480100AC	certified 10 mg 100 ng/µl	10 mg 1.1 ml	EBA GK
<b>Fenthion D6 (dimethoxy D6)</b>		C <sub>10</sub> H <sub>9</sub> O <sub>3</sub> PS <sub>2</sub> D <sub>6</sub>	284.33	XA13580100AC	100 ng/µl	1.1 ml	BCK
<b>Fluazifop-butyl D9</b>		C <sub>19</sub> H <sub>11</sub> F <sub>3</sub> NO <sub>4</sub> D <sub>9</sub>	392.3	XA13670100AC	100 ng/µl	1.1 ml	GD
<b>Fluconazole D4 (bismethylene D4)</b>		C <sub>13</sub> H <sub>8</sub> F <sub>2</sub> N <sub>6</sub> OD <sub>4</sub>	310.27	XA13697510AC	100 ng/µl	1.1 ml	KL
<b>Fluorene D10</b>	81103-79-9	C <sub>13</sub> D <sub>10</sub>	176.31	C 20800200 L 20800200CY	certified 0.1 g 10 ng/µl	0.1 g 10 ml	HL DA

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Description	CAS	Formula	MW	Cat.No.	Conc.	Unit	Price
<b>Folpet D4</b>		C <sub>9</sub> D <sub>4</sub> Cl <sub>3</sub> NO <sub>2</sub> S	300.56	XA13890100AC	100 ng/µl	1.1 ml	BCK
<b>Furan D4</b>	6142-90-1	C <sub>4</sub> D <sub>4</sub> O	72.08	C 13965010 E 13965010	certified	1 g	FC BGL
<b>Glyphosate 1,2-<sup>13</sup>C<sub>2</sub> <sup>15</sup>N</b>		C <sub>3</sub> H <sub>8</sub> <sup>15</sup> N <sub>2</sub> O <sub>5</sub> P	172.06	XA14050100WA	100 ng/µl	1.1 ml	DDA
<b>alpha-HCH <sup>13</sup>C<sub>6</sub></b>	222966-66-7	<sup>13</sup> C <sub>6</sub> H <sub>6</sub> Cl <sub>6</sub>	296.75	XA14071300CY	100 ng/µl	1.1 ml	EKF
<b>alpha-HCH D6</b>	86194-41-4	C <sub>6</sub> Cl <sub>6</sub> D <sub>6</sub>	296.77	C 14071400 XA14071400CY	certified	10 mg	CGA BKL
<b>gamma-HCH D6</b>	60556-82-3	C <sub>6</sub> Cl <sub>6</sub> D <sub>6</sub>	296.77	C 14073100 XA14073100CY	certified	10 mg	8FA DBA
<b>gamma-HCH <sup>13</sup>C<sub>6</sub></b>	104215-85-2	<sup>13</sup> C <sub>6</sub> H <sub>6</sub> Cl <sub>6</sub>	296.75	XA14073200CY	100 ng/µl	1.1 ml	EKF
<b>Hexachlorobenzene <sup>13</sup>C<sub>6</sub></b>	93952-14-8	<sup>13</sup> C <sub>6</sub> Cl <sub>6</sub>	290.7	C 14160100 XA14160100AC	certified	10 mg	CGA BDK
<b>Hexachloro-1,3-butadiene <sup>13</sup>C<sub>4</sub></b>		<sup>13</sup> C <sub>4</sub> Cl <sub>6</sub>	264.76	XA14170100AC	100 ng/µl	1.1 ml	BGL
<b>Imazalil D5</b>		C <sub>14</sub> H <sub>9</sub> Cl <sub>2</sub> N <sub>2</sub> OD <sub>5</sub>	302.2	XA14280100AC	100 ng/µl	1.1 ml	BCK
<b>Imidacloprid D4 (imidazolidin-4,4,5,5 D4)</b>		C <sub>9</sub> D <sub>4</sub> H <sub>6</sub> ClN <sub>3</sub> O <sub>2</sub>	259.7	C 14283710 XA14283710AC	certified	10 mg	CGA BAA
<b>Isoproturon D6</b>		C <sub>12</sub> H <sub>12</sub> N <sub>2</sub> OD <sub>6</sub>	212.29	C 14470100 XA14470100AC YA14470100AL	certified	10 mg	HL FK HL
<b>Leucomalachite green D6</b>		C <sub>23</sub> H <sub>20</sub> N <sub>2</sub> D <sub>6</sub>	336.48	C 14629510 XA14629510AC	certified	50 mg	CGA LE
<b>Linuron D6</b>		C <sub>9</sub> H <sub>4</sub> Cl <sub>2</sub> N <sub>2</sub> O <sub>2</sub> D <sub>6</sub>	254.1	C 14640100 XA14640100AC	certified	5 mg	DKA GK
<b>Malathion D6</b>		C <sub>10</sub> H <sub>13</sub> D <sub>6</sub> O <sub>6</sub> PS <sub>2</sub>	336.36	C 14710200 XA14710200AC	certified	5 mg	DKA FK
<b>MCPA D3</b>		C <sub>9</sub> H <sub>6</sub> ClO <sub>3</sub> D <sub>3</sub>	203.6	C 14760100 XA14760100AC	certified	10 mg	DBA BBK
<b>MCPA D6</b>		C <sub>9</sub> H <sub>3</sub> ClO <sub>3</sub> D <sub>6</sub>	206.6	XA14760200AC	100 ng/µl	1.1 ml	BGL
<b>MCPB D6 (ring D3, methyl D3)</b>		C <sub>11</sub> H <sub>7</sub> ClO <sub>3</sub> D <sub>6</sub>	234.5	XA14790100AC	100 ng/µl	1.1 ml	BBK
<b>Mecarbam D10 (diethoxy D10)</b>			339.4	XA14800100AC	100 ng/µl	1.1 ml	LE
<b>Mecoprop D3 (ring)</b>	352431-15-3	C <sub>10</sub> H <sub>6</sub> ClO <sub>3</sub> D <sub>3</sub>	217.6	C 14820100 XA14820100AC	certified	10 mg	BKL KE
<b>Mecoprop-methyl ester D3 (ring)</b>		C <sub>11</sub> H <sub>10</sub> ClO <sub>3</sub> D <sub>3</sub>	231.68	XA14835100AC	100 ng/µl	1.1 ml	HD
<b>Mepiquat iodide D3 (methyl D3)</b>	29600-30-4	C <sub>7</sub> H <sub>13</sub> IND <sub>3</sub>	244.1	X 14880100DO XA14880100DO	100 ng/µl	10 ml	EBA GK
<b>Methamidophos (dimethyl) D6</b>		C <sub>2</sub> H <sub>5</sub> NO <sub>2</sub> PSD <sub>6</sub>	147.1	XA14980100AC	100 ng/µl	1.1 ml	BBK
<b>Methomyl D3</b>		C <sub>5</sub> H <sub>7</sub> N <sub>2</sub> O <sub>2</sub> SD <sub>3</sub>	165.21	XA15030100AC	100 ng/µl	1.1 ml	BCK
<b>Methoxychlor D14 (bis(4-methoxyphenyl-D7))</b>		C <sub>16</sub> HCl <sub>3</sub> O <sub>2</sub> D <sub>14</sub>	359.65	XA15060100AC	100 ng/µl	1.1 ml	BBK
<b>Metolachlor D6 (propyl D6)</b>		C <sub>15</sub> H <sub>18</sub> ClNO <sub>2</sub> D <sub>6</sub>	289.80	C 15170100 XA15170100AC	certified	10 mg	EGA GK
<b>Metsulfuron-methyl D3 (triazine methoxy D3)</b>		C <sub>14</sub> H <sub>12</sub> N <sub>5</sub> O <sub>6</sub> SD <sub>3</sub>	384.36	XA15210100AC	100 ng/µl	1.1 ml	LE
<b>Molinate D12</b>		C <sub>9</sub> H <sub>5</sub> NOSD <sub>12</sub>	199.30	XA15280010AC	100 ng/µl	1.1 ml	BCK
<b>Monuron D6</b>	217488-65-8	C <sub>9</sub> H <sub>5</sub> ClN <sub>2</sub> OD <sub>6</sub>	204.66	C 15320100 XA15320100AC	certified	5 mg	DKA FK
<b>Musk xylene D15</b>		C <sub>12</sub> N <sub>3</sub> O <sub>6</sub> D <sub>15</sub>	312	XA15360100AC	100 ng/µl	1.1 ml	KE
<b>Naphthalene D8</b>	1146-65-2	C <sub>10</sub> D <sub>8</sub>	136.24	C 20905100 L 20905100CY YA20905100MB	certified	0.1 g	CE DA DF
<b>Nitrobenzene D5</b>	4165-60-0	C <sub>6</sub> D <sub>5</sub> NO <sub>2</sub>	128.15	C 15557100 XA15557100AC YA15557100MB	certified	1 g	GK CE DF
<b>4-n-Nonylphenol D8</b>		C <sub>15</sub> H <sub>16</sub> OD <sub>8</sub>	228.31	XA15630010AC	100 ng/µl	1.1 ml	KE
<b>4-Nonylphenol-mono-ethoxylate D2</b>		C <sub>17</sub> H <sub>26</sub> O <sub>2</sub> D <sub>2</sub>	266.41	LA15631017AC	10 ng/µl	1.1 ml	BBK
<b>4-Nonylphenoxy-acetic acid D2</b>		C <sub>17</sub> H <sub>24</sub> O <sub>3</sub> D <sub>2</sub>	280.39	LA15631023AC	10 ng/µl	1.1 ml	BBK
<b>2-NP-AMAZ D5</b>		C <sub>15</sub> H <sub>13</sub> N <sub>4</sub> O <sub>5</sub> D <sub>5</sub>	339.36	C 15654481	certified	10 mg	CKA
<b>2-NP-AOZ D4</b>		C <sub>10</sub> H <sub>5</sub> D <sub>4</sub> N <sub>3</sub> O <sub>4</sub>	239.22	C 15654501	certified	10 mg	CKA
<b>Omethoate D6 (dimethyl D6)</b>		C <sub>5</sub> H <sub>6</sub> NO <sub>4</sub> PSD <sub>6</sub>	219.19	XA15730100AC	100 ng/µl	1.1 ml	LE
<b>Oxamyl D3</b>		C <sub>7</sub> H <sub>10</sub> N <sub>3</sub> O <sub>3</sub> SD <sub>3</sub>	222.3	XA15780100AL	100 ng/µl	1.1 ml	GK
<b>Paraquat diiodide D6</b>		C <sub>12</sub> H <sub>6</sub> J <sub>2</sub> N <sub>2</sub> D <sub>6</sub>	446.0	C 15870200 XA15870200DO	certified	50 mg	DKA GK
<b>Parathion-ethyl D10 (diethyl D10)</b>	350820-04-1	C <sub>10</sub> H <sub>4</sub> NO <sub>5</sub> PSD <sub>10</sub>	301.27	C 15880100 XA15880100AC	certified	10 mg	DBA HD
<b>Parathion-methyl D6 (dimethyl D6)</b>	96740-32-8	C <sub>8</sub> H <sub>4</sub> NO <sub>5</sub> PSD <sub>6</sub>	269.21	XA15890100AC	100 ng/µl	1.1 ml	HD

# Dr. Ehrenstorfer Reference Materials

Description	CAS	Formula	MW	Cat.No.	Conc.	Unit	Price
<b>Pendimethalin D5</b>		C <sub>13</sub> H <sub>14</sub> N <sub>3</sub> O <sub>4</sub> D <sub>5</sub>	286.31	C 15930100 XA15930100AC	certified 50 mg 100 ng/µl	50 mg 1.1 ml	GFA KE
<b>Pentachloroanisol <sup>13</sup>C<sub>6</sub></b>		C <sup>13</sup> <sub>6</sub> H <sub>3</sub> Cl <sub>5</sub> O	286.4	XA15950010AC	100 ng/µl	1.1 ml	BGL
<b>Pentachlorophenol <sup>13</sup>C<sub>6</sub></b>	85380-74-1	<sup>13</sup> C <sub>6</sub> HCl <sub>5</sub> O	272.26	C 15970100 XA15970100AC	certified 10 mg 100 ng/µl	10 mg 1.1 ml	CGA GD
<b>trans-Permethrin D6 (dimethyl D6)</b>	82523-59-9	C <sub>21</sub> H <sub>14</sub> Cl <sub>2</sub> O <sub>3</sub> D <sub>6</sub>	397.29	XA15990201AC	100 ng/µl	1.1 ml	BCK
<b>Perylene D12</b>	1520-96-3	C <sub>20</sub> D <sub>12</sub>	264.3	C 20915100 L 20915100CY YA20915100TO	certified 0.1 g 10 ng/µl 2000 ng/µl	0.1 g 10 ml 1 ml	BAF EH EC
<b>Phenanthrene D10</b>	1517-22-2	C <sub>14</sub> D <sub>10</sub>	188.32	C 20920100 L 20920100AC L 20920100CY YA20920100MB	certified 0.1 g 10 ng/µl 10 ng/µl 2000 ng/µl	0.1 g 10 ml 10 ml 1 ml	GD DA DA DF
<b>Phenmedipham D3</b>		C <sub>16</sub> H <sub>13</sub> N <sub>2</sub> O <sub>4</sub> D <sub>3</sub>	303.31	C 16020100	certified 5 mg		FFA
<b>Phorate D10</b>		C <sub>7</sub> H <sub>7</sub> O <sub>2</sub> PS <sub>3</sub> D <sub>10</sub>	270.4	XA16080100AC	100 ng/µl	1.1 ml	LE
<b>Phosalone D10 (di-ethyl D5)</b>			377.8	XA16100100AC	100 ng/µl	1.1 ml	KE
<b>Phosmet D6</b>		C <sub>11</sub> H <sub>6</sub> NO <sub>4</sub> PS <sub>2</sub> D <sub>6</sub>	323.33	XA16120100AC	100 ng/µl	1.1 ml	LE
<b>Pirimicarb (dimethylcarbamate) D6</b>		C <sub>11</sub> H <sub>12</sub> N <sub>4</sub> O <sub>2</sub> D <sub>6</sub>	244.3	C 16250100 XA16250100AC	certified 10 mg 100 ng/µl	10 mg 1.1 ml	CGA BAF
<b>Pirimiphos-ethyl D10</b>			343.4	XA16260100AC	100 ng/µl	1.1 ml	BAA
<b>Pirimiphos-methyl D6</b>		C <sub>11</sub> H <sub>14</sub> N <sub>3</sub> O <sub>3</sub> PSD <sub>6</sub>	311.3	XA16270100AC	100 ng/µl	1.1 ml	BAA
<b>Prometryn D6 (isopropyl D6)</b>		C <sub>10</sub> H <sub>13</sub> N <sub>5</sub> SD <sub>6</sub>	247.4	C 16370100 XA16370100AC	certified 10 mg 100 ng/µl	10 mg 1.1 ml	CGA KE
<b>Propamocarb free base D7</b>		C <sub>9</sub> H <sub>13</sub> N <sub>2</sub> O <sub>2</sub> D <sub>7</sub>	195.27	XA16390100AC	100 ng/µl	1.1 ml	KE
<b>Propazine D6 (isopropyl D6)</b>		C <sub>9</sub> H <sub>10</sub> CIN <sub>5</sub> D <sub>6</sub>	235.7	XA16440100AC	100 ng/µl	1.1 ml	FK
<b>Propazine <sup>13</sup>C<sub>3</sub> (ring <sup>13</sup>C<sub>3</sub>)</b>		C <sub>6</sub> H <sub>16</sub> CIN <sub>5</sub> <sup>13</sup> C <sub>3</sub>	232.7	XA16440200AC	100 ng/µl	1.1 ml	EBA
<b>Propiconazole D5 (2,2,3,3,3-propyl-D5)</b>		C <sub>15</sub> H <sub>12</sub> Cl <sub>2</sub> N <sub>3</sub> O <sub>2</sub> D <sub>5</sub>	347.2	XA16480100AC	100 ng/µl	1.1 ml	BGL
<b>Pyrene D10</b>	1718-52-1	C <sub>16</sub> D <sub>10</sub>	212.26	C 20930100 L 20930100CY XA20930100AC XA20930100AL	certified 0.1 g 10 ng/µl 100 ng/µl 100 ng/µl	0.1 g 10 ml 1 ml 1 ml	HL DA CH CH
<b>Pyridine D5</b>	7291-22-7	C <sub>5</sub> D <sub>5</sub> N	84.14	C 16646100 YA16646100MB	certified 1 ml 2000 ng/µl		CH DF
<b>Quizalofop (free acid) D3 (3,3,3-D3)</b>		C <sub>17</sub> H <sub>10</sub> CIN <sub>2</sub> O <sub>4</sub> D <sub>3</sub>	347.8	XA16739991AC	100 ng/µl	1.1 ml	BDK
<b>Quizalofop-ethyl D3 (3,3,3-D3)</b>		C <sub>21</sub> H <sub>12</sub> CIN <sub>2</sub> O <sub>4</sub> D <sub>3</sub>	375.8	XA16740100AC	100 ng/µl	1.1 ml	BDK
<b>Salbutamol D3 (3-hydroxymethyl-D2;a D1)</b>				XA16903001AC	100 ng/µl	1 ml	BDK
<b>Sebuthylazine D5</b>		C <sub>9</sub> H <sub>11</sub> CIN <sub>5</sub> D <sub>5</sub>	234.7	C 16920100 XA16920100AC	certified 5 mg 100 ng/µl	5 mg 1.1 ml	DBA FK
<b>Secbumeton D5 (ethyl D5)</b>		C <sub>10</sub> H <sub>14</sub> N <sub>5</sub> OD <sub>5</sub>	230.3	XA16930100AC	100 ng/µl	1.1 ml	GD
<b>Simazine D10</b>		C <sub>7</sub> H <sub>2</sub> CIN <sub>5</sub> D <sub>10</sub>	211.66	C 16950100 XA16950100AC	certified 10 mg 100 ng/µl	10 mg 1.1 ml	CGA KE
<b>Simazine D5</b>	220621-41-0	C <sub>7</sub> H <sub>7</sub> CIN <sub>5</sub> D <sub>5</sub>	206.66	C 16950200 XA16950200AC	certified 10 mg 100 ng/µl	10 mg 1.1 ml	BHL FK
<b>Sotalol hydrochloride D6</b>			314.8	XA16972631AL	100 ng/µl	1.1 ml	CFA
<b>Sudan 1 D5 (phenyl D5)</b>	752211-63-5	C <sub>16</sub> H <sub>7</sub> N <sub>2</sub> OD <sub>5</sub>	253.18	C 16986105 XA16986105AC	certified 50 mg 100 ng/µl	50 mg 1.1 ml	BGL KL
<b>Sudan 4 D6</b>		C <sub>24</sub> H <sub>14</sub> N <sub>4</sub> OD <sub>6</sub>	386.45	C 16986108 XA16986108AC	certified 25 mg 100 ng/µl	25 mg 1.1 ml	DDA LE
<b>2,4,5-T D2</b>	358731-37-0	C <sub>8</sub> H <sub>3</sub> Cl <sub>3</sub> O <sub>3</sub> D <sub>2</sub>	257.5	XA17100100AC	100 ng/µl	1.1 ml	BBK
<b>Tebuconazole D6</b>		C <sub>16</sub> H <sub>16</sub> CIN <sub>5</sub> OD <sub>6</sub>	313.8	XA17178710AC	100 ng/µl	1.1 ml	BDK
<b>Temephos D12 (O,O,O',O'-tetramethyl D12)</b>		C <sub>16</sub> H <sub>6</sub> O <sub>6</sub> P <sub>2</sub> S <sub>3</sub> D <sub>12</sub>	478.47	XA17220100AC	100 ng/µl	1.1 ml	LE
<b>Terbutylazine D5 (ethyl D5)</b>	222986-60-9	C <sub>9</sub> H <sub>11</sub> CIN <sub>5</sub> D <sub>5</sub>	234.7	C 17300100 XA17300100AC	certified 5 mg 100 ng/µl	5 mg 1.1 ml	EBA FK
<b>Terbutryn D5 (ethyl D5)</b>		C <sub>10</sub> H <sub>14</sub> N <sub>5</sub> SD <sub>5</sub>	246.4	C 17320100 XA17320100AC	certified 10 mg 100 ng/µl	10 mg 1.1 ml	CGA KE
<b>Thiabendazole NH D6</b>		C <sub>10</sub> HN <sub>3</sub> SD <sub>6</sub>	207.3	C 17450100 XA17450100AC	certified 20 mg 100 ng/µl	20 mg 1.1 ml	EKF BCK
<b>Thifensulfuron-methyl D3 (triazine methoxy D3)</b>		C <sub>12</sub> H <sub>10</sub> N <sub>5</sub> O <sub>6</sub> S <sub>2</sub> D <sub>3</sub>	390.4	C 17466100	certified 5 mg		DGA
<b>Thiram D12</b>	69193-86-8	C <sub>6</sub> N <sub>2</sub> S <sub>4</sub> D <sub>12</sub>	252.44	XA17570100AL	100 ng/µl	1.1 ml	BCK
<b>Trietazine D5</b>		C <sub>9</sub> H <sub>11</sub> CIN <sub>5</sub> D <sub>5</sub>	234.7	C 17830100 XA17830100AC	certified 5 mg 100 ng/µl	5 mg 1.1 ml	DBA FK
<b>Trifluralin D14 (di-n-propyl D14)</b>		C <sub>13</sub> H <sub>2</sub> F <sub>3</sub> N <sub>3</sub> O <sub>4</sub> D <sub>14</sub>	349.3	XA17850100AC	100 ng/µl	1.1 ml	GK