

Reference values
for persistent organic pollutants in whole blood – PCB's

Parameter [bibliographical data]	Population group / period of life	Year of study	Reference value ^a
PCB 138 [1999, 2001, 2009]	7 – 14 years ¹	2003-2006	0.3 µg/l
	18 – 19 years ²	1997-1999	0.4 µg/l
	20 – 29 years ²	1997-1999	0.6 µg/l
	30 – 39 years ²	1997-1999	0.9 µg/l
	40 – 49 years ²	1997-1999	1.4 µg/l
	50 – 59 years ²	1997-1999	1.7 µg/l
	60 – 69 years ²	1997-1999	2.2 µg/l
PCB 153 [1999, 2001, 2009]	7 – 14 years ¹	2003-2006	0.4 µg/l
	18 – 19 years ²	1997-1999	0.6 µg/l
	20 – 29 years ²	1997-1999	0.9 µg/l
	30 – 39 years ²	1997-1999	1.6 µg/l
	40 – 49 years ²	1997-1999	2.2 µg/l
	50 – 59 years ²	1997-1999	2.8 µg/l
	60 – 69 years ²	1997-1999	3.3 µg/l
PCB 180 [1999, 2001, 2009]	7 – 14 years ¹	2003-2006	0.3 µg/l
	18 – 19 years ²	1997-1999	0.3 µg/l
	20 – 29 years ²	1997-1999	0.6 µg/l
	30 – 39 years ²	1997-1999	1.0 µg/l
	40 – 49 years ²	1997-1999	1.6 µg/l
	50 – 59 years ²	1997-1999	2.1 µg/l
	60 – 69 years ²	1997-1999	2.4 µg/l
Σ PCB (138 + 153 + 180) [1999, 2001, 2009]	7 – 14 years ¹	2003-2006	1.0 µg/l
	18 – 19 years ²	1997-1999	1.1 µg/l
	20 – 29 years ²	1997-1999	2.0 µg/l
	30 – 39 years ²	1997-1999	3.2 µg/l
	40 – 49 years ²	1997-1999	5.1 µg/l
	50 – 59 years ²	1997-1999	6.4 µg/l
	60 – 69 years ²	1997-1999	7.8 µg/l

[xy] bibliographical data see publication: <http://www.uba.de/gesundheits-e/publikationen/index.htm#khhb>

^a : when applying reference values the analytical uncertainty must be taken into account

¹ Source: German Environmental Survey on Children 2003-2006 (GerES IV)

² Source: German Environmental Survey 1997-1999 (GerES III)

Reference values

for persistent organic pollutants in whole blood – β -HCH, HCB and DDE

Parameter [bibliographical data]	Population group / period of life	Year of study	Reference value ^a	
β-HCH [1999, 2001, 2009]	7 – 14 years ¹	2003-2006	0.1 $\mu\text{g/l}$	
	18 – 19 years ²	1997-1999	0.3 $\mu\text{g/l}$	
	20 – 29 years ²	1997-1999	0.3 $\mu\text{g/l}$	
	30 – 39 years ²	1997-1999	0.3 $\mu\text{g/l}$	
	40 – 49 years ²	1997-1999	0.3 $\mu\text{g/l}$	
	50 – 59 years ²	1997-1999	0.5 $\mu\text{g/l}$	
	60 – 69 years ²	1997-1999	0.9 $\mu\text{g/l}$	
HCB [1999, 2001, 2009]	7 – 14 years ¹	2003-2006	0.3 $\mu\text{g/l}$	
	18 – 19 years ²	1997-1999	0.4 $\mu\text{g/l}$	
	20 – 29 years ²	1997-1999	0.5 $\mu\text{g/l}$	
	30 – 39 years ²	1997-1999	1.0 $\mu\text{g/l}$	
	40 – 49 years ²	1997-1999	2.5 $\mu\text{g/l}$	
	50 – 59 years ²	1997-1999	3.3 $\mu\text{g/l}$	
	60 – 69 years ²	1997-1999	5.8 $\mu\text{g/l}$	
DDE [1999, 2001, 2009]			Western Germany	Eastern Germany
	7 – 14 years ¹	2003-2006	0.7 $\mu\text{g/l}$	1.4 $\mu\text{g/l}$
	18 – 19 years ²	1997-1999	1.5 $\mu\text{g/l}$	3 $\mu\text{g/l}$ **
	20 – 29 years ²	1997-1999	2 $\mu\text{g/l}$	5 $\mu\text{g/l}$
	30 – 39 years ²	1997-1999	4 $\mu\text{g/l}$	11 $\mu\text{g/l}$
	40 – 49 years ²	1997-1999	7 $\mu\text{g/l}$	18 $\mu\text{g/l}$
	50 – 59 years ²	1997-1999	8 $\mu\text{g/l}$	31 $\mu\text{g/l}$
	60 – 69 years ²	1997-1999	11 $\mu\text{g/l}$	31 $\mu\text{g/l}$

[xy] bibliographical data see publication: <http://www.uba.de/gesundheit-e/publikationen/index.htm#khh>

^a : when applying reference values the analytical uncertainty must be taken into account

¹ Source: German Environmental Survey on Children 2003-2006 (GerES IV)

² Source: German Environmental Survey 1998 (GerES III)

** based on the 95th percentile of the values of 28 subjects