

Addendum to Lead and its compounds (except for lead arsenate, lead chromate and alkyl lead compounds)

BLW (2013)	for women > 45 years and for men: 300 µg lead/l blood Sampling time: not fixed
BAR (2012)	for women: 70 µg lead/l blood Sampling time: not fixed
MAK-value	–
Absorption through the skin	–
Carcinogenicity (2006)	Category 2

16 Re-evaluation

The biological tolerance values (BAT values) for lead and its compounds have been lowered several times since their first evaluation in 1981 as a result of new occupational-medical findings.

- 1981 **BAT-value for women > 45 years and for men:**
700 µg lead/l blood
15 mg δ-aminolaevulinic acid/l urine
BAT value for women < 45 years:
450 µg lead/l blood
6 mg δ-aminolaevulinic acid/l urine
(see BAT Documentation 1989)
- 1987 **Re-evaluation of the BAT value for women < 45 years:**
300 µg lead/l blood
6 mg δ-aminolaevulinic acid/l urine
(see BAT Documentation 1989)
- 2000 **Re-evaluation of the BAT value for women < 45 years:**
100 µg lead/l blood
(see BAT Documentation 2001, translated)

2 BAT Value Documentations

- 2003 **Re-evaluation of the BAT value for women < 45 years:**
100 µg lead/l blood
(see BAT Documentation 2003, translated)
- 2005 **BAT values:** withdrawn (classification of lead in carcinogen category 3B;
MAK value not established)
Evaluation as “Biological Guidance Value” (BLW):
for women > 45 years and for men: 400 µg lead/l blood
for women < 45 years: 100 µg lead/l blood
(see BAT Documentation 2006, translated)
- 2012 **BLW for women < 45 years:** withdrawn
**Evaluation of a “Biological Reference Value” (BAR) for women
< 45 years:**
70 µg lead/l blood
(see BAT Documentation 2013)

When deriving the BAT values for women > 45 years and for men in 2000, it was emphasised that indications of behavioural effects already existed in the range between 300 and 400 µg lead/l blood. In the past, the BAT value was the maximum limit for individuals; therefore, a BAT value of 400 µg lead/l blood was established. In 2000, lead was classified as carcinogen category 3B and in 2006 as carcinogen category 2. As a result, the BAT values were withdrawn but continued as a BLW. The BLW was derived as the maximum limit. After changing the concept to mean values, it is necessary to decrease the BLW from 400 to 300 µg lead/l blood.

Taking these facts into consideration the **BLW** for lead is established to

300 µg/l blood for women > 45 years and for men.

The sampling time is not fixed.

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