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Regulations for Hazardous Chemical Substances, 1995			
Biological Exposure Indices (BEIs)			
Chemical Determinant	Sampling Time	BEI	1995 Notation
<b>Aniline</b> Total p-aminophenol in urine Methemoglobin in blood	End of shift During or end of shift	50 mg/g creatinine 1,5% of hemoglobin	C B, C, D
<b>Arsenic and Soluble Compounds including Arsine</b> Inorganic arsenic metabolites in urine	End of workweek	50 micro g/g creatinine	B
<b>Benzene</b> Total phenol in urine Benzene in exhaled air: mixed-exhaled end-exhaled	End of shift Prior to next shift	50 mg/g creatinine 0,08 ppm 0,12 ppm	B, C D D
<b>Cadmium</b> Cadmium in urine Cadmium in blood	Not critical Not critical	10 micro g/g creatinine 10 micro g/l	B B
<b>Carbon Disulfide</b> 2-Thiothiazolidine-4-carboxylic acid in urine	End of shift	5 mg/g creatinine	-
<b>Carbon Monoxide</b> Carboxyhemoglobin in blood Carbon monoxide in end-exhaled air	End of shift End of shift	less than 8% of homoglobin less than 40 ppm	B, C B, C
<b>Chlorobenzene</b> Total 4-chlorocatechol in urine Total p-clorophenol in urine	End of shift End of shift	150 mg/g creatinine 25 mg/g creatinine	C C
<b>Chromium (VI)</b> Water soluble fume Total chromium in urine	Increase during shift End of shift at end of workweek	10 micro g/g creatinine 30 micro g/g creatinine	B B
<b>N,N-Dimethylformamide (DMF)</b> N-Methylformamide in urine	End of shift	40 mg/g creatinine	B
<b>Ethyl Benzene</b> Mandelic acid in urine Ethyl benzene in end-exhaled air	End of shift at end of workweek	1,5 g/g creatinine	A D
<b>Fluorides</b> Fluorides in urine	Prior to shift End of shift	3 mg/g creatinine 10 mg/g creatinine	B, C B, C
<b>Furfural</b> Total furoic acid in urine	End of shift	200 mg/g creatinine	B, C
<b>n-Hexane</b> 2,5-Hexanedione in urine n-Hexane in end-exhaled air	End of shift	5 mg/g creatinine	C D

<b>Mercury</b>			
Total inorganic mercury in urine	Prior to shift	35 micro g/g creatinine	B
Total inorganic mercury in blood	End of shift at end of workweek	15 micro g/l	B
<b>Methemoglobin Inducers</b>			
Methemoglobin in blood	During or end of shift	1,5% of hemoglobin	B, C, D
<b>Methanol</b>			
Methanol in urine	End of shift	15 mg/l	B, C
Formic acid in urine	Before shift at end of workweek	80 mg/g creatinine	B, C
<b>Methyl Chloroform</b>			
Methyl chloroform in end-exhaled air	Prior to the last shift of workweek	40 ppm	-
Trichloroacetic acid in urine	End of workweek	10 mg/l	C, D
Total trichloroethanol in urine	End of shift at end of workweek	30 mg/l	C, D
Total trichloroethanol in blood	End of shift at end of workweek	1 mg/l	C
<b>Methyl Ethyl Ketone</b>			
MEK in urine	End of shift	2 mg/l	-
<b>Methyl Isobutyl Ketone</b>			
MIBK in urine	End of shift	2 mg/l	-
<b>Nitrobenzene</b>			
Total p-nitrophenol in urine	End of shift at end of workweek	5 mg/g creatinine	C
Methemoglobin in urine	End of shift	1,5% of hemoglobin	B, C, D
<b>Organophosphorus</b>			
Cholinesterase Inhibitors			
Cholinesterase activity in red cells	Discretionary	70% of individual's baseline	B, C, D
<b>Parathion</b>			
Total p-nitrophenol in urine	End of shift Discretionary	0,5 mg/g creatinine	C, D
Cholinesterase activity in red cells	Discretionary	70% of individual's baseline	B, C, D
<b>Pentachlorophenol</b>			
Total PCP in urine	Prior to the last shift of workweek	2 mg/g creatinine	B
Free PCP in plasma	End of shift	5 mg/l	B
<b>Perchlorophenol</b>			
Perchloroethylene in end-exhaled air	Prior to the last shift of workweek	10 ppm	-
Perchloroethylene in blood	Prior to the last shift of workweek	1 mg/l	-
Trichloroacetic acid in urine	End of workweek	7 mg/l	C, D
<b>Phenol</b>			
Total phenol in urine	End of shift	250 mg/g creatinine	B, C
<b>Styrene</b>			
Mandelic acid in urine	End of shift	800 mg/g creatine	C
	Prior to next shift	300 mg/g creatinine	C
Phenylglyoxylic acid in urine	End of shift	240 mg/g creatinine	B, C
	Prior to next shift	100 mg/g creatinine	B, C
	End of shift	0,55 mg/l	D
	Prior to next shift	0,02 mg/l	D
<b>Toluene</b>			
Hippuric acid in urine	End of shift	2,5 g/g creatinine	B, C
Toluene in venous blood	End of shift	1 mg/l	D

o-Cresol in urine.	End of shift	1 mg/g creatinine	C
<b>Trichloroethylene</b>			
Trichloroacetic acid in urine	End of workweek	100 mg/g creatinine	C
Trichloroacetic acid and trichloroethanol in urine	End of shift at end of workweek	300 mg/g creatinine	C
Free trichloroethanol in blood	End of shift at end of workweek	4 mg/l	C
Trichloroethylene in end-exhaled air			D
<b>Xylene</b>			
Methylhippuric acid in urine	End of shift	1,5 g/g creatinine	-
	Last four hours of shift	2 mg/min	-

**Notations**

- "A" notation: This notation indicates that an identifiable population group might have an increased susceptibility to the effect of the chemical, thus leaving the population group unprotected by the recommended BEI.
- "B" notation: This notation indicates that the determinant is usually present in a significant amount in biological specimens collected from subjects who have not been occupationally exposed. Such background levels are included in the BEI value.
- "C" notation: This notation indicates that the determinant is non-specific, since it is observed after exposure to some other chemicals. These non-specific tests are preferred because they are easy to use and usually offer a better correlation with exposure than specific tests. In such instances, a BEI for a specific, less quantitative biological determinant is recommended as a confirmatory test.
- "D" notation: This notation indicates that the biological determinant is an indicator of exposure to the chemical, but the quantitative interpretation of the measurement is ambiguous (semi-quantitative). These biological determinants should be used as a screening test if a quantitative test is not practical or a confirmatory test if the quantitative test is not specific and the origin of the determinant is in question.