

242/1993 Coll.
GOVERNMENTAL ORDER
of the Slovak Republic
dated 12th October 1993

which provides the indicators of the permissible degree of contamination of waters

The government of the Slovak Republic under Article 23 par. 2 Act No. 138/1973 Coll. on Waters (Water Act) orders :

Article 1

In permitting of discharging of waste and special waters¹⁾ into surface waters the water management institution proceeds according to indicators of the admissible degree of contamination of waters (hereinafter only "indicator"), which have been specified in annexes No. 1 to 3 of this decree.

1) Article 8 par. 1 Letter c) and d) of the Act No. 138/1973 Coll. on Waters (Water Act).

Article 2

- (1) The indicators entered in Annex No.1 of this Decree refer to the concentration of substances in discharged waste or special waters and are binding for water management institutions in permitting of discharge of waste or special waters into surface waters (hereinafter only "decision taking on discharging of waters"). If the indicator characteristic for a concrete kind of discharged waste or special waters is not entered in Annex No. 1 of this Decree, it will be specified by the competent water management institution after deliberation with the Ministry of Environment of the Slovak Republic (hereinafter "Ministry" and with the Ministry of Health of the Slovak Republic according to the similar kind of production or activity.
- (2) The indicators entered in Annex No. 1 of this Decree specify the highest permissible degree of contamination in discharged waste or special waters. The water management can, with regard to the local water management conditions and interests of the protection of waters, specify stricter values, namely up to the limit of values applicable for water courses.
- (3) The water management institution will specify the indicators of the quality of discharged waste waters to the entity that discharges waste or special waters (hereinafter only "contaminator") from various kinds of production or activities by one outlet taking into regard proportionate representation of the amount and quality of waters discharged from individual productions or activities.
- (4) The discharge of waste waters within the extent of contamination of sewage from households or other similar facilities is being permitted by the competent water management institution on the basis of professional assessment of their impacts on the waters in the recipient.

Article 3

- (1) The contaminator is obliged to monitor according to appropriate technical standards, 2) the amount of discharged waste or special waters and their contamination unless the water management institution in decision taking on discharge of waters specifies otherwise. The provision of the first sentence does not apply to discharge of sewage waste waters from the sources with production of contamination up to 25

equivalent citizens, i.e. up to 1,5 kg a day according to the indicator BOD5, unless the water management institution decides otherwise.

- (2) For the needs of this decree an equivalent inhabitant represents a unit, which shows which number of inhabitants makes the same contamination as waste waters from the production of unit amount of the product or raw material. The basis of the calculation is a specific contamination on one inhabitant 60 g BOD5 a day.
- (3) Unless for the method of provision of one of the indicators a special technical standard has been issued until now, the method of execution of analysis will be specified by a water management institution with the approval of the Ministry.

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- 2) ČSN 75 7241 - Checking of Waste and Special Waters
ČSN 83 0540 - Chemical and Physical Analysis of Waste Waters

Article 4

- (1) The values of indicators specified in the decision of water management institution are considered to be observed if in the analysis of eight hour sample of mixture obtained by pouring together the equivalent volumes of discharged waste or special waters mostly in one hour interval alternately by automatic take-off facility the higher values have not been ascertained. The time interval of monitoring them will be specified by a competent water management institution with regard to the mode of discharge of waste or special waters from the source of contamination.
- (2) For impact discharge of waste or special waters the water management institution will individually specify the conditions for checking of meeting the values of indicators according to local conditions.
- (3) Assessment and inspection of meeting the specified values of indicators can be based only upon analyses made by authorised laboratories, the quality of which is acceptable and which is subject to systematic external inspection; the list of these laboratories will be specified by the Ministry.

Article 5

The indicators entered in Annexes No.2 and 3 of this Decree shall specify the permissible degree of contamination in the recipient after mixing of discharged waste or special waters with surface waters under 355-days flow rate, alternately under minimally ensured flow rate in the recipient. The water management institution sees to these indicators in taking decisions on discharge of waters with the target of gradually achieving them.

Article 6

The Decree of the Government of the Slovak Socialist Republic No. 30/1975 Coll. which specifies the indicators of the admissible degree of contamination of waters is hereby being repealed.

Article 7

This decree comes into force on 1st November 1993.

Vladimír Mečiar, sign manual

ANNEX NO. 1

INDICATORS OF ADMISSIBLE DEGREE
OF CONTAMINATION OF WASTE WATERS

Sewage and municipal waste waters

Size of the source of contamination	Indicator			
	BOD51 (mg/l)		CHSKcr (mg/l)	
	to 31 st Dec. 2004	from 1 st January 2005	to 31 st Dec. 2004	from 1 st January 2005
Number of equivalent inhabitants (EO) (kg BOD5 upon inflow for a day)				
up to 50 EO (up to 3 kg BOD5)	80	60	-	-
up to 500 EO (up to 30 kg BOD5)	60	50	-	-
up to 5000 EO (up to 300 kg BOD5)	50	40	170	140
up to 25 000 EO (up to 1 500 kg BOD5)	45	35	150	120
up to 100 000 EO (up to 6 000 kg BOD5)	35	30	125	100
over 100 000 EO	30	20	110	90

Size of the source of contamination	Indicator			
	NL2 (mg/l)		+ N-NH4 (mg/l)	
	to 31 st Dec. 2004	from 1 st January 2005	to 31 st Dec. 2004	from 1 st January 2005
Number of equivalent inhabitants (EO) (kg BOD5 upon inflow for a day)				
up to 50 EO (up to 3 kg BOD5)	65	50	-	-
up to 500 EO (up to 30 kg BOD5)	55	40	-	-
up to 5000 EO (up to 300 kg BOD5)	45	35	-	20
up to 25 000 EO (up to 1 500 kg BOD5)	35	30	25	15
up to 100 000 EO (up to 6 000 kg BOD5)	30	25	15	10
over 100 000 EO	25	20	10	5

Size of the source of contamination	Indicator	
	P total	(mg/l)
Number of equivalent inhabitants (EO) (kg BOD5 upon inflow for a day)	to 31 st Dec. 2004	from 1 st January 2005
up to 50 EO (up to 3 kg BOD5)	-	-
up to 500 EO (up to 30 kg BOD5)	-	-
up to 5000 EO (up to 300 kg BOD5)	-	-
up to 25 000 EO (up to 1 500 kg BOD5)	-	5
up to 100 000 EO (up to 6 000 kg BOD5)	5	3
over 100 000 EO	3	1,5

Notes:

- 1) BOD5 - with suppressing of nitrification
- 2) NL - indissoluble substances

Industrial Waste Waters and Special Waters

Extraction and Processing of Ores

Uranium Ores

		until 31.12.2004	from 1.1.2005
pH		6,5 - 9,0	6,5 - 9,0
NL	mg/l	30	25
radium	Bq/l	0,5	0,3
uranium	mg/l	0,3	0,2

Other Ores

		6 - 9	6 - 9
pH			
CHSK-Cr	mg/l	100	80
NL	mg/l	80	60
iron	mg/l	5,0	4,0
zinc	mg/l	2,0	1,6
lead	mg/l	0,5	0,4
copper	mg/l	1,0	0,8
arsenic	mg/l	0,5	0,4

Extraction and Processing of Aggregates

		until 31.12.2004	from 1.1.2005
NL	mg/l	50	40
NEL1)	mg/l	5	2

Extraction and Processing of Coal

Extraction of Coal and Briquetting Plants

		6 - 9	6 - 9
pH			
NL	mg/l	100	80
CHSK-Cr	mg/l	150	120

Heat Treatment of Coal

pH		6 - 9	6 - 9
NL	mg/l	50	40
CHSK-Cr	mg/l	1000	800
phenols	mg/l	5,0	4,0
N-NH4	mg/l	200	150
cyanides total	mg/l	1,0	0,8

Heat Plants and Electricity Power Plants

Water Treatment

NL	mg/l	50	40
CHSK-Cr	mg/l	50	40
iron	mg/l	5	4
hydrazine	mg/l	5	4

Metallurgical Production

Production and Processing of Iron

pH		6,5 - 9	6,5 - 9
NL	mg/l	50	40
CHSK-Cr	mg/l	150	100
iron	mg/l	15	10
NEL	mg/l	5	3

Colour Metallurgy and Production of Ferro-Alloys

pH		6,5 - 9	6,5 - 9
NL	mg/l	50	40
copper	mg/l	1,0	0,8
zinc	mg/l	2,0	1,6
nickel	mg/l	1,0	0,8
aluminium	mg/l	3,0	2,5
vanadium	mg/l	2,0	1,6
lead	mg/l	0,5	0,4
chromium	mg/l	1,0	0,8
tin	mg/l	2,0	1,6
mercury	mg/l	0,2	0,1

Mechanical and Electrotechnical Production

Mechanical Machining

		until 31.12.2004	from 1.1.2005
pH		6,5 - 9,5	6,5 - 9,5
NL	mg/l	50	40
CHSK-Cr	mg/l	800	500
NEL	mg/l	10	5
N-NO2	mg/l	5	2,5

Surface Treatment of Metals

pH		6,5 - 9,5	6,5 - 9,5
NL	mg/l	30	25
CHSK-Cr	mg/l	300	250
fluorides	mg/l	20	15
N-NO2	mg/l	5	2,5

sulphides	mg/l	1,0	0,5
arsenic	mg/l	0,5	0,25
aluminium	mg/l	3,0	2,0
silver	mg/l	1,0	0,5
barium	mg/l	3,0	2,0
cadmium	mg/l	0,5	0,25
cobalt	mg/l	1,0	0,5
N-NH4	mg/l	50	25
phosphor total	mg/l	5	2,5
chlorinated	mg/l	1,0	0,5
hydrocarbons volatile			
2)			
toxic cyanides	mg/l	0,2	0,1
cyanides total	mg/l	1,0	0,5
chlorine	mg/l	0,5	0,25
chromium total	mg/l	1,0	0,5
chromium CrVI	mg/l	0,2	0,1
copper	mg/l	1,0	0,5
molybdenum	mg/l	2,0	1,0
mercury	mg/l	0,2	0,1
nickel	mg/l	1,0	0,25
lead	mg/l	0,5	0,25
zinc	mg/l	2,0	1,0
NEL	mg/l	10	5

Chemical Industry

Rafineries of Oil and Petrochemistry

pH		6 - 9	6 - 9
NL	mg/l	50	40
CHSK-Cr	mg/l	200	150
BOD5	mg/l	50	30
NEL	mg/l	20	15
phenols	mg/l	0,5	0,4

Distribution Storehouses of Crude Oil

pH		6 - 9	6 - 9
NL	mg/l	50	50
CHSK-Cr	mg/l	20	16
		until 31.12.2004	from 1.1.2005
CHSK-Cr	mg/l	150	120

Production of Chemical Fibres

NL	mg/l	50	40
CHSK-Cr	mg/l	200	160
BOD5	mg/l	50	40
sulphides	mg/l	10	8
zinc	mg/l	10	8

Pulp Production

BOD5	mg/l	100	50
NL	mg/l	100	50
CHSK-Cr	mg/l	500	250

Paper Production

BOD5	mg/l	50	40
NL	mg/l	60	40
CHSK-Cr	mg/l	250	200

Other Chemical Products

BOD5	mg/l	50	40
NL	mg/l	50	40
CHSK-Cr	mg/l	400	300

Consumer Industry

Textile Industry

NL	mg/l	50	40
CHSK-Cr	mg/l	300	240
BOD5	mg/l	50	40
Chlorine	mg/l	0,5	0,4
NEL	mg/l	10	8

Glassworks

NL	mg/l	30	25
CHSK-Cr	mg/l	150	120
fluorides	mg/l	30	25
lead	mg/l	1,5	1,2
arsenic	mg/l	1,0	0,8
barium	mg/l	5	4

Tanneries

BOD5	mg/l	50	40
CHSK-Cr	mg/l	300	250
chromium total	mg/l	2	1
sulphides	mg/l	2	1

Ceramic Industry

NL	mg/l	50	40
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Food Industry**Dairies**

CHSK- Cr	mg/l	200	160
BOD5	mg/l	50	40

Breweries

CHSK- Cr	mg/l	200	160
BOD5	mg/l	50	40

Sugar Mills

CHSK- Cr	mg/l	250	200
BOD5	mg/l	80	60
NL	mg/l	60	50

Meat Processing

CHSK- Cr	mg/l	250	200
BOD5	mg/l	50	40
EL3)	mg/l	10	5

Distilleries and Yeast Plants

CHSK- Cr	mg/l	250	200
BOD5	mg/l	50	40

Starch Plants

CHSK- Cr	mg/l	250	200
BOD5	mg/l	50	40

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- 1) NEL - nonpolar extractable substances
 - 2) chlorinated hydrocarbons volatile - above all trichloroethen , teteachloroethen, tetrachlormethan, 1,1,1 - trichloethen
 - 3) EL - extractable substances - above all fats

ANNEX 2
INDICATORS OF THE QUALITY OF SURFACE WATERS

1. biological state of waters expressed by saprobe index of bioestone according to Pantle-Buck) smaller than 2,2 in case of water courses and smaller than 3,2 in case of other surface waters;
2. state enabling natural reproduction and development of trout fish in water courses, but also in other surface waters, where it is made possible by geomorphological, hydrological and other conditions of life of trout fish, in other surface waters minimal state enabling natural reproduction and development of carp fish;
3. state without smell in waters of water courses and tanks weakly inorganic in other waters;
4. state in which colour changes are not visible in waters of water courses in the layer up to 20 cm and in other surface waters in the layer of up to 10 cm;
5. temperature of up to 20°C in case of trout waters and water courses and up to 26°C in case of other surface waters;
6. state of surface waters in which excessive undesirable organisms (for example water flower) do not develop any more, neither do sludge banks appear, water level does not get covered by foam, fats, oils not by any other substances;
7. state of surface waters in which hygienic requirements for protection of health against ionising radiation are not being infringed;1)
8. state of surface waters in which neither toxic action of radioactive and other substances for decreasing of the productivity of water ecosystem appears nor significant narrowing of spectrum of species of water organisms, nor exceeding of the highest permissible values of the batch or volume activity of radionuclides.

1) Order of the Ministry of Health of the Slovak Socialist Republic No. 65/1972 Coll. on Protection of Health against Ionising Radiation.

ANNEX 3
INDICATORS OF PERMISSIBLE AMOUNT OF SUBSTANCES IN SURFACE WATERS

Indicator	Symbol	Unit	Valid values		Note
			in water courses 1)	in other surface waters1)	
1. Solved oxygen	O2	mg/l	min.6	min.5	the values of night and morning samples are excluded
2. Biochemical consumption of oxygen	BOD5	mg/l	4	8	
3. Chemical consumption of oxygen by permanganate	CHSK-Mn	mg/l	8	15	with excluding of the influence of natural humin substances
4. Chemical consumption of oxygen by dichlorman	CHSK-Cr	mg/l	25	35	
5. Sulphan and sulphides	S2-	mg/l	2)	0,05	
6. Reaction of water	pHH	mg/l	6,0 - 8,5	6,0 - 8,5	except for naturally acid and basic waters
7. Solved substances	RL	mg/l	500	800	
8. Iron total	Fe	mg/l	0,5	2,0	
9. Manganese total	Mn	mg/l	0,1	0,3	
10. Amoniacal nitrogen	+ N-NH4	mg/l	0,5	1,5	free ammonia must not be in water courses at all

Indicator	Symbol	Unit	Valid values		Note
			in water courses 1)	in other surface waters 1)	
11.Free ammonia	NH3	mg/l	2)	0,5	
12.Nitrite nitrogen	- N-NO2	mg/l	0,005	0,02	
13.Nitrate nitrogen	- N-NO3	mg/l	3,4	7,0	
14.Organic nitrogen	N-org.	mg/l	1,0	2,5	
15.Phosphorus total	P	mg/l	0,05	0,4	
16.Chlorides	Cl-	mg/l	200	300	
17.Sulphate	2- SO4	mg/l	150	250	
18.Calcium	Ca	mg/l	150	200	
19.Magnesium	Mg	mg/l	50	100	
20.Fluorides	F-	mg/l	0,5	1,0	
21.Phenols vaporizing with water vapour	FN 1	mg/l	0,01	0,0	
22.Tensides anion	PAL-A	mg/l	0,5	1,0	
23.Non-polar extractable substances	NEL-A	mg/l	0,01	0,1	
24.Cyanides total	CN-	mg/l	2)	0,2	
25.Boron	B	mg/l	0,3	0,5	
26.Active chlorine	Cl2	mg/l	2)	0,02	

Indicator	Symbol	Unit	Valid values		Note
			in water courses 1)	in other surface waters 1)	
27.Extractable organ. bound chlorine	EOC1	mg/l	0,01	0,02	
28.Mercury	Hg	g/l	0,1	0,5	
29.Cadmium	Cd	g/l	5	10	
30.Lead	Pb	g/l	20	50	
31.Arsenic	As	g/l	20	50	
32.Copper	Cu	g/l	50	100	
33.Chromium total	Cr	g/l	100	200	
34.Chromium (VI)	CrIV	g/l	10	20	
35.Nickel	Ni	g/l	50	100	
36.Zinc	Zn	g/l	50	100	
37.Vanadium	V	g/l	15	50	
38.Silver	Ag	g/l	10	20	
39.Selenium	Se	g/l	10	50	
40.Barium	Ba	mg/l	1,0	2,0	
41.Beryllium	Be	g/l	0,2	1,0	
42.Total volume activity alpha	aV, calpha	mBq/l	100	500	
43.Total volume activity beta	av, c β	mBq/l	500	1000	
44.Radium 226	Ra 226	mBq/l	50	200	
45.Uranium	U	g/l	20	50	

Indicator	Symbol	Unit	Valid values		Note
			in water courses 1)	in other surface waters 1)	
46. Tricium	H3(T)	Bq/l	100	1000	
47. Strontium and yttrium	Sr90+ Y90	Bq/l	0,3	0,5	
		Bq/l			
48. Cesium	Cs137	Bq/l	0,3	0,9	
49. Coliformous bacteria	Coli	KTJ/l ml	10	100	
50. Psychrophylous bacteria	Psychro	KTJ/l ml / 1 ml	1000	5000	
51. Faecal coliformous bacteria	Fecoli	KTJ/ 1 ml	2	20	
52. Enterococces	Enko	KTJ/ 1 ml	1	10	
53. Benzene	BZ	mg/l	0,01	0,05	
54. Chlorobenzene	CB	mg/l	0,003	0,01	
55. Dichlorobenzenes	DCB	mg/l	0,0003	0,001	
56. Polychrinated biphenyls	PCB	ng/l	2)	25	
57. Benzo(a)pyrene	BZP	ng/l	10	50	

Notes :

1) except for solved oxygen these are maximum values

2) below the limit of sensitivity of specification