

REPUBLIC OF BULGARIA
MINISTRY OF THE ENVIRONMENT

Standard levels of permissible emissions
(concentrations in waste gases) of harmful substances, emitted into the atmosphere

Promulgated State Gazette No. 81/01.10.1991

Article 1

(1) The standard levels of permissible emissions apply to existing production processes and activities as well as to the design and construction of new industrial and other projects - sources of emissions.

(2) In cases of reconstruction and modernization of production processes in operation, the standard levels concerning new projects apply.

Article 2

(1) At studying or developing projects the investor and the designer are obliged, besides adhering to these standard levels, to make clear what the air pollution in the region of the site will be for each specific project and to provide for such measures (degree of treatment and height of the emission chimney-stack) that after the completion of the project the content of harmful substances in the air at the level of breathing would not exceed the maximum permissible contaminant levels (emissions).

(2) Irrespective of calculations, the height of the chimney-stack of a production site should exceed with at least 5 m the highest occupied building in a radius of 50 m from the site.

(3) When the site is located in an open not built-up area (asphalt bases, crushing and screening facilities and other production processes) the height of the chimney-stack should be at least 12 m above the elevation of the area, inasmuch as calculations do not require a greater height.

(4) At designing new sites the investor and the designer shall be guided by the state of technology and apply the technical and technological achievements at the time of the study in order to provide for the lowest possible emissions, lower than the standard levels specified with the present document.

Article 3

The quantities of production and flue gases and the content of harmful substances in them should be recalculated for standard conditions (760 mm mercury column and °C) and dry gases. Everywhere in the text standard levels in mg/m³ and quantities of gases in m³ are given in standard conditions.

Article 4

(1) The standard levels apply to production and ventilation gases, tested at the exit of treatment facilities, of production units or at the entrance to the chimney, without dilution with fresh air.

(2) For processes and activities not mentioned in articles 20 - 38, gas quantities in m³/h and harmful contaminant levels found in them are specified as follows:

1. For processes, in which combustion facilities are used, the levels measured are converted into oxygen content in volume percentages:

- a) production of asphalt mixtures - 17%;
- b) glass production - 8% in cases of uninterrupted processes in melting-pot and pan furnaces and 13% in cases of periodically producing (day-time) furnaces;
- c) direct drying of products and materials by hot gases, obtained in combustion chambers - 17%;
- d) melting of mineral materials like basalt, slag etc. - 8%;
- e) warming up of metals for stretching and other treatments - 5%;
- f) production of swollen pearlite, schists or clays - 14%;
- g) incineration of wood or vegetable wastes, paper, straw - 11%;
- h) burning of lye from cellulose production - 5%;

2. Gas emissions from technological production processes are assessed in respect to their content and quantity immediately at the exit of the last technological installation, after which they are led to the treatment facility or are emitted into the atmosphere. If because of technological reasons or safety considerations dilution with fresh air is imperative or if penetration of fresh air into the track leading to the treatment facility is possible, the contaminant levels found after treatment are recalculated into quantities immediately at the exit of the flow line. For this purpose the oxygen content is measured at the exits of the flow line and of the treatment facility and the emission level is recalculated on the basis of these results, excluding the volume of additionally imported air.

(3) When the measured oxygen content differs from the one specified for the respective process, or when it is increased because of gas dilution, the emission found is corrected, multiplying it by the coefficient K determined according to the equation

(21 - Om)

$K = \frac{O_t - O_m}{O_t - O_m}$, where:

(21 - Ot)

Om is the oxygen content in volume percentages for the respective process or at the exit of the flow line;

Ot - the measured oxygen content in volume percentages at the exit of the treatment facility or before the emission of gases into the atmosphere.

Article 5

Emission tests are carried out in the process of normal operation of the production flow line and at loading of 70 to 100%.

Article 6

For substances, which could be found in gases in different physical state (particles, vapors and gases), the standard limits apply to their total content.

Article 7

The total emission of dust-like substances under article 13 para 1 includes non toxic dust and the dust-like substances contained in it under articles 14 and 18, the content of which should not exceed the values specified for the respective class.

Article 8

Everywhere in this document the standard levels for the emission of sulfur oxides represent the sum of sulfur dioxide and sulfur trioxide, determined as sulfur dioxide, and the emission of nitrogen oxides - the sum of nitrogen dioxide and nitrogen monoxide, determined as nitrogen dioxide.

Article 9

Capacity of a production line (installation), combustion facility, etc. means the nominal performance per hour of the respective unit or group of units, using the same chimney. The capacity of combustion facilities is determined by the heating ability of the quantity of fuel, fed in case of a nominal load.

Article 10

Standards for "facilities set in operation till the end of 1992" hold till December 31, 1995. Within this period managers shall take measures for decreasing the emissions to values, specified for new facilities.

Article 11

"Mass flow" per hour is the quantity in kilograms or grams of a given substance, emitted with the gases into the atmosphere per hour.

Article 12

The testing of emissions by control authorities and by other organizations is carried out using methodologies, recommended by the Bulgarian State Standard, and when such a standard is lacking - by methodologies approved by the Minister of the Environment.

Article 13

(1) The total emission of dust-like particles should not exceed:

1. For facilities set in operation before the end of 1992 having a gas flow rate:

- a) up to 20 000 m³/h 300 mg/m³;
- b) from 21 000 to 100 000 m³/h 200 mg/m³;
- c) higher than 100 000 m³/h 150 mg/m³;

2. For new facilities, being commissioned after 1992, having a gas flow rate:

- a) up to 20 000 m³/h 150 mg/m³;
- b) from 21 000 to 60 000 m³/h 130 mg/m³;
- c) higher than 60 000 m³/h 80 mg/m³;

(2) Soot emission should not exceed 50 mg/m³ irrespective of gas quantity.

Article 14

(1) Emissions of dust-like inorganic substances, listed in Annex No. 1 should not exceed the following values:

1. Substances of the I class:

- a) for facilities commissioned before the end of 1992, having a mass flow of 0.1 kg/h and higher - 2 mg/m³.
- b) for new facilities having a mass flow of 1 g/h and higher - 0.2 mg/m³.

2. Substances of the II class:

- a) for facilities commissioned before the end of 1992, having a mass flow of 1 kg/h and higher - 5 mg/m³.
- b) for new facilities having a mass flow of 5 g/h and higher - 1 mg/m³.

3. Substances of the III class:

a) for facilities commissioned before the end of 1992, having a mass flow of 3 kg/h and higher - 15 mg/m³.

b) for new facilities having a mass flow of 25 g/h and higher - 5 mg/m³.

(2) In case of availability of several substances of one and the same class, their total emission should not exceed the specified standard level for the respective class.

(3) In case of availability of substances from different classes, the emission of each of them should not exceed the standard level for the respective class; the total emission in the presence of substances from I and II class should not exceed the standard level for the II class, and in the presence of substances from I and III, II and III or I, II and III class - the standard level for the III class.

Article 15

(1) Emission control and restriction in the course of treatment, production and transportation of dust-creating materials:

1. Installations and devices for treatment (for example crushing, classifying, mixing, pressing into briquettes etc.) or production of dust-creating materials should be enclosed in capsules, and dust containing gases should be caught and led to a dust collecting device;

2. For transportation of dust-creating materials it is obligatory to use closed devices -transportation belts, screw conveyers, pneumatic transportation etc. In cases when enclosure in capsules is partially impossible, dust containing gases are caught and led to a dust-collecting device;

3. At loading and unloading of dust-creating materials aspiration and dust collecting devices are installed in the following places:

a) at permanent sites for loading and unloading with gripes, spade loaders etc.;

b) at the exit pipe of loading devices;

c) at the starting point of pneumatic transportation and mechanical unloading devices of crumbling installations;

4. When aspiration (suction) of dusty air is impossible during these operations (e.g. loading and unloading of wagons and trucks) exit pipes of changeable height (telescopic exit pipes) are used, regulating valves are mounted at the exits of the pipes with the purpose of decreasing the rate of movement of exiting material, etc.;

5. At filling closed volumes (silos, cement transporting vehicles etc.) the air coming out of them should be caught and led to a dust collecting device;

6. Sites for loading and unloading, as well as transportation linking sites, should be asphalt-paved or covered with another equivalent pavement and should be kept permanently clean.

(2) With the purpose of emission reduction in the process of storing and depositing dust-creating materials, the following measures should be taken:

1. storage in silos;

2. covering and closing all sides of the warehouse, auxiliary devices serving the warehouse included;

3. covering the surface of the stored material by ground sheets etc.;

4. closing the deposited material;

5. embankment of the depot, wind-protecting plantation or wind-protecting fences;

6. maintaining the surface of the warehouse permanently wet.

Article 16

Emissions of inorganic gaseous and vapory substances, listed in Annex No.2, should not exceed the following values:

1. Substances of the I class:

a) for facilities commissioned before the end of 1992, having a mass flow of 100 g/h and higher - 3 mg/m³;

b) for new facilities having a mass flow of 10 g/h and higher - 1 mg/m³;

2. Substances of the II class:

a) for facilities commissioned before the end of 1992, having a mass flow of 150 g/h and higher - 15 mg/m³;

b) for new facilities having a mass flow of 50 g/h and higher - 5 mg/m³.

3. Substances of the III class:

a) for facilities commissioned before the end of 1992, having a mass flow of 1000 g/h and higher - 100 mg/m³.

b) for new facilities having a mass flow of 300 g/h and higher - 30 mg/m³.

4. Substances of the IV class:

a) for facilities commissioned before the end of 1992, having a mass flow of 10 kg/h and higher - 1000 mg/m³.

b) for new facilities having a mass flow of 5 kg/h and higher - 500 mg/m³.

Article 17

(1) Emissions of organic substances, listed in Annex No.3, should not exceed the following values:

1. Substances of the I class:

a) for facilities commissioned before the end of 1992, having a mass flow of 0.1 kg/h and higher - 20 mg/m³.

b) for new facilities having a mass flow of 0.1 kg/h and higher - 20 mg/m³.

2. Substances of the II class:

a) for facilities commissioned before the end of 1992, having a mass flow of 3 kg/h and higher - 150 mg/m³;

b) for new facilities having a mass flow of 2 kg/h and higher - 100 mg/m³.

3. Substances of the III class:

a) for facilities commissioned before the end of 1992, having a mass flow of 6 kg/h and higher - 300 mg/m³;

b) for new facilities having a mass flow of 3 kg/h and higher - 200 mg/m³.

(2) In case of availability in gases of organic substances of different classes at a mass flow of 3 kg/h and higher, their total emission determined as hydrocarbons should not exceed 200 mg/m³ and 300 mg/m³ for facilities commissioned before the end of 1992.

(3) In cases of installations, from which substances (organic and inorganic) giving out an intensive odor might be emitted, it is obligatory to take measures for controlling emissions, like encapsulation, operation at lower pressure etc., and gases are caught and led for purification (deodorizing). When the odor number is higher than 100 000, purification (deodorizing) should be above 99%.

Article 18

(1) Emissions of substances having delayed genotoxic impact should not exceed the following values:

1. Class I:

- a) asbestos as a fine dust;
- b) Benz (a) pyrene
- c) beryllium and its compounds, determined as beryllium;
- d) dibenzo (a,h) anthracene;
- e) 2-naphthylamine; at a mass flow of 0.5 g/h and higher emission should not exceed 0.1 mg/m³;

2. Class II:

- a) arsenic trioxide and arsenic pentaoxide, arsenic acid and its salts, determined as arsenic;
- b) six valent chromium and its compounds (e.g. calcium chromate), trivalent chromium, strontium chromate and zinc chromate, determined as chromium;
- c) cobalt - aerosols and slightly soluble cobalt salts, determined as cobalt;
- d) 3,3 dichlorobenzidine;
- e) dimethylsulfate;
- f) ethyleneimine;
- g) nickel, nickel sulfide, nickel oxide, nickel carbonate and nickel tetracarbonate, determined as nickel; at a mass flow of 5 g/h and higher emission should not exceed 1 mg/m³;

3. Class III:

- a) acrylonitrile;
- b) benzene;
- c) 1,3 butadiene;
- d) epichlorohydrin;
- e) 1,2 dibromoethane;
- f) 1,2 epoxy propane;

g) ethylene oxide;

h) hydrazine;

i) vinyl chloride; at a mass flow of 25 g/h and higher emission should not exceed 5 mg/m³;

(2) In case of availability of substances from I and II class the total emission should not exceed 1 mg/m³, and in the presence of substances from I and III, II and III or I, II and III class - 5 mg/m³, and for each separate substance the standard level for the respective class should be kept.

Article 19

Permissible surface loading of open areas with harmful substances, precipitated (fallen) on the ground - arithmetic average values per year:

1. general dust - 350 mg/m² per twenty four hours;
2. lead and its inorganic compounds in the precipitated dust, determined as lead - 0.25 mg/m² per twenty four hours;
3. cadmium and its inorganic compounds in the precipitated dust, determined as cadmium - 0.005 mg/m² per twenty four hours;
4. thallium and its inorganic compounds in the precipitated dust, determined as thallium - 0.01 mg/m² per twenty four hours;
5. hydrogen fluoride and gaseous inorganic fluorine compounds in the precipitated dust, determined as fluorine - 0.001 mg/m² per twenty four hours;
6. zinc in the precipitated dust - 0.4 mg/m² per twenty four hours.

Article 20

(1) Emissions coming out with gases from power and heating boilers of heating capacity higher than 50 MW should not exceed the values in mg/m³ given in Annex No. 4.

(2) Emissions from combustion processes of heating capacity from 5 to 50 MW inclusive should not exceed the values in mg/m³ given in Annex No. 5.

(3) Emissions from combustion processes of heating capacity from 500 kW to 5 MW should not exceed the values in mg/m³ given in Annex No. 6.

(4) Standard levels apply to oxygen content in smoke gases under para 1 and 2 as follows:

1. in cases of grate burning - 7 volume %;

2. in cases of dust burning and dry leading away of ash - 6 volume %;
3. in cases of dust burning and wet slag separation - 5 volume %;
4. for liquid fuel - 3 volume %;
5. for gas fuel - 3 volume %;

Article 21

Cement production:

1. dust emissions - under Article 13, para 1;
2. nitrogen oxides emission from clinker furnaces should not exceed 1500 mg/m³;
3. sulfur oxides emission from clinker furnaces should not exceed 750 mg/m³;
4. emissions with the gases from clinker furnaces apply to oxygen content 9 volume %;

Article 22

Production of ceramics and materials from clay:

1. emissions are determined at oxygen content in the gas of 18 volume %;
2. dust emissions - under article 13, para 1;
3. in cases of sulfur content in initial raw materials of 0.12% and higher, sulfur oxides emission at a mass flow of 10 kg/h and higher should not exceed 1500 mg/m³.

Article 23

Roasting of dolomite, kiselguhr, magnesite, quartzite and fire bricks:

1. dust emissions - under Article 13, para 1, and when raw materials contain chromium, the emission of chromium and its compounds, determined as chromium, should not exceed 10 mg/m³;
2. emission of nitrogen oxides should not exceed :
 - a) from rotation furnaces - 1800 mg/m³;
 - b) from other types of furnaces - 1500 mg/m³;
3. emission of inorganic fluorine compounds, determined as hydrogen fluoride, should not exceed 10 mg/m³;
4. emissions apply to oxygen content in gases of 9 volume %.

Article 24

Installations for the production of non -ferrous metals:

1. dust emissions from facilities in operation before the end of 1993 should be restricted to 50 mg/m³, and from new installations and from those, operating after 1993 - to 20 mg/m³, with the exception of lead production, the emission of which is restricted to 10 mg/m³;
2. sulfur oxides emission from facilities in operation before the end of 1995 is restricted to 3000 mg/m³, and from new installations and from those, operating after 1995 with a mass flow of 5 kg/h and higher - to 800 mg/m³.

Article 25

Production of cast iron, steel, ferrous alloys, casting activities:

1. dust - dust concentration in flue gases from heating installations should not exceed 30 mg/m³, and in case of non ferrous metals - 20 mg/m³;
2. organic compounds in casting processes - organic compounds concentration in gases should not exceed the standard levels, specified under Article 17, and for amines it should not exceed 5 mg/m³;
3. dust emissions in the course of sand drying and other processes for preparation or treatment of casting mixtures and cast cleaning - under Article 13, para 1.

Article 26

Aluminum melting:

1. dust emissions in cases of mass flow of 0.5 kg/h and higher should not exceed 20 mg/m³;
2. chlorine emission with the gases from aluminum refining should not exceed 3 mg/m³;
3. organic compounds emission, determined totally as hydrocarbons, should not exceed 50 mg/m³;

Article 27

Lead acid battery production:

1. dust emissions in cases of mass flow of 5 g/h and higher should not exceed 0.5 mg/m³;
2. sulfuric acid concentration in gases should not exceed 1 mg/m³.

Article 28

Production and packing of preparations for plant protection - dust emissions in cases of mass flow of 25 g/h and higher should not exceed 5 mg/m³.

Article 29

Sulfur dioxide, sulfur trioxide, sulfuric acid and oleum production:

1. sulfur dioxide emission should not exceed 2.6 kg per ton produced 100% sulfuric acid;
2. sulfur trioxide emission should not exceed:
 - a) for installations in operation - 0.6 kg per ton sulfuric acid;
 - b) for new installations - 120 mg/m³.

Article 30

Production of sulfur-containing products applying "Claus-process":

1. emission of sulfur compounds, determined as sulfur, in weight % from the quantity of sulfur treated daily, should not exceed:
 - a) up to 20 tons per day inclusive - 3%;
 - b) from 21 to 50 tons per day inclusive - 2%;
 - c) more than 50 tons per day - 0.5%
2. after burning the waste gas or after another treatment hydrogen sulfide emission should not exceed 10 mg/m³.

Article 31

Production of 1,2 dichloroethane and vinyl chloride - 1,2 dichloroethane emission, as well as that of vinyl chloride should not exceed 5 mg/m³.

Article 32

Polyvinyl chloride (PVC) production - maximum restriction and control should be achieved of vinyl chloride emission and average monthly emission should not exceed 200 mg per kilogram produced polyvinyl chloride.

Article 33

Polyacrylonitrile production:

1. when processing gases are subject to burning, acrylonitrile emission should not exceed 0.2 mg/m³;

2. when processing gases are treated by washing, acrylonitrile emission should not exceed 5 mg/m³;

Article 34

Petroleum treatment and production of petroleum products:

1. combustion facilities:

a) sulfur oxides emission is determined by the formula

Tg Tl

$$E = E_g \text{ -----} + E_l \text{ -----} , \text{ where}$$

To To

E_g is the maximum value at gas burning - 35 mg/m³;

E_l is the maximum value of the emission for liquid fuel: in case of heating capacity up to 300 MW - 1700 mg/m³; for heating capacity higher than 300 MW - 400 mg/m³;

T_g is the heating ability of the quantity gas fuel fed per hour;

T_l is the heating ability of the quantity liquid fuel fed per hour;

To is the sum of T_g and T_l;

b) nitrogen oxides emission should not exceed 300 mg/m³ for new installations and for those, set in operation before the end of 1992 - 700 mg/m³;

c) emissions apply to oxygen content in gases of 3 volume %;

2. Storage of petroleum and petroleum products:

a) The storage of petroleum and petroleum products, which have gas pressure higher than 13 mbar at a temperature of 20°C, should be carried out in reservoirs with floating roofs, tanks with immobile roofs, connected with the gas system of the plant;

b) gases from the breathing of tanks with immobile roofs shall be led to the gas system of the plant, when stored products may emit substances of the I class under Article 17 and any of the classes under Article 18, or when expected emissions exceed mass flows, specified for the rest of the classes under Article 17;

3. Other emission sources:

a) emitted organic gases and vapors should be caught and led away to the gas system of the plant, from where they are fed for burning,

to a torch or another treatment. These requirements apply to: protecting (protection valves) and draining devices; catalysts regeneration; repair and cleaning of installations; starting and suspension of technological operation lines; filling in of raw petroleum, intermediate and final petroleum products, which have gas pressure higher than 13 mbar at a temperature of 20°C;

b) hydrogen sulfide emission - gases from desulfurization installations and other sources are subject to treatment when: Hydrogen sulfide volume content exceeds 0.4%; mass flow of hydrogen sulfide is higher than 2 tons per twenty-four hours. Emission of treated and untreated gases should not exceed 10 mg/m³;

c) treatment of processing and waste waters- processing and waste waters before discharge into open systems are submitted to degassing, obtained gases being led for purification or burning.

Article 35

Production of wooden sheets:

1. dust emission should not exceed:

a) after grinding machines - 10 mg/m³;

b) after drying - 50 mg/m³;

2. emission of gaseous organic substances and organic vapors of the I class under Article 17 in the gases after the presses should not exceed 0.12 kg per m³ of produced wood products.

Article 36

Painting and polishing of machines, metallic and other articles:

1. Gases from painting chambers should not contain particles (lacquer particles) more than 3 mg/m³. Requirements under Article 17 - I and III class do not apply to these gases;

2. organic substances emission in gases from drying chambers, determined totally as hydrocarbons, should not exceed 50 mg/m³.

Article 37

Installations for overlay of coatings and stamping of textile materials and other articles with organic dyes, polish and synthetic materials:

1. dust emissions should not exceed 5 mg/m³ in cases of coating by spraying and 15 mg/m³ by pulverization of dusty materials;

2. emission of organic substances, determined totally as hydrocarbons, in cases of solvent use greater than 10 kg/h should not exceed 150 mg/m³;
3. when water and ethanol up to 25% are used as solvents, ethanol emission should not exceed 500 mg/m³;
4. organic substances emission with gases from drying installations, determined totally as hydrocarbons, should not exceed 50 mg/m³.

Article 38

Installations for treatment of waste by incineration - the concentrations of harmful substances in gases, emitted by installations, in which solid domestic refuse and other types of waste are used as fuel, should not exceed the values in mg/m³, shown in Annex No.7.

Article 39

Whenever emissions are expected from certain processes and activities, not specified in this document for standard levels, interested legal entities and natural persons carry out investigations and recommend to the Ministry of the Environment for approval standard levels of emissions for the specific case.

CONCLUDING PROVISIONS

§ 1. These standard levels are issued on the basis of Article 4 para 3 of the Rules on Implementing the Protection of Air, Waters and Soil from Pollution Act (promulgated SG, No. 80/1964, amended SG No.9/1978) and revoke Regulation No.1 for permissible levels of harmful substances in gases, emitted into the atmosphere (SG, No.7/1986).

§ 2. The standard levels are coordinated with the Ministry of Health by letter No. 04-09-9 from May 13, 1991.

Minister: D. Vodenicharov

Annex No. 1

to Article 14, para 1

No.	Substance	Determined as	Class
1	2	3	4
1.	Antimony and its compounds	Sb	III
2.	Arsenic and its compounds	As	II

3.	Vanadium and its compounds	V	III
4.	Mercury and its compounds	Hg	I
5.	Cadmium and its compounds	Cd	I
6.	Cobalt and its compounds	Co	II
7.	Tin and its compounds	Sn	III
8.	Copper and its compounds	Cu	III
9.	Manganese and its compounds	Mn	III
10.	Nickel and its compounds	Ni	II
11.	Lead and its compounds	Pb	III
12.	Palladium and its compounds	Pd	III
13.	Platinum and its compounds	Pt	III
14.	Fine quartz powder < 5 mm	SiO ₂	III
15.	Rhodium and its compounds	Rh	III
16.	Selenium and its compounds	Se	II
17.	Tellurium and its compounds	Te	II
18.	Thallium and its compounds	Tl	I
19.	Fluorides	F ₂	III
20.	Chromium and its compounds	Cr	III
21.	Cyanides easily soluble	CN	III

Annex No. 2

to Article 16

No.	Substance	Determined as	Class
1.	Ammonia	NH ₃	III

2.	Arsenuretted hydrogen	AsH ₃	I
3.	Nitrogen oxides (nitrogen monoxide and nitrogen dioxide)	NO ₂	IV
4.	Bromine and its vapor and gaseous compounds	HBr	II
5.	Sulfur oxides (sulfur dioxide and sulfur trioxide)	SO ₂	IV
6.	Hydrogen sulfide	H ₂ S	II
7.	Fluorine and its vapor and gaseous compounds	HF	II
8.	Phosgene	COCl ₂	I
9.	Phosphorus hydride	PH ₃	I
10.	Chlorine	Cl ₂	II
11.	Chlorine cyanide	ClCN	I
12.	Chlorine vapor and gaseous inorganic compounds	HCl	II
13.	Hydrogen cyanide	HCN	II
14.	Aerosols of sulfuric acid	H ₂ SO ₄	II

Annex No. 3
to Article 17, para 1

Organic substances

No.	Name	Chemical Formula	Class
1	2	3	4
1.	Acetaldehyde	C ₂ H ₄ O	I
2.	Acetone	C ₃ H ₆ O	III

3.	Acrylic acid	C ₃ H ₄ O ₂	I
4.	Alkylalcohols		III
5.	Aniline	C ₆ H ₇ N	I
6.	Vinyl acetate	C ₄ H ₆ O ₂	II
7.	Butyl acetate	C ₆ H ₁₂ O ₂	III
8.	Dibutylether	C ₈ H ₁₈ O	III
9.	Dichlorodifluoromethane	CCl ₂ F ₂	III
10.	1,1 Dichloroethane	C ₂ H ₄ Cl ₂	II
11.	1,2 Dichloroethane	C ₂ H ₄ Cl ₂	I
12.	Diethyl amine	C ₄ H ₁₁ N	I
13.	Dimethylamine	C ₂ H ₇ N	I
14.	Dioctylphthalate	C ₂₄ H ₃₈ O ₄	II
15.	Ethanol	C ₂ H ₅ OH	III
16.	Ethyl acetate	C ₄ H ₈ O ₂	III
17.	Ethyl amine	C ₂ H ₇ N	I
18.	Ethyl benzene	C ₈ H ₁₀	II
19.	Ethylene glycol	C ₂ H ₆ O ₂	III
20.	Isopropylbenzene	C ₉ H ₁₀	II
21.	Cresols	C ₇ H ₈ O	I
22.	Xylenols	C ₈ H ₁₀ O	II
23.	Formic acid	CH ₂ O ₂	I
24.	Maleic anhydride	C ₄ H ₂ O ₃	I
25.	Mercaptan		I

26.	Methanol	CH ₃ OH	III
27.	Methyl acetate	C ₃ H ₆ O ₂	II
28.	Methylacrylate	C ₄ H ₆ O ₂	I
29.	Methyl amine	CH ₅ N	I
30.	Naphthalene	C ₁₀ H ₈	II
31.	Nitrobenzene	C ₆ H ₅ NO ₂	I
32.	Nitrotoluene	C ₇ H ₇ NO ₂	I
33.	Acetic acid	C ₂ H ₄ O ₂	II
34.	Olefin hydrocarbons (except 1,3 butadiene)		III
35.	Paraffin hydrocarbons (except methane)		III
36.	Perchloroethylene	CCl ₂ CHCl	II
37.	Propionic acid	C ₃ H ₆ O ₂	II
38.	Pyridine	C ₅ H ₅ N	I
39.	Carbon disulfide	CS ₂	II
40.	Styrene	C ₈ H ₈	II
41.	Tetrachloromethane	CCl ₄	I
42.	Toluene	C ₇ H ₈	II
43.	Trichloroethylene	C ₂ HCl ₃	II
44.	Phenol	C ₆ H ₆ O	I
45.	Formaldehyde	CH ₂ O	I
46.	Phthalic anhydride	C ₈ H ₄ O ₃	I
47.	Furfurol	C ₄ H ₃ OCHO	I

48.	Fine wooden powder <10 µm		I
49.	Chlorobenzene	C6H5Cl	II
50.	Chloroethane	C2H5Cl	III
51.	Chloromethane	CH3Cl	I
52.	Chloroform	CHCl3	I

Annex No. 4

to Article 20, para 1

No.	Type of fuel	Set into operation till 1992 inclusive				New facilities			
		dust	sulfur oxides	nitrogen oxides	carbon monoxide	dust	sulfur oxides	nitrogen oxides	carbon monoxide
1.	Local coal	200	3500	1000	250	100	650	600	250
2.	Imported coal	150	2000	1300	250	80	650	600	250
3.	Liquid fuel	50	1700	700	170	50	650	450	170
4.	Gas fuel	10	-	500	100	10	-	300	100

Annex No. 5

to Article 20, para 2

No.	type of fuel	dust	sulfur oxides	nitrogen oxides	Carbon monoxide
1.	Solid fuel	120	2000	500	250
2.	Liquid fuel	50	1000	450	170
3.	Gas fuel	10	-	200	100

Annex No. 6

to Article 20, para 3

No.	type of fuel	dust	sulfur oxides	nitrogen oxides	Carbon monoxide
1.	Solid fuel	150	2000	500	400
2.	Liquid fuel	80	1000	450	170
3.	Gas fuel	-	-	200	100

At an oxygen content in flue gases of 12 volume %

Annex No. 7
to Article 38

No.	Index	Installations burning up to 750 kg/h of waste	Installations burning more than 750 kg/h of waste
1.	Dust-like substances	100	30
2.	Gaseous substances:		
a)	hydrogen chloride, determined as chlorine	100	50
b)	hydrogen fluoride, determined as fluorine	4	2
c)	sulfur oxides	-	300
d)	carbon monoxide	100	100
3.	Dust-like substances and aerosols:		
a)	lead, zinc, chromium, copper, manganese, their compounds inclusive - total	-	5
b)	arsenic, cobalt, nickel and their compounds - total	-	1
c)	cadmium and its soluble compounds	-	0,2

d)	mercury and its compounds	-	0.2
4.	Dioxins (2,3,7,8-tetrachlorodibenzodioxins)	0.1 ng/m ³	0.1 ng/m ³
5.	Organic compounds, totally determined as hydrocarbons	20	20

The standard levels apply to 11 volume % of oxygen in flue gases.