

92/1996 of the Coll.  
Governmental Order of the Slovak Republic  
dated 19 March 1996,

by means of which the Act No. 309/1991 of the Coll. on  
the protection of the ambient air against the pollutants (Ambient Air Act) as subsequently amended is  
implemented

The Government of the Slovak Republic according to the Art. 4 par. (2) and Art. 5 par. (4) of the Act No. 309/1991 of the Coll. on the protection of the ambient air against the pollutants (Ambient Air Act), in wording of the Act No. 218/1992 of the Coll., Act of the Slovak National Council of the Slovak Republic No. 148/1994 of the Coll. and Act of the Slovak National Council No. 256/1995 of the Coll. orders as follows:

General provisions

Article 1

The Order

- a) sets the existing and new sources of pollution,
- b) sets the limits for the pollution and the delay needed to achieve them,
- c) sets the general operating conditions for the sources of pollution, the conditions and delays to achieve them,
- d) makes up the list of pollutants for that the pollution limits are set,
- e) sets the categorisation of the big and middle-sized sources of pollution,
- f) sets the conditions to assure the spreading of ambient air pollutants.

Article 2

(1) The existing source of pollution is

- a) the source having been put into operation not later than 31<sup>st</sup> March 1998,
- b) the source for which the building permission or a similar permission shall be issued by 31<sup>st</sup> March 1998 and that shall be put into operation not later than on 31<sup>st</sup> March 2001,
- c) the source fulfilling the conditions as stipulated under the letter a) or b) if in case of its modification a new building permission is issued after 31<sup>st</sup> March 1998 and no change at the principle of the technology and revamping of the whole source, respectively, is done.

(2) The new source of pollution is a source not mentioned at the paragraph (1).

(3) The documentation involves the building plan, the technical and operation conditions of the equipment manufacturers, the operation manual elaborated in conformity with the building plan, with the conditions given by the equipment manufacturers and with the conditions for its use and the approved file of the technical and operational parameters and technical and organisational measures to ensure the ambient air protection during the operation of the source of pollution. <sup>1</sup>

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<sup>1</sup> The Art. 7 par. (2) of the Act No. 309/1991 of the Coll. on the protection of the ambient air against the pollutants (Ambient Air Act), in wording of the Act of the Slovak National Council No. 148/1994 of the Coll.

Article 3

(1) The list of pollutants the limit values for that are set is given in the Annex No. 1.

(2) The categorisation of the big and middle-sized sources of pollution is given in the Annex No. 2.

Article 4

## Emission limits

- (1) The generally applicable emission limits for the pollutants and the general conditions of the sources' operation are given in the Annex No. 3.
- (2) The emission limits for the selected pollutants at the selected technologies and equipment and the general conditions for the operation of the source of pollution are given in the Annex No. 4.
- (3) The generally applicable emission limits for the pollutants given in the Annex No. 3 apply to all big and middle-sized source of pollution with the exception of such sources and pollutants for which the paragraph (4) stipulates otherwise.
- (4) Variables, units and calculation relations by means of that the emission limits are expressed are given in the Annex No. 5.
- (5) The emission limit expressed as the mass concentration, the mass flow or the emission level, respectively, applies to each site of exhaust of the waste gas into ambient air from the source of contamination, equipment and from other integral part of the equipment beyond that no purification more is carried out.
- (6) If the emission limit is expressed as the mass amount of the pollutant with respect to one unit of the production or output [thereafter only "emission factor"], respectively, the emission limit according to the Annex No. 4 applies to the source of pollution or its part.

### **Emission limits for the existing sources of pollution**

#### Article 5

For the purpose to determine the emission limits for the existing sources of pollution the following is understood:

- a) the given technical equipment is deemed the set of machinery and equipment being operated according to the documentation;
- b) the most less emission achievable is the emission exhausted into ambient air from the equipment in conformity with the documentation.

#### Article 6

For those big and middle-sized sources of pollution having been put into operation till 30<sup>th</sup> September, 1991, or the building permission or a similar permission for which was issued till the date and those having been put into operation till 31<sup>st</sup> December 1994 and without the issued order on the set emission limits, those emission limits shall be determined for

- a) solid pollutants, sulphur dioxide, nitrogen oxides and carbon monoxide;
- b) other pollutants given in the Annex No. 1, selected according to the knowledge about the emission situation and to the knowledge of the state and character of the technology concerned.

When determining the emission limits for big and middle-sized sources of pollution <sup>2</sup> the issuing point is particularly

- a) the results of the determination of the quantity of the pollutants released by measurements if it was carried in the five last years;
  - b) the guaranteed parameters of the manufacturing equipment and those serving to reduce the emissions of pollutants;
  - c) the balance calculations; in case of the stationary devices for fuel burning (power stations, heating plants, steam plants) the balance calculation is based on the composition of the guaranteed fuel;
  - d) the combination of the procedures stipulated in the par. a) to c).
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<sup>2</sup> Art. 14 par. (3) of the Act No. 309/1991 of the Coll. on the protection of the ambient air against the pollutants (Ambient Air Act), in wording of the Act No. 218/1992 of the Coll., Act of the Slovak National Council of the Slovak Republic No. 148/1994 of the Coll. and Act of the Slovak National Council No. 256/1995 of the Coll.

#### Article 8

The determination of the delay within that the existing big and middle-sized source of pollution stipulated at the Art. 6 shall achieve the value of the emission limit set for the existing source of pollution in the Annex No. 3 and No. 4, is based upon the time and investment demand of the measures to be accomplished in order to reach the emission limit and upon the availability of the appropriate technology. The delay shall expire not later than on 31<sup>st</sup> December 1998.

#### Article 9

##### Conditions for the keeping the emission limit

- (1) When using the technical means for continuous monitoring <sup>3</sup> the variable values by means of which the emission limit is expressed (thereafter called “emission value” only) the emission limit expressed as the mass concentration, mass flow or the emission level shall be deemed to be kept if the following conditions are fulfilled at the same time:
  - a) All half-hour average emission values are less or equal to the double of the emission limit value;
  - b) all average emission values in course of a day determined as the arithmetic mean of the half-hour average emission values are less or equal to the emission limit value; the actual delay of the operation of the source is considered for the daily average only;
  - c) at least 95 per cent of the half-hour average emission values within a calendar month are less or equal to the 1.2-multiple value of the emission limit.
- (2) When carrying a single measurement the emission limit expressed as the mass concentration, mass flow or the emission level shall be deemed to be kept if the following conditions are fulfilled at the same time:
  - a) The arithmetic mean of the individual emission values determined in course of the technology being in operation in conformity with the valid documentation is less or equal to the emission limit value;
  - b) all individual emission values determined in course of the technology being in operation in conformity with the valid documentation is less or equal to the 1.2-multiple of the emission limit.
- (4) If the modified weighted mean of the emission limits is set according to the expression given in the annex No. 4 part I, item 1.8.2.1 letter a) or if the emission limit seems to be the weighted mean of the emission limits the provision of the paragraphs 1 and 2 apply to the modified weighted mean.
- (5) The emission limits during the unavoidable period of time within that the observation of the conditions according to the paragraphs (1) to (3) is impossible are not included in the values being decisive for the consideration of the preconditions to keep the emission limit. This period shall be
  - a) the run-in time (inclusively the change of fuel or output) of the stationary devices for the fuel burning (e. g. heating plant, steam plant, process burning equipment), but not more than 3 hours, and the shut down time, but not more than 30 minutes if the valid documentation or the applied conditions set by the environmental authority 4 does not stipulate the time otherwise;
  - b) the run-in time (inclusively the change of output), and the shut down time in conformity with the valid documentation and the applied conditions set by the environmental authority <sup>4</sup>;
  - c) the time of out of operation to reduce the emission of sulphur dioxide given in the annex No. 4 Part I, par. 1.5.3.4 and 1.6.3.4;
  - d) the time in course of that the functional and other tests of the continuous monitoring and requiring a special operation mode of the source of pollution; the time is not included in the time of the shut down of the equipment for the purpose to reduce emissions according to the par. c);
  - e) the time in course of what the operation of the continuous monitoring is not in conformity with the valid documentation and conditions set by the environmental authority <sup>3</sup>;

- f) the trial run time or its part under conditions set by the environmental authority <sup>5</sup>;
  - g) the time set otherwise by the environmental authority <sup>5</sup>.
- (5) The emission limit expressed as the emission factor shall be deemed to be kept if the emission value determined as the mean of the individual emission values is not more than the emission limit value. The mean is calculated
- a) as the arithmetic mean of the daily average emission values when using the continuous monitoring where actual time of the operation of the source is considered for the daily average only, exclusively the time periods stipulated according to the paragraph (4);
  - b) when carrying a single measurement as the weighted mean of the individual emission values with reference to the production, output or the time of the individual operation state of the technology being operated in conformity with the valid documentation.
- (6) The emission limit expressed as the fume darkness shall be deemed to be kept if none of the emission values is higher than the emission value given in the annex No. 4.
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<sup>3</sup> Art. 7 par. (1) letter i) of the Act No. 309/1991 of the Coll., in wording of the Act of the Slovak National Council of the Slovak Republic No. 148/1994 of the Coll.

<sup>4</sup> Art. 7 par. (1) letter a) of the Act No. 309/1991 of the Coll., in wording of the Act of the Slovak National Council of the Slovak Republic No. 148/1994 of the Coll.

<sup>5</sup> Art. 11 of the Act No. 309/1991 of the Coll., in wording of the Act of the Slovak National Council of the Slovak Republic No. 148/1994 of the Coll.

#### Article 10 Emission limits

The emission limits for selected pollutants are given in the annex No. 6.

#### Article 11 Conditions for the support of the emission spreading of pollutants for the new source of pollution

The conditions for the support of the emission spreading of pollutants for the new source of pollution are given in the annex No. 7.

#### Article 12 Common provisions

The provisions of the Governmental Order that are not specified for the new or for the existing sources of pollution only apply to both the new and existing source of pollution.

#### Article 13 Preliminary provisions

- (1) The provisions of the Governmental Order on the emission limits of the existing sources of pollution apply to the existing sources of pollution having their emission limits determined by the resolution made by the environmental authority <sup>6</sup> after the time limit set for the emission limits by the above mentioned resolution has expired.
- (2) The changes in the categorisation of the sources of pollution and those in the emission limits for the pollutants set by the Governmental Order for the existing sources that are in respect of the effectual resolutions and approvals made by the environmental authorities, shall be taken into consideration by the environmental authorities at all new procedures entered upon their own initiative and they shall issue new resolutions and approvals.
- (3) The change at the categorisation of the sources of pollution from the 1<sup>st</sup> January 1997 applies to the existing sources of pollution that subsequently change from the big or middle-sized sources of pollution

to small sources of pollution. If any reasons in doubts should be shown towards the change in the categorisation of the sources of pollution after the stipulated schedule the competent environmental authority <sup>7</sup> may decide on the change. The coming into effect of the change in categorisation is always set as to 1<sup>st</sup> January of the next year of the year when the decision was issued.

(4) The provision of the Governmental Order on the new sources of pollution with the exception of the annex No. 7 apply to the existing sources of pollution unless not otherwise stipulated in the annex No. 2 and 4.

(5) The provisions of the Governmental Order apply to the new sources of pollution from the 1<sup>st</sup> April 1998.

<sup>6</sup> Art. 12 par. (4) and (5) of the Act of the Slovak National Council No. 134/1992 of the Coll. on the State Administration of the Ambient Air Protection, in wording of the Act of the Slovak National Council of the Slovak Republic No. 148/1994 of the Coll. and the Act of the Slovak National Council of the Slovak Republic No. 256/1995 of the Coll.

<sup>7</sup> Art. 5 par. (2) letter g) of the Act of the Slovak National Council No. 134/1992 of the Coll. on the State Administration of the Ambient Air Protection, in wording of the Act of the Slovak National Council of the Slovak Republic No. 148/1994 of the Coll.

#### Article 14 Repealed provisions

The following is hereby repealed:

1. Governmental Order of the Slovak Commission for the Environment No. 407/1992 of the Coll. that amends the list of categorisation of sources of pollution and the list of pollutants and theirs limits and that set the details at the determination of the emission limits for the existing sources of pollution of the ambient air;
2. Legal Measure of the Federal Committee for the Environment dated 1<sup>st</sup> October 1991 to the Act No. 309 dated 9<sup>th</sup> July 1991 on the ambient air protection against the pollutants that has been published in the Part 84/1991 of the Coll.;
3. Legal Measure of the Federal Committee for the Environment dated 23<sup>rd</sup> June 1992 that amends the Legal Measure of the Federal Committee for the Environment dated 1<sup>st</sup> October 1991 to the Act No. 309 dated 9<sup>th</sup> July 1991 on the ambient air protection against the pollutants that has been published in the Part 84/1991 of the Coll.

#### Article 15 Coming into force

The Governmental Order comes into force on 1<sup>st</sup> April 1996.

Vladimír Mečiar sign manual

### **Annex No. 1**

#### **List of pollutants for that the pollution limit is set**

#### **A. The existing sources of pollution**

##### **I. Principal pollutants**

Solid pollutants <sup>1</sup>

Sulphur oxides expressed as sulphur dioxide <sup>1</sup>

Nitrogen oxides expressed as nitrogen dioxide <sup>1</sup>

Carbon monoxide <sup>1</sup>

Ozone <sup>2</sup>

Compounds with odour <sup>2</sup>

Organic compounds expressed as the total organic carbon in the waste gas in the gaseous phase

## II. Other pollutants

### GROUP I OF POLLUTANTS - CARCINOGENS

#### Subgroup I

Asbestos (chrysotile, crocydolite, ammosite, antophyllite, actinophyllite, tremolite)

Benzo(a)pyrene

Beryllium and its compounds expressed as Be

Dibenzo (a,h) anthracen

Cadmium and its compounds expressed as Cd <sup>1</sup>

2-Naphthyl amine

#### Subgroup II

Arsenic and its compounds expressed as As

Chromium(VI) compounds expressed as Cr

Cobalt and its compounds expressed as Co

Nickel and its compounds expressed as Ni

#### Subgroup III

Acrylonitrile

Benzene

1,3-Butadiene

1,2-Ethylene dibromide

Epichlorhydrine

Ethylene oxide

Hydrazine

Propylene oxide

Vinyl chloride

### GROUP II OF POLLUTANTS - SOLID INORGANIC POLLUTANTS

#### Subgroup I

Mercury and its compounds expressed as Hg

Thallium and its compounds expressed as Tl

#### Subgroup II

Selenium and its compounds expressed as Se

Tellurium and its compounds expressed as Te

#### Subgroup III

Antimony and its compounds expressed as Sb

Tin and its compounds expressed as Sn

Fluorides expressed as F

Chromium and its compounds (but for Cr<sup>VI</sup>) expressed as Cr

Cyanides expressed as CN

Manganese and its compounds expressed as Mn

Copper and its compounds expressed as Cu

Lead and its compounds expressed as Pb <sup>1</sup>

Vanadium and its compounds expressed as V

Zinc and its compounds expressed as Zn

### GROUP III OF POLLUTANTS - GASEOUS INORGANIC POLLUTANTS

#### Subgroup I

Stibine  
Arsine  
Phosphine  
Phosgene  
Cyanogen chloride

Subgroup II

Bromine and its gaseous compounds expressed as HBr  
Fluorine and its gaseous compounds expressed as HF  
Chlorine  
Hydrogen cyanide  
Hydrogen sulphide

Subgroup III

Ammonia  
Chlorine inorganic gaseous compounds expressed as HCl

GROUP IV OF POLLUTANTS - ORGANIC GASES AND VAPOURS

Subgroup I

Acetaldehyde  
Aniline  
Benzyl chloride  
Diethylamine  
1,2-Ethylene dichloride  
1,1-Acethylene dichloride  
Dimethylamine  
Ethanol amine  
Ethyl acrylate  
Phenol  
Formaldehyde  
Cresols  
Acrylic acid  
Formic acid  
Mercaptans  
Methyl acrylate  
Nitrobenzene  
Nitrophenols  
Nitrocresols  
Nitrotoluene  
Pyridine  
Carbon disulphide  
Tetrachlorethane  
Thioethers  
Toluidine  
Trichlorethylene  
Trichlormethane

Subgroup II

Benzaldehyde  
Butyl aldehyde  
1,4-Dichlorbenzene  
1,1-Dichlorethane  
Ethyl benzene  
Furfural  
Chlorobenzene  
2-Chloroprene

2-propyl chloride  
Isopropylbenzene  
Acetic acid  
Methyl acetate  
Methyl metacrylate  
1-methyl naphthalene  
2-methyl naphthalene  
Naphthalene  
Styrene  
Toluene  
Vinyl acetate  
Xylene

Subgroup III  
Acetone  
Alkyl alcohols  
Biphenyl  
2-Butanone  
Butyl acetate  
Dibutyl ether  
Diethyl ether  
Diphenyl ether  
1,2-dichlorethylene  
Dichlormethane  
Diisopropyl ether  
Dimethyl ether  
Ethyl acetate  
Ethylene glycol  
4-hydroxy-4-methyl-2-pentanone  
Ethyl chloride  
Benzoic acid methylate  
4-Methyl-2-Pentanone  
N-methyl pyrrolidone  
Olefins, with the exception of 1,3-butadiene (Class II)  
Paraffins with the exception of methane

## **B. The new sources of pollution**

The list for the existing sources applies with the following amendments:

- a) for the new sources - Group IV Subgroup I - cyclohexylamine; Subgroup II - cyclohexanone
  - b) furfural is changed from the Subgroup II do the Subgroup I; biphenyl is changed from the Subgroup III to the Subgroup I.
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<sup>1</sup> Both emission and imission limits are set.

<sup>2</sup> Imission limits are set only.

Without mark: For all unmarked compounds at this text only emission limits have been set.

## **Annex No. 2**

### **Categorisation of the big and middle-sized sources of pollution**

#### **I. The new sources of pollution**

1. FUEL AND POWER INDUSTRY

1.1. Big sources of pollution

- 1.1.1 Technological complexes involving the stationary devices to fuel combustion with the total heating output 50 MW and more (power stations, heating stations, steam plants).
- 1.1.2 Sorting and treatment of coal, briquetting plants
- 1.1.3 Coking plant
- 1.1.4 Production of power gases (generator gas, city gas) and synthesis gas
- 1.1.5 Gas turbines

## 1.2 Middle-sized sources of pollution

- 1.2.1 Technological complexes involving the stationary devices to fuel combustion with the total heating output from 0.2 MW and more to 50 MW.
- 1.2.2 Stationary internal combustion engines with the heating output 0.2 MW and more (with the exception of emergency and break-down aggregates)

## 2. INDUSTRIAL PRODUCTION AND PROCESSING METALS

### 2.1 Big sources of pollution

- 2.1.1 Manganese and iron ore dressing, manipulation with the material at the powdered state
- 2.1.2 Production of pig iron, blast furnaces
- 2.1.3 Steel production (converters, Siemens-Martin (open-hearth) furnaces, double-hearth furnaces, electrical furnaces, März-Böhler furnaces)
- 2.1.4 Production of cast iron and its castings
- 2.1.5 Non-ferrous ore dressing
- 2.1.6 Production of light metals and their alloys (e. g. magnesium, aluminium, beryllium)
- 2.1.7 Production of other non-ferrous metals and their alloys
- 2.1.8 Production of ferroalloys

### 2.2 Middle-sized sources of pollution

- 2.2.1 Metallurgical secondary production (e. g. rolling mill plants, forging shops, wire-mills and other thermal treatment shops)
- 2.2.2 Other special metallurgical products
- 2.2.3 Processing of metals with low smelting temperature and their alloys (e. g. zinc, cadmium, tin, antimony, lead, mercury, bismuth)
- 2.2.4 Processing of metals with middle smelting temperature and their alloys (e. g. manganese, copper, cobalt, nickel)
- 2.2.5 Processing of metals with high smelting temperature and their alloys (titanium, chromium, niobium, molybdenum, wolfram)
- 2.2.6 Processing of noble metals and their alloys (e. g. gold, silver, platinum, palladium, iridium)
- 2.2.7 Processing of other non-ferrous metals and their alloys (e. g. silica, selenium, germanium, sodium, calcium, potassium, rubidium, caesium, barium)
- 2.2.8 Surface finish of metals (e. g. pickling, galvanisation, phosphate treatment, enamelling and related operations)

## 3. MANUFACTURE OF NON-METALLIC MINERAL PRODUCTS

### 3.1 Big sources of pollution

- 3.1.1 Processing of asbestos and manufacture of products containing asbestos
- 3.1.2 Production of cement
- 3.1.3 Production of lime
- 3.1.4 Precoating plants for bituminous mixtures and bitumen compounding
- 3.1.5 Production of glass and glassware and glass fibres
- 3.1.6 Production of magnesite and of alkaline refractories
- 3.1.7 Production of mineral fibres containing organic binders

### 3.2 Middle-sized sources of pollution

- 3.2.1 Production and processing of the organic siliceous materials

- 3.2.2 Stone quarries and stone processing
- 3.2.3 Mining, dressing and processing of the siliceous raw material
- 3.2.4 Production of expanded non-metallic mineral products
- 3.2.5 Production of non-burnt masonry material and prefabricated products
- 3.2.6 Brickmaking production
- 3.2.7 Production of refractories (fireclay factory)
- 3.2.8 Treatment of material for the production of ceramics and for the kaolin plants
- 3.2.9 Manufacture of ceramics, porcelain and cast basalt
- 3.2.10 Extraction and processing of kieselgur (diatomaceous earth)
- 3.2.11 Glass grinding and manufacture of glass jewellery
- 3.2.12 Production of glazes, fritted glass, and siliceous grinding material
- 3.2.13 Large-scale production of concrete, mortar or other masonry material with the designed output more than  $10 \text{ m}^3 \cdot \text{h}^{-1}$

#### 4. CHEMICAL INDUSTRY

- 4.1 Big sources of pollution
  - 4.1.1 Oil and casing-head gas exploitation and the related transportation and storage
  - 4.1.2 Oil refinery
  - 4.1.3 Petrochemical oil treatment
  - 4.1.4 Distribution stores and repumping equipment for fuels, grease, petrochemical products and other organic liquids of the total designed storage volume of  $1,000 \text{ m}^3$  and more or with the yearly turn-over capacity of  $10,000 \text{ m}^3$  and more, respectively
  - 4.1.5 Production of synthetic alcohols, ketones, aldehydes, ethers, organic acids and their salts
  - 4.1.6 Manufacture of the organic dye semi-products and organic solvent coating compounds
  - 4.1.7 Manufacture of industrial explosives
  - 4.1.8 Manufacture of drugs and pharmaceutical raw material
  - 4.1.9 Manufacture of organic halogenised compounds
  - 4.1.10 Manufacture of polymers with the exception of the synthetic rubber
  - 4.1.11 Manufacture of cellulose and its derivatives, inclusive of the waste processing to the products from the procedure
  - 4.1.12 Manufacture and processing of the viscose
  - 4.1.13 Manufacture of pesticides
  - 4.1.14 Manufacture of auxiliary compounds for the rubber industry
  - 4.1.15 Production and processing of chlorine, fluorine and bromine
  - 4.1.16 Manufacture of hydrochloric acid
  - 4.1.17 Production of sulphur (Claus' process)
  - 4.1.18 Manufacture and processing of the sulphuric acid
  - 4.1.19 Manufacture of ammonia and urea
  - 4.1.20 Manufacture of nitric acid and its salts
  - 4.1.21 Manufacture of phosphoric acid and its salts
  - 4.1.22 Manufacture of inorganic pigments, refining and bleaching agents
  - 4.1.23 Manufacture of industrial fertilizers
  - 4.1.24 Manufacture of cyan hydride, cyanides, thiocyanic acid
  - 4.1.25 Manufacture of soda and ammonia chloride
  - 4.1.26 Manufacture of calcium carbide and other electrochemical productions
  - 4.1.27 Manufacture of synthetic rubber
  - 4.1.28 Manufacture of acrylic acid and its derivatives
  - 4.1.29 Manufacture and processing carbonaceous material (e. g. charcoal, black, burning of carbonaceous material)
- 4.2 Middle-sized sources of pollutants
  - 4.2.1 Manufacture and processing of rubber
  - 4.2.2 Manufacture of soap, detergents and cosmetics

- 4.2.3 Manufacture and processing of fats and oils of the vegetal and animal origin
- 4.2.4 Manufacture of gley and sizes
- 4.2.5 Manufacture and treatment of paper
- 4.2.6 Manufacture of damp-proofing material and roofing material
- 4.2.7 Industrial processing of plastics
- 4.2.8 Manufacture, recuperation and disposal of batteries and monocells
- 4.2.9 Petrol stations (without capacity limit)
- 4.2.10 Distribution storage facilities and repumping equipment for fuel, grease, petrochemical products and other organic liquids of the total designed storage volume of 1,000 m<sup>3</sup> and more or with the yearly turn-over capacity of 10,000 m<sup>3</sup> and more, respectively

## 5. WASTE TREATMENT AND DISPOSAL

- 5.1 Big sources of pollution
  - 5.1.1 Municipal waste incineration plant (without capacity limit)
  - 5.1.2 Incineration plant for the special and hazardous waste (without capacity limit)
  - 5.1.3 Veterinary decontamination facilities (without capacity limit)
- 5.2 Middle-sized sources of pollutants
  - 5.2.1 Sewage water treatment plants
  - 5.2.2 Composting plants
  - 5.2.3 Crematoria

## 6. OTHER INDUSTRIES AND FACILITIES

- 6.1 Big sources of pollution
  - 6.1.1 Large-scale feedlot for feeders (designed for the capacity above 500 units of ox, above 5,000 units of pigs and above 50,000 units of poultry)
  - 6.1.2 Industrial manufacture and processing of skin
  - 6.1.3 Paint shops with the designed consumption above 10 tons of painting material yearly
  - 6.1.4 Slaughter-houses and other meat producing plants (designed for the capacity of scale above 250 tons of poultry yearly and above 2,000 tons of other animals yearly, respectively)
  - 6.1.5 Other products and technological processes that are not expressly mentioned in the items 1 to 6 and that are producing pollutants in quantities above the tenfold value of the mass flow according to the Annex No. 3 of the Governmental Order and in the event if the technology involves a fuel incineration plant with the rating output 50 MW and more. The mass flows are considered before the precipitator.
- 6.2 Middle-sized sources of pollutants
  - 6.2.1 Industrial wood processing (designed for the capacity above 20 m<sup>3</sup> of the processed wood daily (e. g. sawing plant, manufacture of furniture, plywood, wall boards)
  - 6.2.2 Manufacture of felt
  - 6.2.3 Printing art (Printing on flat and band material)
  - 6.2.4 Painting shops with the designed consumption of painting material from 1 ton to 10 tons yearly)
  - 6.2.5 Industrial metal and electrical parts degreasing using the organic solvents
  - 6.2.6 Textile cleaning using the organic solvents
  - 6.2.7 Feedlots for feeders (designed for the capacity from 100 to 499 units of ox, from 500 do 4,999 units of pigs and from 1,000 to 49,999 units of poultry)
  - 6.2.8 Slaughter-houses and other meat producing plants (designed for the capacity of scale above 250 tons of poultry yearly and above 2,000 tons of other animals yearly, respectively)
  - 6.2.9 Sugar factories
  - 6.2.10 Canning plants and distilleries
  - 6.2.11 Flourmills (with the designed capacity 5 tons and more per hour)
  - 6.2.12 Production of the industrial feeding and organic fertilizers with the designed capacity 1 ton and more per hour.

- 6.2.13 Oust house for the agricultural and food products with the designed capacity 1 ton and more of product per hour.
- 6.2.14 Other products and technological processes that are not expressly mentioned in the items 1 to 6 and that are producing pollutants in quantities above the tenfold value of the mass flow according to the Part I and II of the items 1, 2, and 3 of the Governmental Order and 0.2-fold to tenfold value of the mass flow included according to the Part II, item 4 of the Annex No. 3 in the event if the technology involves a fuel incineration plant with the rating output 50 MW and more. The mass flows are considered before the precipitator.

If the sources of pollution by its kind of technology stipulated in the annex and corresponding to any of the category of the new or existing sources for which the production capacity is not set occur in the form of the small-scale production they are deemed to be a small source. It applies in the case only if it is justified that the mass flows of the individual pollutants produced at the rated output are less than the lower mass flow limits set for the middle-sized sources of pollution in the item 6.2.14. The rule applies for the existing sources as well from the 1<sup>st</sup> January 1997 or according to the resolution made by the Ambient Air Protection Authority in conformity with the Art. 13 par. (3) of the Governmental Order. For the case the mass flows intended for the new sources of pollution apply according to the Annex No. 3 as well.

## **II. The existing sources of pollution**

### **1. FUEL AND POWER INDUSTRY**

#### **1.1. Big sources of pollution**

- 1.1.1 Technological complexes involving the stationary devices to fuel combustion with the total heating output 50 MW and more
- 1.1.2 Sorting and treatment of coal, briquetting plants
- 1.1.3 Coking plant
- 1.1.4 Production of power gases (generator gas, city gas) and synthesis gases
- 1.1.5 Gas turbines
- 1.1.6 Stationary internal combustion engines with the heating output 50 MW and more

#### **1.2 Middle-sized sources of pollution**

- 1.2.1 Technological complexes involving the stationary devices to fuel combustion with the total heating output from 0.2 MW and more to 50 MW.
- 1.2.2 Stationary internal combustion engines with the heating output 0.2 MW and more

### **2. INDUSTRIAL PRODUCTION AND PROCESSING METALS**

#### **2.1 Big sources of pollution**

- 2.1.1 Manganese and iron ore dressing
- 2.1.2 Production of pig iron, blast furnaces
- 2.1.3 Steel production (converters, Siemens-Martin (open-hearth) furnaces, double-hearth furnaces, electrical furnaces, März-Böhler furnaces)
- 2.1.4 Production of cast iron and its castings
- 2.1.5 Non-ferrous ore dressing
- 2.1.6 Production of light metals and theirs alloys (e. g. magnesium, aluminium, beryllium)
- 2.1.7 Production of other non-ferrous metals and theirs alloys (with exception of those mentioned in the item 2.2)
- 2.1.8 Production of ferroalloys

#### **2.2 Middle-sized sources of pollution**

- 2.2.1 Metallurgical secondary production (e. g. rolling mill plants, wire-mills, forging shops)
- 2.2.2 Other special metallurgical products
- 2.2.3 Processing of metals with low smelting temperature and theirs alloys (e. g. zinc, cadmium, tin, antimony, lead, mercury, bismuth)

- 2.2.4 Processing of metals with middle smelting temperature and their alloys (e. g. manganese, copper, cobalt, nickel)
- 2.2.5 Processing of metals with high smelting temperature and their alloys (titanium, chromium, niobium, molybdenum, wolfram)
- 2.2.6 Processing of noble metals and their alloys (e. g. gold, silver, platinum, palladium, iridium)
- 2.2.7 Processing of other non-ferrous metals and their alloys (e. g. semiconductor - silica, selenium, germanium, alkaline - sodium, calcium, potassium, rubidium, caesium, barium)
- 2.2.8 Surface finish of metals (e. g. pickling, galvanisation, phosphate treatment, enamelling)

### 3. MANUFACTURE OF NON-METALLIC MINERAL PRODUCTS

- 3.1 Big sources of pollution
  - 3.1.1 Processing of asbestos and manufacture of products containing asbestos
  - 3.1.2 Production of cement
  - 3.1.3 Production of lime
  - 3.1.4 Precoating shops for bituminous mixtures and bitumen compounding
  - 3.1.5 Production of glass and glassware, glass fibres and other mineral fibres
  - 3.1.6 Production of magnesite and of alkaline refractories
- 3.2 Middle-sized sources of pollution
  - 3.2.1 Production and processing of the organic siliceous materials
  - 3.2.2 Stone quarries and stone processing
  - 3.2.3 Processing of the siliceous raw material
  - 3.2.4 Manufacture of expanded non-metallic mineral products
  - 3.2.5 Manufacture of non-burnt masonry material and prefabricated products
  - 3.2.6 Brickmaking production
  - 3.2.7 Manufacture of refractories (fireclay factory)
  - 3.2.8 Treatment of material for the production of ceramics and for the kaolin plants
  - 3.2.9 Manufacture of ceramics and porcelain
  - 3.2.10 Extraction and processing of kieselgur (diatomaceous earth)
  - 3.2.11 Glass grinding and manufacture of glass jewellery

### 4. CHEMICAL INDUSTRY

- 4.1 Big sources of pollution
  - 4.1.1 Manufacture of fuels, grease and other oil products
  - 4.1.2 Manufacture of aliphatic and aromatic carbohydrates (petrochemical oil processing)
  - 4.1.3 Manufacture of by-products from the thermal oil treatment
  - 4.1.4 Production of synthetic alcohols, ketones, and organic acids
  - 4.1.5 Manufacture of the organic dye semi-products and organic dyes
  - 4.1.6 Manufacture of explosives
  - 4.1.7 Manufacture of pharmaceutical raw material and drugs
  - 4.1.8 Manufacture of organic halogenised compounds
  - 4.1.9 Manufacture and processing of polymers
  - 4.1.10 Manufacture of cellulose and its derivatives
  - 4.1.11 Manufacture and processing of the viscose
  - 4.1.12 Manufacture and processing of painting material
  - 4.1.13 Manufacture of pesticides and herbicides
  - 4.1.14 Manufacture of auxiliary compounds for the rubber industry
  - 4.1.15 Production and processing of chlorine
  - 4.1.16 Manufacture of hydrochloric acid
  - 4.1.17 Production of sulphur (Claus' process)
  - 4.1.18 Manufacture and processing of the sulphuric acid
  - 4.1.19 Manufacture of ammonia and urea

- 4.1.20 Manufacture of nitric acid and its salts
- 4.1.21 Manufacture of phosphoric acid and its salts
- 4.1.22 Manufacture of inorganic pigments
- 4.1.23 Manufacture of industrial fertilizers
- 4.1.24 Manufacture of cyan hydrides, cyanides, thiocyanic acids
- 4.1.25 Manufacture of soda and ammonia chloride
- 4.1.26 Manufacture of calcium carbide and other chemical productions
- 4.1.27 Distribution storage facilities and repumping equipment for fuel, grease, petrochemical products and other organic liquids of the total designed storage volume of 1,000 m<sup>3</sup> and more or with the yearly turn-over capacity of 10,000 m<sup>3</sup> and more, respectively

## 4.2 Middle-sized sources of pollutants

- 4.2.1 Manufacture and processing of rubber
- 4.2.2 Manufacture of soap, detergents and cosmetics
- 4.2.3 Manufacture and processing of fats and oils
- 4.2.4 Manufacture of gley and sizes
- 4.2.5 Manufacture of glazes, fritted glass and dyes
- 4.2.6 Manufacture and treatment of paper
- 4.2.7 Manufacture of damp-proofing material and roofing material
- 4.2.8 Distribution storage facilities and repumping equipment for fuel, grease, petrochemical products and other organic liquids of the total designed storage volume of 1,000 m<sup>3</sup> and more or with the yearly turn-over capacity of 10,000 m<sup>3</sup> and more, respectively

## 5. WASTE TREATMENT AND DISPOSAL

### 5.1 Big sources of pollution

- 5.1.1 Municipal waste incineration plant (without capacity limit)
- 5.1.2 Incineration plant for the special and hazardous waste (without capacity limit)

### 5.2 Middle-sized sources of pollutants

- 5.2.1 Composting plants
- 5.2.2 Crematoria

## 6. OTHER INDUSTRIES AND FACILITIES

### 6.1 Big sources of pollution

- 6.1.1 Large-scale feedlot for feeders
- 6.1.2 Veterinary decontamination facilities

### 6.2 Middle-sized sources of pollutants

- 6.2.1 Industrial wood processing (designed for the capacity above 20 m<sup>3</sup> of the processed wood daily)
  - 6.2.2 Manufacture of felt
  - 6.2.3 Tanneries
  - 6.2.4 Production of the industrial feeding
  - 6.2.5 Painting shops with the designed capacity 1 ton and more for the painting material yearly
  - 6.2.6 Textile and other cloths cleaning shops
- Industrial metal parts degreasing

The categorisation of the sources according to the items 4.1.27 and 4,2,8 (distribution storage facilities and repumping equipment for fuels, grease, petrochemical products and other organic liquids) is effective from 1<sup>st</sup> January 1999.

## Annex No. 3

### General emission limits in force for the pollutants and the general conditions for the operation of the sources of pollution

#### I. Emission limits for the principal pollutants

##### 1. Emission limit for the solid pollutants

###### 1.1 The emission limit for the new sources of pollution

a) For the mass flow of the solid pollutants less than  $0.5 \text{ kg}\cdot\text{h}^{-1}$  the concentration of the solid pollutants in the waste gas shall not exceed  $150 \text{ mg}\cdot\text{m}^{-3}$

b) For the mass flow of the solid pollutants  $0.5 \text{ kg}\cdot\text{h}^{-1}$  and more the concentration of the solid pollutants in the waste gas shall not exceed  $50 \text{ mg}\cdot\text{m}^{-3}$

###### 1.2 The emission limit for the existing sources of pollution

a) For the mass flow of the solid pollutants less than  $2.5 \text{ kg}\cdot\text{h}^{-1}$  the concentration of the solid pollutants in the waste gas shall not exceed  $200 \text{ mg}\cdot\text{m}^{-3}$

b) For the mass flow of the solid pollutants  $2.5 \text{ kg}\cdot\text{h}^{-1}$  and more the concentration of the solid pollutants in the waste gas shall not exceed  $150 \text{ mg}\cdot\text{m}^{-3}$

##### 2. Emission limit for sulphur oxides

###### 2.1 The emission limit for the new sources of pollution

For the mass flow of the sulphur oxides more than  $5 \text{ kg}\cdot\text{h}^{-1}$  the concentration of the solid pollutants in the waste gas shall not exceed  $500 \text{ mg}\cdot\text{m}^{-3}$ . The values for the mass flow and concentration are expressed as sulphur dioxide.

###### 2.2 The emission limit for the existing sources of pollution

For the mass flow of the sulphur oxides  $20 \text{ kg}\cdot\text{h}^{-1}$  and more the concentration of the solid pollutants in the waste gas shall not exceed  $2,500 \text{ mg}\cdot\text{m}^{-3}$ . The values for the mass flow and concentration are expressed as sulphur dioxide.

##### 3. Emission limit for sulphur oxides

###### 3.1 The emission limit for the new sources of pollution

For the mass flow of the nitrogen oxides more than  $5 \text{ kg}\cdot\text{h}^{-1}$  the concentration of the solid pollutants in the waste gas shall not exceed  $500 \text{ mg}\cdot\text{m}^{-3}$ . The values for the mass flow and concentration are expressed as nitrogen dioxide.

###### 3.2 The emission limit for the existing sources of pollution

For the mass flow of the nitrogen oxides  $10 \text{ kg}\cdot\text{h}^{-1}$  and more the concentration of the solid pollutants in the waste gas shall not exceed  $500 \text{ mg}\cdot\text{m}^{-3}$ . The values for the mass flow and concentration are expressed as nitrogen dioxide.

#### II. Emission limit for other pollutants

##### 1. EMISSION LIMITS OF THE CARCINOGENIC POLLUTANTS (GROUP I)

###### 1.1 Emission limits the subgroup I of the carcinogenic pollutants

###### 1.1.1 The emission limit for the new sources of pollution

For the mass flow higher than  $0.5 \text{ g}\cdot\text{h}^{-1}$  the sum of the concentration of the compounds of the subgroup I in the waste gas shall not exceed  $0.1 \text{ mg}\cdot\text{m}^{-3}$

###### 1.1.2 The emission limit for the existing sources of pollution

For the mass flow higher than  $1 \text{ g}\cdot\text{h}^{-1}$  the sum of the concentration of the compounds of the subgroup I in the waste gas shall not exceed  $0.2 \text{ mg}\cdot\text{m}^{-3}$

###### 1.2 Emission limits the subgroup II of the carcinogenic pollutants

- 1.2.1 The emission limit for the new sources of pollution  
For the mass flow higher than  $5 \text{ g}\cdot\text{h}^{-1}$  the sum of the concentration of the compounds of the subgroup II in the waste gas shall not exceed  $1 \text{ mg}\cdot\text{m}^{-3}$
- 1.2.2 The emission limit for the existing sources of pollution  
For the mass flow higher than  $10 \text{ g}\cdot\text{h}^{-1}$  the sum of the concentration of the compounds of the subgroup II in the waste gas shall not exceed  $2 \text{ mg}\cdot\text{m}^{-3}$

1.3 Emission limits the subgroup III of the carcinogenic pollutants

- 1.3.1 The emission limit for the new sources of pollution  
For the mass flow higher than  $25 \text{ g}\cdot\text{h}^{-1}$  the sum of the concentration of the compounds of the subgroup III in the waste gas shall not exceed  $5 \text{ mg}\cdot\text{m}^{-3}$
- 1.3.2 The emission limit for the existing sources of pollution  
For the mass flow higher than  $50 \text{ g}\cdot\text{h}^{-1}$  the sum of the concentration of the compounds of the subgroup III in the waste gas shall not exceed  $5 \text{ mg}\cdot\text{m}^{-3}$

2. EMISSION LIMITS FOR SOLID INORGANIC POLLUTANTS AND GENERAL CONDITIONS FOR THE OPERATION OF THE SOURCES OF POLLUTION RELEASING THE SOLID POLLUTANTS (GROUP II)

- 2.1 Emission limits for the subgroup I of the solid pollutants  
For the mass flow higher than  $1 \text{ g}\cdot\text{h}^{-1}$  the sum of the concentrations of the pollutants of the subgroup I in the waste gas shall not exceed the value  $0.2 \text{ mg}\cdot\text{m}^{-3}$ .
- 2.2 The emission limit for the subgroup II of the solid pollutants
- 2.2.1 The emission limit for the new sources of pollution  
For the mass flow higher than  $5 \text{ g}\cdot\text{h}^{-1}$  the sum of the concentrations of the pollutants of the subgroup II in the waste gas shall not exceed the value  $1 \text{ mg}\cdot\text{m}^{-3}$ .
- 2.2.2 The emission limit for the existing sources of pollution  
For the mass flow higher than  $10 \text{ g}\cdot\text{h}^{-1}$  the sum of the concentrations of the pollutants of the subgroup II in the waste gas shall not exceed the value  $2 \text{ mg}\cdot\text{m}^{-3}$ .
- 2.3 The emission limit for the subgroup III of the solid pollutants
- 2.3.1 The emission limit for the new sources of pollution  
For the mass flow higher than  $25 \text{ g}\cdot\text{h}^{-1}$  the sum of the concentrations of the pollutants of the subgroup III in the waste gas shall not exceed the value  $5 \text{ mg}\cdot\text{m}^{-3}$ .
- 2.3.2 The emission limit for the existing sources of pollution  
For the mass flow higher than  $50 \text{ g}\cdot\text{h}^{-1}$  the sum of the concentrations of the pollutants of the subgroup III in the waste gas shall not exceed the value  $5 \text{ mg}\cdot\text{m}^{-3}$ .
- 2.4 The general conditions for the operation of the sources of pollution of the ambient air releasing the solid pollutants - the new sources of pollution  
When carrying out the activities where dust emissions could be released and in facilities where the dusty compounds are produced, processed, unloaded, loaded or stored, all technical devices available for reasonable costs shall be used to reduce the dust emissions.  
When considering the extent of measures it is necessary to issue from the level of danger of the dust, emission mass flow, emission duration, meteorological conditions and ambient conditions.

Manufacture, treatment, transportation, unloading and loading of dusty material

The equipment for the manufacture, treatment and transportation of dusty material shall be covered by cowled. If it is impossible to assure the dust-proof quality the dusty air shall be exhausted to remove the dust.

Storage and disposal of dusty material

When storing the dusty material it is necessary to carry out measures like the following:

- store the dusty material at silos
- build up a canopy and to close the stock from all sites
- over the surface of the dusty material
- green the surface of the stored dusty material

- set up the green earth barrier against the wind or plant the protection green against the wind
- keep the necessary surface humidity of the stored dusty material

### 3. EMISSION LIMITS FOR GASEOUS INORGANIC POLLUTANTS (GROUP 3)

#### 3.1 Emission limits for the subgroup I of the gaseous pollutants

For the mass flow higher than  $10 \text{ g}\cdot\text{h}^{-1}$  the sum of the concentrations of the pollutants of the subgroup I in the waste gas shall not exceed the value  $1 \text{ mg}\cdot\text{m}^{-3}$ .

#### 3.2 The emission limit for the subgroup II of the gaseous pollutants

##### 3.2.1 The emission limit for the new sources of pollution

For the mass flow higher than  $50 \text{ g}\cdot\text{h}^{-1}$  the sum of the concentrations of the pollutants of the subgroup II in the waste gas shall not exceed the value  $5 \text{ mg}\cdot\text{m}^{-3}$ .

##### 3.2.2 The emission limit for the existing sources of pollution

For the mass flow higher than  $100 \text{ g}\cdot\text{h}^{-1}$  the sum of the concentrations of the pollutants of the subgroup II in the waste gas shall not exceed the value  $10 \text{ mg}\cdot\text{m}^{-3}$ .

#### 3.3 The emission limit for the subgroup III of the solid pollutants

##### 3.3.1 The emission limit for the new sources of pollution

For the mass flow higher than  $0.3 \text{ kg}\cdot\text{h}^{-1}$  the sum of the concentrations of the pollutants of the subgroup III in the waste gas shall not exceed the value  $30 \text{ mg}\cdot\text{m}^{-3}$ .

##### 3.3.2 The emission limit for the existing sources of pollution

For the mass flow higher than  $0.5 \text{ kg}\cdot\text{h}^{-1}$  the sum of the concentrations of the pollutants of the subgroup III in the waste gas shall not exceed the value  $50 \text{ mg}\cdot\text{m}^{-3}$ .

### 4. EMISSION LIMITS FOR ORGANIC GASES AND VAPOURS AND GENERAL CONDITIONS FOR THE OPERATION OF THE SOURCES OF POLLUTION RELEASING THE ORGANIC GASES AND VAPOURS (GROUP IV)

#### 4.1 Emission limits for the subgroup I of the organic gases and vapours

For the mass flow higher than  $0.1 \text{ kg}\cdot\text{h}^{-1}$  the sum of the concentrations of the pollutants of the subgroup I in the waste gas shall not exceed the value  $20 \text{ mg}\cdot\text{m}^{-3}$ .

#### 4.2 Emission limits for the subgroup II of the organic gases and vapours

For the mass flow higher than  $2 \text{ kg}\cdot\text{h}^{-1}$  the sum of the concentrations of the pollutants of the subgroup II in the waste gas shall not exceed the value  $100 \text{ mg}\cdot\text{m}^{-3}$ .

#### 4.3 Emission limits for the subgroup III of the organic gases and vapours

For the mass flow higher than  $3 \text{ kg}\cdot\text{h}^{-1}$  the sum of the concentrations of the pollutants of the subgroup III in the waste gas shall not exceed the value  $150 \text{ mg}\cdot\text{m}^{-3}$ .

#### 4.4 Emission limit for the simultaneous occurrence of pollutants from several subgroups in the waste gas

For the simultaneous occurrence of pollutants from several subgroups in the waste gas and their total mass flow higher than  $3 \text{ kg}\cdot\text{h}^{-1}$  the sum of the concentrations of such pollutants in the waste gas shall not exceed the value  $150 \text{ mg}\cdot\text{m}^{-3}$  and the emission limits according to the paragraphs 4.1 and 4.3. shall not be exceeded.

#### 4.5 Emission limit for the organic pollutants set as the total organic carbon

When setting the emission limit for the organic pollutants at the selected technologies and devices mentioned in the Annex No. 4 of the Governmental Order as the total organic carbon the emission limits do not apply to the individual pollutants according to the paragraphs 4.1 to 4.4. The emission limits for the subgroup I of pollutants (carcinogens) remain inviolate.

#### 4.6 The general conditions for the operation of sources of pollution of the ambient air releasing the organic gases and vapours - new sources of pollution

For all technological processes and operations where gases and liquid compounds with a high partial vapour pressure are handles it is necessary to take all available technical measures to reduce the escape of gases and vapours into ambient air. This applies for organic pollutants named in the Annex No. 1, Group IV of the Governmental Order and for other volatile organic compounds (VOC) of

anthropogenous character that can produce photochemical oxidants using nitrogen oxides in the presence of solar radiation. The following measures are concerned in particular:

- a) When storing liquid organic compounds with the vapour pressure higher than 1.32 kPa (13 mbar) at 20°C to 76 kPa at the operation temperature it is necessary
- to use the storing vessels with floating roof;
  - to provide the hard roof with the inner floating membrane with sealing;
  - to ensure the withdrawal of gases from the vessels with hard roof to recover or dispose of them;
  - to carry out other measures that are similar with their effect.

In case of vapour withdrawal from the vessel to dispose of them the emission degree of the organic compounds 5 per cent and higher (i. e. the efficiency 95 per cent and higher). The vessels with floating roof, hard roof and floating cover of the surface shall be provided with a efficient sealing made from elastic material.

- b) When repumping the organic liquids named under a) as e. g. tapping from the tank cars or tank trucks, filling the reservoirs from the storage tanks or other repumping it is necessary to take special measures like recycle of the gaseous phase, conduit of the exhausted gases to the disposing facilities or other similar measures.

Measures to reduce the emissions in course of storage shall be accomplished for each vessel with the volume 100 m<sup>3</sup> and higher or for the yearly turn-over 1,000 m<sup>3</sup> and higher.

- c) The ventilation of vessels shall be reduced as much as possible, e.g. through the drop of the temperature variation of the volume of the vessel by using the appropriate insulation or reflected painting.
- d) When repumping liquids of the inflammability class I and II with the boiling temperature up to 200°C it is necessary to use pumps with efficient sealing systems having reduced losses as e.g. pumps with mechanical seal.
- e) Separate efficient measures to avoid gas and vapour escape into ambient air in case of manipulation (pumping, compression, piped transportation, storage) with liquid organic compounds containing more than 10 mg·kg<sup>-1</sup> of compounds of Subgroup I and more than 5 per cent of compounds of Subgroup II and III, Group I; and of the Subgroup I, Group IV, respectively, like the following:
- when pumping it is necessary to use special sealed pumps with doubled mechanical seal with external rinsing and pumps without seal and in such a way to ensure the closed circuit for the compounds being pumped;
  - during tapping gases and vapours the deaeration of the sealing liquid (oil) shall be withdrawn into ambient air;
  - limit the number of flange joints used for the transportation of gases and vapours if it is possible technically and from the point of view of work safety and maintenance;
  - in case of highly stable compounds and those of the Group I and those of Subgroup I, Group IV the flange joints shall be equipped with efficient seals;
  - classical valves and gate valves with mobile spindles shall be replaced with bellows equipped with auxiliary seals or in other equivalent way.

For highly stable and toxic compounds, e.g. polychlorinated biphenyls (PCBs), polychlorinated dibenzodioxins (PCDD), polychlorinated dibenzofurans (PCDF) the mass flow shall be reduced as much as technically possible. That is why besides the flue gas or waste gas cleaning also technical measures are necessary at the technological procedure along with an impact on the character of such compounds the purpose of which shall be the reduction of the production of such compounds.

#### 4.7 The general conditions for the operation of sources of pollution of the ambient air releasing the gases and vapours with odour for the new sources of pollution

For all technological processes and devices where in course of their operation or break downs of a small extent compounds of an intensive odour could be released the appropriate technically available measures shall be taken to reduce the emissions, e.g. the covered equipment, an encapsulated part of the equipment, the negative pressure in the encapsulated part of the equipment, appropriate storage of raw material, products and residues.

The waste gases having an intensive odour shall be withdrawn to the cleaning or an appropriate liquidation, respectively. When setting the extent of the requirements for the individual cases the

volume flow of the waste gas, the mass flow of the compounds releasing odour shall be considered, the local spreading conditions for the emission, its duration and the distance of the equipment from the next scheduled or existing buildings.

#### **Annex No. 4**

### **Emission limits for selected contaminants at selected technologies and equipment and general conditions for the operation of the sources of pollution**

#### **I. FUEL AND POWER INDUSTRY**

1. Technological complexes containing the stationary fuel combustion devices (heating plants, power stations, steam plants and facilities for the process combustion) with a total heating output 0.2 MW and higher
  - 1.1 Equipment for the new sources

Such equipment as mentioned in the Governmental Order is deemed the boiler unit or a group of boiler units (or technological heating units) that release or may release flue gas through the common stack.

To set the emission limit according to the output the outputs of the boilers combusting the same kind of fuel (solid, liquid, gaseous) are summed. In case of binary fuel where the ratio of the power gained by the second fuel does not exceed 30 per cent, for the purpose to set the emission limit the boiler is considered as it would combust the fuel producing the prevailing part of power only. If the boiler uses the auxiliary fuel in the extent exceeding 30 per cent of the power produced the output of the boiler shall not be added to the outputs of other boilers using only one kind of fuel (or considered to be so), and the output of each such boiler is calculated separately to set the emission limit. The outputs of the boilers with circulating fluid or pressurised bed are summed separately as well as the outputs of boilers with slag-tap furnace.
  - 1.2 Equipment for the existing sources being effective by 31<sup>st</sup> December 2009

Such equipment is deemed the arrangements of boilers or devices for the technological combustion within the given technological unit whose individual heating outputs are less than 50 MW or whose individual boilers and devices for the technological combustion with the heating output 50 MW and more.

For the existing sources applies the definition of the equipment according to the Par. 1.1, after 1<sup>st</sup> January 2010.
  - 1.3 Equipment for technological combustion

The equipment for technological combustion involves other technological fuel combustion equipment like power stations, heating and steam plants where the quantity and composition of the emission does not depend on the quantity and the fuel composition and where the flue gas flow is separated from the other technology by the heat-exchange wall.
  - 1.4 Fuel

The fuel combustion equipment may combust only fossil fuel produced from it (brown coal and bituminous coal and lignite, peat, coke, briquettes, fuel oil, heating oils and heavy oil fractions of standardised quality being combusted at refineries as their own product), wood, waste wood, and other mass of vegetable origin, and used oils, respectively, as far as they do not contain chlorine in amounts higher than 0.5 per cent by mass and PCB and PCT higher than 10 mg·kg<sup>-1</sup>, casing-head gas or industrial gases set forth in the Annex separately.

The waste wood is a wooden mass without any treatment by protection mordant (e.g. against vermin, fungi, inflammation) and without any content of chlorinated organic compounds.
  - 1.5 Emission limits for solid fuel combustion

Emission limits setting conditions

All emission limits stipulated in the par. 1.5 apply to the concentration calculated as for the dried gas under standard conditions 101.325 kPa and 0 degree C and for the oxygen content in the waste gas of 6 per cent by volume. A variant calculation for the concentrations as for the content of oxygen 11 per

cent by volume in the waste gas applies for the combustion of wood and other mass of the vegetable origin.

#### 1.5.2 Emission limit for the solid pollutants

##### 1.5.2.1 Emission limit for the new sources of pollution

- a) The concentration of the solid pollutants in the waste gas shall not exceed the value  $50 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for solid fuel with rated output 400 MW and higher.
- b) The concentration of the solid pollutants in the waste gas shall not exceed the value  $100 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for solid fuel with rated output 50 MW to 400 MW.
- c) The concentration of the solid pollutants in the waste gas shall not exceed the value  $150 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for solid fuel with rated output 2 MW to 50 MW.
- d) Differently from the stipulation in the letter c) the concentration of the solid pollutants in the waste gas shall not exceed the value  $100 \text{ mg}\cdot\text{m}^{-3}$  for equipment for the fluid combustion of solid fuel with circulating and pressurised fluid bed with the rated output higher than 2 MW to 400 MW.
- e) The concentration of the solid pollutants in the waste gas shall not exceed the value  $250 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for solid fuel with rated output 0.2 MW to 2 MW, inclusively.

##### 1.5.2.2 Emission limit for the existing sources of pollution effective by 31<sup>st</sup> December 2009

- a) The concentration of the solid pollutants in the waste gas shall not exceed the value  $100 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for solid fuel with rated output 50 MW and higher.
- b) The concentration of the solid pollutants in the waste gas shall not exceed the value  $150 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for solid fuel with rated output 2 MW to 50 MW.
- c) For the combustion equipment for solid fuel with rated output 0.2 MW to 2 MW inclusively the emission limit for the solid pollutants is not set and the generally applicable emission limits do not apply either.
- d) Differently from the stipulation in the letter b) the concentration of the solid pollutants in the waste gas shall not exceed the value  $100 \text{ mg}\cdot\text{m}^{-3}$  for equipment for the fluid combustion of solid fuel with circulating and pressurised fluid bed with the rated output higher than 2 MW.

#### 1.5.3 Emission limit for sulphur oxides

##### 1.5.3.1 Emission limit for the new sources of pollution

- a) The concentration of the sulphur oxides expressed as sulphur dioxide in the waste gas shall not exceed the value  $400 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for solid fuel with rated output 400 MW and higher. If because of the high content of sulphur in the domestic fuel the value cannot be reached the emission level of the sulphur oxides shall not be higher than 10 per cent.
- b) For the combustion equipment for solid fuel with the rated output 140 MW and higher up to 400 MW the concentration of the sulphur oxides expressed as the sulphur dioxide in the waste gas shall not exceed the value calculated from the expression

$$EL = 2\,400 - 5 \times MTV$$

where EL is the emission limit [ $\text{mg}\cdot\text{m}^{-3}$ ]

MTV is the rated output [MWt]

If because of the high content of sulphur in the domestic fuel the value cannot be reached the emission level of the sulphur oxides shall not be higher than the value calculated from the expression

$$ES = 84 - 0.185 \times MTV$$

where ES is the emission level [%].

In such a case the concentration of the sulphur oxides expressed as the sulphur dioxide in the flue gas shall not exceed  $2,500 \text{ mg}\cdot\text{m}^{-3}$  at the same time.

- c) The concentration of the sulphur oxides expressed as sulphur dioxide in the waste gas shall not exceed the value  $1,700 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for solid fuel with rated output 400 MW and higher. If because of the high content of sulphur in the domestic fuel the value cannot be reached the emission level of the sulphur oxides shall not be higher than 60 per cent. In such a

case the concentration of the sulphur oxides expressed as the sulphur dioxide in the flue gas shall not exceed  $2,500 \text{ mg}\cdot\text{m}^{-3}$  at the same time.

- d) The concentration of the sulphur oxides expressed as sulphur dioxide in the waste gas shall not exceed the value  $2,500 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for solid fuel with rated output 0.2 MW up to 40 MW and the mass flow higher than  $10 \text{ kg}\cdot\text{h}^{-1}$ .
- e) Differently from the stipulation in the letters a) to d) the concentration of the sulphur oxides expressed as the sulphur dioxide pollutants in the waste gas shall not exceed the value  $400 \text{ mg}\cdot\text{m}^{-3}$  or the emission level shall not exceed 15 per cent for equipment for the fluid combustion of solid fuel with circulating and pressurised fluid bed with the rated output higher than 2 MW.

#### 1.5.3.2 Emission limit for the existing sources of pollution being effective by 31<sup>st</sup> December 2009

- a) The concentration of the sulphur oxides expressed as sulphur dioxide in the waste gas shall not exceed the value  $500 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for solid fuel with rated output 300 MW and higher. If because of the high content of sulphur in the domestic fuel the value cannot be reached the emission level of the sulphur oxides shall not be higher than 15 per cent.
- b) For the combustion equipment for solid fuel with the rated output 50 MW and higher up to 300 MW the concentration of the sulphur oxides expressed as the sulphur dioxide in the waste gas shall not exceed  $1,700 \text{ mg}\cdot\text{m}^{-3}$ . If because of the high content of sulphur in the domestic fuel the value cannot be reached the emission level of the sulphur oxides shall not be higher than 15 per cent. In such a case the concentration of the sulphur oxides expressed as the sulphur dioxide in the flue gas shall not exceed  $2,500 \text{ mg}\cdot\text{m}^{-3}$  at the same time.
- c) For the combustion equipment for solid fuel with the rated output 5 MW and higher up to 50 MW the concentration of the sulphur oxides expressed as the sulphur dioxide in the waste gas shall not exceed  $2,500 \text{ mg}\cdot\text{m}^{-3}$ .
- d) For the combustion equipment for solid fuel with the rated output 0.2 MW and higher up to 5 MW and the mass flow of the sulphur dioxide  $20 \text{ kg}\cdot\text{h}^{-1}$  the concentration of the sulphur oxides expressed as the sulphur dioxide in the waste gas shall not exceed  $2,500 \text{ mg}\cdot\text{m}^{-3}$ .
- e) Differently from the stipulation in the letters a) to d) the concentration of the sulphur oxides expressed as the sulphur dioxide pollutants in the waste gas shall not exceed the value  $400 \text{ mg}\cdot\text{m}^{-3}$  or the emission level shall not exceed 15 per cent for equipment for the fluid combustion of solid fuel with circulating and pressurised fluid bed with the rated output higher than 2 MW.

#### 1.5.3.3 Emission limit for the existing sources of pollution being effective after 1<sup>st</sup> January 2010

- a) The concentration of the sulphur oxides expressed as sulphur dioxide in the waste gas shall not exceed the value  $400 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for solid fuel with rated output 400 MW and higher. If because of the high content of sulphur in the domestic fuel the value cannot be reached the emission level of the sulphur oxides shall not be higher than 10 per cent.
- b) For the combustion equipment for solid fuel with the rated output 50 MW and higher up to 400 MW the concentration of the sulphur oxides expressed as the sulphur dioxide in the waste gas shall not exceed  $1,700 \text{ mg}\cdot\text{m}^{-3}$ . If because of the high content of sulphur in the domestic fuel the value cannot be reached the emission level of the sulphur oxides shall not be higher than 60 per cent. In such a case the concentration of the sulphur oxides expressed as the sulphur dioxide in the flue gas shall not exceed  $2,500 \text{ mg}\cdot\text{m}^{-3}$  at the same time.
- c) For the combustion equipment for solid fuel with the rated output 5 MW and higher up to 50 MW the concentration of the sulphur oxides expressed as the sulphur dioxide in the waste gas shall not exceed  $2,500 \text{ mg}\cdot\text{m}^{-3}$ .
- d) For the combustion equipment for solid fuel with the rated output 0.2 MW and higher up to 5 MW and the mass flow of the sulphur dioxide  $20 \text{ kg}\cdot\text{h}^{-1}$  the concentration of the sulphur oxides expressed as the sulphur dioxide in the waste gas shall not exceed  $2,500 \text{ mg}\cdot\text{m}^{-3}$ .
- e) Differently from the stipulation in the letters a) to d) the concentration of the sulphur oxides expressed as the sulphur dioxide pollutants in the waste gas shall not exceed the value  $400 \text{ mg}\cdot\text{m}^{-3}$  or the emission level shall not exceed 15 per cent for equipment for the fluid combustion of solid fuel with circulating and pressurised fluid bed with the rated output higher than 2 MW.

#### 1.5.3.4 Conditions for the keeping emission limit

Combustion equipment may be operated also in case of failure of the device reducing the sulphur dioxide emission if the period of time for such failure does not exceed 96 consequent hours and 360 hours at the total within a year.

#### 1.5.4 Emission limit for the nitrogen oxides

- a) The concentration of the nitrogen oxides expressed as the nitrogen dioxide in the waste gas shall not exceed the value  $550 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for solid fuel with rated output 50 MW and higher.
- b) The concentration of the nitrogen oxides expressed as the nitrogen dioxide in the waste gas shall not exceed the value  $650 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for solid fuel with rated output 0.2 MW to 50 MW.
- c) Differently from the stipulations in the letters a) and b) the concentration of nitrogen oxides expressed as the nitrogen dioxide in the waste gas shall not exceed  $1,100 \text{ mg}\cdot\text{m}^{-3}$  for the boilers with slag-tap furnace.
- d) Differently from the stipulation in the letter b) the concentration of the nitrogen oxides expressed as the nitrogen dioxide in the waste gas shall not exceed the value  $400 \text{ mg}\cdot\text{m}^{-3}$  for equipment for the fluid combustion of solid fuel with circulating and pressurised fluid bed with the rated output higher than 2 MW.

#### 1.5.5 Emission limit for carbon monoxide

##### 1.5.5.1 Emission limit for the new sources of pollution

- a) The concentration of the carbon monoxide in the waste gas shall not exceed the value  $250 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for solid fuel with rated output 50 MW and higher.
- b) The concentration of the carbon monoxide in the waste gas shall not exceed the value  $850 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for solid fuel with rated output 0.2 MW to 50 MW and the mass flow higher than  $5 \text{ kg}\cdot\text{h}^{-1}$ .

##### 1.5.5.2 Emission limit for the existing sources of pollution being effective by 31<sup>st</sup> December 2009

- a) The emission limit for the carbon monoxide is not set for combustion equipment for solid fuel and grate furnace of all types with the rated output 0.2 MW and higher up to 5 MW, inclusively.
- b) The concentration of the carbon monoxide in the waste gas shall not exceed the value  $1,100 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for solid fuel with grate furnace and overthrew rotor and with rated output 2 MW and higher.
- c) For other solid fuel combustion equipment that are not stipulated under the letters a), b) and having the rated output 0.2 MW and higher up to 5 MW, inclusively, and the mass flow  $5 \text{ kg}\cdot\text{h}^{-1}$  the concentration of the carbon monoxide in the waste gas shall not exceed  $850 \text{ mg}\cdot\text{m}^{-3}$ .
- d) For other solid fuel combustion equipment that are not stipulated under the letter b) and having the rated output higher than 5 MW, the concentration of the carbon monoxide in the waste gas shall not exceed  $850 \text{ mg}\cdot\text{m}^{-3}$ .

#### 1.5.6 Emission limit for organic compounds

##### 1.5.6.1 Emission limit for the new sources

When combusting wood, waste wood, bark, and other mass of the vegetable origin, respectively, at the equipment with the rated output 0.2 MW and higher the concentration of the organic compounds expressed as the total organic carbon in the waste gas shall not exceed  $50 \text{ mg}\cdot\text{m}^{-3}$ .

##### 1.5.6.2 Emission limit for the existing sources

When combusting wood, waste wood, bark, and other mass of the vegetable origin, respectively, at the equipment with the rated output higher than 5 MW the concentration of the organic compounds expressed as the total organic carbon in the waste gas shall not exceed  $50 \text{ mg}\cdot\text{m}^{-3}$ .

#### 1.5.7 Emission limits for other pollutants given in the Annex No. 1

The emission limits for other pollutants are not set and the generally applicable emission limits do not apply either. It is When carrying out the activities where dust emissions could be released and in facilities where the dusty compounds are produced, processed, unloaded, loaded or stored, all technical devices available for reasonable costs shall be used to reduce the dust emissions. necessary

to take use of all technical devices available for reasonable costs to reduce the emissions (e.g. combustion technique, selection of the fuel quality).

#### 1.6 Emission limits for the combustion of the liquid fuel

1.6.1 All emission limits stipulated in the par. 1.6 apply to the concentration calculated as for the dried gas under standard conditions 101.325 kPa and 0 degree C and for the oxygen content in the waste gas of 3 per cent by volume.

#### 1.6.2 Emission limit for solid pollutants

- a) The concentration of the solid pollutants in the waste gas shall not exceed the value  $50 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for liquid fuel with rated output 50 MW and higher.
- b) The concentration of the solid pollutants in the waste gas shall not exceed the value  $100 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for liquid fuel with rated output 0.2 MW to 50 MW.
- c) In case if the emission limits for the solid pollutants as mentioned under a) and b) are reached without precipitation the general emission limits being into force for the Group II of pollutants do not apply (Annex No. 3, Part II, par. 2).

#### 1.6.3 Emission limits for sulphur oxides

##### 1.6.3.1 Emission limits for the new sources of pollution

- a) The concentration of the sulphur oxides expressed as sulphur dioxide in the waste gas shall not exceed the value  $400 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for liquid fuel with rated output 435 MW and higher. If because of the high content of sulphur in the domestic fuel the value cannot be reached the emission level of the sulphur oxides shall not be higher than 10 per cent.
- b) For the combustion equipment for liquid fuel with the rated output 260 MW and higher up to 435 MW the concentration of the sulphur oxides expressed as the sulphur dioxide in the waste gas shall not exceed the value calculated from the expression

$$EL = 3\,630 - 7.425 \times MTV$$

where EL is the emission limit [ $\text{mg}\cdot\text{m}^{-3}$ ]

MTV is the rated output [MWt]

If because of the high content of sulphur in the domestic fuel the value cannot be reached the emission level of the sulphur oxides shall not be higher than 10 %.

- c) The concentration of the sulphur oxides expressed as sulphur dioxide in the waste gas shall not exceed the value  $1,700 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for liquid fuel with rated output 5 MW and higher up to 260 MW.

##### 1.6.3.2 Emission limit for the existing source of pollution effective by 31<sup>st</sup> December 2009

- a) The concentration of the sulphur oxides expressed as sulphur dioxide in the waste gas shall not exceed the value  $500 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for liquid fuel with rated output 300 MW and higher. If because of the high content of sulphur in the domestic fuel the value cannot be reached the emission level of the sulphur oxides shall not be higher than 15 per cent.
- b) For the combustion equipment for liquid fuel with the rated output 5 MW and higher up to 300 MW the concentration of the sulphur oxides expressed as the sulphur dioxide in the waste gas shall not exceed  $1,700 \text{ mg}\cdot\text{m}^{-3}$ .

##### 1.6.3.3 Emission limit for the existing source of pollution effective after 1<sup>st</sup> January 2010

- a) The concentration of the sulphur oxides expressed as sulphur dioxide in the waste gas shall not exceed the value  $400 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for liquid fuel with rated output 435 MW and higher. If because of the high content of sulphur in the domestic fuel the value cannot be reached the emission level of the sulphur oxides shall not be higher than 10 per cent.
- b) For the combustion equipment for liquid fuel with the rated output 5 MW and higher up to 435 MW the concentration of the sulphur oxides expressed as the sulphur dioxide in the waste gas shall not exceed  $1,700 \text{ mg}\cdot\text{m}^{-3}$

##### 1.6.3.4 Conditions for the keeping emission limit

Combustion equipment may be operated also in case of failure of the device reducing the sulphur dioxide emission if the period of time for such failure does not exceed 96 consequent hours and 360 hours at the total within a year.

- 1.6.3.5 General conditions for keeping the emission limit - limitation of the sulphur content in fuel  
The liquid fuel combustion equipment with the rated output 0.2 MW and higher up to 5 MW, inclusively, shall not combust fuel containing sulphur in amount higher than 1 per cent by mass. The limitation do not apply to the combustion of the own technological oils where the concentration of sulphur oxides in the waste gas shall not exceed  $1,700 \text{ mg}\cdot\text{m}^{-3}$ .
- 1.6.4 Emission limit for the nitrogen oxide
- The concentration of the nitrogen oxides expressed as the nitrogen dioxide in the waste gas shall not exceed the value  $450 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for liquid fuel with rated output 5 MW and higher.
  - The concentration of the nitrogen oxides expressed as the nitrogen dioxide in the waste gas shall not exceed the value  $500 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for liquid fuel with rated output 0.2 MW to 5 MW.
- 1.6.5 Emission limit for the carbon monoxide  
The concentration of the carbon monoxide in the waste gas shall not exceed the value  $175 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for liquid fuel with rated output 0.2 MW and higher.
- 1.6.6 Emission limit for the combustion of the used oil  
For the combustion of the used oils according to the par. 1.4 apply the emission limits for the principal pollutants according to par. 1.6.1 to 1.6.5 with the exception of the par. 1.6.2, letter c) which is not concerned by the combustion of the used oils. Further conditions for the combustion of the used oils shall be set by the environmental authority.
- 1.7 Emission limits for the combustion of the gaseous fuel
- 1.7.1 Conditions for the set up of the emission limits  
All emission limits stipulated in the par. 1.7 apply to the concentration calculated as for the dried gas under standard conditions 101.325 kPa and 0 degree C and for the oxygen content in the waste gas of 3 per cent by volume.
- 1.7.2 Emission limit for the solid pollutants
- The concentration of the solid pollutants in the waste gas shall not exceed the value  $10 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for gaseous fuel with rated output 0.2 MW and higher.
  - Differently from the stipulation in the letter a) the concentration of the solid pollutants in the waste gas shall not exceed the value  $50 \text{ mg}\cdot\text{m}^{-3}$  for equipment for the fluid combustion of industrial gases from the steel production.
- 1.7.3 Emission limit for the sulphur oxides  
The concentration of sulphur oxides expressed as the sulphur dioxide in the waste gas for the gaseous fuel combustion equipment with the rated output 0.2 MW shall not exceed
- $100 \text{ mg}\cdot\text{m}^{-3}$  for the combustion of industrial gases from the refineries;
  - $800 \text{ mg}\cdot\text{m}^{-3}$  for the combustion of low fuel value industrial gases (blast furnace gas, coking gas, sludge gas) and theirs mixtures;
  - $35 \text{ mg}\cdot\text{m}^{-3}$  for the combustion of other gases.
- 1.7.4 Emission limit for the nitrogen oxides  
The concentration of the nitrogen oxides expressed as the nitrogen dioxide in the waste gas shall not exceed the value  $200 \text{ mg}\cdot\text{m}^{-3}$  for the combustion equipment for gaseous fuel with rated output 0.2 MW and higher.
- 1.7.5 Emission limit for the carbon monoxide

The concentration of the carbon monoxide in the waste gas shall not exceed the value  $100 \text{ mg} \cdot \text{m}^{-3}$  for the combustion equipment for liquid fuel with rated output 0.2 MW and higher.

## 1.8 Combustion of several fuel kinds

### 1.8.1 Combustion of several fuel kinds at one equipment consequently

When combusted several kinds of fuel at one equipment in the way that only one kind of fuel is combusted at the same time, the emission limit for the fuel being actually combusted applies.

### 1.8.2 Combustion of several fuel kinds at one equipment simultaneously

#### 1.8.2.1 For the new sources of pollution

a) When several kinds of fuel are combusted at one equipment simultaneously the emission limit shall be set as the modified weighted mean of the emission limit set for the used fuel from the expression

$$EL_{\text{mix}, O_{\text{ref}}} = (20.95 - O_{\text{ref}}) / Q_{\text{celk}} \cdot [Q_i \cdot EL_i / (20.95 - O_{r,i}) + \dots + Q_n \cdot EL_n / (20.95 - O_{r,n})]$$

where

$Q_i$  is the heating output for the fuel i

$Q_{\text{celk}}$  is the total heating output

$EL_i$  is the emission limit for the given fuel and the refer. oxygen

$EL_{\text{mix}, O_{\text{ref}}}$  is the total emission limit

$O_{\text{ref}}$  is the reference oxygen content for the prevailing fuel according to the power input expressed in per cent by volume

$O_{r,i}$  is the reference oxygen content for the fuel "i" in per cent by volume

b) In case if the portion of the heating power input of one fuel is 70 per cent and more the emission limit for the fuel applies.

#### 1.8.2.2 For the existing source of pollution effective by 31<sup>st</sup> December 2009

When several fuel kinds are combusted simultaneously at one equipment the emission limit is determined by the fuel whose portion at the power input is the highest; each individual boiler is deemed to be such equipment.

### 1.8.3 Simultaneous combustion of several kinds of fuel at various types of stationary combustion equipment

If the waste gas is withdrawn within one source from several equipments or from groups of equipment through a common stack and if for the individual equipment or groups of equipment the emission limits are set by the Governmental Order, for the purpose of demonstration of the conditions for keeping the emission limits (Art. 9) the expression given at the par. 1.8.2.1 letter a) may be used.

## 2. Gas turbines

### 2.1 Conditions for the set up of the emission limits

All emission limits stipulated in the par. 2 apply to the concentration calculated as for the dried gas under standard conditions 101.325 kPa and 0 degree C and for the oxygen content in the waste gas of 3 per cent by volume.

### 2.2 Emission limit for the solid pollutants

The operation of the gas turbine should be conducted in the way that does not allow to produce the pollutants (black) in amounts

a) higher than the 3<sup>rd</sup> degree of the Bacharach's scale during the running-in and higher than the 2<sup>nd</sup> degree of the Bacharach's scale at the flue gas flow  $60,000 \text{ m}^3 \cdot \text{h}^{-1}$

b) higher then the 4<sup>th</sup> degree of the Bacharach's scale at the flue gas flow up to  $60,000 \text{ m}^3 \cdot \text{h}^{-1}$  and all operation modes.

- 2.3 Emission limit for sulphur dioxides  
Emission limit for the new sources of pollution  
The concentration of the sulphur dioxide in the waste gas for the liquid fuel containing sulphur shall not exceed  $600 \text{ mg}\cdot\text{m}^{-3}$ .  
Emission limit for the existing sources of pollution  
The concentration of the sulphur dioxide in the flue gas for the liquid fuel containing sulphur shall not exceed  $1,700 \text{ mg}\cdot\text{m}^{-3}$ .
- 2.4 Emission limit for the nitrogen oxides  
The concentration of the nitrogen oxides expressed as the nitrogen dioxide in the flue gas shall not exceed  
a)  $300 \text{ mg}\cdot\text{m}^{-3}$  for the flue gas flow  $60\,00 \text{ m}^3\cdot\text{h}^{-1}$  and higher  
b)  $350 \text{ mg}\cdot\text{m}^{-3}$  for the flue gas flow up to  $60\,00 \text{ m}^3\cdot\text{h}^{-1}$
- 2.5 Emission limit for the carbon monoxide  
The concentration of the carbon monoxide in the flue gas during the permanent operation mode shall not exceed  $100 \text{ mg}\cdot\text{m}^{-3}$ .
- 2.6 The integration of the boiler with the gas turbine - new sources  
In case of the introduction of the flue gas boiler downstream the gas turbine the emission limits and conditions of theirs set-up apply as for the gas turbines. In case of auxiliary run of the flue gas boiler with the power input higher than 30 per cent of the gas turbine the emission limit for the gas turbine and the flue gas boiler calculated from the expression given in the par. 1.8.2.1 letter a) shall be applied.

**3. General conditions for the operation of drying equipment or for other thermal treatment where the flue gas or the flame is in a direct contact with the medium to be heated - the limitation for the kind of fuel for the new sources**

The drying equipment or that is intended for other thermal treatment may combust only gaseous and liquid fuel with a sulphur content not exceeding 1 per cent by mass or the solid fuel with the specific sulphur content not higher than  $0.5 \text{ g}\cdot\text{MJ}^{-1}$ .

**4. Stationary piston combustion engine - new sources**

- 4.1 The conditions for the set-up of the emission limit  
All emission limits apply the standard conditions 101.325 kPa and 0 degree C and for the oxygen content in the waste gas of 5 per cent by volume. The emission limits do not apply to units intended for use in case of emergency.
- 4.2 Emission limit for the solid pollutants  
The concentration of the solid pollutants under the standard conditions in the Diesel engines combusting the liquid fuel shall not exceed  $130 \text{ mg}\cdot\text{m}^{-3}$ .
- 4.3 Emission limit for the nitrogen oxides  
The concentration of the nitrogen oxides expressed as the nitrogen dioxides shall not exceed
- |   |                                      |
|---|--------------------------------------|
| a) for the Diesel engines with the output |                                      |
| 0.2 MW and higher up to 3 MW              | $4,000 \text{ mg}\cdot\text{m}^{-3}$ |
| 3 MW and higher                           | $2,000 \text{ mg}\cdot\text{m}^{-3}$ |
| b) for other engines                      |                                      |
| four-stroke engine                        | $500 \text{ mg}\cdot\text{m}^{-3}$   |
| two-stroke engine                         | $800 \text{ mg}\cdot\text{m}^{-3}$ . |
- 4.4 Emission limit for the carbon monoxide  
The concentration of the carbon monoxide in the flue gas shall not exceed  $650 \text{ mg}\cdot\text{m}^{-3}$ .
- 4.5 General operating conditions - the limitation of the sulphur content in the fuel

The stationary combustion engines may combust gaseous and liquid fuel containing not more than 1 per cent by mass of sulphur.

## **5. Limitation for the level of pollution (fume darkness) for the sources with the rated heating output less than 0.2 MW - new sources**

- a) When the solid fuel is combusted in the equipment with the heating output less than 0.2 MW (small sources) the smoke shall not be darker than the second degree of the Ringelmann's scale or the opacity value shall not be less than 40 per cent when measured with the optical device. Exceptionally, the smoke may be darker than the stated values during the heating period in the cold state or in course of the shut down period that may be set by the manufacturer of the combustion equipment but not longer than 3 hours during the running-in and 30 minutes during the shut down procedure. Anyway the smoke may not be darker than the 3<sup>rd</sup> degree of the Ringelmann's scale or the opacity value higher than 60 per cent.
- b) When the solid fuel is combusted in the equipment with the heating output less than 0.2 MW (small sources) besides the conditions set under the previous paragraph the production of black shall not exceed the 4<sup>th</sup> degree according to the Bacharach's scale at any of the three consequently conducted tests and two of three consequently conducted tests shall not show a higher value than the 3<sup>rd</sup> degree according to Bacharach. While heating up the Bacharach's test is not carried out .

## **6. Production of coke**

### 6.1 Heating the coke-oven batteries

#### 6.1.1 Emission limit for the solid pollutants

The smoke released from the stack of the coke-oven battery shall be not darker than the 2<sup>nd</sup> degree of the Ringelmann's scale.

#### 6.1.2 Emission limit for the nitrogen oxides

The concentration of the nitrogen oxides in the flue gas of the heating gas expressed as the nitrogen dioxide shall not exceed the value 500 mg·m<sup>-3</sup>. The set up limit applies to the oxygen content in the flue gas in amount of 5 per cent.

#### 6.1.3 The limitation for the hydrogen monosulfide in the heating gas

The concentration of the hydrogen monosulfide in the heating gas shall not exceed 500 mg·m<sup>-3</sup>.

### 6.2 Preparation of the coke charge

#### 6.2.1 General conditions for the operation of the new sources

The emission of solid pollutants from all equipment parts and sites of production shall be reduced by using the technical measures available in relation to the reasonable costs (e.g. withdrawal, dust removal, sealing).

#### 6.2.2 Emission limit for solid pollutants

##### 6.2.2.1 Emission limit for the new sources of pollution

The concentration of solid pollutants in the waste gas shall not exceed 50 mg·m<sup>-3</sup>.

##### 6.2.2.2 Emission limit for the existing sources of pollution

The concentration of solid pollutants in the waste gas shall not exceed 100 mg·m<sup>-3</sup>.

### 6.3 Filling in the coking retort

#### 6.3.1 The filling gases shall be fed into the process gas or to another coking retort if such an education regarding the further processing to the crude tar is possible. Otherwise they shall be incinerated.

All outlets of the coke-oven batteries shall be sealed so that the portion of the smoking outlets of the total quantity of outlets at the coke-oven batteries does not exceed 10 per cent.

#### 6.3.2 Emission limit for the solid pollutants

The concentration of solid pollutants in the waste gas shall not exceed 50 mg·m<sup>-3</sup>.

### 6.4 Coke pushing

#### 6.4.1 General conditions for the operation of the new sources of pollution

Only entirely coked charge may be pushed. During the coke pushing the waste gas is to be withdrawn to the dedusting equipment.

#### 6.4.2 Emission limit for the solid pollutants

- 6.4.3 The total emission of the solid pollutants may not be higher than 0.035 kg per 1 ton of coke at the monthly mean.
- 6.5 Coke cooling down
- 6.5.1 General conditions for the operation of the new sources of pollution  
For the cooling down coke the procedures producing low emission level of the solid pollutants should be introduced, e.g. dry cooling.
- 6.5.2 Emission limit for the solid pollutants for the operation of the new sources of pollution  
The total emission of the solid pollutants during the dry cooling may not be higher than 0.02 kg per 1 ton of coke at the monthly mean.
- 6.5.3 Emission limit for the solid pollutants for the operation of the existing sources of pollution  
The general conditions for the operation and the emission limit for the solid pollutants as stipulated under 6.5.1 and 6.5.2 apply to the existing sources from the effective date 1<sup>st</sup> January 2015.
- 6.6 Coke sorting plants
- 6.6.1 General conditions for the operation of the new sources of pollution  
The coke crushers and sorters shall be dedusted and withdrawn.
- 6.6.2 Emission limit for the solid pollutants
- 6.6.2.1 Emission limit for the new sources of pollution  
The concentration of solid pollutants in the waste gas shall not exceed 50 mg·m<sup>-3</sup>.
- 6.6.2.2 Emission limit for the existing sources of pollution  
The concentration of solid pollutants in the waste gas shall not exceed 100 mg·m<sup>-3</sup>.
- 6.7 Chemical shops of the coking plants
- 6.7.1 General conditions for the operation of the new sources of pollution
- a) The equipment at the chemical plants shall be proofed against escaping for the volatile compounds into the ambient air
  - b) The objectionable water from the direct cooling of the gas may not be in a direct contact with the ambient air.
  - c) The coking gas at the output of the chemical plants may contain not more than 500 mg·m<sup>-3</sup> of the hydrogen sulphide.

## II. Metals manufacture and processing

### 1. Iron ore enrichment

- 1.1 Preparation of the charge for the agglomeration
- 1.1.1 General conditions for the operation of the new sources of pollution  
The emission of solid pollutants from all equipment parts and sites of production shall be reduced by using the technical measures available in relation to the reasonable costs (e.g. withdrawal, dust removal, sealing).
- 1.1.2 Emission limit for the solid pollutants
- 1.1.2.1 Emission limit for the new sources of pollution  
The concentration of solid pollutants in the waste gas shall not exceed 50 mg·m<sup>-3</sup>.
- 1.1.2.2 Emission limit for the existing sources of pollution  
The concentration of solid pollutants in the waste gas shall not exceed 100 mg·m<sup>-3</sup>.
- 1.2 Agglomeration
- 1.2.1 Emission limits for the individual pollutants  
The concentration of the individual pollutants in the waste gas from the agglomeration strands shall not exceed the following values:
- |   |                          |
|---|--------------------------|
| solid pollutants                                      | 100 mg·m <sup>-3</sup>   |
| sulphur oxides expressed as the sulphur dioxide       | 400 mg·m <sup>-3</sup>   |
| sulphur oxides in the processing of the sulphide ores | 1,000 mg·m <sup>-3</sup> |
| nitrogen oxides expressed as the nitrogen dioxide     | 400 mg·m <sup>-3</sup>   |
| carbon monoxide                                       | 6,000 mg·m <sup>-3</sup> |
| carbon monoxide in the processing the carbonated ores | 8,000 mg·m <sup>-3</sup> |

mercury in the gaseous state

1 mg·m<sup>-3</sup>

The given emission limits apply to the oxygen content in the waste gas being 19 per cent by volume.

### 1.3 Magnetisation agglomeration and its pelletizing in the rotary furnaces

#### 1.3.1 Emission limit for the solid pollutants

The concentration of solid pollutants in the waste gas shall not exceed 100 mg·m<sup>-3</sup>.

#### 1.3.2 Emission limit for the sulphur oxide

##### 1.3.2.1 Emission limit for the new sources

The concentration of the sulphur oxide expressed as the sulphur dioxide in the waste gas in the agglomeration of the sulphide ores shall not exceed 2,500 mg·m<sup>-3</sup>; if such value cannot be achieved without the desulphurisation the emission degree of the sulphur dioxide shall not exceed 60 per cent.

##### 1.3.2.2 Emission limit for the existing sources

The concentration of the sulphur oxide expressed as the sulphur dioxide in the waste gas in the agglomeration of the sulphide ores shall not exceed 3,500 mg·m<sup>-3</sup>.

### 1.4 Cooling, crushing, sorting and manipulation with the roasted ore

#### 1.4.1 General conditions for the operation of the new sources of pollution

The emission of solid pollutants from all equipment parts and sites of production shall be reduced by using the technical measures available in relation to the reasonable costs (e.g. withdrawal, dust removal, sealing).

#### 1.4.2 Emission limit for the solid pollutants

a) The concentration of the solid pollutants in the waste gas from the crushing, sorting and manipulation with the charge shall not exceed 50 mg·m<sup>-3</sup>.

b) The concentration of the solid pollutants in the waste gas from the cooling shall not exceed 100 mg·m<sup>-3</sup>.

## 2. Production of pig iron, blast furnaces

### 2.1 Transportation and manipulation with the blast furnace charge

#### 2.1.1 General conditions for the operation of the new sources of pollution

The emission of solid pollutants from all equipment parts and sites of production shall be reduced by using the technical measures available in relation to the reasonable costs (e.g. withdrawal, dust removal, sealing).

#### 2.1.2 Emission limit for the solid pollutants

##### 2.1.2.1 Emission limit for the new sources of pollution

The concentration of solid pollutants in the waste gas shall not exceed 50 mg·m<sup>-3</sup>.

##### 2.1.2.2 Emission limit for the existing sources of pollution

The concentration of solid pollutants in the waste gas shall not exceed 100 mg·m<sup>-3</sup>.

### 2.2 Casting

#### 2.2.1 General conditions for the operation of the new sources of pollution

The emission of solid pollutants from all equipment parts and sites of production shall be reduced by using the technical measures available in relation to the reasonable costs (e.g. withdrawal, dust removal, sealing).

#### 2.2.2 Emission limit for the solid pollutants

The concentration of solid pollutants in the waste gas shall not exceed 100 mg·m<sup>-3</sup>.

## 3. Steel production

### 3.1 Oxygen converters

#### 3.1.1 General conditions for the operation of the new sources of pollution

a) The emission of solid pollutants from all equipment parts and sites of production shall be reduced by using the technical measures available in relation to the reasonable costs (e.g. withdrawal, dust removal, sealing).

b) The converter gas shall be trapped for the further processing.

#### 3.1.2 Emission limit for the solid pollutants

##### 3.1.2.1 Emission limit for the new sources of pollution

The concentrations of the solid pollutants shall not exceed the following values

- a) in the waste gas from the converter 50 mg·m<sup>-3</sup>
  - b) in the waste gas from the withdrawal of the transportation and manipulation with the charge 100 mg·m<sup>-3</sup>
- 3.1.2.2 Emission limit for the existing sources of pollution
- a) in the waste gas from the converter 50 mg·m<sup>-3</sup>
  - b) in the waste gas from the withdrawal of the transportation and manipulation with the charge 100 mg·m<sup>-3</sup>
- 3.2 Electrical arc furnace, induction furnace and evacuating equipment
- 3.2.1 General conditions for the operation of the new sources of pollution
- a) The emission of solid pollutants from all equipment parts and sites of production shall be reduced by using the technical measures available in relation to the reasonable costs (e.g. withdrawal, dust removal, sealing).
  - b) When cutting metallic material for the charge by the oxygen lancing it is necessary to secure the dedusting and withdrawal of the waste gas as far as technically possible in relation to the reasonable costs.
- 3.2.2 Emission limits for the individual pollutants in the waste gas from the furnaces
- a) The concentration of the pollutants in the flue gas from the furnaces with the mass of the charge up to 20 tons shall not exceed the value
    - for the solid pollutants 75 mg·m<sup>-3</sup>
    - for the carbon monoxide 1,000 mg·m<sup>-3</sup>
    - for the nitrogen oxides expressed as the nitrogen dioxide 400 mg·m<sup>-3</sup>
  - b) The concentration of the pollutants in the flue gas from the furnaces with the mass of the charge 20 tons and higher shall not exceed the value
    - for the solid pollutants 50 mg·m<sup>-3</sup>
    - for the carbon monoxide 1,000 mg·m<sup>-3</sup>
    - for the nitrogen oxides expressed as the nitrogen dioxide 400 mg·m<sup>-3</sup>
- 3.2.3 Emission limit for the withdrawal from the transportation and manipulation
- 3.2.3.1 Emission limit for the new sources of pollution
- The concentration of the solid pollutants in the waste gas in the withdrawal from the transportation and manipulation with the charge and the cutting of the heavy metallic material by the oxygen lancing shall not exceed 50 mg·m<sup>-3</sup>.
- 3.2.3.2 Emission limit for the existing sources of pollution
- The concentration of the solid pollutants in the waste gas in the withdrawal from the transportation and manipulation with the charge and the cutting of the heavy metallic material by the oxygen lancing shall not exceed 100 mg·m<sup>-3</sup>.

#### 4. **Forgery technologies**

- 4.1 General conditions for the operation of the new sources of pollution
- a) The emission of solid pollutants from all equipment parts and sites of production shall be reduced by using the technical measures available in relation to the reasonable costs (e.g. withdrawal, dust removal, sealing).
  - b) The produced organic compounds in the manufacture of the cores and moulds shall be withdrawn and trapped.

#### 5. **Production of cast iron - cupola furnace**

- 5.1 General conditions for the operation of the new sources of pollution
- The emission of solid pollutants from all equipment parts and sites of production shall be reduced by using the technical measures available in relation to the reasonable costs (e.g. withdrawal, dust removal, sealing, using or incineration of the CO).

- 5.2 Emission limits for the individual pollutants from the cupola furnace
- a) The concentration of the pollutants in the flue gas from the furnaces with the melting capacity up to 10 tons per hour shall not exceed the value
- |  |                          |
|--|--------------------------|
| for the solid pollutants   | 100 mg·m <sup>-3</sup>   |
| for the carbon monoxide for the hot wind cupola furnace with the recuperator | 1,000 mg·m <sup>-3</sup> |
- b) The concentration of the pollutants in the flue gas from the furnaces with the mass of the charge 10 tons and higher shall not exceed the value
- |  |                          |
|--|--------------------------|
| for the solid pollutants   | 75 mg·m <sup>-3</sup>    |
| for the carbon monoxide for the hot wind cupola furnace with the recuperator | 1,000 mg·m <sup>-3</sup> |

5.3 Emission limit for the withdrawal from the transportation and manipulation

5.3.1 Emission limit for the new sources of pollution

The concentration of the solid pollutants in the waste gas for the withdrawal from the transportation, manipulation with the charge and from other equipment shall not exceed 50 mg·m<sup>-3</sup>.

5.3.2 Emission limit for the existing sources of pollution

The concentration of the solid pollutants in the waste gas for the withdrawal from the transportation, manipulation with the charge and from other equipment shall not exceed 100 mg·m<sup>-3</sup>.

## 6. Metallurgical secondary production (e. g. rolling mill plants, forging shops, wire-mills and other thermal treatment shops)

6.1 Emission limit for the solid pollutants

6.1.1 Emission limit for the new sources of pollution

The concentration of the solid pollutants in the waste gas from all equipment shall not exceed 50 mg·m<sup>-3</sup>.

6.1.2 Emission limit for the existing sources of pollution

The concentration of the solid pollutants in the waste gas from all equipment shall not exceed 100 mg·m<sup>-3</sup>.

6.2 Emission limit for the sulphur oxides

The concentration of the sulphur oxides expressed as the sulphur dioxide when the heating gas as the mixture of the blast furnace and coking gas shall not exceed 800 mg·m<sup>-3</sup>.

6.3 Emission limit for the nitrogen oxide

The concentration of the nitrogen oxides expressed as the nitrogen dioxide in the waste gas from the heating furnaces

a) without the air preheater shall not exceed 400 mg·m<sup>-3</sup>;

b) with the air preheater shall not exceed 800 mg·m<sup>-3</sup>.

6.4 Conditions of the keeping emission limit

The emission limits apply to the oxygen content in the waste gas 5 per cent by volume.

6.5 Emission limit for zinc

The concentration of zinc in the waste gas in the heating surface treatment for the oxygen content 19 per cent by volume shall not exceed 20 mg·m<sup>-3</sup>.

## 7. Manufacture and processing non-ferrous metals and ferro-alloys

7.1 General conditions for the operation of the new sources of pollution

The emission of solid pollutants from all equipment parts and sites of production shall be reduced by using the technical measures available in relation to the reasonable costs (e.g. withdrawal, dust removal, sealing).

7.2 Emission limit for the solid pollutants

7.2.1 Emission limit for the new sources of pollution

- a) The concentrations of the solid pollutants in the flue gas from the furnace units shall not exceed  $50 \text{ mg}\cdot\text{m}^{-3}$ .
  - b) The concentrations of the solid pollutants in the waste gas from the withdrawal of the transportation and manipulation with the charge units shall not exceed  $50 \text{ mg}\cdot\text{m}^{-3}$ .
- 7.2.2 Emission limit for the new sources of pollution
- a) The concentrations of the solid pollutants in the flue gas from the furnace units shall not exceed  $50 \text{ mg}\cdot\text{m}^{-3}$ .
  - b) The concentrations of the solid pollutants in the waste gas from the withdrawal of the transportation and manipulation with the charge units shall not exceed  $100 \text{ mg}\cdot\text{m}^{-3}$ .
- 7.3 Emission limit for the sulphur oxides in the production of copper
- 7.3.1 Emission limit for the new sources of pollution  
The concentration of the sulphur oxides expressed as the sulphur dioxide in the processing the sulphured waste gas to the sulphuric acid shall not exceed  $1,500 \text{ mg}\cdot\text{m}^{-3}$  at the measures to minimise the emission of  $\text{SO}_3$ .
- 7.3.2 Emission limit for the existing sources of pollution  
The general emission limit for the existing sources is applicable.
- 7.4 Common provisions  
The provisions as stipulated in the par. 7 do not apply to the production and processing of mercury and aluminium.

## 8. Production of mercury on the base of the fahl-ore concentrates

- 8.1 Emission limits for the individual pollutants
- a) The concentration of the solid pollutants in the waste gas shall not exceed  $50 \text{ mg}\cdot\text{m}^{-3}$ .
  - b) The concentration of metals shall not exceed for
 

ba) arsenic and its compounds expressed as As	$4 \text{ mg}\cdot\text{m}^{-3}$
bb) mercury and its compounds expressed as Hg	$7 \text{ mg}\cdot\text{m}^{-3}$
bc) antimony and copper and theirs compounds expressed as the sum of Sb + Co	$19 \text{ mg}\cdot\text{m}^{-3}$ .

## 9. Production of aluminium

- 9.1 Electrolysis
- 9.1.1 Emission limits for the individual pollutants
- a) The concentration of the solid pollutants in the waste gas withdrawn from the electrolyzers shall not exceed  $30 \text{ mg}\cdot\text{m}^{-3}$ .
  - b) The total emission of the solid pollutants including the withdrawal from the production facilities shall within a daily average shall not exceed 5 kg per 1 ton of aluminium.
  - c) The concentration of the fluorine compounds expressed as the hydrogen fluoride in the waste gas withdrawn from the electrolysis facilities shall not exceed 0.5 kg per 1 ton of aluminium.
- 9.2 Production of the aluminium oxide and carbon electrodes
- 9.2.1 Emission limits for the individual pollutants
- a) The concentration of the solid pollutants in the waste gas shall not exceed  $50 \text{ mg}\cdot\text{m}^{-3}$ .
  - b) The concentration of sulphur oxides expressed as the sulphur dioxide in the flue gas shall not exceed  $400 \text{ mg}\cdot\text{m}^{-3}$ .
  - c) The concentration of the nitrogen oxide expressed as the nitrogen dioxide in the flue gas from the rotary kilns shall not exceed
    - ca)  $1,300 \text{ mg}\cdot\text{m}^{-3}$  when the flue gas heat is reused;
    - cb)  $1,800 \text{ mg}\cdot\text{m}^{-3}$  when the flue gas heat is not reused.

## III. Production of the non-metallic mineral products

### 1. Production of cement

- 1.1 Conditions for keeping emission limits for the new sources of pollution

Emission limits apply to the oxygen content in the waste gas of 11 per cent by volume from the rotary case-hardening furnace.

1.2 Emission limit for the solid pollutants

- a) The concentration of the solid pollutants in the waste gas being produced at all operations shall not exceed  $50 \text{ mg}\cdot\text{m}^{-3}$ .
- b) The total emission of the solid pollutants shall not exceed 1.5 kg per 1 ton of the clinker at the monthly average.

1.3 Emission limit for the sulphur oxides

The concentration of the sulphur oxides expressed as the sulphur dioxide in the flue gas from the clinker firing shall not exceed  $400 \text{ mg}\cdot\text{m}^{-3}$ .

1.4 Emission limit for the nitrogen oxides

1.4.1 Emission limit for the new sources

The concentration of the nitrogen oxides expressed as the nitrogen oxide shall not exceed

- a) at the rotary kilns with the raw material preheater and the heat reuse  $1,300 \text{ mg}\cdot\text{m}^{-3}$
- b) at other furnaces  $1,500 \text{ mg}\cdot\text{m}^{-3}$ .

1.4.2 Emission limit for the existing sources of pollution

The concentration of the nitrogen oxides expressed as the nitrogen oxide shall not exceed

- a) at the rotary kilns with the heat reuse  $1,300 \text{ mg}\cdot\text{m}^{-3}$
- b) at the rotary kilns without the heat reuse  $1,800 \text{ mg}\cdot\text{m}^{-3}$
- c) at shaft furnaces  $1,500 \text{ mg}\cdot\text{m}^{-3}$ .

## 2. Production of lime

2.1 Conditions for keeping emission limits for the new sources of pollution

Emission limits apply to the oxygen content in the waste gas of 11 per cent by volume from the rotary lime furnace.

2.2 Emission limit for the solid pollutants

2.2.1 Emission limit for the new sources of pollution

- a) For all operations where the solid pollutants are produced with the exception of lime hydrate, the concentration of the solid pollutants in the waste gas shall not exceed  $50 \text{ mg}\cdot\text{m}^{-3}$ .
- b) The total emission of the solid pollutants shall not exceed 1.5 kg per 1 ton of the quick lime at the monthly average.

2.2.2 Emission limit for the existing sources of pollution

For all operations where the solid pollutants are produced with the exception of lime hydrate, the concentration of the solid pollutants in the waste gas shall not exceed  $50 \text{ mg}\cdot\text{m}^{-3}$ .

2.3 Emission limits for the nitrogen oxides

2.3.1 Emission limit for the new sources of pollution

The concentration of the nitrogen oxides in the waste gas from the calcining furnace shall not exceed  $1,500 \text{ mg}\cdot\text{m}^{-3}$ .

2.3.2 Emission limit for the existing sources of pollution

The concentration of the nitrogen oxides shall not exceed:

- a) at the rotary furnaces  $1,800 \text{ mg}\cdot\text{m}^{-3}$ ;
- b) at other furnaces  $1,500 \text{ mg}\cdot\text{m}^{-3}$ .

## 3. Precoating plants for bituminous mixtures and bitumen compounding

3.1 Conditions for keeping emission limits for the new sources of pollution

Emission limits apply to the oxygen content of 17 per cent by volume in the waste gas.

3.2 Emission limit for the solid pollutants

3.2.1 Emission limit for the new sources of pollution

For all operations where the solid pollutants the concentration of the solid pollutants in the waste gas shall not exceed  $30 \text{ mg}\cdot\text{m}^{-3}$ .

3.2.2 Emission limit for the existing sources of pollution

For all operations where the solid pollutants the concentration of the solid pollutants in the waste gas shall not exceed  $50 \text{ mg}\cdot\text{m}^{-3}$ .

3.3 Smoke darkness

The smoke escaping from the precoating plant shall not be more dark than the first degree of the Ringelmann's scale or the opacity value shall be higher than 20 per cent except for the first 10 minutes during the running-in of the process. During those 10 minutes the smoke shall not be darker than the third degree of the Ringelmann's scale or opacity value shall be higher than 60 per cent.

3.4 General conditions for operation – the limitation of the sulphur content in the fuel for the new sources of pollution

In the production of the bituminous mixtures the liquid fuel containing more than 1 per cent of sulphur or the solid fuel containing  $0.5 \text{ g}\cdot\text{MJ}^{-1}$  shall not be used.

**4. Production of magnesite**

4.1 Conditions for keeping emission limits for the new sources of pollution

Emission limits for the pollutants apply to the oxygen content in the waste gas of 11 per cent by volume from the rotary calcining furnace.

4.2 Emission limit for the solid pollutants

4.2.1 Emission limit for the new sources of pollution

a) For all operations where the solid pollutants are produced the concentration of the solid pollutants in the waste gas shall not exceed  $50 \text{ mg}\cdot\text{m}^{-3}$ .

b) The total emission of the solid pollutants shall not exceed 1.5 kg per 1 ton of the calcined magnesite at the monthly average.

4.2.2 Emission limit for the existing sources of pollution

For all operations where the solid pollutants are produced in the firing of the magnesite clinker, the concentration of the solid pollutants in the waste gas shall not exceed  $50 \text{ mg}\cdot\text{m}^{-3}$ .

4.3 Emission limit for the sulphur oxides

The concentration of the sulphur oxides expressed as the sulphur dioxide in the waste gas from the magnesite clinker firing shall not exceed  $400 \text{ mg}\cdot\text{m}^{-3}$ .

4.4 Emission limit for the nitrogen oxides

4.4.1 Emission limit for the new sources of pollution

The concentration of the nitrogen oxides expressed as the nitrogen dioxide in the waste gas from the calcining furnaces shall not exceed  $1,500 \text{ mg}\cdot\text{m}^{-3}$ .

4.4.2 Emission limit for the existing sources of pollution

The concentration of the nitrogen oxides expressed as the nitrogen dioxide shall not exceed

a) at the rotary furnaces  $1,800 \text{ mg}\cdot\text{m}^{-3}$ ;

b) at the shaft furnaces  $1,500 \text{ mg}\cdot\text{m}^{-3}$ .

**5. Manufacture of glass and glassware and glass fibres**

5.1 Emission limits setting conditions

All emission limits stipulated in the par. 5.1 to 5.5 apply to the dried flue gas under standard conditions 101.325 kPa and 0 degree C. They apply to the oxygen content in the waste gas of 17 per cent by volume for the continuous melting units and to the oxygen content in the waste gas of 17 per cent by volume for the discontinuous melting units.

5.2 Emission limit for the solid pollutants

5.2.1 Emission limit for the new sources of pollution

a) For all operations where the solid pollutants are produced, the concentration of the solid pollutants in the waste gas shall not exceed  $50 \text{ mg}\cdot\text{m}^{-3}$ .

b) The sum of concentrations of the solid pollutants may at the mass flow  $0.005 \text{ kg}\cdot\text{h}^{-1}$  and higher shall not exceed  $1 \text{ mg}\cdot\text{m}^{-3}$  for

- ba) arsenic
- chromium
- cadmium
- cobalt
- nickel
- selenium

at the mass flow  $0.025 \text{ kg}\cdot\text{h}^{-1}$  and higher shall not exceed  $5 \text{ mg}\cdot\text{m}^{-3}$  for

- bb) antimony
- tin
- manganese
- copper
- lead
- vanadium.

#### 5.2.2 Emission limit for the existing sources of pollution

a) For all operations where the solid pollutants are produced, the concentration of the solid pollutants in the waste gas shall not exceed

aa)  $100 \text{ mg}\cdot\text{m}^{-3}$  at the mass flow less than  $2.5 \text{ kg}\cdot\text{h}^{-1}$

ab)  $50 \text{ mg}\cdot\text{m}^{-3}$  at the mass flow  $2.5 \text{ kg}\cdot\text{h}^{-1}$  and higher.

b) The sum of concentrations of the solid pollutants may at the mass flow  $0.01 \text{ kg}\cdot\text{h}^{-1}$  and higher shall not exceed  $2 \text{ mg}\cdot\text{m}^{-3}$  for

- ba) arsenic
- chromium
- cadmium
- cobalt
- nickel
- selenium

at the mass flow  $0.05 \text{ kg}\cdot\text{h}^{-1}$  and higher shall not exceed  $5 \text{ mg}\cdot\text{m}^{-3}$  for

- bb) antimony
- tin
- manganese
- copper
- lead
- vanadium.

#### 5.4 Emission limit for the sulphur oxides

The concentration of the sulphur oxides expressed as the sulphur dioxide in the waste gas shall not exceed

a) for the fuel natural gas  $500 \text{ mg}\cdot\text{m}^{-3}$

b) for the fuel generator gas  $1,750 \text{ mg}\cdot\text{m}^{-3}$

#### 5.4 Emission limit for the nitrogen oxides

The concentration of the nitrogen oxides expressed as the nitrogen dioxide in the waste gas shall not exceed

a) for the recuperating continuous melting units  $1,600 \text{ mg}\cdot\text{m}^{-3}$

b) for the regenerating continuous melting units  $2,500 \text{ mg}\cdot\text{m}^{-3}$

c) for the discontinuous melting units  $1,100 \text{ mg}\cdot\text{m}^{-3}$ .

If for the quantity reason in view of the product the nitrate refining is necessary the concentration of the nitrogen oxides expressed as the nitrogen dioxide shall not exceed the double of the value as stipulated under a), b) and c).

#### 5.5 Emission limit for the fluorine compounds

##### 5.5.1 Emission limit for the new sources of pollution

The concentration of the fluorine compounds expressed as the hydrogen fluoride shall not exceed  $7 \text{ mg}\cdot\text{m}^{-3}$  at the mass flow  $0.05 \text{ kg}\cdot\text{h}^{-1}$  and higher.

##### 5.5.2 Emission limit for the existing sources of pollution

The concentration of the fluorine compounds expressed as the hydrogen fluoride shall not exceed  $10 \text{ mg}\cdot\text{m}^{-3}$  at the mass flow  $0.1 \text{ kg}\cdot\text{h}^{-1}$  and higher.

5.6 Emission limit for the chlorine compounds

5.6.1 Emission limit for the new sources of pollution

The concentration of the chlorine compounds expressed as the hydrogen chloride shall not exceed  $30 \text{ mg}\cdot\text{m}^{-3}$  at the mass flow  $0.03 \text{ kg}\cdot\text{h}^{-1}$  and higher.

5.6.2 Emission limit for the existing sources of pollution

The concentration of the chlorine compounds expressed as the hydrogen chloride shall not exceed  $50 \text{ mg}\cdot\text{m}^{-3}$  at the mass flow  $0.5 \text{ kg}\cdot\text{h}^{-1}$  and higher.

**6. Production of mineral fibres containing organic binders**

6.1 Emission limit for the new sources of pollution

The concentration of the solid pollutants in the waste gas in the withdrawal from the transportation and manipulation with the charge and the cutting of the heavy metallic material by the oxygen lancing shall not exceed  $50 \text{ mg}\cdot\text{m}^{-3}$ .

6.2 Emission limits for the cupola furnaces

The concentration of the pollutants in the basalt casting at the cupola furnaces shall not exceed

a)  $100 \text{ mg}\cdot\text{m}^{-3}$  of the solid pollutants in the waste gas

$1,100 \text{ mg}\cdot\text{m}^{-3}$  of the carbon monoxide

in the waste gas from the furnaces with the melting capacity up to  $10 \text{ t}\cdot\text{h}^{-1}$

b)  $75 \text{ mg}\cdot\text{m}^{-3}$  of the solid pollutants in the waste gas

$1,000 \text{ mg}\cdot\text{m}^{-3}$  of the carbon monoxide

in the waste gas from the furnaces with the melting capacity  $10 \text{ t}\cdot\text{h}^{-1}$  and higher.

6.3 Emission limits for the solid pollutants from sedimentation, hardening and drying mineral fibres containing organic binders

The concentration of the solid pollutants in the waste gas from sedimentation, hardening and drying mineral fibres containing organic binders shall not exceed  $75 \text{ mg}\cdot\text{m}^{-3}$ .

**7. Other industrial sources from the production of the mineral products**

7.1 General conditions for the operation of the new sources of pollution

The emission of solid pollutants from all equipment parts and sites of production shall be reduced by using the technical measures available in relation to the reasonable costs (e.g. withdrawal, dust removal, sealing).

7.2 Emission limit for the solid pollutants

7.2.1 Emission limit for the new sources of pollution

For all operations where the solid pollutants are produced, the concentration of the solid pollutants in the waste gas shall not exceed  $50 \text{ mg}\cdot\text{m}^{-3}$ .

7.2.2 Emission limit for the existing sources of pollution

The general emission limit for the existing sources is applicable.

**8. Firing equipment for the ceramic products using clay as the raw material**

8.1 Emission limit setting conditions

The emission limits apply as calculated to the oxygen content 18 per cent by volume in the waste gas.

8.2 Emission limits for the sulphur oxides

8.2.1 Emission limit for the new sources of pollution

a) When the content of sulphur in the input raw material is less than 0.12 per cent the concentration of the sulphur oxides in the waste gas expressed as the sulphur dioxide shall not exceed  $500 \text{ mg}\cdot\text{m}^{-3}$  at the mass flow  $10 \text{ kg}\cdot\text{h}^{-1}$ .

- b) When the content of sulphur in the input raw material is 0.12 per cent and higher the concentration of the sulphur oxides in the waste gas expressed as the sulphur dioxide shall not exceed  $1,500 \text{ mg}\cdot\text{m}^{-3}$  at the mass flow  $10 \text{ kg}\cdot\text{h}^{-1}$ .

#### 8.2.2 Emission limit for the existing sources of pollution

The general emission limit for the existing sources is applicable.

### IV. Chemical industry

#### 1. Chemical industry

##### 1.1 General conditions for the operation of the new sources of pollution

- a) Any kind of the end, technological and other waste gas containing chlorine must be brought in to the suitable equipment for dechlorination.
- b) It is necessary to central exhaustion and withdrawal of the waste gas from the working facilities.

##### 1.2 Emission limit for the chlorine

The concentration of the chlorine in the waste gas escaping from the dechlorination equipment shall not exceed  $6 \text{ mg}\cdot\text{m}^{-3}$ .

##### 1.3 Emission limit for the mercury

The emission of mercury in the exhausted gas from the electrolysis facilities shall not exceed 1.5 g of mercury per 1 ton of the produced chlorine at the yearly average.

#### 2. Production of the hydrogen chloride and hydrochloric acid

##### 2.1 Emission limit for the hydrogen chloride

- a) The concentration of the hydrogen chloride in the exhausted gases escaping from the waste gas washing shall not exceed  $25 \text{ mg}\cdot\text{m}^{-3}$ . At the same time, the emission of the hydrogen chloride in the production of the hydrochloric acid shall not exceed  $0.05 \text{ kg}\cdot\text{h}^{-1}$  per 1 ton of the hydrochloric acid (36 per cent by mass) at the monthly average.
- b) Emission limits as stipulated under a) apply to the following processes:
- ba) burning the chlorine at the hydrogen;
- bb) reaction of salts with the sulphuric acid (Mannheim's process, sulphate process);
- bc) chlorination of the organic compounds.

#### 3. Production of the sulphuric acid

##### 3.1 Emission limits for the sulphur oxides

The emission of the sulphur oxides expressed as the sulphur dioxide at the escaping gas shall not exceed 2.2 kg per ton of the produced sulphuric acid at the yearly average (as calculated for the sulphuric acid to 100 per cent).

#### 4. Production of ammonia and urea

##### 4.1 Emission limit for the ammonia

The emission of the ammonia expressed as the nitrogen dioxide at the escaping gas shall not exceed 0.2 kg per ton of the produced ammonia at the yearly average. The emission of the ammonia is monitored before firing escaping gases within the technological preheating or at the field burner.

#### 5. Production of the nitric acid

##### 5.1 Emission limit for the nitrogen oxides

The concentration of the nitrogen oxides expressed as the nitrogen oxide in the waste gas shall not exceed  $300 \text{ mg}\cdot\text{m}^{-3}$ .

##### 5.2 Emission limit for the ammonia

If the catalytic reduction of the nitrogen oxides with ammonia is used to drop the emission of the nitrogen oxides the concentration of the ammonia in the waste gas shall not exceed  $300 \text{ mg}\cdot\text{m}^{-3}$ .

## **6. Production of sulphur (Claus' process)**

- 6.1 General conditions for the operation of the new sources of pollution  
The waste gas containing the hydrogen sulphide shall be additionally burnt.
- 6.2 Emission limit for the hydrogen sulphide  
The concentration of the hydrogen sulphide in the waste gas shall not exceed  $10 \text{ mg}\cdot\text{m}^{-3}$ .
- 6.3 Emission limit for the sulphur compound
- The sulphur emission degree at the equipment with the daily capacity up to 10 tons of sulphur, inclusively, shall not exceed 6 per cent.
  - The sulphur emission degree at the equipment with the daily capacity 10 tons to 20 tons of sulphur, inclusively, shall not exceed 3 per cent.
  - The sulphur emission degree at the equipment with the daily capacity 20 tons to 50 tons of sulphur, inclusively, shall not exceed 2 per cent.
  - The sulphur emission degree at the equipment with the daily capacity 50 tons and higher of sulphur, inclusively, shall not exceed 1 per cent.

## **7. Production and processing of viscose**

- 7.1 General conditions for the operation of the new sources of pollution
- The waste gas from the manufacture of the viscose, the preparation of the repulping bath and, if technically available, also from other operations shall be withdrawn into trapping equipment or to the disposal of the waste gas. It is necessary to take use of all technical devices available for reasonable costs for their erection and operation to reduce the emissions.
  - The spinning machines shall be cowed if the operation is continuous and the waste gas shall be withdrawn to the gas wash.
  - When diverting the sewage water containing the hydrogen sulphide and carbon disulphide, it is necessary to take use of all technical devices available for reasonable costs to reduce the emissions.
- 7.2 Emission limits for individual pollutants
- The concentration in the waste gas from the disposal shall not exceed
    - $10 \text{ mg}\cdot\text{m}^{-3}$  for the hydrogen sulphide;
    - $100 \text{ mg}\cdot\text{m}^{-3}$  for the carbon disulphide.
  - The total emission including the withdrawal from the manufacturing facilities and the auxiliary withdrawal at the spinning machines shall not exceed
    - $50 \text{ mg}\cdot\text{m}^{-3}$  for the hydrogen sulphide
    - $150 \text{ mg}\cdot\text{m}^{-3}$  for the carbon disulphide from the production of staple rayon and foil;
    - $400 \text{ mg}\cdot\text{m}^{-3}$  for the carbon disulphide from the manufacture of rayon cord.
- 7.3 General conditions for the operation of the existing sources of pollution  
The general conditions for the operation as stipulated under 7.1 letter a) and b) apply to the existing sources from the effective date 1<sup>st</sup> January 1999.

## **8. Production of polyvinyl chloride (PVC)**

- 8.1 General conditions for the operation of the new sources of pollution  
The waste gas containing the vinyl chloride shall be withdrawn to the gas wash or to the thermal disposal.
- 8.2 Emission limit for the vinyl chloride
- The concentration of the vinyl chloride in the waste gas from the gas wash or disposal shall not exceed  $5 \text{ mg}\cdot\text{m}^{-3}$ .
  - The concentration of the residual vinyl chloride at the site of the changeover from the closed system to the treatment or drying within an open system shall not exceed
    - $10 \text{ mg VC per kg PVC}$  in the final product;
    - $100 \text{ mg VC per kg PVC}$  in the suspension of the homo-polymer;

- bc) 400 mg VC per kg of the copolymer in the suspension of the copolymer;
- bd) 1,500 mg of VC per kg PVC in the suspension of the micro-polymer and the emulsion of the polymer  
at the monthly average.

## 9. Mineral oil refineries, petrochemical oil treatment and the distribution stores for the refinery and petrochemical products

### 9.1 General conditions for the operation of the new sources of pollution

#### 9.1.1 Storage and repumping

- a) When storing liquid organic compounds with the vapour pressure higher than 1.32 kPa (13 mbar) at 20°C to 76 kPa at the operation temperature it is necessary
  - to use the storing vessels with floating roof;
  - to provide the hard roof with the inner floating membrane with sealing;
  - to ensure the withdrawal of gases from the vessels with hard roof to recover or dispose of them;
  - to carry out other measures that are similar with their effect.

Such measures shall ensure the reduction of the emission by at least 90 per cent if compared to the vessels with hard roof without floating level cover. In case of vapour withdrawal from the vessel to dispose of them the emission degree shall not exceed 5 per cent and higher (i. e. the efficiency 95 per cent and higher). For petrol and similar oil products having the vapour pressure 15.4 kPa and higher at the temperature 20°C (according to Reid 27.6 kPa and higher) the concentration of the hydrocarbons shall not exceed 35 mg·m<sup>-3</sup> in the gas from the vapour recovery unit.

- b) When repumping the organic liquids named under a) as e. g. tapping from the tank cars or tank trucks, filling the reservoirs from the storage tanks or other repumping it is necessary to take special measures like recycle of the gaseous phase, conduit of the exhausted gases to the disposing facilities or other similar measures. For petrol and similar oil products having the vapour pressure 15.4 kPa and higher at the temperature 20°C (according to Reid 27.6 kPa and higher) the concentration of the hydrocarbons shall not exceed 35 mg·m<sup>-3</sup> in the gas from the vapour recovery unit.
- c) Measures to reduce the emissions in course of storage shall be accomplished for each vessel with the volume 1000 m<sup>3</sup> and higher or for the yearly turn-over 10,000 m<sup>3</sup> and higher.
- d) The ventilation of vessels shall be reduced as much as possible, e.g. through the drop of the temperature variation of the volume of the vessel by using the appropriate insulation or reflected painting having the radiated heat reflectivity 70 per cent.
- e) For the purpose of repumping the sealed pumps without drips, e.g. mechanically sealed pumps, shall be used.
- f) When storing the liquids containing compounds of the Subgroup 1, Group I, see Annex No. 1, in higher amounts than 10 mg·kg<sup>-1</sup> or those compounds of the subgroups 2 and 3, Group I, and those of the Subgroup 1, Group IV according to the Annex No. 1, respectively, in amounts higher than 5 per cent, the vessels with hard roof and forced ventilation shall be envisaged, and the withdrawn gases and vapours shall be exhausted to the gas trap system or to the firing, if the expected values for the emission flow exceed the values given in the Annex No. 3 on the generally applicable emission limits.

#### 9.1.2 Fittings for pressure unload and discharging devices

Such gases and vapours escaping from the pressure unloading and discharging devices shall be exhausted to the gas trap system. It does not apply to cases of emergency and fire and for those when a pressure increase is caused by the polymerisation or other similar reasons. The trapped gases shall be burnt at the technological furnaces; if not possible, they shall be supplied to the field burner.

#### 9.1.3 Take-off of the waste gas

The waste gas from the technological devices being produced during the current run and also waste gases from the regeneration of the catalyst recovery shall be exhausted to the final burning or similar measures shall be accomplished to reduce emissions.

#### 9.1.4 Start and shut down of the production

Gases being produced during the start and shut down of the production shall be exhausted to the gas trap system. If not possible, if not possible, they shall be supplied to the field burner.

#### 9.1.5 Hydrogen sulphide

a) The gas from the desulphurisation equipment of other equipment containing the hydrogen sulphide in amounts higher than 0.4 per cent by volume and the mass flow of the hydrogen sulphide higher than 2 tons a day shall be processed.

Such gases that are not processed more shall be withdrawn to the final burning and the concentration of the hydrogen sulphide shall not exceed  $10 \text{ mg}\cdot\text{m}^{-3}$ .

The process and sewage water containing the hydrogen sulphide shall be drained off to avoid the emission of the hydrogen sulphide into ambient air.

b) The gases from the evacuation systems containing besides the hydrogen sulphide also smelling heterocyclic sulphur and nitrogen compounds may be burnt in the process furnaces. The concentration of the sulphur oxides expressed as the sulphur dioxide in the waste gas shall not exceed  $800 \text{ mg}\cdot\text{m}^{-3}$ .

#### 9.1.6 Chemically contaminated sewage water

The sewage water treatment plants to which the contaminated sewage water is drained off shall be covered and the withdrawn gases shall be drawn off to the gas wash. The measure applies to the capacity of the water treatment plant  $200 \text{ m}^3\cdot\text{h}^{-1}$  and higher. The emission degree of the organic compounds shall not exceed 20 per cent (the efficiency of the gas wash equipment shall be at least 80 per cent).

#### 9.1.7 Monitoring of the escaping organic compounds

It is necessary to regularly carry out the monitoring of the escaping volatile organic compounds, from the pumps and fittings in particular, and in case of such escape discovered, the repairing measures shall be taken immediately.

#### 9.2 General conditions for the operation of the existing sources:

a) The provisions of the par. 9.1.1. letter a) to c) apply to the existing sources from 1<sup>st</sup> January 2010

b) The provisions of the par. 9.1.15. letter b) apply to the existing sources from 1<sup>st</sup> April 1996

#### 9.3 Emission limits for the individual pollutants and processes

##### 9.3.1 Emission limit for the organic compounds

If gases are burnt in the field burner during the start-up or shut-off of the equipment, the emission degree of the organic compounds expressed as the total organic carbon shall not exceed 1 per cent.

##### 9.3.2 Emission limit for the hydrogen sulphide

The concentration of the hydrogen sulphide in the waste gas shall not exceed  $10 \text{ mg}\cdot\text{m}^{-3}$ .

##### 9.3.3 Emission limit for the catalytic pyrolyse - for the new sources of pollution

The emission of the individual pollutants in the waste gas from the regeneration of the catalyst recovery from the catalytic pyrolyse at the process of the fluidised bed shall not exceed

a)  $50 \text{ mg}\cdot\text{m}^{-3}$  for the solid pollutants;

b)  $700 \text{ mg}\cdot\text{m}^{-3}$  for the nitrogen oxides expressed as the nitrogen dioxide;

c)  $1,700 \text{ mg}\cdot\text{m}^{-3}$  for the sulphur oxides expressed as the sulphur dioxide.

### 10. Petrol filling stations

#### 10.1 Applicability of the conditions for operation

The General conditions for the operation apply to facilities and the operation of the filling stations with a capacity  $1,000 \text{ m}^3$  and higher of the petrol a year.

#### 10.1.2 Filling-in the storage vessels with the petrol

The inlet for the liquid to the vessel shall be situated at the bottom of the vessel or similar measure shall be conducted. The vapours pushed out of the vessels shall be recirculated to the equipment by means of which the vessels is being filled-in during the operation safety is given. If the pushed vapour during the filling-in of the vessel cannot be recirculated, they shall be drawn to a recovery or equipment or disposal of them while the emission degree of the hydrocarbons from the disposing or recovery equipment shall not exceed 5 per cent (i.e. the efficiency of the equipment shall not be less

than 95 per cent) or by means of another equivalent way, or by another way to reach the a. m. degree of cleaning at reasonable costs.

- 10.1.3 Filling-in of the fuel tanks at vehicles with the petrol  
The stand pumps for the filling-in of the fuel tanks at vehicles shall be erected and operated in such a way that the pushed out vapour of the hydrocarbons are at recirculated to the storage vessels according to the state of art and at reasonable costs. If a negative pressure is used to withdraw the vapour, the ratio by volume of the mixture containing the hydrocarbon vapour and the air shall not exceed 1.05.
- 10.2 General conditions for the operation of the existing sources:  
The General conditions for the operation according to the par. 10.1.1 to 10.1.3 apply to the existing sources from 1<sup>st</sup> January 2010.

## **11. Production of cellulose**

- 11.1 General conditions for the operation of the new sources of pollution  
In the production of cellulose it is necessary to make use of all available technical possibilities in relation to the reasonable costs aimed at the trapping and disposal of the smelling compounds (those containing the reduced sulphur) from the individual sources (e.g. from the boiling plant, evaporating unit, exhausting column) using the local or central withdrawal system to trap them and dispose of them.
- 11.2 Emission limits for the individual pollutants from the burning of limes from the pulp production
- 11.2.1 Sulphite method and neutral-sulphite method of production:  
100 mg·m<sup>-3</sup> for solid pollutants  
700 mg·m<sup>-3</sup> for the sulphur dioxide  
400 mg·m<sup>-3</sup> for the hydrogen sulphide
- 11.2.2 Sulphate production method:  
100 mg·m<sup>-3</sup> for solid pollutants  
450 mg·m<sup>-3</sup> for the sulphur dioxide  
300 mg·m<sup>-3</sup> for the hydrogen sulphide  
20 mg·m<sup>-3</sup> for sulphur expressed as H<sub>2</sub>S
- 11.2.3 Conditions for the set-up of the limits  
The emission limits given in the par. 11.2.1 and 11.2.2 apply to the oxygen content of 11 per cent by volume.

## **12. Production of pesticides**

- 12.1 Emission limit for the solid pollutants
- 12.1.1 Emission limit for the new sources of pollution  
The concentration of the solid pollutants containing the active compounds in the waste gas shall not exceed 5 mg·m<sup>-3</sup>.
- 12.1.2 Emission limit for the existing sources of pollution  
The general limit being in force applies to the existing sources.

## **13. Manufacture of fertilizers**

- 13.1 Emission limit for the solid pollutants
- 13.1.1 Emission limit for the new sources of pollution  
The concentration of the solid pollutants in the waste gas from all process operations shall not exceed 75 mg·m<sup>-3</sup>.
- 13.1.2 Emission limit for the existing sources of pollution  
The general limit being in force applies to the existing sources.

## **14. Equipment for the manufacture and processing carbonaceous material**

- 14.1 General conditions for the operation of the new sources of pollution  
The emission of the organic pollutants from thermal processes used in the manufacture of the carbonaceous material shall be limited according to the technical measures available at the reasonable costs (e.g. withdrawal and disposal).

- 14.2 Emission limit for the solid pollutants
- 14.2.1 Emission limit for the new sources of pollution  
For all operations where the solid pollutants are produced their concentration in the waste gas shall not exceed  $50 \text{ mg}\cdot\text{m}^{-3}$ .
- 14.2.2 Emission limit for the existing sources of pollution  
The general limit being in force applies to the existing sources.
- 14.3 Emission limit for the gaseous organic compounds in the manufacture of the carbonaceous material by burning
- 14.3.1 Emission limit for the new sources of pollution
- 14.3.1.1 Mixing and forming  
The concentration of the organic compounds expressed as the total carbon in the flue gas from the mixing and forming devices where pitch, tars and similar organic volatile products as binders are used, shall not exceed  $100 \text{ mg}\cdot\text{m}^{-3}$ .
- 14.3.1.2 Burning
- a) The concentration of the organic compounds expressed as the total organic carbon in the flue gas from the chamber furnace and tunnel furnace shall not exceed  $50 \text{ mg}\cdot\text{m}^{-3}$ ;
- b) The concentration of the organic compounds expressed as the total organic carbon in the flue gas from the rotary furnace for the burning of the graphite and carbon electrodes shall not exceed  $200 \text{ mg}\cdot\text{m}^{-3}$ .
- 14.3.1.3 Impregnation  
The concentration of the organic compounds expressed as the total organic carbon in the waste gas from the impregnation equipment shall not exceed  $50 \text{ mg}\cdot\text{m}^{-3}$ .
- 14.3.2 Emission limit for the existing sources of pollution  
The general limit being in force applies to the existing sources.
- V. WASTE TREATMENT AND DISPOSAL**
- 1. Incineration of the municipal waste**
- 1.1 General conditions for the operation of the new sources of pollution
- a) For all incineration equipment for the municipal waste the storage container shall be made capable to maintain the negative pressure and, in such a way, the withdrawn air shall be supplied to the furnace. If the incineration equipment is out of operation, the air withdrawn from the waste storage container shall be conveyed to the blow pipe approved by the environmental body.
- b) All equipment's components for the municipal waste incineration shall guarantee the temperature not less than  $850^{\circ}\text{C}$  during 2 seconds at least at the combustion chamber beyond the last air intake and that at the oxygen content in the flue gas not less than 6 per cent by volume. In case of special incineration equipment, such as e.g. furnace for pyrolysis or others, the conditions for the incineration shall be set by the individual environmental body.
- c) The device shall be made to ensure the sufficient retention time of the incinerated waste in the combustion chamber to completely burn out.
- d) The waste can be added to the combustion chamber at the time and amounts in order to keep the conditions according to letter b).
- 1.2 Emission limit for the municipal waste incineration
- 1.2.1 Emission limits setting conditions  
All emission limits set forth for the municipal waste incineration plants apply to the concentrations calculated as for the dried gas under standard conditions  $101.325 \text{ kPa}$  and  $0^{\circ}\text{C}$  and for the oxygen content in the waste gas of 11 per cent by volume, for the equipment with the throughput higher than 1 ton, and of 17 per cent by volume, for the equipment with the throughput 1 ton and less, respectively.
- 1.2.2 Emission limits for the municipal waste incineration plants with the throughput up to 1 ton of the incinerated waste per hour  
For the municipal waste incineration plants with the throughput up to 1 ton of the incinerated waste per hour the concentration of the individual pollutants in the flue gas shall not exceed
- a)  $50 \text{ mg}\cdot\text{m}^{-3}$  for the solid pollutants;
- b)  $100 \text{ mg}\cdot\text{m}^{-3}$  for the carbon monoxide;
- c)  $20 \text{ mg}\cdot\text{m}^{-3}$  for the organic compounds expressed as the total organic carbon;

- d)  $30 \text{ mg}\cdot\text{m}^{-3}$  for the hydrocarbon.
- 1.2.3 Emission limits for the municipal waste incineration plants with the throughput 1 ton and higher of the incinerated waste per hour  
For the municipal waste incineration plants with the throughput 1 ton and higher of the incinerated waste per hour the concentration of the individual pollutants in the flue gas shall not exceed
- $30 \text{ mg}\cdot\text{m}^{-3}$  for the solid pollutants;
  - $100 \text{ mg}\cdot\text{m}^{-3}$  for the carbon monoxide;
  - $20 \text{ mg}\cdot\text{m}^{-3}$  for the organic compounds expressed as the total organic carbon;
  - $300 \text{ mg}\cdot\text{m}^{-3}$  for the sulphur oxides expressed as the sulphur dioxide; if such limit cannot be reached without desulphurisation, the emission degree of the sulphur oxides shall not exceed 30 per cent;
  - $350 \text{ mg}\cdot\text{m}^{-3}$  for the nitrogen oxides expressed as nitrogen dioxide;
  - $30 \text{ mg}\cdot\text{m}^{-3}$  for the gaseous chlorine compounds expressed as the hydrogen chloride;
  - $2 \text{ mg}\cdot\text{m}^{-3}$  for the gaseous fluorine compounds expressed as the hydrogen fluoride;
  - for the metals occurring in the flue gas in the solid, liquid and gaseous phase
    - for the new sources of pollution
      - mercury, thallium, cadmium total  $0.2 \text{ mg}\cdot\text{m}^{-3}$ ;
      - arsenic, nickel, chromium, cobalt total  $1.0 \text{ mg}\cdot\text{m}^{-3}$ ;
      - lead, copper, manganese total  $5.0 \text{ mg}\cdot\text{m}^{-3}$ ;
    - for the existing sources of pollution
      - mercury, thallium, cadmium total  $0.2 \text{ mg}\cdot\text{m}^{-3}$ ;
      - arsenic, nickel, chromium, cobalt total  $2.0 \text{ mg}\cdot\text{m}^{-3}$ ;
      - lead, copper, manganese total  $5.0 \text{ mg}\cdot\text{m}^{-3}$ ;
- 1.2.4 For the municipal waste incineration plants with the throughput 3 tons and higher of the incinerated waste per hour  
Differently from the stipulation in the par. 1.2.3 letter a), d), f), and g) for the municipal waste incineration plants with the throughput 3 tons and higher of the incinerated waste per hour, the concentration of the pollutants in the flue gas exceed
- $20 \text{ mg}\cdot\text{m}^{-3}$  for the ~~30~~  $30 \text{ mg}\cdot\text{m}^{-3}$  for the solid pollutants;
  - $100 \text{ mg}\cdot\text{m}^{-3}$  for the sulphur oxides expressed as the sulphur dioxide; if such limit cannot be reached without desulphurisation, the emission degree of the sulphur oxides shall not exceed 10 per cent;
  - $15 \text{ mg}\cdot\text{m}^{-3}$  for the gaseous chlorine compounds expressed as the hydrogen chloride;
  - $1 \text{ mg}\cdot\text{m}^{-3}$  for the gaseous fluorine compounds expressed as the hydrogen fluoride;

## 2. Incineration of the special and hazardous waste

- 2.1 General conditions for the operation of the new sources of pollution
- For all incineration equipment for the special and hazardous waste the storage container for the solid waste shall be made capable to maintain the negative pressure and, in such a way, the withdrawn air shall be supplied to the furnace. In case of liquid waste the air withdrawn from the pumping site and the container ventilation site shall be led to the combustion chamber. If the incineration equipment is out of operation, the air withdrawn from the waste storage container shall be spread out at the height approved by the environmental body.
  - All equipment for the special and hazardous waste incineration shall be equipped with the additional combustion. The temperature giving the guarantee for the thermal and oxidising destruction of all hazardous escaping compounds but not less than  $900^\circ\text{C}$  during 2 seconds at least at the combustion chamber beyond the last air intake and that at the oxygen content in the flue gas not less than 6 per cent by volume, and 3 per cent by volume for the liquid waste, respectively. In case of special incineration equipment, such as e.g. furnace for pyrolysis or others, the conditions for the incineration shall be set by the individual environmental body.
  - When special and hazardous waste containing the highly stable organic compounds such as e.g. polychlorinated biphenyls (PCB) is incinerated, the temperature not less than  $1,200^\circ\text{C}$  during the retention time for the flue gas of 2 seconds at least at the combustion chamber beyond the last air intake and that at the oxygen content in the flue gas not less than 6 per cent by volume, and 3 per cent by volume for the liquid waste, respectively, shall be maintained.

- 2.2 Emission limits for the incineration of special and hazardous waste
- 2.2.1 All emission limits for the special and hazardous waste incineration equipment apply to the concentration calculated as for the dried gas under standard conditions 101.325 kPa and 0 degree C and for the oxygen content in the waste gas of 11 per cent by volume.
- 2.2.2 Emission limits for the individual pollutants  
For the special and hazardous waste incineration plants the concentration of the individual pollutants in the flue gas shall not exceed
- a) 30 mg·m<sup>-3</sup> for the solid pollutants;
  - b) 100 mg·m<sup>-3</sup> for the carbon monoxide;
  - c) 20 mg·m<sup>-3</sup> for the organic compounds expressed as the total organic carbon;
  - d) 300 mg·m<sup>-3</sup> for the sulphur oxides expressed as the sulphur dioxide; if such limit cannot be reached without desulphurisation, the emission degree of the sulphur oxides shall not exceed 10 per cent;
  - e) 500 mg·m<sup>-3</sup> for the nitrogen oxides expressed as nitrogen dioxide;
  - f) 30 mg·m<sup>-3</sup> for the gaseous chlorine compounds expressed as the hydrogen chloride;
  - g) 2 mg·m<sup>-3</sup> for the gaseous fluorine compounds expressed as the hydrogen fluoride;
  - h) for the metals occurring in the flue gas in the solid, liquid and gaseous phase
    - ha) for the new sources of pollution
      - mercury, thallium, cadmium total 0.2 mg·m<sup>-3</sup>;
      - arsenic, nickel, chromium, cobalt total 1.0 mg·m<sup>-3</sup>;
      - lead, copper, manganese total 5.0 mg·m<sup>-3</sup>;
    - hb) for the existing sources of pollution
      - mercury, thallium, cadmium total 0.2 mg·m<sup>-3</sup>;
      - arsenic, nickel, chromium, cobalt total 2.0 mg·m<sup>-3</sup>;
      - lead, copper, manganese total 5.0 mg·m<sup>-3</sup>;
- 2.2.3 For the municipal waste incineration plants with the throughput 3 tons and higher of the incinerated waste per hour  
Differently from the stipulation in the par. 2.2.2 letter a), d), f), and g) for the municipal waste incineration plants with the throughput 3 tons and higher of the incinerated waste per hour, the concentration of the pollutants in the flue gas exceed
- a) 20 mg·m<sup>-3</sup> for the 30 mg·m<sup>-3</sup> for the solid pollutants;
  - b) 100 mg·m<sup>-3</sup> for the sulphur oxides expressed as the sulphur dioxide; if such limit cannot be reached without desulphurisation, the emission degree of the sulphur oxides shall not exceed 10 per cent;
  - c) 15 mg·m<sup>-3</sup> for the gaseous chlorine compounds expressed as the hydrogen chloride;
  - d) 1 mg·m<sup>-3</sup> for the gaseous fluorine compounds expressed as the hydrogen fluoride;

### 3. Waste incineration at equipment other the waste incineration plants

Where the waste is incinerated in other equipment than the waste incineration plants the emission limits for the selected pollutants apply for the applicable technology or equipment that are given in the Annex No. 4.

For the pollutants occurring in the flue gas only as the consequence of the waste incineration, the emission limits apply according to the kind and the quantity of such waste (in Art. the reference oxygen content).

For such pollutants being introduced simultaneously with the combustible or raw material and the waste to be incinerated or that are produced in the given process even without the waste incineration, the emission for the waste incineration plants apply (in Art. reference oxygen content), if the portion of the pollutant being introduced or produced by the incineration process, respectively, in the total mass flow of the pollutant is higher than 30 per cent. The mass flow of the exhausted pollutants along with the flue gas is to be determined as the difference of the mass flow produced with the waste incinerated and without it. If the mass flow portion is 30 per cent and less, the generally applicable limits apply (without reduction to the reference oxygen content), if in the Annex No. 4 for the applicable technology and the pollutant is not stipulated otherwise.

The generally applicable emission limits apply to other pollutants. The emission limits are applicable for the concentration reduced to the dry gas at the standard conditions. The emission limits for selected pollutants on the selected technologies / processes and equipment are applicable for the

reference oxygen content that is given in the Annex No. 4. The increase of the mass flow of the individual pollutants withdrawn with the flue gas (except for the solid pollutants, NO<sub>x</sub>, SO<sub>2</sub>, and CO) determined as the difference in the mass flows during the waste incineration and without it shall not exceed 1.2-multiple of the mass flow of the pollutants withdrawn with the flue gas from the corresponding waste incineration plant concerning the process and the throughput (the mass flows correspond to the applicable concentration limits for the incineration plants).

For the rotary cement furnaces, the used mineral oils may be deemed to be the combustible, if they do not contain chlorine in amounts exceeding 0.5 per cent and PCBs and PCTs in amounts exceeding 50 mg·kg<sup>-1</sup>.

Conditions for the waste incineration in equipment other than the incineration plants are to be set by the environmental authority. General conditions for the operation apply in relation, depending to the character, quantity and combustion retention time.

## **VI. OTHER INDUSTRIES AND EQUIPMENT**

### **1. Wood processing**

#### **1.1 Mechanical wood processing**

- a) For all operations where the solid pollutants are produced with the exception of lime hydrate, the concentration of the solid pollutants in the waste gas shall not exceed 50 mg·m<sup>-3</sup>.
- b) During the grinding in the manufacture of veneer, plywood, plates, and furniture the concentration of the solid pollutants in the waste gas shall not exceed 10 mg·m<sup>-3</sup>.

#### **1.2 Surface finish using paintings containing the organic solvents**

The emission limits and General conditions for the operation according to the Part VI, par.. 2.2 of the Annex are applicable (other painting equipment).

### **2. Paint shops**

#### **2.1 The series painting (using machine) of the vehicle's body and other similar products except for buses and superstructures on the trucks**

##### **2.1.1 Emission limit for the new sources of pollution**

At all facilities intended for the series painting it is necessary to take use of available measures considering the costs needed, in order to reduce emissions, e.g. to make use of such painting systems with low or zero content of the organic thinner, to apply the paint coats with a high efficiency under withdrawal and wash of the waste gas.

##### **2.1.2 Emission limit for the solid pollutants**

##### **2.12.1 Emission limit for the new sources of pollution**

The concentration of the solid pollutants (paint particles) in the waste gas shall not exceed 3 mg·m<sup>-3</sup>.

##### **2.12.2 Emission limit for the existing sources of pollution**

The concentration of the solid pollutants (paint particles) in the waste gas withdrawn from the drying room shall not exceed 3 mg·m<sup>-3</sup>.

##### **2.1.3 Emission limit for the organic compounds from the whole equipment**

The emission of the organic compounds in the waste gas withdrawn from the whole equipment including the preservation shop shall not exceed at the monthly average

- a) 60 mg·m<sup>-3</sup> of the painted surface at the monochromatic painting;
- b) 120 mg·m<sup>-3</sup> of the painted surface at the multicolour and metallised painting.

##### **2.1.4 Emission limits for the spraying booths (spraying zones)**

The generally applicable limits ac. to the Annex No. 3, Part II, par. 4.2 and 4.3 do not apply to the waste gas from the spraying booths.

##### **2.1.5 Emission limits of the organic compounds for drying process**

Emission of the volatile organic compounds expressed as the total organic carbon in the waste gas from the dryer shall not exceed 50 mg·m<sup>-3</sup>. If the waste gas is conveyed to the additional burning, the air protection authority lays down the conditions for the incineration, such as the carbon monoxide concentration, the combustion temperature and the required retention.

#### **2.2 Other painting equipment**

##### **2.2.1 Emission limit for the new sources of pollution**

At all facilities intended for the series painting it is necessary to take use of available measures considering the costs needed, in order to reduce emissions, e.g. to make use of such painting systems with low or zero content of the organic thinner, to apply the paint coats with a high efficiency under withdrawal and wash of the waste gas, in order to meet the emission limits ac. to the Annex No. 3, Part II, par. 4.2 and 4.3.

#### 2.2.2 Emission limit for the solid pollutants

##### 2.2.2.1 Emission limit for the new sources of pollution

The concentration of the solid pollutants (paint particles) in the waste gas shall not exceed  $3 \text{ mg}\cdot\text{m}^{-3}$ .

##### 2.2.2.2 Emission limit for the existing sources of pollution

The concentration of the solid pollutants (paint particles) in the waste gas withdrawn from the drying room shall not exceed  $3 \text{ mg}\cdot\text{m}^{-3}$ .

#### 2.2.3 Emission limits for the spraying booths (spraying zones)

The generally applicable limits ac. to the Annex No. 3, Part II, par. 4.2 and 4.3 do not apply to the waste gas from the spraying booths.

#### 2.2.4 Emission limits of the organic compounds for drying process

Emission of the volatile organic compounds expressed as the total organic carbon in the waste gas from the dryer shall not exceed  $50 \text{ mg}\cdot\text{m}^{-3}$ . If the waste gas is conveyed to the additional burning, the air protection authority lays down the conditions for the incineration, such as the carbon monoxide concentration, the combustion temperature and the required retention.

### 3. Textile cleaning equipment

#### 3.1 General conditions for the operation of the new sources of pollution

At the facilities for the textile cleaning using the chlorinated hydrocarbons the concentrated hydrocarbon vapours from the cleaning units shall be trapped.

#### 3.2 Emission limit for the organic compounds

##### 3.2.1 Cleaning using the chlorinated hydrocarbons

At the facilities for the textile cleaning using the chlorinated hydrocarbons the concentration of the solvent vapours in the gases withdrawn from the drying chambers and the environment shall not exceed

a)  $150 \text{ mg}\cdot\text{m}^{-3}$  at the mass of one cleaning batch up to 30 kg

b)  $100 \text{ mg}\cdot\text{m}^{-3}$  at the mass of one cleaning batch 30 kg and higher

The total emission factor shall not exceed the value 30 g of the solvent per 1 kg of the textile under cleaning at the monthly average.

##### 3.2.2 Cleaning using the benzoline

At the facilities for the textile cleaning using the benzoline 150/200 the concentration of the benzoline in the waste gas shall not exceed  $6,000 \text{ mg}\cdot\text{m}^{-3}$ . The total emission factor shall not exceed the value 150 g of the solvent per 1 kg of the textile under cleaning at the monthly average.

### 4. Degreasing of the metallic parts

#### 4.1 General conditions for the operation of the new sources of pollution

At the facilities for the degreasing the metallic parts using the chlorinated solvents the solvent vapour shall be withdrawn and disposed of, and that in view of the availability of the technical measures at reasonable costs.

#### 4.2 Emission limit for the organic compounds

The concentration of the solvent vapour in the waste gas from the degreasing devices for the metallic parts shall not exceed  $100 \text{ mg}\cdot\text{m}^{-3}$  at the mass flow  $0.5 \text{ kg}\cdot\text{h}^{-1}$ .

### 5. Production and refining of sugar

#### 5.1 Emission limit for the solid pollutants

##### 5.1.1 Emission limit for the new sources of pollution

The concentration of the solid pollutants in the waste gas shall not exceed  $75 \text{ mg}\cdot\text{m}^{-3}$  as calculated in the wet gas.

##### 5.1.2 Emission limit for the existing sources of pollution

The general emission limit for the existing sources of pollution is applicable.

## **6. Green fodder dehydrators**

6.1 Emission limit for the solid pollutants

6.1.1 Emission limit for the new sources of pollution

The concentration of the solid pollutants in the waste gas shall not exceed  $150 \text{ mg}\cdot\text{m}^{-3}$  as calculated in the wet gas.

6.1.2 Emission limit for the existing sources of pollution

The general emission limit for the existing sources of pollution is applicable.

6.2 General conditions for the operation – limitation of the fuel kind for the new sources of pollution

Only casing-head gas, liquid fuels containing sulphur in amount not more than 1 per cent and solid fuels with the specific sulphur content not more than  $0.5 \text{ g}\cdot\text{MJ}^{-1}$  may be used at the dehydrators.

### **Annex No. 5**

#### **Variables, units and the conversion relations**

##### **I. Variables and units for the emission and the emission limits**

The following variables and units for the emission and its limits are used:

1. The mass concentration

The mass concentration (thereafter only “the concentration”) is the mass of the pollutants referred to the volumetric unit of the waste gas. It is expressed in the following units:  $\text{mg}\cdot\text{m}^{-3}$  and  $\text{g}\cdot\text{m}^{-3}$ , respectively.

a) The conditions for the determination of the emission limit expressed as the mass concentration for the new sources of pollution.

If not stipulated otherwise, the mass concentration is expressed as the concentration in the dry gas after the reduction to the standard state conditions (the pressure 101.325 kPa, the temperature  $0^\circ\text{C}$ ) and the set oxygen content as the reference value.

Differently from the above paragraph, the concentrations are calculated for the wet gas (i.e. such humidity of the gas that results from the technological process) in the manufacture of calcium hydrate, magnesium hydrate, coal briquettes, perlites, production and refining of sugar, green fodder dehydration, drying of wood, manufacture of cement using the wet method and special equipment, such as cooking vessels and evaporators.

For such pollutants for which no oxygen reference content is set for their emission limits for the selected technical processes and equipment (see Annex No. 4), the concentration refers to the composition and quantity of the waste gas that results from the principle of the technology. The air quantity being conveyed into equipment to dilute the flue gas and waste gas, and to cool them down, respectively, shall be counted off during the determination of the concentration.

b) The conditions for the determination of the emission limit expressed as the mass concentration for the existing sources of pollution.

If not stipulated otherwise, the mass concentration is expressed as the concentration in the dry gas after the reduction to the standard state conditions (the pressure 101.325 kPa, the temperature  $0^\circ\text{C}$ ) and the set oxygen content as the reference value.

If no oxygen reference content is set, the concentration refers to the composition and quantity of the waste gas that results from the principle of the technology. The air quantity being conveyed into equipment to dilute the flue gas and waste gas, and to cool them down, respectively, shall be counted off during the determination of the concentration.

2. The mass flow

The mass flow is the mass of the pollutants in the waste gas as referred to the time unit. It is expressed in the following units, in particular:  $\text{kg}\cdot\text{h}^{-1}$ ,  $\text{g}\cdot\text{s}^{-1}$ ,  $\text{t}\cdot\text{year}^{-1}$ .

3. The emission factor

The emission factor is the mass ratio of the pollutant being released from the source or parts thereof to the mass unit or another quantity unit for the product, semi-product, raw material or the throughput of the manufacturing technology that contaminates the environment. It is a data to characterise the proportion of the emission (the specific emission at the production) released from

the given technology / process (inArt. emission reduction equipment) into the ambient air. It is expressed in the following units, in particular:  $\text{kg}\cdot\text{t}^{-1}$ ,  $\text{kg}\cdot\text{GJ}^{-1}$ .

4. The emission degree  
The emission degree is the ratio of the mass of the pollutant being released from, the source, and part thereof or from the equipment to reduce the emission, to the mass of such compound at the input of the process. It is expressed in per cent.
5. Fume darkness  
The fume darkness is the optical quality of the fume being induced by the imbibition of the light at the smoke plume arising from the stack. It is expressed in degrees ac. to the Ringelmann's scale (degree 1 to 5) or as the opacity in per cent (where the optical devices are used). If the black content is checked by measuring the intensity of the smut on the filter after the withdrawn air assay ac. to Bacharach, it is expressed in degrees (0 to 9).

## II. Definition of the gaseous and solid pollutants

The gaseous pollutants in the waste gas are deemed to be, besides gases and vapours, also such finely dispersed suspension of liquids and solids that pass through the separator (such as e.g. filter made from the siliceous wool, condensate trap etc.) and produce a signal which can be measured by the analytical methods. Such compounds that remained in the separators, are indicated as the solid pollutants.

## III. Conversion relations

If the concentrations are determined at other than standard state conditions, the following expressions shall be used for the conversion to the standard conditions or to the reference oxygen content:

a) the conversion of the concentrations to the standard state conditions of the wet gas:

$$c_n = 273.15 + t / 273.15 \cdot 101.325 / 101.325 + p \cdot c_p$$

b) the conversion of the concentrations to the standard state conditions of the dry gas:

$$c_{sn} = 273.15 + t / 273.15 \cdot 101.325 / 101.325 + p \cdot 100 / 100 - W \cdot c_p$$

c) the conversion of the concentrations to the standard state conditions of the dry gas and the reference oxygen content in the flue gas:

$$c_{rn} = 273.15 + t / 273.15 \cdot 101.325 / 101.325 + p \cdot 100 / 100 - W \cdot 20.95 - O_{r2} / 20.95 - O_{p2} \cdot c_p$$

The symbols mean the followings:

- $c_n$  - the concentration after the conversion to the standard conditions in the wet gas
- $c_{sn}$  - the concentration after the conversion to the standard conditions in the dry gas
- $c_{rn}$  - the concentration after the conversion to the standard conditions in the dry gas and the reference conditions expressed by the oxygen content  $O_{r2}$
- $c_p$  - the concentration (measured) corresponding to the operation conditions
- $t$  - the temperature of the dry gas at the operation conditions (in °C)
- $p$  - the pressure difference from the standard pressure, corresponding to the operation conditions
- $w$  - the water content in the flue gas (per cent by volume)
- $O_{r2}$  - the reference oxygen content in the flue gas (per cent by volume)
- $O_{p2}$  - the oxygen content (measured) in the flue gas corresponding to the operation conditions (per cent by volume)

## Annex No. 6

### Emission limits for selected pollutants

Pollutant	Expressed as	Emission limits ( $\square\text{g}\cdot\text{m}^{-3}$ )			
		IHr	IHd	IH8h	Ihk
Dust		60	150		500
Sulphur dioxide	SO <sub>2</sub>	60	150		500
Sulphur dioxide and dust	SO <sub>2</sub> + D		250*		
Nitrogen oxides	NO <sub>2</sub>	80	100		200
Carbon monoxide	CO		5 000		10 000

Ozone	O <sub>3</sub>	110
Lead in the dust	Pb	0.5
Cadmium in the dust	Cd	0.01
Smelling compounds	they may not be contained in concentrations annoying the population	

\* The calculated arithmetic sum of the daily average concentrations of both components.

The conditions for keeping limits:

The concentration IHd and IHk for the dust, SO<sub>2</sub>, NO<sub>x</sub> and CO may not be exceeded in more than 5 per cent of cases within one year.

Explanations of symbols used:

- IHr - The average yearly concentration of the pollutant.  
The average yearly concentration means the mean concentration value determined at the given site and within a period of one year, expressed as the arithmetic mean calculated from the 24-hours-mean concentration values.
- IHd - The average daily concentration of the pollutant  
The average daily concentration means the mean concentration value determined at the given site and within a time period of 24 hours. The average daily concentration may be also the mean value of at least twelve well-distributed measurements of the half-one-hour-concentrations within the period of 24 hours (arithmetic average).
- IH8h - The average 8-hours-concentration of the pollutant  
The average 8-hours-concentration of the pollutant means the mean concentration values determined within a period of 8 hours.
- IHk - The average half-one-hour-concentration of the pollutant  
The average half-one-hour-concentration of the pollutant means the mean concentration values determined within a period of 30 minutes.

## Annex No. 7

### The conditions for the spreading of emission of the pollutants for the new sources of pollution

1. The waste gas shall be withdrawn in such a way in order to enable its transportation by the free flow and to ensure such spreading of the emitted pollutants that theirs permitted concentrations in the ambient air related to the objective source shall be not exceeded.
2. The height of the stack (blow out) at the incineration plants shall be at least 5 m and for other process sources 7 m above the terrain. The height difference between the stack and the roof ridge shall be at least 0.5 m for the heating plants using fuels with the output up to 50 kW, at least 1 m for the heating plants using fuels with the output between 50 kW and 1 MW, and 3 m for the heating plants using fuels with the output between higher than 1 MW and big and middle-sized sources. Where the pitch is less than 20° or where the roof is flat the calculation is based on the pitch being 20°. The above mentioned does not apply to the equipment using gaseous combustibles with the output 10 kW and less.
3. It is necessary, for the purpose of design and execution of the erection of the sources of pollution, to adopt such technical solution that implements the minimum quantity of blowouts or stacks to emit the pollutants, in view of the givenness of the technology and process.
4. The stack may exceed the height 250 m in the case only if all available technical measures have been considered, and that at reasonable costs, in order to reduce the emission of pollutants.

5. The minimum height of the stack shall be determined on the basis of the mass flow and the factor ac. to the characteristics of the pollutant and other parameters, respectively. The calculation method and the applicable factors will be published in the Bulletin of the Ministry for Environment of the Slovak Republic. In case if more than one pollutant are emitted through one stack, the height of the stack shall be determined on the basis of the biggest height calculated for the individual pollutants.
6. The determination of the stack height may involve the difference between the altitude of the source's facility foundations and the stack footing (e.g. when the flue gas duct and the stack is situated in the gradient).