

**MINISTRY OF ENVIRONMENT AND WATER
MINISTRY OF HEALTH**

REGULATION No:9 from May 3, 1999

on

*LIMIT VALUES FOR SULPHUR DIOXIDE, NITROGEN DIOXIDE, FINE PARTICULATE MATTER
AND LEAD IN AMBIENT AIR*

Chapter One

GENERAL PROVISIONS

Article 1. This Regulation sets forth provisions concerning:

1. The establishment of limit values for the levels of sulphur dioxide, nitrogen dioxide, fine particulate matter and lead in ambient air;
2. The establishment of alert thresholds for sulphur dioxide and nitrogen dioxide in ambient air;
3. The assessment of sulphur dioxide, nitrogen dioxide, fine particulate matter and lead levels in ambient air, including the registration, validation and storage of results and data in accordance with the corresponding provisions of Regulation No:7 on ambient air quality assessment and management (State Gazette No:45 from 1999);
4. dissemination to the population of adequate information concerning levels of sulphur dioxide, nitrogen dioxide, fine particulate matter and lead in ambient air and ensuring that it is made available to the public;
5. improvement of ambient air quality in areas where the established limit values for sulphur dioxide, nitrogen dioxide, fine particulate matter and lead in ambient air are exceeded and

its maintenance in the rest of the areas.

Article 2. The limit values referred to in article 1, points 1 and 2 are defined as mass contained in one cubic meter of air, under normal conditions in accordance with the provision of article 4, paragraph 3 of the Clean Air Act.

Chapter Two

LIMIT VALUES FOR SULPHUR DIOXIDE IN AMBIENT AIR

Article 3.(1) The concentration of sulphur dioxide in ambient air shall not exceed the corresponding limit values set out in Section 1 of Annex 1 (table 1).

(2) The margins of tolerance from the corresponding limit values referred to in above paragraph shall apply according to column 4 of table 1 in Section 1 of Annex 1.

Article 4.(1) The alert threshold for sulphur dioxide in ambient air and its exceeding is set out in Section 2 of Annex 1.

(2) In areas where the alert threshold referred to in above paragraph is exceeded the relevant competent authorities, according to article 19 of the Clean Air Act, shall undertake the necessary measures in order to supply the population, as soon as possible, with corresponding information detailed in accordance with Section 3 of Annex 1.

(3) The information which is to be supplied to the population in accordance with the conditions of points 3 and 4 in Section 3 of Annex 1 shall be coordinated with the relevant competent authorities under the Ministry of Health.

Article 5. When continuous measurements for determination of hourly mean level of sulphur dioxide in ambient air are done in agglomerations, the primary results and data from such measurements shall be registered (recorded) and integrated as mean values over a time period of 10 minutes. This data and results shall be storage in the national data base managed by the National Center on Environment and Sustainable Development.

Article 6.(1) The Municipal Authorities, in coordination with the relevant Regional Environmental Inspectorate, shall undertake the corresponding measures in order to maintain the levels of sulphur dioxide in ambient air in accordance with the provisions of article 34 of Regulation No:7 on ambient air quality assessment and management (State Gazette No:45 from 1999).

(2) In accordance with the provisions of article 27 of the Clean air Act and article 31 of Regulation No:7 on ambient air quality assessment and management (State Gazette No:45 from 1999), in areas where the levels of sulphur dioxide in ambient air are exceeding the limit values referred to in above article 3, paragraph 1, the Municipal Authorities, in coordination with the relevant Regional Environmental Inspectorate, shall prepare programs for achievement of the established limit values.

(3) The programs referred to in above paragraph shall ensure the achievement of the established limit values as soon as possible, but not later than the corresponding deadlines set out in

column 5 of table 1 in Section 1 of Annex 1 to this Regulation.

(4) In accordance with the provisions of article 30 of the Clean Air Act the Municipal Authorities, in coordination with the relevant Regional Environmental Inspectorate, shall prepare operational action plans in order to reduce the harmful effects on human health and environment in case where there is a possibility for the limit values referred to in article 3, paragraph 1 or the alert threshold referred to in article 4, paragraph 1 to be exceeded, as a result from unfavorable meteorological and other similar conditions.

Chapter Three

LIMIT VALUES FOR NITROGEN DIOXIDE IN AMBIENT AIR

Article 7.(1) The concentration of nitrogen dioxide and oxides of nitrogen in ambient air shall not exceed the corresponding limit values set out in Section 1 of Annex 2 (table 2).

(2) The margins of tolerance from the corresponding limit values referred to in above paragraph shall apply according to column 4 of table 2 in Section 1 of Annex 2.

Article 8.(1) The alert threshold for sulphur dioxide in ambient air and its exceeding is set out in Section 2 of Annex 2.

(2) In areas where the alert threshold referred to in above paragraph is exceeded the relevant competent authorities, according to article 19 of the Clean Air Act, shall undertake the necessary measures in order to supply the population, as soon as possible, with corresponding information detailed in accordance with Section 3 of Annex 2.

(3) The information which is to be supplied to the population in accordance with the conditions of points 3 and 4 in Section 3 of Annex 2 shall be coordinated with the relevant competent authorities under the Ministry of Health.

Article 9.(1) The Municipal Authorities, in coordination with the relevant Regional Environmental Inspectorate, shall undertake the corresponding measures in order to maintain the levels of nitrogen dioxide and/or oxides of nitrogen in ambient air in accordance with the provisions of article 34 of Regulation No:7 on ambient air quality assessment and management (State Gazette No:45 from 1999).

(2) In accordance with the provisions of article 27 of the Clean air Act and article 31 of Regulation No:7 on ambient air quality assessment and management (State Gazette No:45 from 1999), in areas where the levels of nitrogen dioxide and/or oxides of nitrogen in ambient air are exceeding the limit values referred to in above article 7, paragraph 1, the Municipal Authorities, in coordination with the relevant Regional Environmental Inspectorate, shall prepare programs for achievement of the established limit values.

(3) The programs referred to in above paragraph shall ensure the achievement of the

established limit values as soon as possible, but not later than the corresponding deadlines set out in column 5 of table 1 in Section 1 of Annex 2 to this Regulation.

(4) In accordance with the provisions of article 30 of the Clean Air Act the Municipal Authorities, in coordination with the relevant Regional Environmental Inspectorate, shall prepare operational action plans in order to reduce the harmful effects on human health and environment in case where there is a possibility for the limit values referred to in article 7, paragraph 1 or the alert threshold referred to in article 8, paragraph 1 to be exceeded, as a result from unfavorable meteorological and other similar conditions.

Chapter Four

LIMIT VALUES FOR FINE PARTICULATE MATTER IN AMBIENT AIR

Article 10.(1) The concentration of fine particulate matter (PM10) in ambient air shall not exceed the corresponding limit values set out in Section 1 of Annex 3 (table 3).

(2) The margins of tolerance from the corresponding limit values referred to in above paragraph shall apply according to column 4 of table 3 in Section 1 of Annex 3.

(3) The limit values for total suspended particulate shall be determined in accordance with point 117 of Annex 1 to article 2, paragraph 2 of Regulation No:14 from 1997 on limit values for maximum permissible concentrations of harmful substances in ambient air above settlements (State Gazette No:88 from 1997).

Article 11.(1) The Municipal Authorities, in coordination with the relevant Regional Environmental Inspectorate, shall undertake the corresponding measures in order to maintain the levels of PM10 and/or total suspended particulates in ambient air in accordance with the provisions of article 34 of Regulation No:7 on ambient air quality assessment and management (State Gazette No:45 from 1999).

(2) In accordance with the provisions of article 27 of the Clean air Act and article 31 of Regulation No:7 on ambient air quality assessment and management (State Gazette No:45 from 1999), in areas where the levels of particulate matter and/or total suspended particulates in ambient air are exceeding the limit values referred to in above article 10, paragraphs 1 and 3, the Municipal Authorities, in coordination with the relevant Regional Environmental Inspectorate, shall prepare programs for achievement of the established limit values.

(3) The programs referred to in above paragraph shall ensure the achievement of the established limit values as soon as possible, but not later than the corresponding deadlines set out in column 5 of table 3 in Section 1 of Annex 3 to this Regulation.

(4) The programs for attainment of PM10 limit values, as well as general strategies for decreasing concentrations of PM10 shall aim to reduce concentrations of PM2.5 in ambient air as part of the total reduction.

Article 12. The monitoring sites within the National and the Local Monitoring and Control Systems performing measurements in order to determine the ambient air levels of PM_{2.5} shall be located and equipped in accordance with the following provisions:

1. The sampling points for PM_{2.5} where possible should be collocated, within the relevant monitoring sites, with sampling points for assessment of PM₁₀ levels in ambient air.
2. The Minister of Environment and Water shall approve the number and location of monitoring sites for particulate matter level in ambient air.
3. The range of above monitoring sites shall ensure that results and data on concentrations of PM_{2.5} are representative at regional and local level within the territory of the Country.

Article 13.(1) In areas within which limit values for PM₁₀ levels are exceeded owing to significant concentrations of particulate matter in ambient air due to natural sources, the action levels for PM_{2.5} and the corresponding margins of tolerance set forth in Section 2, table 4 of Annex 3 to this Regulation shall apply when determining whether programs for attainment of the established PM₁₀ limit values should be prepared in accordance with the provisions of article 11, paragraph 2.

(2) When preparing programs referred to in above paragraph 1 action levels for PM_{2.5} shall be used as indicative targets, to be met as far as far as possible by the relevant attainment date.

(3) In areas referred to in paragraph 1 above the relevant upper and lower assessment thresholds for PM₁₀ set forth in Section 1B, table 8 of Annex 5 to this regulation shall apply.

(4) Monitoring sites located in areas falling within the scope of paragraph 1 above should perform measurements ensuring the determination of PM₁₀ and PM_{2.5} levels in ambient air.

(5) In accordance with the provisions of article 21, in areas falling within the scope of paragraph 1 above, information to be supplied to the population shall contain data on concentrations of PM_{2.5} in ambient air. Information on levels of PM₁₀ in ambient air may be supplied in addition.

Chapter Five

LIMIT VALUES FOR LEAD IN AMBIENT AIR

Article 14.(1) The concentration of lead in ambient air shall not exceed the annual limit values set out in table 5 of Annex 4.

(2) The margin of tolerance from the annual limit value referred to in above paragraph shall apply according to column 4 in table 5 of Annex 4.

Article 15.(1) The Municipal Authorities, in coordination with the relevant Regional Environmental Inspectorate, shall undertake the corresponding measures in order to maintain the levels of lead in ambient air in accordance with the provisions of article 34 of Regulation No:7 on

ambient air quality assessment and management (State Gazette No:45 from 1999).

(2) In accordance with the provisions of article 27 of the Clean air Act and article 31 of Regulation No:7 on ambient air quality assessment and management (State Gazette No:45 from 1999), in areas where the levels of lead in ambient air are exceeding the limit value referred to in above article 14, paragraph 1, the Municipal Authorities, in coordination with the relevant Regional Environmental Inspectorate, shall prepare programs for attainment of the established limit value.

(3) The programs referred to in above paragraph shall ensure the attainment of the established limit value as soon as possible, but not later than the corresponding deadline fixed in accordance with column 5 in table 5 of Annex 4 to this Regulation.

Chapter Six

ASSESSMENT OF LEVELS OF SULPHUR DIOXIDE, NITROGEN DIOXIDE, FINE PARTICULATE MATTER AND LEAD IN AMBIENT AIR

Article 16.(1) The corresponding upper and lower assessment thresholds for sulphur dioxide, nitrogen dioxide, fine particulate matter and lead in ambient air shall be determined in accordance with Section 1 of Annex 5.

(2) The classification of the areas for ambient air quality assessment and management within the territories of the Regional Environmental Inspectorates (REI) in order to determine the method of ambient air quality assessment for the purposes of article 8 of Regulation '7 on ambient air quality assessment and management, shall be done by the REI directors depending on the excess of the corresponding assessment thresholds referred to in above paragraph.

(3) The classification of the areas for ambient air quality assessment and management referred to in above paragraph should be reviewed at regular intervals not exceeding five calendar years in accordance with the procedure laid down in Section 2 of Annex 5, as well as earlier in any case of significant change to activities relevant to ambient concentrations of sulphur dioxide, nitrogen dioxide, or where relevant nitrogen dioxide plus nitric oxide, fine particulate matter or lead in ambient air.

Article 17. The location of monitoring sites for measurements of concentrations of sulphur dioxide, nitrogen dioxide, fine particulate matter and/or lead in ambient air shall be determined in accordance with the requirements laid down in Annex 6.

Article 18. For areas referred to in article 8, paragraph 1 of Regulation No:7 on ambient air quality assessment and management (State Gazette No:45 from 1999) within which measurement is required, if measurement is the sole source of data on ambient air quality within it, the minimum number of continuous monitoring sites for each relevant pollutant to be installed in each area shall be determined in accordance with Annex 7.

Article 19.(1) Measurements of pollutant levels in ambient air shall be done using relevant reference methods which are specified with standardizational documents or methodologies, approved by the minister of environment and water, and adequate measuring equipment with valid type approval

certificate.

(2) The measurements referred to in above paragraph shall be done in accordance with the relevant instructions adopted on the grounds of article 22, paragraph 1 of Regulation No:7 on ambient air quality assessment and management (State Gazette No:45 from 1999).

Article 20.(1) For areas referred to in article 8, paragraph 2 of Regulation No:7 on ambient air quality assessment and management (State Gazette No:45 from 1999) within which data and results from measurements are supplemented by information from other assessment methods (emission inventories, indicative measurement programs and air quality modelling), the number of monitoring sites and its range to be installed for continuous ambient air quality assessment, as well as the spatial resolution of other assessment techniques, shall be sufficient to enable the establishment of concentrations (levels) of each air pollutants.

(2) The monitoring sites referred to in above paragraph shall be established and operated in accordance with the requirements laid down in Section 1 of Annex 6.

(3) The measurements in monitoring sites for ambient air quality assessment shall be performed in accordance with the requirements laid down in Section 1 of Annex 8.

Chapter Seven

INFORMATION PROCEDURES

Article 21.(1) The relevant competent authorities according to article 19 of the Clean Air Act shall ensure that adequate information on levels of sulphur dioxide, nitrogen dioxide (and/or nitrogen oxides), fine particulate matter and lead in ambient air is made available to the public by means of:

1. public broadcast media, national or regional press, bulletins, information screens, computer network services and other similar measures;
2. notification of appropriate organizations representing the interest of sensitive population groups and other pertinent health care bodies.
3. notification of appropriate organizations such as environmental organizations, consumer organizations and others.

(2) The Ministry of environment and water shall prepare and review annually the list of organizations referred to in paragraph 1 above.

(3) The information referred to in paragraph 1 above shall indicate the exceedances of the public information indicators listed in Sections 1 to 4 of Annex 9.

(4) In areas falling within the scope of article 13, paragraph 1 shall apply the public information indicators listed in Section 5 of Annex 9.

Article 22 (1) The National Center on Environment and Sustainable Development shall create and maintain a national data base containing all results from ambient air quality assessment done in compliance with the provisions of this Regulation.

(2) The national data base of the National Center on Environment and Sustainable Development referred to in paragraph 1 above shall contain the following information:

1. the maximum (recorded) value, the median, the 98th and 99th percentiles calculated from the corresponding mean values of 10-minute sulphur dioxide concentrations measured within the calendar year in monitoring sites performing continuous (automatic) measurements for ambient air quality assessment in accordance with article 5;
2. the maximum (recorded) value, the median, the 98th and 99th percentiles calculated from the corresponding sulphur dioxide, nitrogen dioxide and PM10 hourly concentration mean values measured within the calendar year in all monitoring sites;
3. the arithmetic mean value, the median, the 98th percentile and the maximum concentration calculated from the corresponding measurements of PM2.5 levels, averaged over a period of 24 hours, within zones and agglomerations referred to in article 13, paragraph 1.

(3) The calculation of corresponding percentile and median values referred to in paragraph 2 above, shall be done in accordance with the procedure for determination of statistical parameters laid down in Annex 5 to article 27, paragraph 4 of the Regulation No:7 on ambient air quality assessment and management (State Gazette No:45 from 1999).

Article 23. The Ministry of Environment and Water shall not later than 01.01.2003 prepare a report on the status of ambient air quality in all areas referred to in article 12, paragraph 1, containing at least corresponding data on measured values for PM10 and PM2.5 levels, as well as their sources within such areas.

Article 24. The Ministry of Environment and Water shall ensure that all programs referred to in articles 6, 8, 11 and 15 are made available to the corresponding organizations in accordance with article 21, paragraph 1 points 2 and 3.

ADDITIONAL PROVISIONS

§1. In case where the level of more than one pollutant is higher than the limit values the Municipal Authorities in coordination with the relevant Regional Environmental Inspectorate, involving the interested juridical and physical persons, as well as with the assistance of the environmental organizations and movements must prepare integrated programs for compliance (attainment) of the corresponding established limit values for sulphur dioxide, nitrogen dioxide (and/or nitrogen oxides), fine particulate matter, total suspended particulate and/or lead.

§2. The ambient air quality assessment and management in order to determine levels of

sulphur dioxide, nitrogen dioxide (and/or nitrogen oxides), fine particulate matter, total suspended particulate and lead in all areas throughout the territory of the Country should be done in accordance with the provisions of Regulation No:7 on ambient air quality assessment and management (State Gazette No:45 from 1999).

§3. For the purposes of this Regulation:

1. **„oxides of nitrogen“** means nitric oxide and nitrogen dioxide;
2. **„PM10“** means all particles which pass through a size selective inlet with 50% efficiency cut-off at 10 micrometers aerodynamic diameter;
3. **„PM2.5“** means all particles which pass through a size selective inlet with 50% efficiency cut-off at 2.5 micrometers aerodynamic diameter;
4. **„public information indicator“** means a level of pollution such that, if it is exceeded over a given period this fact shall be recorded in information disseminated to the public in accordance with the provisions of article 21, paragraph 4 of this Regulation.

FINAL AND CONCLUDING PROVISIONS

§4. This Regulation is adopted on the grounds of article 6, paragraph 1, in connection with paragraph 5 of the transitional and concluding provisions, of the Clean Air Act.

§5. Instructions and guidelines on the implementation of this Regulation are given by the minister of environment and water together with the minister of health.

§6. This Regulation repeals point 1, 2, 102, and 122 of Annex 1 to article 2, paragraph 2 of Regulation No:14 from 1997 on limit values for maximum permissible concentrations of harmful substances in ambient air above settlements (State Gazette No:88/1997).

§7. The provisions of articles 4, 5, 8 and 21 from this Regulation shall apply as from 1st January 2003.

§8. The provisions of articles 11 and 12 from this Regulation concerning ambient air quality assessment and management of particulate matter shall apply as from 31 December 2003.

§9. This Regulation enters into force on 01.01.2000.

Minister of Environment and Water:

E.MANEVA

Minister of Health:

P.BOYADJIEV

ANNEX 1
to articles 3 and 4

LIMIT VALUES AND ALERT THRESHOLDS FOR SULPHUR DIOXIDE IN AMBIENT AIR

Section 1. Limit values for sulfur dioxide:

(the limit values are expressed in $\mu\text{g}/\text{m}^3$ under normal conditions)

Table 1

	Averaging period	Limit Value	Margin of tolerance	Data by which the limit values is to be attained
1	2	3	4	5
1. Hourly limit value for the protection of human health	one hour	350 $\mu\text{g}/\text{m}^3$ (not to be exceeded more than 24 times per calendar year)	150 $\mu\text{g}/\text{m}^3$ (43%) on the date of entry into force of this Regulation reducing linearly on 1 January 2001 and every 12 months thereafter to reach 0% by 1 January 2005	1 January 2005
2. Daily limit value for the protection of human health	24 hours	125 $\mu\text{g}/\text{m}^3$ (not to be exceeded more than 24 times per calendar year)	25 $\mu\text{g}/\text{m}^3$ (25%) on the date of entry into force of this Regulation reducing linearly on 1 January 2001 and every 12 months thereafter to reach 0% by 1 January 2005	1 January 2005
3. Limit value for the protection of ecosystems (not to be applied in the immediate vicinity of pollutant sources)	calendar year and winter (1st October to 31 March)	20 $\mu\text{g}/\text{m}^3$	none	3 years from the date of entry into force of this Regulation

Section 2. Alert threshold for sulfur dioxide in ambient air:

The alert threshold for sulphur dioxide in ambient air is 350 $\mu\text{g}/\text{m}^3$, measured over three consecutive hours at locations (monitoring sites) representative of ambient air quality over at least 100 km^2 or an entire area or agglomeration, whichever of these areas is the smallest.

Section 3. Minimum details to be supplied to the population in cases when the alert threshold for sulfur dioxide in ambient air is exceeded:

1. data, hour and place of the occurrence.
2. forecasts on:
 - 2.1. expected change in concentrations (improvement, stabilization, or deterioration);
 - 2.2. reason for occurrence and expected change in ambient air levels;
 - 2.3. geographical area concerned;
 - 2.4. duration of the occurrence.
3. number of population concerned, including type of population potentially sensitive to the occurrence.
4. precautions to be taken by the population concerned, including the potentially sensitive risk groups.

ANNEX 2
to articles 7 and 8

LIMIT VALUES FOR NITROGEN DIOXIDE AND OXIDES OF NITROGEN IN AMBIENT AIR

Section 1. limit values for nitrogen dioxide and oxides of nitrogen:
(the limit values are expressed in $\mu\text{g}/\text{m}^3$ under normal conditions)

Table 2

	Averaging period	Limit Value	Margin of tolerance	Data by which the limit values is to be attained
1	2	3	4	5
1. Hourly limit value for the protection of human health	one hour	200 $\mu\text{g}/\text{m}^3$ NO ₂ (not to be exceeded more than eight times per calendar year)	50% on the date of entry into force of this Regulation reducing linearly on 1 January 2001 and every 12 months thereafter to reach 0% by 1 January 2010	1 January 2010
2. Annual limit value for the protection of human health	One calendar year	40 $\mu\text{g}/\text{m}^3$ NO ₂	50% on the date of entry into force of this Regulation reducing linearly on 1 January 2001 and every 12 months thereafter to reach 0% by 1 January 2010	1 January 2010
3. Annual limit value for the protection of vegetation (not to be applied in the immediate vicinity of pollutant sources)	One calendar year	30 $\mu\text{g}/\text{m}^3$ NO+NO ₂	none	3 years from the date of entry into force of this Regulation

Section 2. Alert threshold for nitrogen dioxide in ambient air:

The alert threshold for nitrogen dioxide in ambient air is $400 \mu\text{g}/\text{m}^3$, measured over three consecutive hours at locations (monitoring sites) representative of ambient air quality over entire area or agglomeration.

Section 3. Minimum details to be supplied to the population in cases when the alert threshold for nitrogen dioxide in ambient air is exceeded:

1. data, hour and place of the occurrence.
2. forecasts on:
 - 2.1. expected change in concentrations (improvement, stabilization, or deterioration);
 - 2.2. reason for occurrence and expected change in ambient air levels;
 - 2.3. geographical area concerned;
 - 2.4. duration of the occurrence.
3. number of population concerned, including type of population potentially sensitive to the occurrence.
4. precautions to be taken by the population concerned, including the potentially sensitive risk groups.

LIMIT VALUES AND ACTION LEVELS FOR FINE PARTICULATE MATTER IN AMBIENT
AIR

Section 1. limit values for fine particulate matter (PM):

(the limit values are expressed in $\mu\text{g}/\text{m}^3$ under normal conditions)

Table 3

	Averaging period	Limit Value	Margin of tolerance	Data by which the limit values is to be attained
1	2	3	4	5
Stage 1				
1. Daily limit value for the protection of human health	24 hours	50 µg/m ³ PM ₁₀ , (not to be exceeded more than 25* times per calendar year)	50% on 31.12.2003, reducing linearly from the same date and every 12 months thereafter to reach 0% by 31.12.2008	31 December 2008
2. Annual limit value for the protection of human health	One calendar year	30 µg/m ³ PM ₁₀	50% on 31.12.2003, reducing linearly from the same date and every 12 months thereafter to reach 0% by 31.12.2008	31 December 2008
Stage 2				
1. Daily limit value for the protection of human health	24 hours	50 µg/m ³ PM ₁₀ , (not to be exceeded more than seven times per calendar year)	[to be determined in addition on the basis of data on ambient air quality during stage 1, before 31.12.2008]	1 January 2010
2. Annual limit value for the protection of human health	One calendar year	20 µg/m ³ PM ₁₀	50% on 1 January 2008, reducing linearly from the same date and every 12 months thereafter to reach 0% by 1 January 2010	1 January 2010

* In areas where exceedances are associated with unusual acute effects, the number of exceedances permitted shall be reduced to 14 times per year.

Section 2. Action levels for PM_{2.5} for the purposes of article 13

Table 4

	Averaging periods	Action Levels	Margin of tolerance	Data by which the action level should be met as far as possible
1	2	3	4	5
1. 24-hour action level for the protection of human health	24 hours	40 µg/m ³ PM _{2.5} , (not to be exceeded more than 14 times per calendar year)	50% on 31.12.2003, reducing linearly from the same date and every 12 months thereafter to reach 0% by 31.12.2008	31 December 2008
2. Annual action level for the protection of human health	One calendar year	20 µg/m ³ PM _{2.5}	50% on 31.12.2003, reducing linearly from the same date and every 12 months thereafter to reach 0% by 31.12.2008	31 December 2008

ANNEX 4
to article 14,
paragraph 1

LIMIT VALUE FOR LEAD IN AMBIENT AIR

The limit value are expressed in µg/m³ under normal conditions:

Table 5

	Averaging period	Limit Value	Margin of tolerance	Data by which the limit value is to be attained
1	2	3	4	5
Annual limit value for the protection of human health	One calendar year	0.5 µg/m ³	100% on the date of entry into force of this Regulation reducing linearly on 1 January 2001 and every 12 months thereafter to reach 0% by 1 January 2005	1 January 2005

ANNEX 5
to article 16, paragraphs 1 and 2

DETERMINATION OF REQUIREMENTS FOR ASSESSMENT OF CONCENTRATIONS OF
SULPHUR DIOXIDE, OXIDES OF NITROGEN, PARTICULATE MATTER AND LEAD IN
AMBIENT AIR WITHIN AN AREA OR AGGLOMERATION

Section 1. Upper and Lower Assessment Thresholds:

A. Sulfur dioxide

Table 6

	For the daily limit value for the protection on human health	For the annual limit value for the protection of ecosystems
Upper assessment threshold	60% of the daily limit value (75 $\mu\text{g}/\text{m}^3$ - not to be exceeded more than three times per calendar year)	60 % of winter limit value (12 $\mu\text{g}/\text{m}^3$)
Lower assessment threshold	40% of the daily limit value (50 $\mu\text{g}/\text{m}^3$ - not to be exceeded more than three times per calendar year)	40 % of winter limit value (8 $\mu\text{g}/\text{m}^3$)

B. Nitrogen dioxide and oxides of nitrogen

Table 7

	For the hourly limit value for the protection on human health	For the annual limit value for the protection on human health	For the annual limit value for the protection of vegetation
Upper assessment threshold	60% of the limit value (120 $\mu\text{g}/\text{m}^3$ - not to be exceeded more than three times per calendar year)	70 % of the limit value (32 $\mu\text{g}/\text{m}^3$)	70 % of the limit value (21 $\mu\text{g}/\text{m}^3$)
Lower assessment threshold	50% of the limit value (100 $\mu\text{g}/\text{m}^3$ - not to be exceeded more than three times per calendar year)	65 % of the limit value (26 $\mu\text{g}/\text{m}^3$)	65 % of the limit value (19.5 $\mu\text{g}/\text{m}^3$)

C. *Fine particulate matter***Table 8**

	For the hourly limit value for the protection on human health	For the annual limit value for the protection on human health
Upper assessment threshold	60% of the limit value (30 $\mu\text{g}/\text{m}^3$ - not to be exceeded more than seven times per calendar year)	70 % of the limit value (14 $\mu\text{g}/\text{m}^3$)
Lower assessment threshold	40% of the limit value (20 $\mu\text{g}/\text{m}^3$ - not to be exceeded more than seven times per calendar year)	50 % of the limit value (10 $\mu\text{g}/\text{m}^3$)

D. *Lead***Table 9**

	For the annual limit value for the protection on human health
Upper assessment threshold	70 % of the limit value (0.35 $\mu\text{g}/\text{m}^3$)
Lower assessment threshold	50 % of the limit value (0.25 $\mu\text{g}/\text{m}^3$)

Section 2. Determination of excellence of upper and lower assessment thresholds

2.1. Excellence of upper and lower assessment thresholds shall be determined on the basis of representative results on concentrations during previous five years where sufficient data are available. An assessment threshold shall be judged to have been exceeded if the total number of exceedances of the numerical concentration of the threshold during those five years exceeds three times number of exceedances allowed per year.

2.2. When fewer than five years representative data are available, measurement campaigns of short duration during the period of the year at locations likely to be typical of the highest pollution levels shall be combined with results obtained with information from emission inventories and dispersion modeling.

LOCATION OF MONITORING SITES FOR ASSESSMENT OF CONCENTRATIONS OF
SULPHUR DIOXIDE, OXIDES OF NITROGEN, FINE PARTICULATE MATTER AND LEAD IN
AMBIENT AIR

Section 1. Conditions for monitoring site location (macroscale siting)

1. Protection of human health

1.1. Monitoring sites (sampling points) directed at the protection of human health should be located:

- a) to provide data on the zones within areas and agglomerations where the highest concentrations occur in which the population is likely to be directly or indirectly exposed for a period which is significant in relation to the averaging period of the corresponding limit values;
- b) to provide data on levels in other zones within the areas and agglomerations which are representative of the exposure of the general population, and which provide information for the purposes of ambient air quality management.

1.2. Protection of ecosystems and other vegetation:

Monitoring sites targeted at the protection of ecosystems and other vegetation should be located in order to be representative of ambient air quality away from the immediate vicinity of sources such as agglomerations and other build-up areas, industrial installations and roads. As a guideline the monitoring sites should be located to be representative of ambient air quality in a surrounding zone of at least 1000 km².

Section 2. Conditions for location of sampling points (microscale siting)

1. Obligatory conditions for location of sampling points:

1.2. The flow around the inlet sampling probe should be unrestricted without any obstructions affecting the air flow in the vicinity of the sampler (normally the location should be some meters away from buildings, balconies, trees, and other obstacles and at least 0.5 meters away from the nearest building in the case of sampling points representing ambient air quality at the building line);

1.3. In general, the inlet sampling point should be located between 1.5 meters (the breathing zone) and 4 meters above the grounds. Higher positions (up to 8 meters) may be necessary in some circumstances. Higher siting may also be appropriate if the monitoring site is representative of a large zone;

- 1.3. The inlet probe should not be positioned in the very near vicinity of sources in order to avoid direct intake of emissions unmixed with ambient air;
 - 1.4. The sampler exhaust outlet should be positioned so that recirculation of exhaust air to the sample inlet is avoided;
 - 1.5. Traffic-oriented samplers should be at least 25 meters from major junctions and should be no less than 4 meters from the center of the nearest traffic lane;
 - 1.6. Traffic-oriented samplers for the measurement of nitrogen dioxide should be located less than 5 meters from the kerb side;
 - 1.7. In built-up areas, traffic-oriented samplers for the measurement of particulates (fine particulate matter or total suspended particulates) should be located to be representative of air quality close to the building line.
2. Other factors which should be taken into account during the selection of sampling points:
- 2.1. interfering sources;
 - 2.2. security;
 - 2.3. access;
 - 2.4. availability of electrical power and telephone communications;
 - 2.5. visibility of the location site in relation to its surroundings;
 - 2.6. safety of public and monitoring site operators;
 - 2.7. the desirability of collocating sampling points for different pollutants;
3. requirements in connection with the regional development and planning (regional planning schemes).

Section 3. Procedure for documentation and review of the location of monitoring sites:

The selection of monitoring site location should be fully documented at classification stage by such means as compass photographs of the surrounding zone and a detailed map, etc. The location of monitoring sites for assessment of levels of sulfur dioxide, oxides of nitrogen, particulate matter and lead in ambient air should be reviewed at regular intervals with repeated documentation to ensure that selection criteria remain valid over time.

ANNEX 7
to article 18

CRITERIA FOR DETERMINING NUMBERS OF MONITORING SITES FOR CONTINUOUS MEASUREMENT OF CONCENTRATIONS OF SULPHUR DIOXIDE, OXIDES OF NITROGEN, FINE PARTICULATE MATTER AND LEAD IN AMBIENT AIR

Section 1. Minimum number of monitoring sites for continuous measurement to assess

compliance with the established limit values and alert thresholds for the protection of human health in areas and agglomerations where discontinuous measurement is the sole source of information (according to the type of the polluting activities)

1. Diffuse (area) sources

Table 10

Population of area or agglomeration in question	Number of monitoring sites in case that concentrations are exceeding the corresponding upper assessment threshold	Number of monitoring sites in case that the maximum levels observed are between the corresponding upper and lower assessment thresholds	Number of monitoring sites for sulphur dioxide in agglomerations where the maximum levels observed are below the corresponding lower assessment thresholds
250 000	2	1	1
500 000	2	1	1
750 000	3	1	1
1 000 000	4	2	1
1 500 000	5	2	1
2 000 000	6	3	2
	For nitrogen dioxide and particulate matter: to include at least one urban background monitoring site and one traffic-oriented monitoring site		

2. Point Sources

For the assessment of ambient air pollution in the vicinity of point sources, the number of monitoring sites (sampling points) for continuous measurements should be calculated taking into account emission densities, the likely distribution patterns of ambient air pollution and potential exposure of the population concerned.

Section 2. Minimum number of monitoring sites (sampling points) for continuous measurement in order to assess compliance with limit values for the protection of ecosystems or other vegetation in areas other than agglomerations

Table 11

In case that maximum concentrations exceed the corresponding upper assessment thresholds	In case that maximum concentrations are between the corresponding upper and lower assessment thresholds
1 monitoring site per each area of 20 000 km ²	1 monitoring site per each area of 40 000 km ²

ANNEX 8
to article 20, paragraph 3

**REQUIREMENTS FOR DATA QUALITY OBJECTIVES AND COMPILATION OF RESULTS OF
AMBIENT AIR QUALITY ASSESSMENT**

Section 1. Requirements for ambient air assessment data quality objectives

Table 12

	Nitrogen dioxide and sulphur dioxide	Fine particulate matter and lead
Continuous measurements:		
Accuracy and precision of individual measurements	15 %	25 %
Minimum data capture	90%	90%
Minimum time coverage	100%	100%
Discontinuous measurements:		
Accuracy and precision of individual measurements	25%	50%
Minimum data capture	90%	90%
Minimum time coverage	20% (every fifth day, or ten weeks evenly distributed over the calendar year, or at random throughout the calendar year)	20% (every fifth day, or ten weeks evenly distributed over the calendar year, or at random throughout the calendar year)
Other representative methods for ambient air quality assessment (objective estimation)	75%	100%

Section 2. Results of ambient air quality assessment

1. The following information should be compiled for areas or agglomerations within which sources other than measurement are employed to supplement information from measurement, or as the sole means of ambient air quality assessment:

- 1.2. description of assessment activities carried out;
- 1.3. specific methods used, with references to descriptions of the method;
- 1.4. sources of data and information;

- 1.5. a description of results, including uncertainties and in particular, the extent of any zone or, if relevant the length of road within the area or agglomeration over which concentrations exceed the established limit values, or as the case may be limit values plus applicable margins of tolerance and of any zone within which concentrations exceed the corresponding assessment thresholds (upper and lower);
2. For limit values whose object is the protection of human health - the population potentially exposed to concentrations in excess of the limit values.
3. Where possible, adequate maps showing concentration distributions within each zone and agglomeration shall be compiled.

ANNEX 9
to article 21, paragraph 3

PUBLIC INFORMATION INDICATORS

Section 1. Public information indicators for concentrations of sulfur dioxide in ambient air:

Table 13

Concentration	Averaging time	Class of monitoring site
Hourly (short-term) health indicator: 350 µg/m³	1 hour	any
Annual (long-term) health indicator: 125 µg/m³	24 hours	any
Indicator for vegetation protection: 20 µg/m³	one calendar year	Monitoring site targeted at protection of vegetation

Section 2. Public information indicators for concentrations of nitrogen dioxide or oxides of nitrogen in ambient air:

Table 14

Concentration	Averaging time	Class of monitoring site
Hourly (short-term) health indicator: 200 µg/m³ NO₂	1 hour	any
Annual (long-term) health indicator: 40 µg/m³ NO₂	one calendar year	any
Indicator for vegetation protection: 30 µg/m³ NO + NO₂	one calendar year	Monitoring site targeted at protection of vegetation

Section 3. Public information indicators for concentrations of PM10 in ambient air:

Table 15

Concentration	Averaging time	Class of monitoring site
Daily (short-term) health indicator: 50 µg/m³	24 hours	any
Annual (long-term) health indicator: 30 µg/m³	one calendar year	any

Section 4. Public information indicators for concentrations of lead in ambient air:

0.5 µg/m³, measured over a calendar year.

Section 5. Public information indicators for concentrations of PM_{2.5} in ambient air:**Table 16**

Concentration	Averaging time	Class of monitoring site
Daily (short-term) health indicator: 40 µg/m³	24 hours	any
Annual (long-term) health indicator: 20 µg/m³	one calendar year	any