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COMMISSION IMPLEMENTING DECISION

of 12 December 2011

laying down rules for Directives 2004/107/EC and 2008/50/EC of the European Parliament and of the Council as regards the reciprocal exchange of information and reporting on ambient air quality

(notified under document C(2011) 9068)

(2011/850/EU)

(OJ L 335, 17.12.2011, p. 86)

Corrected by:

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CHAPTER I

GENERAL PROVISIONS

Article 1

Subject matter

This Decision establishes rules implementing Directives 2004/107/EC and 2008/50/EC as regards:

- (a) Member States obligations to report on the assessment and management of ambient air quality;
- (b) Member States reciprocal exchange of information concerning networks and stations, and the measurements of air quality obtained from those stations that are selected by Member States for the purpose of reciprocal exchange from amongst existing stations.

Article 2

Definitions

For the purposes of this Decision, and in addition to the definitions laid down in Article 2 of Directive 2004/107/EC, Article 3 of Directive 2007/2/EC, and Article 2 of and Annex VII to Directive 2008/50/EC, the following definitions shall apply:

- (1) 'station' means a location where measurements or samples are taken at one or more sampling points at the same site within an area of approximately 100 m²;
- (2) 'network' means an organisational structure performing assessment of ambient air quality by measuring at one or more stations;
- (3) 'measurement configuration' means the technical facilities used for the measurement of one pollutant or one of its compounds at a certain station;
- (4) 'measurement data' means information on the concentration or deposition level of a specific pollutant obtained by measurements;
- (5) 'modelling data' means information on the concentration or deposition level of a specific pollutant obtained through numerical simulation of physical reality;

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- (6) ‘objective estimation data’ means information on the concentration or deposition level of a specific pollutant obtained through expert analysis and may include use of statistical tools;
- (7) ‘primary data’ means information on the concentration or deposition level of a specific pollutant at the highest time resolution considered in this Decision;
- (8) ‘primary up-to-date assessment data’ means primary data collected with the frequency appropriate to each pollutant assessment method and made available to the public without delay;
- (9) ‘ambient air quality portal’ means a webpage managed by the Commission assisted by the European Environment Agency, through which information related to the implementation of this Decision including the data repository is provided;
- (10) ‘data repository’ means an information system, linked to the ambient air quality portal and managed by the European Environment Agency, containing air quality information and data made available through national data reporting and exchange nodes under the control of the Member States;
- (11) ‘data type’ means a descriptor by which similar data to be used for different purposes is categorised as set out in Part A of Annex II to this Decision;
- (12) ‘environmental objective’ means an ambient air quality objective to be attained within a given period, or where possible over a given period respectively or in the long term as laid down in Directives 2004/107/EC and 2008/50/EC.

CHAPTER II

COMMON PROVISIONS ON THE PROCESS FOR TRANSMITTING INFORMATION AND ON QUALITY CONTROL*Article 3***Ambient air quality portal and data repository**

1. The Commission, assisted by the European Environment Agency, shall establish a data repository and make it accessible through the ambient air quality portal (hereinafter referred to as ‘the portal’).
2. Member States shall make available the information used for reporting and reciprocal exchange of information to the data repository in accordance with Article 5.
3. The European Environment Agency shall manage the data repository.
4. The public shall have access to the data repository free of charge.

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5. Each Member State shall nominate a person or persons responsible for the delivery on its behalf to the data repository of each reported and exchanged information. Only nominated persons shall make available the information to be reported or exchanged.

6. Each Member State shall communicate the name of the person or persons referred to in paragraph 5 to the Commission.

*Article 4***Encoding of information**

The Commission, assisted by the European Environment Agency, shall on the portal make available to Member States the standardised machine-readable description of how to encode the information required by this Decision.

*Article 5***Procedure for making information available**

1. Member States shall make available to the data repository the information required by this Decision in accordance with the data requirements set out in Part A of Annex I. That information shall be automatically processed by an electronic tool.

2. The tool referred to in paragraph 1 shall be used to perform the following functions:

- (a) a consistency check of the information which is to be made available;
- (b) a check of the primary data relative to the specific data quality objectives specified in Annex IV to Directive 2004/107/EC and Annex I to Directive 2008/50/EC;
- (c) the aggregation of primary data according to the rules set out in Annex I to this Decision and Annexes VII and XI to Directive 2008/50/EC.

3. Where aggregated data is to be made available pursuant to Articles 6 to 14, they shall be generated by the tool referred to in paragraph 1 of this Article.

4. The Commission shall acknowledge the receipt of the information.

5. In case a Member State wants to update information, it shall describe the differences between the updated and original information and the reasons for the update when making the updated information available in the data repository.

The Commission shall acknowledge the receipt of the updated information. After that acknowledgment, the updated information shall be considered as the official information.



CHAPTER III
**MAKING AVAILABLE MEMBER STATES' INFORMATION ON
AMBIENT AIR QUALITY**

Article 6

Zones and agglomerations

1. In accordance with the procedure referred to in Article 5 of this Decision, Member States shall make available the information set out in Part B of Annex II to this Decision on the delimitation and type of zones and agglomerations established in accordance with Article 3 of Directive 2004/107/EC and Article 4 of Directive 2008/50/EC and in which the assessment and management of air quality is to be carried out in the following calendar year.

For zones and agglomerations to which an exemption or a postponement applies pursuant to Article 22 of Directive 2008/50/EC, the information made available shall include an indication thereof.

2. Member States shall make the information referred to in paragraph 1 available to the Commission no later than 31 December of each calendar year. Member States may indicate that there have been no changes to the information previously made available.

3. Where changes are made to the delimitation and type of zones and agglomerations, the Member States shall inform the Commission thereof no later than 9 months after the end of the calendar year the changes were made.

Article 7

Assessment regime

1. In accordance with the procedure referred to in Article 5 of this Decision, Member States shall make available the information set out in Part C of Annex II on the assessment regime to be applied in the following calendar year for each pollutant within individual zones and agglomerations in accordance with Article 4 of Directive 2004/107/EC and Articles 5 and 9 of Directive 2008/50/EC.

2. Member States shall make the information referred to in paragraph 1 available to the Commission no later than 31 December of each calendar year. Member States may indicate that there have been no changes to the information previously made available.

Article 8

**Methods for the demonstration and subtraction of exceedances
attributable to natural sources or to winter-sanding or -salting**

1. In accordance with the procedure referred to in Article 5 of this Decision, Member States shall make available the information set out in Part D of Annex II on the methods used for the demonstration and subtraction of exceedances attributable to natural sources or to winter-sanding or -salting applied within individual zones and agglomerations according to Articles 20 and 21 of Directive 2008/50/EC.

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2. Member States shall make the information referred to in paragraph 1 available to the Commission for a full calendar year no later than 9 months after the end of each calendar year.

*Article 9***Assessment methods**

1. In accordance with the procedure referred to in Article 5 of this Decision, Member States shall make available the information set out in Part D of Annex II on the quality and traceability of the assessment methods applied.

2. Member States shall make the information referred to in paragraph 1 available to the Commission for a full calendar year no later than 9 months after the end of each calendar year.

3. Where in a particular zone or agglomeration fixed measurement is mandatory according to Article 4 of Directive 2004/107/EC and Articles 6 and 9 and Article 10(6) of Directive 2008/50/EC, the information shall include at least the following:

- (a) the measurement configuration;
- (b) the demonstration of equivalence where a non-reference method is used;
- (c) the sampling point location, its description and classification;
- (d) the documentation of data quality.

4. Where in a particular zone or agglomeration indicative measurement is applied in accordance with Article 4 of Directive 2004/107/EC and Articles 6 and 9 and Article 10(6) of Directive 2008/50/EC, the information shall include at least the following:

- (a) the measurement method applied;
- (b) the sampling points and the coverage area;
- (c) the validation method;
- (d) the documentation of data quality.

5. Where in a particular zone or agglomeration modelling techniques are applied in accordance with Article 4 of Directive 2004/107/EC and Articles 6 and 9 of Directive 2008/50/EC, the information shall include at least the following:

- (a) the description of the modelling system and its inputs;
- (b) the model validation through measurements;
- (c) the coverage area;
- (d) the documentation of data quality.

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6. Where in a particular zone or agglomeration objective estimation is applied in accordance with Article 4 of Directive 2004/107/EC and Articles 6 and 9 of Directive 2008/50/EC, the information shall include at least the following:

- (a) the description of the estimation method;
- (b) the documentation of data quality.

7. Member States shall also make available the information set out in Part D of Annex II on the quality and traceability of the assessment methods applied, for the networks and stations selected by the Member States for the purpose of the reciprocal exchange of information as referred to in point (b) of Article 1 for the pollutants listed in Part B of Annex I and where available for the additional pollutants listed in Part C of Annex I and for the additional pollutants listed on the portal for that purpose. Paragraphs 1 to 6 of this Article shall apply to the exchanged information.

*Article 10***Primary validated assessment data and primary up-to-date assessment data**

1. In accordance with the procedure referred to in Article 5 of this Decision, Member States shall make available the information set out in Part E of Annex II on primary validated assessment data for all sampling points where measurement data is collected for the purpose of the assessment as indicated by Member States according to Article 9 for the pollutants listed in Parts B and C of Annex I.

Where in a particular zone or agglomeration modelling techniques are applied, Member States shall make available the information set out in Part E of Annex II at the highest time resolution available.

2. The primary validated assessment data shall be made available to the Commission for a full calendar year as complete time series no later than 9 months after the end of each calendar year.

3. Member States shall, where they make use of the possibility provided for in Articles 20(2) and 21(3) of Directive 2008/50/EC, make available information on the quantification of the contribution from natural sources pursuant to Article 20(1) of Directive 2008/50/EC or from the winter-sanding or -salting of roads pursuant to Article 21(1) and (2) of Directive 2008/50/EC.

The information shall include:

- (a) the spatial extent of the subtraction;
- (b) the quantity of the primary validated assessment data made available according to paragraph 1 of this Article that can be attributed to natural sources or winter-sanding or -salting;
- (c) the results of the application of the methods reported according to Article 8.

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4. Member States shall also make available the information set out in Part E of Annex II on primary up-to-date assessment data for the networks and stations selected by the Member States for the specific purpose of making available up-to-date information amongst the networks and stations selected by the Member States for the purpose of the reciprocal exchange of information as referred to in point (b) of Article 1 for the pollutants listed in Part B of Annex I and where available for the additional pollutants listed in Part C of Annex I and for the additional pollutants listed on the portal for that purpose.

5. Member States shall also make available the information set out in Part E of Annex II on primary validated assessment data for the networks and stations selected by the Member States for the purpose of the reciprocal exchange of information as referred to in point (b) of Article 1 for the pollutants listed in Part B of Annex I and where available for the additional pollutants listed in Part C of Annex I and for the additional pollutants listed on the portal for that purpose. Paragraphs 2 and 3 of this Article shall apply to the exchanged information.

6. The primary up-to-date assessment data pursuant to paragraph 4 shall be made available to the Commission on a provisional basis with the frequency appropriate to each pollutant assessment method and within a reasonable timeframe after the data has been made available to the public according to Article 26 of Directive 2008/50/EC, for the pollutants specified for that purpose in Part B of Annex I to this Decision.

The information shall include:

- (a) assessed concentration levels;
- (b) a status indication on the quality control.

7. The primary up-to-date information made available pursuant to paragraph 4 shall be coherent with the information made available pursuant to Articles 6, 7 and 9.

8. Member States may update the primary up-to-date assessment data made available pursuant to paragraph 4 following further quality control. The updated information shall replace the original information and its status shall be clearly indicated.

*Article 11***Aggregated validated assessment data**

1. The tool referred to in Article 5(1) shall generate the information set out in Part F of Annex II on aggregated validated assessment data, on the basis of the information made available by Member States on primary validated assessment data according to Article 10.

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2. For pollutants with mandatory monitoring requirements, the information generated by the tool shall consist of aggregated measured concentration levels for all sampling points on which the Member States shall make information available pursuant to Article 9(3)(c).

3. For pollutants with defined environmental objectives, the information generated by the tool shall consist of the concentration levels expressed in the metric associated with the defined environmental objective set out in Part B of Annex I and shall include:

- (a) the annual average, where an annual average target or limit value is defined;
- (b) the total hours in exceedance where an hourly limit value is defined;
- (c) the total days in exceedance where a daily limit value is defined, or the percentile 90,4 for PM₁₀ in the particular case when random measurements are applied instead of continuous measurements;
- (d) the total days in exceedance where a maximum daily eight-hour mean target or limit value is defined;
- (e) the AOT40 as defined in Part A of Annex VII to Directive 2008/50/EC in case of the ozone target value for the protection of vegetation;
- (f) the Average Exposure Indicator in case of the PM_{2,5} exposure reduction target and the exposure concentration obligation.

Article 12

Attainment of environmental objectives

1. In accordance with the procedure referred to in Article 5 of this Decision, Member States shall make available the information set out in Part G of Annex II on the attainment of environmental objectives set by Directives 2004/107/EC and 2008/50/EC.

2. The information referred to in paragraph 1 shall be made available to the Commission for a full calendar year no later than 9 months after the end of each calendar year.

The information shall include the following:

- (a) a declaration of attainment of all environmental objectives in each specific zone or agglomeration, including information on the exceedance of any applicable margin of tolerance;
- (b) where relevant, a declaration that the exceedance in the zone is attributable to natural sources;

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- (c) where relevant, a declaration that the exceedance of a PM₁₀ air quality objective in the zone or agglomeration is due to the re-suspension of particulate matter following the winter-sanding or -salting of roads;
 - (d) information on the attainment of the PM_{2,5} exposure concentration obligation.
3. Where an exceedance has occurred, the information made available shall also include information on the area of exceedance and the number of people exposed.
4. The information made available shall be coherent with the zone delimitation made available pursuant to Article 6 for the same calendar year and the aggregated validated assessment data made available pursuant to Article 11.

*Article 13***Air quality plans**

1. In accordance with the procedure referred to in Article 5 of this Decision, Member States shall make available the information set out in Parts H, I, J and K of Annex II to this Decision on air quality plans as required by Article 23 of Directive 2008/50/EC including:
- (a) the mandatory elements of the air quality plan as listed pursuant to Article 23 of Directive 2008/50/EC in Section A of Annex XV to Directive 2008/50/EC;
 - (b) references to where the public can have access to regularly updated information on the implementation of the air quality plans.
2. The information shall be made available to the Commission without delay, and no later than 2 years after the end of the calendar year in which the first exceedance was observed.

*Article 14***Measures to comply with the target values of Directive 2004/107/EC**

1. In accordance with the procedure referred to in Article 5 of this Decision, Member States shall make available the information set out in Part K of Annex II to this Decision on measures taken to comply with the target values as required pursuant to Article 5(2) of Directive 2004/107/EC.
2. The information shall be made available to the Commission no later than 2 years after the end of the year in which the exceedance triggering the measure was observed.

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CHAPTER IV
TRANSITIONAL AND FINAL PROVISIONS

Article 15

Repeal

Decisions 2004/224/EC and 2004/461/EC are repealed with effect from 1 January 2014.

Article 16

Applicability

1. This Decision shall apply from 1 January 2014.
2. By way of derogation from paragraph 1 of this Article, Member States shall make available the information required pursuant to Articles 6 and 7 for the first time no later than 31 December 2013.

Article 17

Addressees

This Decision is addressed to the Member States.

▼ B*ANNEX I***(A) Data requirements***(1) Reporting of time*

All time references shall be made available in accordance with the ISO standard 8601:2004(E) using the extended format (YYYY-MM-DDThh:mm:ss ± hh:mm) that includes the information on difference from UTC.

The time stamp refers to the end of the measurement period.

(2) Number of digits and rounding

Data should be made available with the same number of digits as they are used in the monitoring network.

Rounding has to be the very last step of any calculation, i.e. immediately before comparing the result with the environmental objective and has to be done only once. By default the system will perform rounding of the data made available where appropriate following the commercial rounding rules.

(3) Equivalence

When more than one assessment method is used at a specific location, data should be supplied using the assessment method exhibiting the lowest uncertainty at that specific location.

(4) Standardisation

The provisions set out in Part IV of Annex IV to Directive 2004/107/EC and Part C of Annex VI to Directive 2008/50/EC should apply to the reciprocal exchange of information.

*(5) Provisions for PM_{2,5}**Limit values plus margin of tolerance*

For PM_{2,5}, in accordance with Part E of Annex XIV to Directive 2008/50/EC, the following sum of limit value (LV) + margin of tolerance (MOT) shall apply in the respective years mentioned below:

Year	LV + MOT
2008	30
2009	29
2010	29
2011	28
2012	27
2013	26
2014	26
2015	25

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Calculation of the Average Exposure Indicator (AEI) in accordance with Part A of Annex XIV to Directive 2008/50/EC

Calculation is made for each individual year, calculating PM_{2,5} annual means for each of the selected sampling points. The selection of the sampling points has to be evident from the appropriate information made available.

Valid annual means complying with the data quality objectives are averaged over all designated AEI sites of the Member State to obtain an annual average.

The procedure is repeated for each of the 3 years, and the three annual averages are then averaged to obtain the AEI.

The AEI shall be made available annually as a three-year running mean. In case of a need to update any of the data that could directly or indirectly (through selection of sampling point) influence the AEI, the complete update of all affected information is necessary.

(B) Environmental objectives and reporting metrics

Formula	Protection target	Environmental Objective type (Code ⁽¹⁾)	Averaging period of assessments	Reporting metric of environmental objective	Numerical values of the environmental objective (allowed number of exceedances)
Pollutants for which up-to-date and validated data have to be reported					
NO ₂	Health	LV	1 hour	Hours in exceedance in a calendar year	200 µg/m ³ (18)
		LVMT			
		LV	1 calendar year	Annual average	40 µg/m ³
		LVMT			
		ALT	1 hour	Three consecutive hours in exceedance (at locations representative of air quality over at least 100 km ² or an entire zone or agglomeration, which ever is smaller)	400 µg/m ³
NO _x	Vegetation	CL	1 calendar year	Annual average	30 µg/m ³
PM ₁₀	Health	LV	1 day	Days in exceedance in a calendar year	50 µg/m ³ (35) Percentile of 90,4
		LV	1 calendar year	Annual average	40 µg/m ³
		WSS ⁽²⁾	1 day	Deducted days in exceedance in a calendar year	n.a.
			1 calendar year	Deduction of annual average	n.a.
		NAT ⁽²⁾	1 day	Deducted days in exceedance in a calendar year	n.a.
			1 calendar year	Deduction of the annual average	n.a.

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Formula	Protection target	Environmental Objective type (Code ⁽¹⁾)	Averaging period of assessments	Reporting metric of environmental objective	Numerical values of the environmental objective (allowed number of exceedances)
PM _{2,5}	Health	ECO	3 subsequent calendar years	Average Exposure Indicator (calculation see Directive 2008/50/EC)	20 µg/m ³
		ERT			in accordance with Annex XIV, Part B to Directive 2008/50/EC
		TV	1 calendar year	Annual average	25 µg/m ³
		LV			
		LVMT			
SO ₂	Health	LV	1 hour	Hours in exceedance in a calendar year	350 µg/m ³ (24)
			1 day	Days in exceedance in a calendar year	125 µg/m ³ (3)
		ALT	1 hour	Three consecutive hours in exceedance (at locations representative of air quality over at least 100 km ² or an entire zone or agglomeration, whichever is smaller)	500 µg/m ³
		NAT ⁽²⁾	1 hour	Deducted hours in exceedance in a calendar year	n.a.
			1 day	Deducted days in exceedance in a calendar year	n.a.
		Vegetation	CL	1 calendar year	Annual average
	Winter			Average value over the winter months, i.e. 1 October year x-1 to 31 March year x	20 µg/m ³
	O ₃	Health	TV	Maximum daily eight-hour mean	Days when maximum daily eight-hour mean exceeded the target value averaged over 3 years
LTO			Maximum daily eight-hour mean	Days when maximum daily eight-hour mean exceeded the long term objective in 1 calendar year	120 µg/m ³
INT			1 hour	Hours in exceedance in a calendar year	180 µg/m ³
ALT			1 hour	Hours in exceedance in a calendar year	240 µg/m ³
Vegetation		TV	1 May to 31 July	AOT40 (calculation see Dir. 2008/50/EC Annex VII)	18 000 µg/m ³ ·h
		LTO	1 May to 31 July	AOT40 (calculation see Dir. 2008/50/EC Annex VII)	6 000 µg/m ³ ·h

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Formula	Protection target	Environmental Objective type (Code ⁽¹⁾)	Averaging period of assessments	Reporting metric of environmental objective	Numerical values of the environmental objective (allowed number of exceedances)
CO	Health	LV	Maximum daily eight-hour mean	Days when maximum daily eight-hour mean exceeded the limit value	10 mg/m ³

Pollutants for which only validated data have to be reported

Benzene	Health	LV	1 calendar year	Annual average	5 µg/m ³
Lead	Health	LV	1 calendar year	Annual average	0,5 µg/m ³
Cadmium	Health	TV	1 calendar year	Annual average	5 ng/m ³
Arsenic	Health	TV	1 calendar year	Annual average	6 ng/m ³
Nickel	Health	TV	1 calendar year	Annual average	20 ng/m ³
B(a)P	Health	TV	1 calendar year	Annual average	1 ng/m ³

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- ⁽¹⁾ LV: limit value, LVMT: Limit value plus margin of tolerance, TV: target value, LTO: long-term objective, INT: Information threshold, ALT: Alert threshold, CL: Critical level, NAT: Assessment of natural contribution, WSS: Assessment of winter-sanding and -salting, ERT: Exposure reduction target, ECO: Exposure concentration obligation.
- ⁽²⁾ No up-to-date data is to be made available.

(C) Pollutants with monitoring requirements

The list includes all pollutants with monitoring requirements referred to in Directives 2004/107/EC and 2008/50/EC. A list including further pollutants on which Member States shall have reciprocal data exchange, as available, is kept by the European Environment Agency and is made available at the portal.

Airbase code	Pollutant formula	Pollutant name	Measurement unit
Gaseous inorganic pollutants			
1	SO ₂	Sulphur dioxide	µg/m ³
8	NO ₂	Nitrogen dioxide	µg/m ³
9	NO _x ⁽¹⁾	Nitrogen oxides	µg/m ³
7	O ₃	Ozone	µg/m ³
10	CO	Carbon monoxide	mg/m ³
Particulate Matter (PM)			
5	PM ₁₀	PM ₁₀	µg/m ³
6001	PM _{2,5}	PM _{2,5}	µg/m ³

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Airbase code	Pollutant formula	Pollutant name	Measurement unit
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PM_{2,5} Speciation**▼C1**

1047	SO ₄ ²⁻ in PM _{2,5}	Sulphate in PM _{2,5}	µg/m ³
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1046	NO ₃ ⁻ in PM _{2,5}	Nitrate in PM _{2,5}	µg/m ³
1045	NH ₄ ⁺ in PM _{2,5}	Ammonium in PM _{2,5}	µg/m ³
1771	elem. C in PM _{2,5}	Elemental Carbon in PM _{2,5}	µg/m ³
1772	org. C in PM _{2,5}	Organic Carbon in PM _{2,5}	µg/m ³
1629	Ca ²⁺ in PM _{2,5}	Calcium in PM _{2,5}	µg/m ³
1659	Mg ²⁺ in PM _{2,5}	Magnesium in PM _{2,5}	µg/m ³
1657	K ⁺ in PM _{2,5}	Potassium in PM _{2,5}	µg/m ³
1668	Na ⁺ in PM _{2,5}	Sodium in PM _{2,5}	µg/m ³
1631	Cl ⁻ in PM _{2,5}	Chloride in PM _{2,5}	µg/m ³

Heavy Metals**▼C1**

5012	Pb in PM ₁₀	Lead in PM ₁₀	µg/m ³
5014	Cd in PM ₁₀	Cadmium in PM ₁₀	ng/m ³
5018	As in PM ₁₀	Arsenic in PM ₁₀	ng/m ³
5015	Ni in PM ₁₀	Nickel in PM ₁₀	ng/m ³

▼B**Heavy Metals Deposition****▼C1**

7012	Pb deposition	wet/total Pb deposition	µg/m ² .day
7014	Cd deposition	wet/total Cd deposition	µg/m ² .day
7018	As deposition	wet/total As deposition	µg/m ² .day
7015	Ni deposition	wet/total Ni deposition	µg/m ² .day

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7013	Hg deposition	wet/total Hg deposition	µg/m ² .day
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Mercury

4013	Metallic gaseous Hg	elemental gaseous Mercury	ng/m ³
4813	Total gaseous Hg	Total gaseous Hg	ng/m ³
653	Reactive gaseous Hg	reactive gaseous Mercury	ng/m ³

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Airbase code	Pollutant formula	Pollutant name	Measurement unit
5013	Hg in PM ₁₀	Mercury in PM ₁₀	ng/m ³

▼ C1▼ B**Polycyclic Aromatic Hydrocarbons**

5029	B(a)P	Benzo(a)pyrene in PM ₁₀	ng/m ³
5610	Benzo(a)anthracene	Benzo(a)anthracene in PM ₁₀	ng/m ³
5617	Benzo(b)fluoranthene	Benzo(b)fluoranthene in PM ₁₀	ng/m ³
5759	Benzo(j)fluoranthene	Benzo(j)fluoranthene in PM ₁₀	ng/m ³
5626	Benzo(k)fluoranthene	Benzo(k)fluoranthene in PM ₁₀	ng/m ³
5655	Indeno(1,2,3,-cd)pyrene	Indeno(1,2,3,-cd)pyrene in PM ₁₀	ng/m ³
5763	Dibenzo(a,h)anthracene	Dibenzo(a,h)anthracene in PM ₁₀	ng/m ³

Polycyclic Aromatic Hydrocarbons Deposition

7029	B(a)P	Benzo(a)pyrene deposition	µg/m ² .day
611	Benzo(a)anthracene	Benzo(a)anthracene deposition	µg/m ² .day
618	Benzo(b)fluoranthene	Benzo(b)fluoranthene deposition	µg/m ² .day
760	Benzo(j)fluoranthene	Benzo(j)fluoranthene deposition	µg/m ² .day
627	Benzo(k)fluoranthene	Benzo(k)fluoranthene deposition	µg/m ² .day
656	Indeno(1,2,3,-cd)pyrene	Indeno(1,2,3,-cd)pyrene deposition	µg/m ² .day
7419	Dibenzo(a,h)anthracene	Dibenzo(a,h)anthracene deposition	µg/m ² .day

▼ C1**Volatile Organic Compounds**▼ B

20	C ₆ H ₆	Benzene	µg/m ³
428	C ₂ H ₆	Ethane	µg/m ³
430	C ₂ H ₄	Ethene (ethylene)	µg/m ³
432	HC≡CH	Ethyne (acetylene)	µg/m ³
503	H ₃ C-CH ₂ -CH ₃	Propane	µg/m ³
505	CH ₂ = CH-CH ₃	Propene	µg/m ³
394	H ₃ C-CH ₂ -CH ₂ -CH ₃	n-butane	µg/m ³
447	H ₃ C-CH(CH ₃) ₂	2-methylpropane (i-butane)	µg/m ³

▼ B

Airbase code	Pollutant formula	Pollutant name	Measurement unit
6005	$\text{H}_2\text{C} = \text{CH}-\text{CH}_2-\text{CH}_3$	1-butene	$\mu\text{g}/\text{m}^3$
6006	$\text{H}_3\text{C}-\text{CH} = \text{CH}-\text{CH}_3$	trans-2-butene	$\mu\text{g}/\text{m}^3$
6007	$\text{H}_3\text{C}-\text{CH} = \text{CH}-\text{CH}_3$	cis-2-butene	$\mu\text{g}/\text{m}^3$
24	$\text{CH}_2 = \text{CH}-\text{CH} = \text{CH}_2$	1,3-butadiene	$\mu\text{g}/\text{m}^3$
486	$\text{H}_3\text{C}-(\text{CH}_2)_3-\text{CH}_3$	n-pentane	$\mu\text{g}/\text{m}^3$

▼ C1

450	$\text{H}_3\text{C}-\text{CH}_2-\text{CH}(\text{CH}_3)_2$	2-methylbutane (i-pentane)	$\mu\text{g}/\text{m}^3$
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▼ B

6008	$\text{H}_2\text{C} = \text{CH}-\text{CH}_2-\text{CH}_2-\text{CH}_3$	1-pentene	$\mu\text{g}/\text{m}^3$
6009	$\text{H}_3\text{C}-\text{HC} = \text{CH}-\text{CH}_2-\text{CH}_3$	2-pentene	$\mu\text{g}/\text{m}^3$
451	$\text{CH}_2 = \text{CH}-\text{C}(\text{CH}_3) = \text{CH}_2$	2-methyl-1,3-butadiene (isoprene)	$\mu\text{g}/\text{m}^3$
443	C_6H_{14}	n-hexane	$\mu\text{g}/\text{m}^3$
316	$(\text{CH}_3)_2-\text{CH}-\text{CH}_2-\text{CH}_2-\text{CH}_3$	2-methylpentane (i-hexane)	$\mu\text{g}/\text{m}^3$
441	C_7H_{16}	n-heptane	$\mu\text{g}/\text{m}^3$
475	C_8H_{18}	n-octane	$\mu\text{g}/\text{m}^3$
449	$(\text{CH}_3)_3-\text{C}-\text{CH}_2-\text{CH}-(\text{CH}_3)_2$	2,2,4-trimethylpentane (i-octane)	$\mu\text{g}/\text{m}^3$

▼ C1

21	$\text{C}_6\text{H}_5-\text{CH}_3$	Toluene	$\mu\text{g}/\text{m}^3$
431	$\text{C}_6\text{H}_5-\text{C}_2\text{H}_5$	Ethyl benzene	$\mu\text{g}/\text{m}^3$
464	m,p- C_6H_4 (CH_3) ₂	m,p-xylene	$\mu\text{g}/\text{m}^3$
482	o- C_6H_4 (CH_3) ₂	o-xylene	$\mu\text{g}/\text{m}^3$

▼ B

6011	C_6H_3 (CH_3) ₃	1,2,4-trimethylbenzene	$\mu\text{g}/\text{m}^3$
6012	C_6H_3 (CH_3) ₃	1,2,3-trimethylbenzene	$\mu\text{g}/\text{m}^3$
6013	C_6H_3 (CH_3) ₃	1,3,5-trimethylbenzene	$\mu\text{g}/\text{m}^3$
32	THC(NM)	total non methane Hydrocarbons	$\mu\text{g}/\text{m}^3$
25	HCHO	Methanal (formaldehyde)	$\mu\text{g}/\text{m}^3$

(1) NO_x or the sum of NO and NO₂ measures at the same spot can be reported. To be reported as $\mu\text{g NO}_2/\text{m}^3$.

▼ B*ANNEX II***(A) Common Data types**

Wherever a certain data type is to be made available pursuant to Parts B to K of this Annex, all information listed under the relevant data type specified below is to be included.

(1) Data type 'Contact Details'

1. Name of responsible authority, institution or body
2. Name of responsible person
3. Web address
4. Address
5. Telephone number
6. E-mail

(2) Data type 'Exceedance Situation'

1. Exceedance Situation ID
2. Exceeded environmental objective
3. Area of the exceedance situation (data type 'Spatial Extent')
4. Classification of the area
5. Administrative units
6. Estimate of the surface area where the level was above the environmental objective
7. Estimate of the length of road where the level was above the environmental objective
8. Monitoring stations in exceedance area (link to D)
9. Modelled exceedance (link to D)
10. Estimate of the total resident population in the exceedance area
11. Estimate of the ecosystem/vegetation area exposed above the environmental objective
12. Reference year

(3) Data type 'Environmental Objective'

1. Objective type
2. Averaging period of assessment
3. Protection target

▼ B(4) *Data type 'Spatial Extent'*

1. GIS information provided as coordinates

(5) *Data type 'Spatial Observation'*

1. Spatial assessment data

(6) *Data type 'Publication'*

1. Publication
2. Title
3. Author(s)
4. Publication date
5. Publisher
6. Web link

(7) *Data type 'Documentation of Change'*

1. Change
2. Description of change

(B) Information on zones and agglomerations (Article 6)

- (1) Provider (data type 'Contact Details')
- (2) Change documentation (data type 'Documentation of Change')
- (3) Zone code
- (4) Zone name
- (5) Zone type
- (6) Zone delimitation (data type 'Spatial Extent')
- (7) Zone history: application start and end date
- (8) Predecessors (link to B)
- (9) Resident population
- (10) Resident population reference year
- (11) Code of designated pollutant
- (12) Protection Target
- (13) Exemption or postponement according to Article 22 of Directive 2008/50/EC

(C) Information on the assessment regime (Article 7)

- (1) Provider (data type 'Contact Details')
- (2) Change documentation (data type 'Documentation of Change')

▼ B

- (3) Information on zone (link to B)
- (4) Pollutant
- (5) Environmental objective (data type 'Environmental Objective')
- (6) Attainment of assessment threshold
- (7) Assessment threshold classification year
- (8) Documentation of the classification (web link)
- (9) Assessment type
- (10) Assessment type: Description
- (11) Individual assessment metadata, including station ID, location information (link to D)
- (12) Authority responsible for the assessment of air quality (data type 'Contact Details')
- (13) Authority responsible for the approval of measurement systems (data type 'Contact Details')
- (14) Authority responsible for ensuring the accuracy of measurements (data type 'Contact Details')
- (15) Authority responsible for the analysis of assessment method (data type 'Contact Details')
- (16) Authority responsible for the coordination of nation-wide quality assurance (data type 'Contact Details')
- (17) Authority responsible for the cooperation with other Member States and with the Commission (data type 'Contact Details')

(D) Information on the assessment methods (Articles 8 and 9)*(i) General: information for all assessment methods*

- (1) Provider (data type 'Contact Details')
- (2) Change documentation (data type 'Documentation of change')
- (3) Assessment Type
- (4) Information on zone (Link to B)
- (5) Pollutant

(ii) Fixed measurement Information

- (1) Measurement configuration ID
- (2) European station ID
- (3) Network ID
- (4) National station code
- (5) Name of the monitoring station
- (6) Name of the municipality

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- (7) Measurement start and end date
- (8) Measurement type
- (9) Measurement/sampling/analytical method
- (10) Measurement/sampling equipment (where available)
- (11) Detection limit (where available)
- (12) Demonstration of equivalence
- (13) Demonstration of equivalence: Documentation (web link)
- (14) Sampling time
- (15) Sampling interval
- (16) Spatial Extent of representative area (data type 'Spatial Extent') (where available)
- (17) Evaluation of representativeness (where available)
- (18) Documentation of representativeness (web link) (where available)
- (19) Sampling point location: height of air inlet above ground
- (20) Sampling point location: horizontal distance of air inlet from the next building (for traffic stations)
- (21) Sampling point location: Distance of air inlet from nearest lane (for traffic stations)
- (22) Classification of station in relation to predominant emission sources relevant for the measurement configuration for each pollutant
- (23) Main sources (traffic, domestic heating, industrial sources or source area etc.) (where available)
- (24) Distance from predominant industrial source or source area (for industrial stations)
- (25) Station time references: start and end date
- (26) Geographical coordinates: longitude, latitude and altitude of monitoring station
- (27) Documentation of station information including maps and photographs (web link) (where available)
- (28) Classification of the area
- (29) Distance to major junction (for traffic stations)
- (30) Assessed traffic volume (for traffic stations)

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- (31) Heavy-duty fraction of traffic (for traffic stations, where available)
 - (32) Traffic speed (for traffic stations, where available)
 - (33) Street canyon — width of street (for traffic stations, where available)
 - (34) Street canyon — mean height of building facades (for traffic stations, where available)
 - (35) Network name
 - (36) Network: start and end date of operation
 - (37) Body responsible for network management (data type ‘Contact Details’)
 - (38) Assessment method for winter sanding and salting (where Article 21 of Directive 2008/50/EC applies)
 - (39) Assessment method for natural contribution (where Article 20 of Directive 2008/50/EC applies)
 - (40) Data quality objectives: time coverage
 - (41) Data quality objectives: data capture
 - (42) Data quality objectives: uncertainty estimation
 - (43) Data quality objectives: documentation of traceability and uncertainty estimation
 - (44) Data quality objectives: documentation of QA/QC (Web Link)
- (iii) *Indicative Measurement Information*
- (1) Indicative measurement ID
 - (2) Description of measurement method
 - (3) Measurement type
 - (4) Measurement method
 - (5) Measurement/sampling equipment (where available)
 - (6) Detection limit (where available)
 - (7) Sampling time
 - (8) Sampling interval
 - (9) Geographical coordinates: geographical longitude, latitude and altitude
 - (10) Assessment method for winter sanding and salting (where Article 21 of Directive 2008/50/EC applies)

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- (11) Assessment method for natural contribution (where Article 20 of Directive 2008/50/EC applies)
 - (12) Data quality objectives: time coverage
 - (13) Data quality objectives: data capture
 - (14) Data quality objectives: uncertainty estimation
 - (15) Data quality objectives: documentation of traceability and uncertainty estimation
 - (16) Data quality objectives: documentation of QA/QC (Web Link)
- (iv) *Modelling Information*
- (1) Modelling ID
 - (2) Environmental objective type (data type 'Environmental Objective')
 - (3) Modelling method: name
 - (4) Modelling method: description
 - (5) Modelling method: documentation (web link)
 - (6) Modelling method: validation by measurement
 - (7) Modelling method: validation by measurement at sites not reported under the AQD
 - (8) Modelling period
 - (9) Area for modelling (data type 'Spatial Extent')
 - (10) Spatial resolution
 - (11) Assessment method for winter sanding and salting (where Article 21 of Directive 2008/50/EC applies)
 - (12) Assessment method for natural contribution (where Article 20 of Directive 2008/50/EC applies)
 - (13) Data quality objectives: uncertainty estimation
 - (14) Data quality objectives: documentation of QA/QC (Web Link)
- (v) *Objective Estimation Information*
- (1) Objective estimation ID
 - (2) Description
 - (3) Area for objective estimation (data type 'Spatial Extent')
 - (4) Data quality objective: uncertainty estimation

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(5) Data quality objectives: documentation of traceability and uncertainty estimation

(6) Data quality objectives: documentation of QA/QC (Web Link)

(E) Information on primary validated assessment data and primary up-to-date assessment data (Article 10)

(1) Provider (data type 'Contact Details')

(2) Documentation of change (data type 'Documentation of Change')

(3) Version number

(4) Pollutant

(5) Unit of pollutant

(6) Assessment Type

(7) Assessment Method (Link to D)

(8) Start and end date of sampling

(9) Time units and number of units of sampling

(10) Measurement value (including quantity of pollutant concentration levels attributed to natural sources and winter-sanding and -salting (where Articles 20 and 21 of Directive 2008/50/EC apply))

(11) Modelled value (data type 'Spatial Observation') (including quantity of pollutant concentration levels attributed to natural sources and winter-sanding and -salting (where Articles 20 and 21 of Directive 2008/50/EC apply))

(12) Validity

(13) Verification status

(F) Information on generated aggregated data (Article 11)

(1) Assessment ID

(2) Information on zone (Link to B)

(3) Pollutant

(4) Unit of pollutant

(5) Environmental Objective (data type 'Environmental Objective')

(6) Assessment Type

(7) Assessment Method (link to D)

(8) Time reference: start and end date of aggregation period

(9) Aggregated measurement value

(10) Aggregated modelled value (data type 'Spatial Observation')

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- (11) Data quality objective: time coverage
- (12) Data quality objective: data capture
- (13) Data quality objective: uncertainty estimation
- (14) Validity
- (15) Verification status

(G) Information on the attainment of environmental objectives (Article 12)

This information must cover all zones and agglomerations and be fully coherent with the generated information under Part F of this Annex on aggregated validated assessment data for pollutants with defined environmental objectives.

- (1) Provider (data type 'Contact Details')
- (2) Reporting year
- (3) Change documentation (data type 'Documentation of Change')
- (4) Information on zone (link to B)
- (5) Exceedance situation (data type 'Exceedance Situation')
- (6) Pollutant
- (7) Assessment information (link to D)
- (8) Exceedance of the environmental objective
- (9) Exceedance of the environmental objective plus margin of tolerance
- (10) Exceedance taking into account natural sources
- (11) Exceedance taking into account winter sanding or salting
- (12) Exceedance situation after consideration of natural contributions and winter sanding or salting (data type 'Exceedance Situation').
- (13) Total numbers of exceedances (according to 8 to 11)

(H) Information on air quality plans (Article 13)

- (1) Provider (data type 'Contact Details')
- (2) Change documentation (data type 'Documentation of Change')
- (3) Air quality plan: code
- (4) Air quality plan: name
- (5) Air quality plan: reference year of first exceedance
- (6) Competent authority (data type 'Contact Details')
- (7) Air quality plan: status

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- (8) Air quality plan: pollutants covered
 - (9) Air quality plan: date of official adoption
 - (10) Air quality plan: timetable of implementation
 - (11) Reference to air quality plan (web link)
 - (12) Reference to implementation (web link)
 - (13) Relevant publication (data type 'Publication')
 - (14) Code of the relevant exceedance situation(s) (link to G)
- (I) Information on source apportionment (Article 13)**
- (1) Code(s) of exceedance situation (link to G)
 - (2) Reference year
 - (3) Regional background: total
 - (4) Regional background: from within Member State
 - (5) Regional background: transboundary
 - (6) Regional background: natural
 - (7) Urban background increment: total
 - (8) Urban background increment: traffic
 - (9) Urban background increment: industry including heat and power production
 - (10) Urban background increment: agriculture
 - (11) Urban background increment: commercial and residential
 - (12) Urban background increment: shipping
 - (13) Urban background increment: off-road mobile machinery
 - (14) Urban background increment: natural
 - (15) Urban background increment: transboundary
 - (16) Local increment: total
 - (17) Local increment: traffic
 - (18) Local increment: industry including heat and power production

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- (19) Local increment: agriculture
- (20) Local increment: commercial and residential
- (21) Local increment: shipping
- (22) Local increment: off-road mobile machinery
- (23) Local increment: natural
- (24) Local increment: transboundary

(J) Information on the scenario for the attainment year (Article 13)

- (1) Code of exceedance situation (link to G)
- (2) Code of scenario
- (3) Code of air quality plan (link to H)
- (4) Reference year for which projections are developed
- (5) Reference year from which projections are started
- (6) Source apportionment (link to I)
- (7) Relevant publication (data type 'Publication')
- (8) Baseline: description of the emission scenario
- (9) Baseline: total emissions in the relevant spatial unit
- (10) Baseline: included measures (link to K)
- (11) Baseline: expected concentration levels in the projection year
- (12) Baseline: expected number of exceedances in the projection year
- (13) Projection: description of the emission scenario
- (14) Projection: total emissions in the relevant spatial unit
- (15) Projection: included measures (Link to K)
- (16) Projection: expected concentration levels in the projection year
- (17) Projection: expected number of exceedances in the projection year

(K) Information on measures (Articles 13 and 14)

- (1) Code(s) of exceedance situation (link to G)
- (2) Code of air quality plan (link to H)
- (3) Code of evaluation scenario (link to J)
- (4) Measure: code
- (5) Measure: name
- (6) Measure: description
- (7) Measure: classification

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- (8) Measure: type
- (9) Measure: administrative level
- (10) Measure: time scale
- (11) Measure: affected source sector
- (12) Measure: spatial scale
- (13) Estimated implementation costs (where available)
- (14) Planned implementation: start and end date
- (15) Date when the measure is planned to take full effect
- (16) Other key implementation dates
- (17) Indicator for monitoring progress
- (18) Reduction in annual emissions due to applied measure
- (19) Expected impact in level of concentrations in the projection year (where available)
- (20) Expected impact in number of exceedances in the projection year (where available)