



STATUTORY INSTRUMENTS

S.I. No. 58 of 2009

ARSENIC, CADMIUM, MERCURY, NICKEL AND POLYCYCLIC
AROMATIC HYDROCARBONS IN AMBIENT AIR REGULATIONS
2009

(Prn. A9/0258)

ARSENIC, CADMIUM, MERCURY, NICKEL AND POLYCYCLIC
AROMATIC HYDROCARBONS IN AMBIENT AIR REGULATIONS
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The Minister for the Environment, Heritage and Local Government in exercise of the powers conferred on him by sections 10, 20, 21, 46, 47, 49, 50 and 52 of the Air Pollution Act 1987 (No. 6 of 1987) and by sections 6, 53, 54, 56 and 80 of the Environmental Protection Agency Act 1992 (No. 7 of 1992) and for the purpose of giving effect to Council Directive 2004/107/EC relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air⁽¹⁾ hereby makes the following Regulations—

Citation

1. These Regulations may be cited as the Arsenic, Cadmium, Mercury, Nickel and Polycyclic Aromatic Hydrocarbons in Ambient Air Regulations 2009.

Entry into Force

2. These Regulations shall come into operation on the 23rd day of February 2009.

Definitions

3. (1) In these Regulations, unless the context otherwise requires—

“the Agency” means the Environmental Protection Agency established under section 19 of the Environmental Protection Agency Act 1992 (No. 7 of 1992);

“CEN” means the European Committee for Standardisation;

“the Commission” means the Commission of the European Communities;

“the Directive” means Council Directive 2004/107/EC relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air⁽¹⁾;

“EMEP” means the Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe under the UNECE Convention on Long-range Transboundary Air Pollution;

“Framework Directive 96/62/EC” means Council Directive 96/62/EC⁽²⁾ on ambient air quality assessment and management;

“the Minister” means the Minister for the Environment, Heritage and Local Government;

⁽¹⁾O.J. No. L 23/3 of 26 January 2005.

⁽²⁾O.J. No. L 296/55 of 21 November 1996 as amended by Regulation No. 1882/2003/EC of the European Parliament and of the Council, O.J. No. L284/1 of 31 October 2003.

*Notice of the making of this Statutory Instrument was published in
“Iris Oifigiúil” of 20th February, 2009.*

“ISO” means the International Organisation for Standardisation;

“zones and agglomerations” mean the zones and agglomerations specified in Schedule VI.

(2) In these Regulations—

- (a) any reference to an article or sub-article which is not otherwise identified is a reference to an article or sub-article of these Regulations;
- (b) a reference to a schedule or table which is not otherwise identified is a reference to a schedule or table of these Regulations; and
- (c) a letter, word, phrase or symbol which has been assigned a meaning by the Directive has that meaning, where the context requires except where otherwise indicated.

Objective

4. The objectives of these Regulations are to—

- (a) establish a target value for the concentration of arsenic, cadmium, nickel and benzo(a)pyrene in ambient air in order to avoid, prevent or reduce harmful effects of arsenic, cadmium, nickel and polycyclic aromatic hydrocarbons on human health and the environment as a whole;
- (b) ensure, with respect to arsenic, cadmium, nickel and polycyclic aromatic hydrocarbons, that ambient air quality is maintained where it is good and that it is improved in other cases;
- (c) determine common methods and criteria for the assessment of concentrations of arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air and of the deposition of arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons; and
- (d) ensure that adequate information on concentrations of arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air and on the deposition of arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons is obtained and that it is made available to the public.

Target Values and Assessment Thresholds

5. The target values for concentrations of arsenic, cadmium, nickel and benzo(a)pyrene in ambient air shall be as specified in Schedule I with effect from 31 December 2012.

6. The upper and lower assessment thresholds for arsenic, cadmium, nickel and benzo(a)pyrene in ambient air shall be as specified in Section 1 of Schedule II.

Reference Methods and Data Quality

7. (1) The reference methods for the sampling and analysis of arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air shall be those specified in Sections 1, 2, and 3 of Schedule V.

(2) The reference techniques for measuring the total deposition of arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons shall be those specified in Section 4 of Schedule V.

(3) The reference techniques for air quality modelling shall be those, if any, adopted pursuant to Article 6 of the Directive.

(4) The data quality objectives specified at Section 1 of Schedule IV are provided as a guide to quality assurance.

(5) The requirements specified at Section 2 of Schedule IV shall apply where an air quality model is used for assessment.

(6) The requirement specified at Section 3 of Schedule IV shall apply where objective estimation techniques are used.

(7) The provisions of Section 4 of Schedule IV shall apply where substances are to be analysed in the PM¹⁰ fraction.

Assessment and Review of Air Quality

8. (1) The Agency shall assess ambient air quality with regard to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons throughout the territory of the State under these Regulations.

(2) Following the assessment at sub-article (1) the Agency shall list—

(a) the zones and agglomerations in which the levels of arsenic, cadmium, nickel and benzo(a)pyrene are below the respective target values specified in Schedule I; and

(b) the zones and agglomerations, if any, in which the levels of arsenic, cadmium, nickel and benzo(a)pyrene exceed the respective target values specified in Schedule I.

(3) (a) The Agency shall review, in accordance with the procedure specified in Section 2 of Schedule II, the classification of the zones and agglomerations from time to time and at least every 5 years, or earlier in the event of significant change in activities relevant to concentrations of arsenic, cadmium, nickel and benzo(a)pyrene in ambient air.

(b) Following a review under paragraph (a) the Agency may amend the classifications of zones or agglomerations in accordance with sub-article (2).

Measurement of Ambient Air Concentrations and Deposition Rates

9. (1) The Agency shall at fixed sites located in accordance with the relevant criteria specified in this article and articles 10 to 13, undertake, or cause to be undertaken, such number of measurements of arsenic, cadmium, nickel and benzo(a)pyrene in ambient air, through continuous measurement or by random sampling, as shall be sufficient to enable the levels to be determined in—

- (a) zones and agglomerations in which the levels are between the upper and the lower assessment threshold; and
- (b) zones and agglomerations in which the levels exceed the upper assessment threshold.

(2) The Agency may supplement the measurements provided for at sub-article (1) by modelling techniques to provide an adequate level of information on ambient air quality.

10. (1) The Agency may use—

- (a) a combination of measurements, including indicative measurements, as referred to in Section 1 of Schedule IV, and modelling techniques, to assess ambient air quality in zones and agglomerations where the levels over a representative period, as defined by the Agency, are between the upper and lower assessment thresholds, determined in accordance with Section 2 of Schedule II;
- (b) solely modelling or objective estimation techniques to assess ambient air quality in zones and agglomerations where the levels are below the lower assessment threshold, determined in accordance with Section 2 of Schedule II; and
- (c) bio-indicators where regional patterns of the impact on ecosystems are to be assessed.

(2) The Agency shall ensure that, for zones and agglomerations within which information from fixed measurement stations is supplemented by information from other sources, such as emission inventories, indicative measurement methods and air quality modelling, the number of fixed measuring stations to be installed and the spatial resolution of other techniques shall be sufficient for the concentrations of air pollutants to be established in accordance with Section 1 of Schedule III and Section 1 of Schedule IV.

11. The Agency shall—

- (a) locate sampling points for the measurement of arsenic, cadmium, nickel and benzo(a)pyrene in ambient air in order to assess compliance with the target values in accordance with the criteria set out in Sections 1, 2, 3 and 4 of Schedule III; and

- (b) install sampling points in each zone or agglomeration within which measurement is required if fixed measurement is the sole source of data on concentrations within the zone or agglomeration.

12. The Agency shall assess the contribution of benzo(*a*)pyrene to the overall concentration of polycyclic aromatic hydrocarbons in ambient air, and for this purpose the Agency shall—

- (a) at a limited number of sites monitor other relevant polycyclic aromatic hydrocarbons such as, at a minimum, benzo(*a*)anthracene, benzo(*b*)fluoranthene, benzo(*j*)fluoranthene, benzo(*k*)fluoranthene, indeno(1, 2, 3-*cd*)pyrene, and dibenz(*a,h*)anthracene;
- (b) select the sites in order to best identify geographical variation and long-term trends in accordance with Sections 1, 2, and 3 of Schedule III; and
- (c) co-locate these sites at those for monitoring benzo(*a*)pyrene under article 11.

13. (1) The Agency shall install, or arrange for the installation of, at least one background sampling point in the State for the indicative measurement in ambient air of arsenic, cadmium, nickel, total gaseous mercury, benzo(*a*)pyrene and the other polycyclic aromatic hydrocarbons referred to in article 12 and of the total deposition of arsenic, cadmium, mercury, nickel, benzo(*a*)pyrene and the other polycyclic aromatic hydrocarbons referred to in article 12.

(2) The Agency may measure particulate and gaseous divalent mercury.

(3) The Agency—

- (a) may in accordance with any guidelines established under Article 6 of the Directive, by agreement with the relevant authorities in Northern Ireland, install one or more common background sampling points covering neighbouring zones;
- (b) shall select the site of each such sampling point in such a manner as to best identify geographical variation and long-term trends and in accordance with Sections 1, 2, and 3 of Schedule III; and
- (c) where appropriate, shall coordinate the monitoring with the EMEP monitoring strategy and measurement programme.

Measures to Ensure Compliance with Target Values or to Maintain Good Air Quality

14. (1) The Agency shall—

- (a) identify those areas, consisting of zones or agglomerations in whole or in part, drawn up in accordance with article 8(2)(*b*) where the levels of arsenic, cadmium, nickel and benzo(*a*)pyrene in ambient air exceed the target values specified in Schedule I;

- (b) identify the sources contributing to the exceedance;
- (c) notify the exceedances and the sources contributing to the exceedances to the relevant local authority in whose functional area each zone or agglomeration or part of a zone or agglomeration or specified source of the emissions exists or any other statutory body or agency, the discharge of whose functions will be or may be affected by the measures specified under paragraph (d);
- (d) specify, in consultation with the local authority, statutory body or agency concerned—
 - (i) all the measures directed in particular at the dominant sources of emissions to ensure that, as from 31 December 2012, the levels of arsenic, cadmium, nickel and benzo(a)pyrene do not exceed the target values specified in Schedule I; and
 - (ii) the dates by which such measures shall be taken.

(2) The Agency, the local authority and other statutory body or agency concerned shall implement the measures specified under sub-article (1)(d).

15. (1) The Agency shall—

- (a) identify those areas, consisting of zones or agglomerations in whole or in part, drawn up in accordance with article 8(2)(a) where the levels of arsenic, cadmium, nickel and benzo(a)pyrene in ambient air are below the respective target values specified in Schedule I;
- (b) identify the sources contributing to the levels;
- (c) notify the levels and the sources of the emissions contributing to the levels to the relevant local authority in whose functional area each zone or agglomeration or part of a zone or agglomeration or the specified source of the emissions exists or any other statutory body or agency, the discharge of whose functions will be or may be affected by the measures specified under paragraph (d);
- (d) specify, in consultation with the local authority, statutory body or agency concerned—
 - (i) the measures necessary to ensure that the levels of arsenic, cadmium, nickel and benzo(a)pyrene are maintained below the respective target values specified in Schedule I; and
 - (ii) the dates by which such measures shall be taken.

(2) The Agency, the local authority and other statutory body or agency concerned shall implement the measures specified under sub-article (1)(d) and shall endeavour to preserve the best ambient air quality compatible with sustainable development.

16. For the purposes of articles 14 and 15 “measures”—

- (a) shall not entail disproportionate costs or shall, in the case of industrial installations covered by Directive 96/61/EC⁽³⁾, mean the application of BAT as defined by Article 2(11) of that Directive;
- (b) may include the powers, functions and duties of—
 - (i) the Environmental Protection Agency under the Environmental Protection Agency Act 1992 as amended;
 - (ii) a local authority under the Air Pollution Act 1987 as amended;
 - (iii) a local authority under the Waste Management Act 1996 as amended;
 - (iv) a planning authority under the Planning Act 2000 as amended;
 - (v) a local authority under the Water Pollution Acts 1977 and 1990 as amended;
 - (vi) the Environmental Protection Agency, local authority or planning authority under regulations made under the above Acts or under any regulations made to give effect to EU Regulations, Directives or Decisions; and
 - (vii) any other appropriate statutory body or agency under relevant legislation;
- (c) shall be coordinated and integrated as appropriate and in so far as possible with plans, programmes and other actions in respect of pollutants which are assessed and managed under regulations, including the Air Quality Standards Regulations 2002 and the Ozone in Ambient Air Regulations 2004, which give effect to the Framework Directive 96/62/EC and related Directives.

Reporting

17. The Agency shall notify to the Minister and the Commission for each calendar year by no later than 30 September of the following year and for the first time for the 2008 calendar year—

- (a) in the event of any of the target values in Schedule I being exceeded in any zone or agglomeration—
 - (i) a list of the zones and agglomerations concerned;
 - (ii) the areas of exceedance;
 - (iii) the concentration values assessed;

⁽³⁾O.J. No. L257/26 of 10 October 1996 Directive as last amended by Regulation No. 1882/2003/EC of the European Parliament and of the Council, O.J. No. L284/1 of 31 October 2003.

- (iv) the reasons for the exceedance, and in particular, any sources contributing to it; and
 - (v) the population exposed to such exceedance;
- (b) any measures taken pursuant to articles 14 and 15;
- (c) all data assessed under articles 8, 9, 10, 11, 12 and 13, unless already reported under Council Decision 97/101/EC⁽⁴⁾ of 27 January 1997 establishing a reciprocal exchange of information and data from networks and individual stations measuring ambient air pollution within the Member States.

Public Information

18. (1) The Agency shall take appropriate steps, including the use of the internet, press and other easily accessible media, to ensure that clear and comprehensible information on the ambient air concentrations and deposition rates of arsenic, cadmium, mercury, nickel and benzo(a)pyrene and the other polycyclic aromatic hydrocarbons referred to in article 12 is accessible and is routinely made available to the public and to any appropriate organisations, including environmental organisations, consumer organisations, organisations representing the interests of sensitive populations and other health care organisations considered relevant by the Agency or to any organisation which so requests.

- (2) The information referred to in sub-article (1) shall include—
- (a) any annual exceedance of the target values for arsenic, cadmium, nickel and benzo(a)pyrene specified in Schedule I;
 - (b) the reasons for the exceedance and the area to which it applies;
 - (c) a short assessment in relation to the target value exceeded;
 - (d) appropriate information regarding effects on health and impact on the environment; and
 - (e) any measures taken pursuant to articles 14 and 15.

Amendment of Regulations

19. The Air Quality Standards Regulations, 2002 (S.I. No. 271 of 2002) are hereby amended by the substitution of the provisions of 'Zone C' of Schedule VI for the provisions of 'Zone C' in Schedule 10 of the Air Quality Standards Regulations 2002 and any reference to 'Schedule 10' in the Air Quality Standards Regulations, 2002 or to 'Schedule 10' of the Air Quality Standards Regulations, 2002 in any other Regulations shall mean 'Schedule 10 as amended by these Regulations'.

⁽⁴⁾O.J. No. L35/14 of 5 February 1997 Decision as amended by Commission Decision 2001/752/EC O.J. No. L282/69 of 26 October 2001.

SCHEDULE I

TARGET VALUES FOR ARSENIC, CADMIUM, NICKEL AND
BENZO(a)PYRENE

Pollutant	Target Value ⁽¹⁾
Arsenic	6 ng/m ³
Cadmium	5 ng/m ³
Nickel	20 ng/m ³
Benzo(a)pyrene	1 ng/m ³

⁽¹⁾For the total content in the PM₁₀ fraction averaged over a calendar year.

SCHEDULE II

DETERMINATION OF REQUIREMENTS FOR ASSESSMENT OF
CONCENTRATIONS OF ARSENIC, CADMIUM, NICKEL AND
BENZO(a)PYRENE (B(a)P) IN AMBIENT AIR WITHIN A ZONE OR
AGGLOMERATION**1. Upper and lower assessment thresholds**

The following upper and lower assessment thresholds will apply:

	Arsenic	Cadmium	Nickel	B(a)P
Upper assessment threshold in percent of the target value	60 % (3.6ng/m ³)	60 % (3ng/m ³)	70 % (14ng/m ³)	60 % (0.6ng/m ³)
Lower assessment threshold in percent of the target value	40 % (2.4ng/m ³)	40 % (2ng/m ³)	50 % (10ng/m ³)	40 % (0.4ng/m ³)

2. Determination of exceedances of upper and lower assessment thresholds

Exceedances of upper and lower assessment thresholds shall be determined on the basis of concentrations during the previous five years where sufficient data are available. An assessment threshold shall be deemed to have been exceeded if it has been exceeded during at least three calendar years out of those previous five years.

Where fewer than five years' data are available, measurement campaigns of short duration during the period of the year and at locations likely to be typical of the highest pollution levels may be combined with results obtained from information from emission inventories and modelling to determine exceedances of the upper and lower assessment thresholds.

SCHEDULE III

LOCATION AND MINIMUM NUMBER OF SAMPLING POINTS FOR
THE MEASUREMENT OF CONCENTRATIONS IN AMBIENT AIR
AND DEPOSITION RATES

1. Macroscale siting

The sites of sampling points should be selected in such a way as to—

- provide data on the areas within zones and agglomerations where the population is likely to be directly or indirectly exposed to the highest concentrations averaged over a calendar year;
- provide data on levels in other areas within zones and agglomerations which are representative of the exposure of the general population;
- provide data on deposition rates representing the indirect exposure of the population through the food chain.

Sampling points should in general be sited so as to avoid measuring very small micro-environments in their immediate vicinity. As a guideline, a sampling point should be representative of air quality in surrounding areas of no less than 200m² at traffic-orientated sites, at least 250m × 250m at industrial sites, where feasible, and several square kilometres at urban-background sites.

Where the objective is to assess background levels the sampling site should not be influenced by agglomerations or industrial sites in its vicinity, i.e. sites closer than a few kilometres.

Where contributions from industrial sources are to be assessed, at least one sampling point shall be installed downwind of the source in the nearest residential area. Where the background concentration is not known, an additional sampling point shall be situated within the main wind direction. In particular where article 8(2)b of these Regulations apply, the sampling points should be sited such that the application of BAT can be monitored.

Sampling points should also, where possible, be representative of similar locations not in their immediate vicinity. Where appropriate they should be co-located with sampling points for PM₁₀.

2. Microscale siting

The following guidelines should be met as far as practicable—

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

- in general, the inlet sampling point should be between 1.5m (the breathing zone) and 4m above the ground; higher positions (up to 8m) may be necessary in some circumstances; higher siting may also be appropriate if the station is representative of a large area;
- the inlet probe should not be positioned in the immediate vicinity of sources in order to avoid direct intake of emissions unmixed with ambient air;
- the sampler's exhaust outlet should be positioned so that recirculation of exhaust air to the sample inlet is avoided;
- traffic-orientated sampling points should be at least 25 metres from the edge of major junctions and at least 4m from the centre of the nearest traffic lane; inlets should be sited so as to be representative of air quality near the building line;
- for the deposition measurements in rural background areas, the EMEP guidelines and criteria should be applied as far as practicable and where not provided for in the Schedules.

The following factors may also be taken into account—

- interfering sources
- security
- access
- availability of electrical power and telephone communications
- visibility of the site in relation to its surroundings
- safety of the public and operators
- the desirability of co-locating sampling points for different pollutants
- planning requirements.

3. Documentation and review of site selection

The site selection procedures should be fully documented at the classification stage by such means as compass-point photographs of the surrounding area and a detailed map. Sites should be reviewed at regular intervals with repeated documentation to ensure that selection criteria remain valid over time.

4. Criteria for determining numbers of sampling points for fixed measurement of concentrations of arsenic, cadmium, nickel and benzo(a)pyrene in ambient air

The minimum number of sampling points for fixed measurement to assess compliance with target values for the protection of human health in zones and

agglomerations where fixed measurement is the sole source of information are specified as follows—

(a) **Diffuse sources**

Population of agglomeration or zone (thousands)	If maximum concentrations exceed the upper assessment threshold ⁽¹⁾		If maximum concentrations are between the upper and lower assessment thresholds	
	<i>As, Cd, Ni</i>	<i>B(a)P</i>	<i>As, Cd, Ni</i>	<i>B(a)P</i>
0–749	1	1	1	1
750–1,999	2	2	1	1
2,000–3,749	2	3	1	1
3,750–4,749	3	4	2	2
4,750–5,999	4	5	2	2
≥6,000	5	5	2	2

⁽¹⁾ To include at least one urban-background station and for benzo(a)pyrene also one traffic-oriented station provided this does not increase the number of sampling points.

(b) **Point sources**

For the assessment of pollution in the vicinity of point sources, the number of sampling points for fixed measurement should be determined taking into account emission densities, the likely distribution patterns of ambient air pollution and potential exposure of the population.

The sampling points should be sited such that the application of BAT as defined by Article 2(11) of Directive 96/61/EC can be monitored.

SCHEDULE IV

DATA QUALITY OBJECTIVES AND REQUIREMENTS FOR AIR QUALITY MODEL

1. Data quality objectives

	Benzo(a) pyrene	Arsenic, cadmium and nickel	Polycyclic aromatic hydro- carbons other than benzo(a) pyrene, total gaseous mercury	Total deposition
Uncertainty: Fixed and indicative measurements	50%	40%	50%	70%
Modelling	60%	60%	60%	60%
Minimum data capture	90%	90%	90%	90%
Minimum time coverage: Fixed measurements	33%	50%		
Indicative measurements*	14%	14%	14%	33%

(*) Indicative measurement being measurements which are performed at reduced regularity but fulfill the other data quality objectives.

The uncertainty (expressed at a 95% confidence level) of the methods used for the assessment of ambient air concentrations will be evaluated in accordance with the principles of the CEN Guide to the Expression of Uncertainty in Measurement (ENV 13005-1999), the methodology of ISO 5725:1994, and the guidance provided in the CEN Report, 'Air quality — Approach to uncertainty estimation for ambient air reference measurement methods' (CR 14377:2002E). The percentages for uncertainty are given for individual measurements, which are averaged over typical sampling times, for a 95% confidence interval. The uncertainty of the measurements should be interpreted as being applicable in the region of the appropriate target value. Fixed and indicative measurements must be evenly distributed over the year in order to avoid skewing of results.

The requirements for minimum data capture and time coverage do not include losses of data due to regular calibration or normal maintenance of the instrumentation. Twenty-four hour sampling is required for the measurement of benzo(a)pyrene and other polycyclic aromatic hydrocarbons. With care, individual samples taken over a period of up to one month can be combined and analysed as a composite sample, provided the method ensures that the samples are stable for that period. The three congeners benzo(b)fluoranthene, benzo(j)fluoranthene, benzo(k)fluoranthene can be difficult to resolve analytically. In such cases they can be reported as sum. Twenty-four hour sampling is also advisable for the measurement of arsenic, cadmium and nickel concentrations. Sampling must be spread evenly over the weekdays and the year. For the measurement of deposition rates, monthly or weekly samples throughout the year are recommended.

The Agency may use wet only instead of bulk sampling if it can demonstrate that the difference between them is within 10%. Deposition rates should generally be given as $\mu\text{g}/\text{m}^2$ per day.

The Agency may apply a minimum time coverage lower than indicated in the above data quality objectives table, but not lower than 14% for fixed measurements and 6% for indicative measurements provided that it can demonstrate that the 95% expanded uncertainty for the annual mean, calculated from the data quality objectives in the table according to ISO 11222:2002 — ‘Determination of the uncertainty of the time average of air quality measurements’ will be met.

2. Requirements for air quality models

Where an air quality model is used for assessment, the Agency shall compile references to descriptions of the model and information on the uncertainty. The uncertainty for modelling is defined as the maximum deviation of the measured and calculated concentration levels, over a full year, without taking into account the timing of the events.

3. Requirements for objective estimation techniques

Where objective estimation techniques are used, the uncertainty shall not exceed 100%.

4. Standardisation

For substances to be analysed in the PM^{10} fraction, the sampling volume refers to ambient conditions.

SCHEDULE V

REFERENCE METHODS FOR ASSESSMENT OF CONCENTRATIONS IN AMBIENT AIR AND DEPOSITION RATES

1. Reference method for the sampling and analysis of arsenic, cadmium and nickel in ambient air

The reference method for the measurement of arsenic, cadmium and nickel concentrations in ambient air shall be as set out in CEN standard EN 14902:2005.

The Agency may also use any other methods which it can demonstrate give results equivalent to the above method.

2. Reference method for the sampling and analysis of polycyclic aromatic hydrocarbons in ambient air

The reference method for the measurement of benzo(a)pyrene concentrations in ambient air shall be as set out in CEN standard EN 15549:2008.

The Agency may use national standard methods or ISO standard methods such as ISO standard 12884 in the absence of a CEN standardised method for the other polycyclic aromatic hydrocarbons referred to in article 12(a).

The Agency may also use any other methods which it can demonstrate give results equivalent to the above methods.

3. Reference method for the sampling and analysis of mercury in ambient air

The reference method for the measurement of total gaseous mercury concentrations in ambient air shall be an automated method based on Atomic Absorption Spectrometry or Atomic Fluorescence Spectrometry.

The Agency may use national standard methods or ISO standard methods in the absence of a CEN standardised method.

The Agency may also use any other methods which it can demonstrate give results equivalent to the above methods.

4. Reference method for the sampling and analysis of the deposition of arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons

The reference method for the sampling of deposited arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons shall be based on the exposition of cylindrical deposit gauges with standardised dimensions.

The Agency may use national standard methods or ISO standard methods in the absence of a CEN standardised method.

SCHEDULE VI

ZONES AND AGGLOMERATIONS

Agglomeration A — Dublin Conurbation

The Restricted Area of Dublin, as specified in the First Schedule to the Air Pollution Act 1987 (Marketing, Sale and Distribution of Fuels) Regulations 1998 to 2003.

Zone B — Cork Conurbation

The Restricted Area of Cork, as specified in the First Schedule to the Air Pollution Act 1987 (Marketing, Sale and Distribution of Fuels) Regulations 1998 to 2003.

Zone C — Other Cities and Large Towns

Limerick City and environs comprising the following Electoral Divisions

Abbey A, B, C and D	Ballinacurra A and B	Ballynanty	Castle A, B, C and D
Coolraine	Custom House	Dock A, B, C and D	Farranshone
Galvone A and B	Glentworth A, B and C	John's A, B and C	Killeely A and B
Market	Prospect A and B	Rathbane	St. Laurence
Shannon A and B	Singland A and B	Ballycummin	Ballysimon
Ballyvarra	Limerick North Rural	Limerick South Rural	Roxborough

Galway City and environs comprising the following Electoral Divisions

Ballybaan	Baile an Bhriotaigh	Bearna	An Caisleán Gearr
Claddagh	Dangan	Eyre Square	An Cnocán Carrach
Lough Atalia	Mionlach	Mervue	Murroogh
Newcastle	Nuns Island	Rahoon	Renmore
Rockbarton	Paróiste San Nicoláis	Salthill	Shantalla
Taylor's Hill	Wellpark		

Waterford City and environs comprising the following Electoral Divisions

Ballybeg North and South	Ballybricken West	Ballymaclode	Ballynakill
Ballynaneashagh	Ballytruckle	Bilberry	Centre A and B
Cleaboy	Custom House A and B	Farranshoneen	Ferrybank
Gracedieu	Grange North and South	Grange Upper	Kilbarry
Kingsmeadow	Larchville	Lisduggan	Military Road
Morrisson's Avenue East	Morrisson's Avenue West	Morrisson's Road	Mount Sion
Newport's Square	Newtown	Park	Poleberry
Roanmore	Shortcourse	Slievekeale	The Glen
Ticor North and South	Kilculliheen	Aglis	

Drogheda and environs comprising the following Electoral Divisions:

Fair Gate; St. Laurence Gate; West Gate; St. Peter's; and St. Mary's.

Dundalk and environs comprising the following Electoral Divisions:

Dundalk Urban Nos. 1, 2, 3 and 4; Castletown; Dundalk Rural; and Haggardstown.

Bray and environs comprising the following Electoral Divisions:

Bray Nos. 1, 2, and 3; Rathmichael (Bray); and Kilmacanoge.

Navan and environs comprising the following Electoral Divisions:

Navan Urban and Navan Rural.

Ennis and environs comprising the following Electoral Divisions:

Ennis Nos. 1, 2, 3 and 4 Urban; Clareabbey; Doorra; Ennis Rural; and Spancelhill.

Tralee and environs comprising the following Electoral Divisions:

Tralee Urban; Blennerville; and Tralee Rural.

Kilkenny and environs comprising the following Electoral Divisions:

Kilkenny Nos. 1 and 2 Urban; and Kilkenny Rural.

Carlow and environs comprising the following Electoral Divisions:

Carlow Urban; Graigue Urban; Ballinacarrig; Carlow Rural; and Graigue Rural.

Naas comprising the following Electoral Divisions:

Naas Urban.

Sligo and environs comprising the following Electoral Divisions:

Sligo East, North and West; and Knockaree.

Newbridge and environs comprising the following Electoral Divisions:

Droichead Nua (Newbridge) Urban; Droichead Nua (Newbridge) Rural; and Morristownbiller.

Mullingar and environs comprising the following Electoral Divisions:

Mullingar North and South Urban; Mullingar Rural; and Castle.

Wexford and environs comprising the following Electoral Divisions:

Wexford Nos. 1, 2 and 3 Urban; and Wexford Rural.

Letterkenny and environs comprising the following Electoral Divisions:

Letterkenny Urban; Ballymacool; Castlewray; Corravaddy; Edenacarnan; Letterkenny Rural; and Magheraboy.

Athlone and environs comprising the following Electoral Divisions:

Athlone East and West Urban; Athlone East Rural; and Moydrum.

Celbridge and environs comprising the following Electoral Divisions:

Celbridge; and Donaghcumper.

Clonmel and environs comprising the following Electoral Divisions:

Clonmel East and West Urban; Clonmel Rural; and Inishlounaght.

Balbriggan and environs comprising the following Electoral Divisions:

Balbriggan Rural; and Balbriggan Urban.

Zone D — Rural Ireland

Remainder of the State excluding Agglomeration A, and Zones B and C.



GIVEN under the Official Seal of the Minister for the Environment,
Heritage and Local Government,
12 February 2009

JOHN GORMLEY.
Minister for the Environment, Heritage and Local Government.

EXPLANATORY NOTE

(This note is not part of the Instrument and does not purport to be a legal interpretation)

These Regulations transpose Directive 2004/107/EC relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air into Irish law.

The Regulations specify target values to be attained, from 31 December 2012, for concentrations of arsenic, cadmium, nickel and benzo(a)pyrene (a measurable indicator of the level of polycyclic aromatic hydrocarbons) and also specify monitoring requirements for mercury and other polycyclic aromatic hydrocarbons. There is a requirement on the Environmental Protection Agency to assess the concentrations in the ambient air and deposition rates of the pollutants concerned and to undertake the monitoring necessary for this purpose.

Provision is made for measures considered necessary by the Environmental Protection Agency in consultation with local authorities and other bodies concerned to address exceedances of the target values. However such measures should not involve disproportionate costs. There is also a requirement to ensure that other areas are maintained below the target values and to endeavour to preserve the best ambient air quality compatible with sustainable development.

The Agency is required to send an annual report to the Minister for the Environment, Heritage and Local Government and to the European Commission.

The Regulations also provide for the dissemination of public information, including information on any exceedances of the target values, the reasons for the exceedances, the area(s) in which they occurred and appropriate information regarding effects on health and impact on the environment.

Offences and Penalties

Any person who contravenes a provision of these regulations is guilty of an offence (section 8 of the Environmental Protection Agency Act 1992 as amended and section 11 of the Air Pollution Act 1987). Penalties for such offences range up to €3,000 and 12 months on summary conviction and up to €15 million and 10 years imprisonment on conviction on indictment and are provided for at section 11 of the Air Pollution Act 1987 and section 9 of the EPA Act 1992. Daily fines are also provided for.

Offences and penalties will also arise in relation to contraventions by third parties of any measure identified as being necessary to avoid exceedances of target values and which are statutory requirements under other enactments, some of which are listed at article 16 of these regulations.

The Regulations also rationalise Zones C and D for the purposes of the Air Quality Standards Regulations, 2002 and the Ozone in Ambient Air Regulations, 2004.

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