

1987 No. 123

CLEAN AIR

Alkali, &c. Works Order (Northern Ireland) 1987

Made 19th March 1987

Coming into operation 1st May 1987

*To be laid before Parliament under paragraph 3(3) of
Schedule 1 to the Northern Ireland Act 1974*

The Department of the Environment, in exercise of the powers conferred by Article 25(9) of the Clean Air (Northern Ireland) Order 1981(a) and of every other power enabling it in that behalf, hereby makes the following Order:—

Citation and commencement

1. This Order may be cited as the Alkali, &c. Works Order (Northern Ireland) 1987 and shall come into operation on 1st May 1987.

Interpretation

2. In this Order—

- (a) “the Alkali Act” means the Alkali, &c. Works Regulation Act 1906(b) as amended by the Alkali, &c. Works Order (Northern Ireland) 1977(c);
- (b) reference to works includes a reference to the materials used in and the products of those works in so far as they are treated, handled or stored by methods which cause noxious or offensive substances to be evolved from those works.

Revocation

3. The Alkali, &c. Works Order (Northern Ireland) 1977 is hereby revoked.

Noxious and offensive gases

4. For the list of noxious or offensive gases mentioned in section 27 of the Alkali Act there shall be substituted the list set out in Schedule 1.

Works

5. For the list of works mentioned in the First Schedule to the Alkali Act there shall be substituted the list of works set out in Schedule 2.

(a) S.I. 1981/158 (N.I. 4)
(b) 1906 c. 14
(c) S.R. 1977 No. 152

Sealed with the Official Seal of the Department of the Environment on
19th March 1987.

(L.S.)

Ian B. McQuiston

Assistant Secretary

List of Noxious or Offensive Gases in Substitution for that contained in Section 27 of the Alkali Act

The expression "noxious or offensive gas" includes the following gases and fumes:—

- Acetic acid or its anhydride
- Acetylene
- Acrylates
- Aldehydes
- Amines
- Ammonia or its compounds
- Arsenic or its compounds
- Bromine or its compounds
- Carbon disulphide
- Carbon dioxide
- Carbon monoxide
- Chlorine or its compounds
- Cyanogen or its compounds
- Di-isocyanates
- Ethylene and higher olefines
- Fluorine or its compounds
- Fumaric acid
- Fumes or dust containing aluminium, antimony, arsenic, beryllium, cadmium, calcium, chlorine, chromium, copper, iron, lead, magnesium, manganese, mercury, molybdenum, phosphorus, potassium, selenium, silicon, sodium, titanium, tungsten, uranium, vanadium, zinc or their compounds
- Fumes or vapours from benzene works, paraffin oil works, petrochemical works, petroleum works, or tar works and bitumen works
- Hydrocarbons
- Hydrogen sulphide
- Iodine or its compounds
- Lead or its compounds
- Maleic acid or its anhydride
- Mercury or its compounds
- Metal carbonyls
- Muriatic acid (Hydrogen chloride)
- Nitric acid or oxides of nitrogen
- Nitriles
- Phthalic acid or its anhydride
- Products containing hydrogen from the partial oxidation of hydrocarbons
- Pyridine or its homologues
- Smoke, grit and dust
- Sulphuric acid or sulphur trioxide

Sulphurous acid or sulphur dioxide

Vinyl chloride

Volatile organic sulphur compounds.

List of Works in Substitution for that contained in the First Schedule to the Alkali Act**LIST OF WORKS**

1. Sulphuric acid (Class I) works

Works in which the manufacture of sulphuric acid is carried on by the lead chamber process, namely, the process by which sulphurous acid is converted into sulphuric acid by the agency of oxides of nitrogen and by the use of a lead chamber or by any other process involving the use of oxides of nitrogen.

2. Sulphuric acid (Class II) works

Works in which the manufacture of sulphuric acid is carried on by any process other than the lead chamber process, and works for the concentration or distillation of sulphuric acid.

3. Chemical fertilizer works

Works in which the manufacture of chemical fertilizer is carried on, and works in which any mineral phosphate is subjected to treatment involving chemical change through the application or use of any acid and works for the granulating of chemical fertilizers involving the evolution of any noxious or offensive gas.

4. Gas liquor works

Works (not being sulphate of ammonia works and chloride of ammonia works as defined in paragraph (6)) in which hydrogen sulphide or any other noxious or offensive gas is evolved by the use of ammoniacal liquor in any manufacturing process, and works in which any such liquor is desulphurized by the application of heat in any process connected with the purification of gas.

5. Nitric acid works

Works in which the manufacture of nitric acid is carried on and works in which nitric acid is recovered from oxides of nitrogen and works where in the manufacture of any product any acid-forming oxide of nitrogen is evolved.

6. Sulphate of ammonia works, and chloride of ammonia works

Works in which the manufacture of sulphate of ammonia or of chloride of ammonia is carried on.

7. Chlorine works

Works in which chlorine is made or used in any manufacturing process.

8. Muriatic acid works (Hydrochloric acid)

(a) muriatic acid works or works (not being alkali works as defined in section 27(1) of the Alkali Act) where muriatic acid gas (hydrogen chloride) is evolved either during the preparation of liquid muriatic acid or for use in any manufacturing process or as the result of the use of chlorides in a chemical process;

(b) tinsplate flux works in which any residue or flux from tinsplate works is calcined for the utilisation of such residue or flux, and in which muriatic acid gas is evolved; and

(c) salt works (not being works in which salt is produced by refining rock salt, otherwise than by the dissolution of rock salt at the place of deposit) in which the extraction of salt from brine is carried on, and in which muriatic acid gas is evolved.

9. Sulphide works

Works in which—

- (a) hydrogen sulphide is evolved by the decomposition of metallic sulphides; or
- (b) hydrogen sulphide is used in the production of such sulphides; or
- (c) hydrogen sulphide or mercaptans are—
 - (i) made; or
 - (ii) used in any chemical process; or
 - (iii) evolved as part of any chemical process.

10. Arsenic works

Works for the preparation of arsenious acid, or where nitric acid or a nitrate is used in the manufacture of arsenic acid or an arsenate and works in which any volatile compound of arsenic is evolved in any manufacturing process and works in which arsenic is made.

11. Nitrate and chloride of iron works

Works in which nitric acid or a nitrate is used in the manufacture of nitrate or chloride of iron.

12. Carbon disulphide works

Works for the manufacture, use or recovery of carbon disulphide.

13. Picric acid works

Works in which nitric acid or a nitrate is used in the manufacture of picric acid.

14. Paraffin oil works

Works in which crude shale oil is produced or refined, and works in which:—

- (a) any product of the refining of crude shale oil is treated so as to cause the evolution of any noxious or offensive gases; or
- (b) any such product as aforesaid is used in any subsequent chemical manufacturing process except as a solvent.

15. Bisulphite works

- (a) works in which sulphurous acid is used in the manufacture of acid sulphites of the alkalis or alkaline earths; or
- (b) works, not defined elsewhere in this Schedule, in which oxides of sulphur are:—
 - (i) made; or
 - (ii) used or evolved in any chemical manufacturing operation; or
 - (iii) used in the production of sulphurous acid.

16. Tar works and bitumen works

- (a) works (not being works described elsewhere in this Schedule) in which gas tar or coal tar or bitumen is distilled or is heated in any manufacturing process, and any product of the distillation of gas tar or coal tar or bitumen is distilled or heated in any process involving the evolution of any noxious or offensive gas; or
- (b) works in which heated materials produced from gas tar or coal tar or bitumen are applied in coating or wrapping of iron or steel pipes or fittings.

17. Zinc works

Works in which by the application of heat, zinc is extracted from the ore, or from any residue containing that metal, and works in which compounds of zinc are made by methods giving rise to dust or fume.

18. Benzene works

Works (not being tar works or bitumen works as defined in paragraph 16) in which:—

- (a) any wash oil used for the scrubbing of coal gas is distilled; or
- (b) any crude benzol is distilled; or
- (c) benzene is distilled or recovered.

19. Pyridine works

Works in which pyridines or picolines or lutidines are recovered or made.

20. Bromine works

Works in which bromine is made or is used in any manufacturing operation.

21. Hydrofluoric acid works

Works in which:—

- (a) hydrogen fluoride is evolved either in the manufacture of liquid hydrofluoric acid or its compounds, or as the result of the use of fluorides in a chemical process; or
- (b) mineral phosphates are treated with acid other than in fertilizer manufacture; or
- (c) mineral phosphates are defluorinated; or
- (d) anhydrous hydrogen fluoride is stored and handled in fixed tanks with an aggregate capacity exceeding one tonne.

22. Cement works

Works in which:—

- (a) argillaceous and calcareous materials are used in the production of cement clinker; or
- (b) cement clinker is handled and ground.

23. Lead works

(a) works (not being works defined elsewhere in this Schedule) in which by the application of heat:

- (i) lead is extracted or recovered from any material containing lead or its compounds; or
- (ii) lead is refined; or
- (iii) lead is applied as a surface coating to other metals by spraying; or
- (b) works (not being works defined elsewhere in this Schedule) in which compounds of lead are manufactured, extracted, recovered or used in processes which give rise to dust or fume, but excluding the manufacture of electric accumulators and the application of glazes or vitreous enamels; or
- (c) works in which organic lead compounds are made.

24. Fluorine works

Works in which fluorine or its compounds with other halogens are made or used in the manufacture of any product, or works for the manufacture of fluorides, borofluorides or silicofluorides.

25. Iron works and steel works

Works in which:—

- (a) iron ores or iron ores and other materials for the production of iron are handled, stored or prepared, but excluding the winning of iron ores; or
- (b) iron ores for the production of iron are calcined, sintered or pelletised; or
- (c) iron or ferro-alloys are produced in a blast furnace or by direct reduction; or
- (d) iron or steel is melted in
 - (i) electric arc furnaces; or
 - (ii) cupolas employing a heated air blast; or
- (e) steel is produced, melted or refined in Tropenas, open hearth or electric arc furnaces; or
- (f) air or oxygen or air enriched with oxygen is used for the refining of iron or for the production, shaping or finishing of steel; or
- (g) ferro-alloys are made by methods giving rise to dust or fume; or
- (h) iron or ferro-alloys produced in any process described in sub-paragraphs (c), (d) or (g) are desulphurised by methods giving rise to dust or fume.

26. Copper works

Works in which:—

- (a) by the application of heat
 - (i) copper is extracted from any ore or concentrate or from any material containing copper or its compounds; or
 - (ii) molten copper is refined; or
 - (iii) copper or copper alloy swarf is degreased; or
 - (iv) copper alloys are recovered from scrap fabricated metal, swarf or residues by processes designed to reduce the zinc content; or
 - (v) copper alloys are recovered from scrap fabricated metal, swarf or residues; or
- (b) copper or copper alloy is melted and cast,

but in sub-paragraphs (a)(v) and (b) excluding works in which the aggregate casting capacity does not exceed 10 tonnes per day.

27. Aluminium works

Works in which:—

- (a) oxide of aluminium is extracted from any ore; or
- (b) aluminium is extracted from any compound containing aluminium by a process evolving any noxious or offensive gases; or
- (c) aluminium swarf is degreased by the application of heat; or
- (d) aluminium or aluminium alloys are recovered from aluminium or aluminium alloy scrap fabricated metal, swarf, skimmings, or other residues by melting under flux cover; or
- (e) aluminium is recovered from slag or drosses; or
- (f) molten aluminium or aluminium alloys are treated by chlorine or its compounds; or
- (g) materials used in the above processes or the products thereof are treated or handled by methods which cause noxious or offensive gases to be evolved.

28. Electricity works

Works in which solid liquid or gaseous fuel is burned:—

- (a) for the generation of electricity solely for distribution to the general public or for the purposes of public transport, but excluding compression ignition engines burning distillate fuel with a sulphur content of less than one per cent; or
- (b) in boilers having an aggregate maximum continuous rating of not less than 200 tonnes of steam per hour used to produce steam for the generation of electricity for purposes, either wholly or in part, other than those mentioned in sub-paragraph (a).

29. Producer gas works

Works in which producer gas is made from coal and in which raw producer gas is transmitted or used.

30. Gas and coke works

Works (not being producer gas works as defined in paragraph 29) in which:—

- (a) coal, oil, or other carbonaceous materials (excluding wood) or products of petroleum refining or natural gas or methane from coal mines or gas derived from fermentation of carbonaceous materials are handled or prepared for carbonisation or gasification or reforming and in which these materials are subsequently carbonised or gasified or reformed; or
- (b) water gas is produced or purified; or
- (c) coke or semi-coke or other solid smokeless fuel is produced and quenched, cut, crushed or graded; or
- (d) gases derived from any process mentioned in sub-paragraph (a) are subjected to purification processes.

31. Ceramic works

Works in which:—

- (a) heavy clay or refractory goods are fired by coal or oil in any kiln in which a reducing atmosphere is essential; or
- (b) salt glazing or any earthenware or clay material is carried on.

32. Lime works

Works in which:—

- (a) calcium carbonate or calcium-magnesium carbonate is burnt through the agency of solid, liquid or gaseous fuels; or
- (b) lime is slaked on premises where any process described in sub-paragraph (a) is carried out.

33. Caustic soda works

Works in which black liquor produced in the manufacture of paper is calcined in the recovery of caustic soda.

34. Chemical incineration works

Works for the destruction by burning of:—

- (a) wastes produced from chemical manufacturing processes; or
- (b) chemical wastes containing combined bromine, chlorine, fluorine, iodine, lead, mercury, cadmium, zinc, nitrogen, phosphorus or sulphur; or

(c) wastes produced in the manufacture of plastics;
but excluding general purpose incinerators owned and operated by public authorities.

35. Uranium works

Works (not being works licensed under the Nuclear Installations Acts 1965(a) and 1969(b) and not being nuclear reactors or works involving the processing of irradiated fuel therefrom for the purpose of removing fission products) in which:—

- (a) any ore or concentrate or any material containing uranium or its compounds is treated for the production of uranium or its alloys or its compounds; or
- (b) any volatile compounds of uranium are manufactured, or used; or
- (c) uranium or its compounds are manufactured, fashioned or fabricated by methods giving rise to dust or fume.

36. Beryllium works

Works in which:—

- (a) any ore or concentrate or any material containing beryllium or its compounds is treated for the production of beryllium or its alloys or its compounds; or
- (b) any material containing beryllium or its alloys or its compounds is treated, processed or fabricated in any manner giving rise to dust or fume.

37. Selenium works

Works in which:—

- (a) any ore or concentrate or any material containing selenium or its compounds is treated for the production of selenium or its alloys or its compounds; or
- (b) any material containing selenium or its alloys or its compounds other than as colouring matter is treated, processed or fabricated in any manner giving rise to dust or fume.

38. Phosphorous works

Works in which:—

- (a) phosphorus is made; or
- (b) yellow phosphorus is used in any chemical or metallurgical process.

39. Ammonia works

Works in which ammonia is:—

- (a) made or recovered; or
- (b) used in the ammonia-soda process; or
- (c) used in the manufacture of carbonate, hydroxide, nitrate or phosphate of ammonia, or urea or nitriles; or
- (d) stored and handled in anhydrous form in fixed tanks with an aggregate capacity exceeding 100 tonnes.

40. Hydrogen cyanide works

Works in which hydrogen cyanide is made or is used in any chemical manufacturing process.

41. Acetylene works
Works in which acetylene is made or used in any chemical manufacturing process.
42. Amines works
Works in which:—
 - (a) any methylamine or any ethylamine is made; or
 - (b) any methylamine or any ethylamine is used in any chemical process.
43. Aldehyde works
Works in which formaldehyde, acetaldehyde or acrolein or the methyl, ethyl or propyl derivatives of acrolein are made.
44. Anhydride works
Works in which acetic, maleic or phthalic anhydrides or the corresponding acids are made or recovered.
45. Chromium works
Works in which:—
 - (a) any chrome ore or concentrate is treated for the production therefrom of chromium compounds; or
 - (b) chromium metal is made by methods giving rise to dust or fume.
46. Magnesium works
Works in which magnesium or its alloys or any compound of magnesium is made by methods giving rise to dust or fume.
47. Cadmium works
Works in which:—
 - (a) metallic cadmium is recovered; or
 - (b) cadmium alloys are made or recovered; or
 - (c) any compound of cadmium is made by methods giving rise to dust or fume.
48. Manganese works
Works in which manganese or its alloys or any compound of manganese is made by methods giving rise to dust or fume.
49. Metal recovery works
Works in which metal is recovered from scrap cable by burning in a furnace.
50. Petroleum works
Works in which:—
 - (a) crude or stabilised crude petroleum or associated gas, or condensate is
 - (i) handled or stored; or
 - (ii) refined; or
 - (b) any product of such refining is subjected to further refining or to conversion; or
 - (c) natural gas is refined or odorised; or

- (d) any product of any of the foregoing operations is used, except as a solvent, in any subsequent chemical manufacturing process, provided that the process is not described elsewhere in this Schedule; or
- (e) used lubricating oil is prepared for re-use by any thermal process.

51. Acrylates works

Works in which acrylates are:—

- (a) made or purified; or
- (b) made and polymerised; or
- (c) purified and polymerised; or
- (d) stored and handled in fixed tanks with an aggregate capacity exceeding 20 tonnes.

52. Di-isocyanate works

Works in which:—

- (a) di-isocyanates or partly polymerised di-isocyanates are made; or
- (b) di-isocyanates or partly polymerised di-isocyanates are used in the manufacture of flexible or rigid polyurethane foams or elastomers; or
- (c) polyurethane foams are subjected to hot-wire cutting or flame-bonding.

53. Mineral works

Works in which:—

- (a) metallurgical slags; or
- (b) pulverised fuel ash; or
- (c) lignite; or
- (d) minerals, other than moulding sand in foundries or coal,

are subjected to any size reduction, grading, handling or heating by processes giving rise to dust, not being works described elsewhere in this Schedule.

54. Smelting works

Works in which sulphides or sulphide ores, including regulus or mattes are calcined or smelted.

55. Asbestos works

Works in which:—

- (a) raw asbestos is milled, ground, opened or blended prior to use in a manufacturing operation; or
- (b) asbestos is used in the manufacture of:—
 - (i) asbestos cement; or
 - (ii) asbestos cement pipes; or
 - (iii) asbestos insulating board; or
 - (iv) asbestos textiles; or
 - (v) asbestos jointing or packing materials; or
 - (vi) asbestos brake or clutch materials; or
 - (vii) asbestos floor coverings; or
 - (viii) fillers or reinforcements; or
- (c) crocidolite is stripped from railway vehicles other than as part of repair or maintenance or during vehicle recovery after an accident; or

- (d) railway vehicles containing crocidolite are destroyed by burning at purpose built installations.
56. Carbonyl works
Works in which metal carbonyls are manufactured or used in any chemical or metallurgical manufacturing process.
57. Petrochemical works
Works in which:—
- (a) any hydrocarbons are used for the production of ethylene or propylene or other olefines; or
 - (b) (i) ethylene or propylene or other olefines or mixtures thereof are used in any chemical manufacturing process, not being a chemical manufacturing process defined elsewhere in this Schedule; or
(ii) any product of the processes to which sub-paragraph (b)(i) applies is used, except as a solvent, in any subsequent chemical manufacturing process, not being a chemical manufacturing process defined elsewhere in this Schedule; or
 - (c) ethylene, or propylene or other olefines or products of processes defined at sub-paragraphs (b)(i) and (ii) or mixtures thereof are polymerised.
58. Vinyl chloride works
Works in which vinyl chloride is made or polymerised or used or stored and handled in fixed tanks with an aggregate capacity exceeding 20 tonnes.

EXPLANATORY NOTE

(This note is not part of the Order.)

The discharge of certain noxious or offensive gases from certain types of works is subject to control under the Alkali, &c. Works Regulation Act 1906. Article 25(9) of the Clean Air (Northern Ireland) Order 1981 empowers the Department to make orders amending or extending both the list of gases and the list of works.

The existing list of gases is set out in section 27 of the Act of 1906 as extended and amended by the Alkali, &c. Works Order (Northern Ireland) 1977 and the existing list of works is set out in the First Schedule to that Act also as extended and amended by that Order.

This Order further extends and amends both these lists, consolidates the original lists set out in the Act, the extensions and amendments made in that Order of 1977 and the extensions and amendments made in this Order and revokes that Order of 1977.