

## SCHEDULE 1

Regulation 14

### THE SCHEDULE TO BE SUBSTITUTED FOR SCHEDULE 1 TO THE CONTROL OF MAJOR ACCIDENT HAZARDS REGULATIONS 1999

“SCHEDULE 1

Regulations 2(1) and (8) and 3(1)

#### DANGEROUS SUBSTANCES TO WHICH THE REGULATIONS APPLY

*(This Schedule sets out the provisions of Annex 1 of the Directive, with modifications)*

## PART 1

### INTRODUCTION

1. This Schedule applies to the presence of dangerous substances at any establishment and determines the application of the relevant regulations in accordance with regulation 3(1).
2. Mixtures and preparations shall be treated in the same way as pure substances provided they remain within the concentration limits set according to their properties under the Chemicals (Hazard Information and Packaging for Supply) Regulations 2002(1), unless a percentage composition or other description is specifically given.
3. The qualifying quantities set out in Parts 2 and 3 relate to each establishment.
4. The quantities to be considered for the application of the relevant regulations are the maximum quantities which are present at any one time. Dangerous substances present at an establishment only in quantities equal to or less than 2 per cent of the relevant qualifying quantity shall be ignored for the purposes of calculating the total quantity present if their location within an establishment is such that it cannot act as an initiator of a major accident elsewhere on site.
5. The rules given in Part 3, Note 4 governing the addition of dangerous substances, or categories of dangerous substances, shall apply.
6. For the purposes of this Schedule, a gas is any substance that has an absolute vapour pressure equal to or greater than 101.3 kPa at a temperature of 20°C.
7. For the purposes of this Schedule, a liquid is any substance that is not a gas and is not in the solid state at a temperature of 20° C and at a standard pressure of 101.3 kPa.

## PART 2

### NAMED SUBSTANCES

Where a substance or group of substances listed in this Part also falls within a category of Part 3, the qualifying quantities set out in this Part must be used.

<i>Column 1</i>	<i>Column 2</i>	<i>Column 3</i>
<i>Dangerous substances</i>	<i>Quantity in tonnes</i>	
Ammonium nitrate (as described in Note 1 of this	5,000	10,000

(1) S.I.2002/1689.

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<i>Column 1</i> <i>Dangerous substances</i>	<i>Column 2</i> <i>Quantity in tonnes</i>	<i>Column 3</i>
Part; see also Note 8(1) and (2))		
Ammonium nitrate (as described in Note 2 of this Part; see also Note 8)	1,250	5,000
Ammonium nitrate (as described in Note 3 of this Part; see also Note 8(2) and (3))	350	2,500
Ammonium nitrate (as described in Note 4 of this Part; see also Note 8)	10	50
Potassium nitrate (as described in Note 5 of this Part)	5,000	10,000
Potassium nitrate (as described in Note 6 of this Part)	1,250	5,000
Arsenic pentoxide, arsenic (V) acid and/or salts	1	2
Arsenic trioxide, arsenious (III) acid and/or salts	0.1	0.1
Bromine	20	100
Chlorine	10	25
Nickel compounds in inhalable powder form (nickel monoxide, nickel dioxide, nickel sulphide, trinickel disulphide, dinickel trioxide)	1	1
Ethyleneimine	10	20
Fluorine	10	20
Formaldehyde (concentration $\geq$ 90%)	5	50
Hydrogen	5	50
Hydrogen chloride (liquefied gas)	25	250
Lead alkyls	5	50
Liquefied extremely flammable gases (including LPG) and natural gas (whether liquefied or not)	50	200
Acetylene	5	50
Ethylene oxide	5	50

<i>Column 1</i> <i>Dangerous substances</i>	<i>Column 2</i> <i>Quantity in tonnes</i>	<i>Column 3</i>
Propylene oxide	5	50
Methanol	500	5,000
4, 4-Methylenebis (2-chloraniline) and/or salts, in powder form	0.01	0.01
Methylisocyanate	0.15	0.15
Oxygen	200	2,000
Toluene diisocyanate	10	100
Carbonyl dichloride (phosgene)	0.3	0.75
Arsenic trihydride (arsine)	0.2	1
Phosphorus trihydride (phosphine)	0.2	1
Sulphur dichloride	1	1
Sulphur trioxide	15	75
Polychlorodibenzofurans and polychlorodibenzodioxins (including TCDD), calculated in TCDD equivalent	0.001	0.001
The following CARCINOGENS at concentrations above 5% by weight:	0.5	2
4-Aminobiphenyl and/or its salts, Benzotrichloride, Benzidine and/or salts, Bis (chloromethyl) ether, Chloromethyl methyl ether, 1,2-Dibromoethane, Diethyl sulphate, Dimethyl sulphate, Dimethylcarbamoyl chloride, 1,2-Dibromo-3-chloropropane, 1,2-Dimethylhydrazine, Dimethylnitrosamine, Hexamethylphosphoric triamide, Hydrazine, 2-Naphthylamine and/or salts, 4-Nitrodiphenyl and 1,3-Propanesultone		
Petroleum products:	2,500	25,000
(a) gasolines and naphthas		

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<i>Column 1</i>	<i>Column 2</i>	<i>Column 3</i>
<i>Dangerous substances</i>	<i>Quantity in tonnes</i>	
(b) kerosenes (including jet fuels)		
(c) gas oils (including diesel fuels, home heating oils and gas oil blending streams)		

#### NOTES

**1. Ammonium nitrate (5,000/10,000): fertilisers capable of self-sustaining decomposition.**

This applies to ammonium nitrate-based compound/composite fertilisers (compound or composite fertilisers containing ammonium nitrate with phosphate and/or potash) in which the nitrogen content as a result of ammonium nitrate is—

- (a) between 15.75% and 24.5% by weight and either with not more than 0.4% total combustible or organic materials or which satisfy the detonation resistance test described in Schedule 2 to the Ammonium Nitrate Materials (High Nitrogen Content) Safety Regulations 2003(2)“the detonation resistance test”; or
- (b) 15.75% or less by weight and unrestricted combustible materials,

and which are capable of self-sustaining decomposition according to the UN Trough Test specified in United Nations Recommendations on the Transport of Dangerous Goods: Manual of Tests and Criteria (3<sup>rd</sup> revised Edition), Part III, subsection 38.2.

**2. Ammonium nitrate (1,250/5,000): fertiliser grade.**

This applies to straight ammonium nitrate-based fertilisers and to ammonium nitrate-based compound/composite fertilisers in which the nitrogen content as a result of ammonium nitrate is—

- (a) more than 24.5% by weight, except for mixtures of ammonium nitrate with dolomite, limestone and/or calcium carbonate with a purity of at least 90%;
- (b) more than 15.75% by weight for mixtures of ammonium nitrate and ammonium sulphate; or
- (c) more than 28% by weight for mixtures of ammonium nitrate with dolomite, limestone and/or calcium carbonate with a purity of at least 90%,

and which satisfy the detonation resistance test.

**3. Ammonium nitrate (350/2,500): technical grade.**

This applies to—

- (a) ammonium nitrate and preparations of ammonium nitrate in which the nitrogen content as a result of the ammonium nitrate is—
  - (i) between 24.5% and 28% by weight, and which contain not more than 0.4% combustible substances; or
  - (ii) more than 28% by weight, and which contain not more than 0.2% combustible substances; and
- (b) aqueous ammonium nitrate solutions in which the concentration of ammonium nitrate is more than 80% by weight.

(2) S.I. 2003/1082.

4. Ammonium nitrate (10/50): “off-specs” material and fertilisers not satisfying the detonation resistance test.

This applies to—

- (a) material rejected during the manufacturing process and to ammonium nitrate and preparations of ammonium nitrate, straight ammonium nitrate-based fertilisers and ammonium nitrate-based compound/composite fertilisers referred to in Notes 2 and 3, that are being or have been returned from the final user to a manufacturer, temporary storage or reprocessing plant for reworking, recycling or treatment for safe use, because they no longer comply with the specifications of Notes 2 and 3; or
- (b) fertilisers which do not fall within Notes 1(a) and 2 because they do not satisfy the detonation resistance test, other than fertilisers which—
  - (i) at the time of delivery to a final user satisfied the detonation resistance test; but
  - (ii) later became degraded or contaminated; and
  - (iii) are temporarily present at the establishment of the final user prior to their return for reworking, recycling or treatment for safe use or to their being applied as fertiliser.

5. Potassium nitrate (5,000/10,000): composite potassium nitrate-based fertilisers composed of potassium nitrate in prilled/granular form.

6. Potassium nitrate (1,250/5,000): composite potassium nitrate-based fertilisers composed of potassium nitrate in crystalline form.

7. Polychlorodibenzofurans and polychlorodibenzodioxins.

The quantities of polychlorodibenzofurans and polychlorodibenzodioxins are calculated using the following factors:

<i>International Toxic Equivalent Factors (ITEF) for the congeners of concern (NATO/CCMS)*</i>			
2, 3, 7, 8-TCDD	1	2, 3, 7, 8-TCDF	0.1
1, 2, 3, 7, 8-PeCDD	0.5	2, 3, 4, 7, 8-PeCDF	0.5
		1, 2, 3, 7, 8-PeCDF	0.05
1, 2, 3, 4, 7, 8-HxCDD	0.1		
1, 2, 3, 6, 7, 8-HxCDD	0.1	1, 2, 3, 4, 7, 8-HxCDF	0.1
1, 2, 3, 7, 8, 9-HxCDD	0.1	1, 2, 3, 7, 8, 9-HxCDF	0.1
		1, 2, 3, 6, 7, 8-HxCDF	0.1
1, 2, 3, 4, 6, 7, 8-HpCDD	0.01	2, 3, 4, 6, 7, 8-HxCDF	0.1
		1, 2, 3, 4, 6, 7, 8-HpCDF	0.01

\* (T = tetra, Pe = penta, Hx = hexa, Hp = hepta, O = octa)

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<i>International Toxic Equivalent Factors (ITEF) for the congeners of concern (NATO/CCMS)*</i>			
OCDD	0.001	1, 2, 3, 4, 7, 8, 9-HpCDF	0.01
		OCDF	0.001

\* (T = tetra, Pe = penta, Hx = hexa, Hp = hepta, O = octa)

8.—(1) 15.75% nitrogen content by weight as a result of ammonium nitrate corresponds to 45% ammonium nitrate.

(2) 24.5% nitrogen content by weight as a result of ammonium nitrate corresponds to 70% ammonium nitrate.

(3) 28% nitrogen content by weight as a result of ammonium nitrate corresponds to 80% ammonium nitrate.

### PART 3

#### CATEGORIES OF SUBSTANCES AND PREPARATIONS NOT SPECIFICALLY NAMED IN PART 2

<i>Column 1</i> <i>Categories of dangerous substances</i>	<i>Column 2</i> <i>Quantity in tonnes</i>	<i>Column 3</i>
1. VERY TOXIC	5	20
2. TOXIC	50	200
3. OXIDISING	50	200
4. EXPLOSIVE (see Note 2) where the substance, preparation or article is an explosive within UN/ADR Division 1.4	50	200
5. EXPLOSIVE (see Note 2) where the substance, preparation or article is an explosive within UN/ADR Division 1.1, 1.2, 1.3, 1.5 or 1.6 or risk phrase R2 or R3	10	50
6. FLAMMABLE, where the substance or preparation falls within the definition given in Note 3(a)	5,000	50,000
7a. HIGHLY FLAMMABLE, where the substance or	50	200

<i>Column 1</i> <i>Categories of dangerous substances</i>	<i>Column 2</i> <i>Quantity in tonnes</i>	<i>Column 3</i>
preparation falls within the definition given in Note 3(b)(i)		
<b>7b. HIGHLY FLAMMABLE</b> liquids, where the substance or preparation falls within the definition given in Note 3(b)(i)	5,000	50,000
<b>8. EXTREMELY FLAMMABLE</b> , where the substance or preparation falls within the definition given in Note 3(c)	10	50
<b>9. DANGEROUS FOR THE ENVIRONMENT</b> risk phrases:		
(a) R50: “Very toxic to aquatic organisms”(including R50/53)	100	200
(b) R51/53: “Toxic to aquatic organisms: may cause long term adverse effects in the aquatic environment”	200	500
<b>10. ANY CLASSIFICATION</b> not covered by those given above in combination with risk phrases—		
(a) R14: “Reacts violently with water” (including R14/15)	100	500
(b) R29: “in contact with water, liberates toxic gas”	50	200

## NOTES

1. Substances and preparations shall be classified for the purposes of this Schedule according to regulation 4 of the Chemicals (Hazard Information and Packaging for Supply)

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Regulations 2002, whether or not the substance or preparation is required to be classified for the purposes of those Regulations.

In the case of substances and preparations with properties giving rise to more than one classification, for the purposes of these Regulations the lowest qualifying quantities shall apply. However, for the application of the rule in Note 4, the qualifying quantity used shall always be the one corresponding to the classification concerned.

2. An “explosive” means—

- (a) a substance or preparation which creates the risk of an explosion by shock, friction, fire or other sources of ignition (risk phrase R2);
- (b) a substance or preparation which creates extreme risks of explosion by shock, friction, fire or other sources of ignition (risk phrase R3); or
- (c) a substance, preparation or article covered by Class 1 of the European Agreement concerning the International Carriage of Dangerous Goods by Road (UN/ADR), concluded on 30 September 1957, as amended, as transposed by Council Directive [94/55/EC](#) of 21 November 1994 on the approximation of the laws of the Member States with regard to the transport of dangerous goods by road<sup>(3)</sup>.

Included in this definition are pyrotechnics, which for the purposes of these Regulations mean substances (or mixtures of substances) designated to produce heat, light, sound, gas or smoke or a combination of such effects through self-sustained exothermic chemical reactions.

Where a substance or preparation is classified by both UN/ADR and risk phrase R2 or R3, the UN/ADR classification shall take precedence over assignment of risk phrases.

Substances and articles of Class 1 are classified in Divisions 1.1 to 1.6 in accordance with the UN/ADR classification scheme. The Divisions concerned are—

- (a) Division 1.1: “Substances and articles which have a mass explosion hazard (a mass explosion is an explosion which affects almost the entire load virtually instantaneously).”
- (b) Division 1.2: “Substances and articles which have a projection hazard but not a mass explosion hazard.”
- (c) Division 1.3: “Substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard—
  - (i) combustion of which gives rise to considerable radiant heat; or
  - (ii) which burn one after another, producing minor blast or projection effects or both.”
- (d) Division 1.4: “Substances and articles which present only a slight risk in the event of ignition or initiation during carriage. The effects are largely confined to the package and no projection of fragments of appreciable size or range is to be expected. An external fire shall not cause virtually instantaneous explosion of virtually the entire contents of the package.”
- (e) Division 1.5: “Very insensitive substances having a mass explosion hazard which are so insensitive that there is very little probability of initiation or of transition from burning to detonation under normal conditions of carriage. As a minimum requirement they shall not explode in the external fire test.”
- (f) Division 1.6: “Extremely insensitive articles which do not have a mass explosion hazard. The articles contain only extremely insensitive detonating substances and

<sup>(3)</sup> OJ L 319, 12.12.1994, p.7. Directive as last amended by Commission Directive [2003/28/EC](#) (OJ L 90, 8.4.2003, p.45).



demonstrate a negligible probability of accidental initiation or propagation. The risk is limited to the explosion of a single article.”

Included in this definition are also explosive or pyrotechnic substances or preparations contained in articles. In the case of articles containing explosive or pyrotechnic substances or preparations, if the quantity of the substance or preparation contained is known, that quantity shall be considered for the purposes of these Regulations. If the quantity is not known, then, for the purposes of these Regulations, the whole article shall be treated as explosive.

**3. “Flammable”, “highly flammable” and “extremely flammable” mean—**

- (a) flammable liquids—substances and preparations having a flash point equal to or greater than 21°C and less than or equal to 55°C (risk phrase R10), supporting combustion;
- (b) highly flammable liquids—
  - (i) substances and preparations which may become hot and finally catch fire in contact with air at ambient temperature without any input of energy (risk phrase R17); substances and preparations which have a flash point lower than 55°C and which remain liquid under pressure, where particular processing conditions, such as high pressure or high temperature, may create major-accident hazards;
  - (ii) substances and preparations having a flash point lower than 21°C and which are not extremely flammable (risk phrase R11, second indent); and
- (c) extremely flammable gases and liquids—
  - (i) liquid substances and preparations which have a flash point lower than 0°C and the boiling point (or, in the case of a boiling range, the initial boiling point) of which at normal pressure is less than or equal to 35°C (risk phrase R12, first indent); and
  - (ii) gases which are flammable in contact with air at ambient temperature and pressure (risk phrase R12, second indent), which are in a gaseous or supercritical state; and
  - (iii) flammable and highly flammable liquid substances and preparations maintained at a temperature above their boiling point.

**4.** In the case of an establishment where no individual substance or preparation is present in a quantity above or equal to the relevant qualifying quantities, the following rules shall be applied to determine the application of these Regulations to the establishment.

If the sum— $q_1/Q_{U1} + q_2/Q_{U2} + q_3/Q_{U3} + q_4/Q_{U4} + q_5/Q_{U5} + \dots$  is greater than or equal to 1, where—

- (a)  $q_x$  = the quantity of dangerous substance  $x$  (or category of dangerous substances) falling within Part 2 or 3 of this Schedule; and
- (b)  $Q_{UX}$  = the relevant qualifying quantity for substance or category  $x$  from column 3 of Part 2 or 3,

then these Regulations apply.

If the sum— $q_1/Q_{L1} + q_2/Q_{L2} + q_3/Q_{L3} + q_4/Q_{L4} + q_5/Q_{L5} + \dots$  is greater than or equal to 1, where—

- (a)  $q_x$  = the quantity of dangerous substance  $x$  (or category of dangerous substances) falling within Part 2 or 3 of this Schedule; and
- (b)  $Q_{LX}$  = the relevant qualifying quantity for substance or category  $x$  from column 2 of Part 2 or 3,

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then these Regulations, save regulations 7 to 14, apply.

These rules shall be used to assess the overall hazards associated with toxicity, flammability and eco-toxicity. They must therefore be applied three times—

- (a) for the addition of substances and preparations named in Part 2 and classified as toxic or very toxic, together with substances and preparations falling into category 1 or 2;
- (b) for the addition of substances and preparations named in Part 2 and classified as oxidising, explosive, flammable, highly flammable or extremely flammable, together with substances and preparations falling into category 3, 4, 5, 6, 7a, 7b or 8; and
- (c) for the addition of substances and preparations named in Part 2 and classified as dangerous for the environment (R50 (including R50/53) or R51/53), together with substances and preparations falling into category 9(a) or 9(b),

and the relevant provisions of these Regulations shall apply if any of the sums thereby obtained is greater than or equal to 1.”