

SUMMARY OF CHANGES TO COMAH INTRODUCED BY THE CONTROL OF MAJOR ACCIDENT HAZARDS (AMENDMENT) REGULATIONS 2005

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BACKGROUND

1. The Control of Major Accident Hazards (Amendment) Regulations 2005 implement Directive 2003/105/EC on the control of major accident hazards involving dangerous substances. The Directive amended the Seveso II Directive (96/82/EC) which was implemented through COMAH in 1999.

2. The main effect of amendments is to broaden the scope of COMAH through changes to Part 2 and Part 3 of Schedule 1. The changes reflect lessons learned from major accidents in Europe since COMAH was introduced and the results of EC working groups on carcinogens and substances dangerous for the environment. In particular:

- the addition of new named substances;
- changes to some existing named substances and generic categories of substance, including revised qualifying quantities; and
- changes to the aggregation rule.

The application of COMAH at mines, quarries, boreholes and landfill sites is also broadened slightly.

CHANGES TO PART 1 OF SCHEDULE 1

3. The Regulations now provide a definition for COMAH purposes of what constitutes a gas and a liquid by reference to pressure and temperature levels (paragraphs 6 and 7 of Schedule 1). These are intended to address uncertainty surrounding substances with boiling points in the ambient temperature range but do not change the scope or application of COMAH.

CHANGES TO PART 2 OF SCHEDULE 1

Ammonium nitrate

4. The entries for ammonium nitrate (AN) have been amended in response to the explosion at a fertiliser plant in Toulouse, France. The two existing entries for fertiliser grade and technical grade AN have been maintained but with a reduced concentration of AN covered. Two new entries have been added to deal with fertilisers capable of self-sustaining decomposition and 'off-spec' material. From 30 June 2005 AN is covered by COMAH as follows:

Description	LT (te)	TT (te)
Note 1. Fertilisers capable of self-sustaining decomposition	5,000	10,000
Note 2. Fertiliser grade	1,250	5000
Note 3. Technical grade	350	500
Note 4. Off-spec material and fertilisers not satisfying the detonation resistance test	10	50

5. Some material included in Note 1 and all material in Note 2 is required to satisfy the detonation resistance test in the Ammonium Nitrate Material (High Nitrogen Content) Safety Regulations 2003. If AN tested under the 2003 Regulations is found to no longer satisfy the test, it would cease to be Note 1 or 2 material and would instead come within the scope of Note 4 and the lower qualifying

quantities would apply. Note 4 also includes material rejected during manufacture and certain AN being returned by a final user for re-working etc because it no longer complies with the specification of Note 3.

6. There is one important exclusion relating to Note 4: AN that on delivery to an end-user satisfied the test but subsequently becomes degraded or contaminated or fails a further test is outside the scope of Note 4 pending its return for re-working or recycling or to its application on the land. Note 4 material at other premises e.g. manufacturing or blending plants, at ports or in storage elsewhere is not excluded.

Potassium nitrate

7. Because of similarities with AN, potassium nitrate is now a named substance with two entries:

Description	LT (te)	TT (te)
Composite potassium nitrate-based fertilisers composed of potassium nitrate in prilled/granular form	5,000	10,000
Composite potassium nitrate-based fertilisers composed of potassium nitrate in crystalline form.	1,250	5,000

8. The threshold quantities reflect the less-combustible nature of these fertilisers (when compared with AN fertilisers), and make a distinction between potassium nitrate in crystalline form and granular form, which is more commonly used for agricultural purposes.

Carcinogens

9. There are three changes to the list of named carcinogens arising from the report of an EC Technical Working Group on carcinogens. This focused on high-potency carcinogens and those where evidence suggested the possibility of “one-shot” effects.

10. First, seven new carcinogens have been added to the previous list:

Benzotrichloride	1,2-Dibromo-3-chloropropane
1,2-Dibromoethane	1,2-Dimethylhydrazine
Diethyl sulphate	Hydrazine
Dimethyl sulphate	

11. The other two changes affect all named carcinogens. The dilution cut-off has been raised from 0.1% to 5% by weight, and the qualifying quantities have been raised from 0.001 tonnes (LT and TT) to 0.5/2.0 tonnes. These quantities are one order of magnitude lower than those for substances classified as “very toxic” and are intended to reflect public concern about carcinogens and the application of the precautionary principle in the absence of full scientific data.

Petroleum products

12. The changes to petroleum substances result from the report of an EC Working Group on substances dangerous for the environment. Petroleum substances are more frequently involved in accidents with environmental

consequences than other substances dangerous for the environment but generally cause less damage for a given quantity.

13. The entry in COMAH 1999 for “Automotive petrol and other petroleum spirits” has been replaced with a “Petroleum products” category. Three classes of substances are covered by the new category with qualifying quantities that are half those of the former automotive petrol category. The new entry is:

Description	LT (te)	TT (te)
Petroleum products: (a) gasolines and naphthas (b) kerosenes (including jet fuels) (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams)	2,500	25,000

14. This is an exclusive category: only the substances named in classes (a) – (c) are to be considered as petroleum products. Any petroleum substances not included in these classes, such as pentane and paraffin, would fall within the appropriate generic categories in Part 3 of Schedule 1 (unless they are named in Part 2). See Appendix 1 for further information.

15. The inclusion of ‘Petroleum products’ as a named category now closes the COMAH/CHIP ‘gap’ that arose when in July 2002 when CHIP 3 first introduced a requirement to classify preparations for their effects on the environment. Some sites that gained or changed COMAH status at that time are now largely taken out of COMAH by the Amendment Regulations.

CHANGES TO PART 3 OF SCHEDULE 1

Explosives

16. Changes to the ‘Explosive’ generic category arise from the series of explosions at a fireworks company in Enschede in the Netherlands in 2000.

17. The definitions of the two categories of explosives have been revised to align with the UN/ADR classification. This distinguishes between explosives on the basis of the hazard they represent instead of the previous reference to risk phrases contained in EC Directives on classification, packaging and labelling of dangerous substances. The revised definitions more accurately describe the hazards of different types of explosives, particularly consumer (domestic) fireworks. The amended entries are set out below and they are supported in the Regulations by explanatory notes:

Description	LT (te)	TT (te)
EXPLOSIVE where the substance, preparation or article is an explosive within UN/ADR Division 1.4	50	200
EXPLOSIVE 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

Substances dangerous for the environment

18. The Amendment Regulations amend the definition of these substances and significantly reduce their qualifying quantities:

Description	LT (te)	TT (te)
DANGEROUS FOR THE ENVIRONMENT risk phrases –		
(a) R50: “Very toxic to aquatic organisms” (including R50/R53)	100	200
(b) R51/53 “Toxic to aquatic organisms: may cause long term adverse effects in the aquatic environment”	200	500

19. The changes reflect the report of the EC Working Group on substances dangerous for the environment particularly concerning those relating to the environmental consequences of substances involved in previous accidents and the fact that relatively small quantities can cause severe environmental damage.

Aggregation/summation rule

20. The aggregation rule is used to determine the application of COMAH where single substances are present in quantities less than lower or top tier quantities. The Amendment Regulations 2005 make a number of changes to the way in which the aggregation rule is applied::

- i) in order to reflect the different nature of the hazards, substances dangerous for the environment are no longer to be aggregated with toxic/very toxic substances;
- ii) the aggregation rule must be applied **separately** for:
 - toxic and very toxic substances
 - oxidising, explosive, flammable, highly flammable and extremely flammable substances, and
 - substances dangerous for the environmentusing the qualifying quantities from Part 2 if the substance is named, or from Part 3 if it is not. As before, the rule must be applied for comparison with both the lower and top tier thresholds; and
- iii) if the total derived from aggregation is **greater than or equal to 1** the Regulations will apply at the appropriate tier (under COMAH 1999 the Regulations applied if the total **exceeded 1**); and
- iv) where a named substance has more than one classification the qualifying quantities in Schedule 1, Part 2 should still be used when applying the aggregation rule for each relevant classification. However, when substances not specifically named have more than one classification and the aggregation rule has to be applied the qualifying quantities in Schedule 1, Part 3 for each of the relevant classifications should be used.

CHANGE TO THE APPLICATION OF COMAH AT MINES/QUARRIES/ BOREHOLES/LAND-FILL SITES – AMENDMENT REGULATION 4

21. The scope of regulation 3(3) of COMAH is slightly broadened with respect to the extractive industries and land-fill sites in response to damburst incidents in Romania and Spain which caused considerable environmental damage.

22. The general exclusion for the exploration, extraction and processing of minerals in mines, quarries or by boreholes remains, but chemical and thermal processing operations involving dangerous substances and their associated storage are brought into scope.

23. Similarly, waste land-fill sites are excluded except for tailing ponds, dams and other operational tailings disposal facilities containing dangerous substances, particularly when they are used in connection with the chemical and thermal processing of minerals.

TIMESCALES FOR COMPLIANCE - AMENDMENT REGULATIONS 5, 6(1), 7, 9

24. The changes to Schedule 1 (and possibly the broadening of scope at mines etc) will lead to some establishments entering COMAH, or moving between the tiers. In COMAH 1999, regulation 3(4) sets out the timescale for complying with changes arising from:

- a change in the CHIP classification of a substance;
- a change in the qualifying quantities in Schedule 1; or
- knowledge of what dangerous substances may be generated during loss of control of an industrial chemical process

25. The Amendment Regulations revoke regulation 3(4) of COMAH and instead include timescales for compliance under individual regulations. Regulation 2(6) of COMAH, which sets out how establishments that become subject to any of the regulations because of an increase in the quantity of dangerous substances should be treated, is unchanged.

26. Appendix 2 contains information about the timescales for compliance with requirements for MAPPs, notification, safety reports and on-site emergency plans for a variety of scenarios.

OTHER CHANGES

Definition of ‘notify’ – Amendment regulation 3

27. The definition of ‘notify’ in regulation 2(1) of COMAH is amended to explicitly include e-mail and other means of notification allowed by the recipient. This allows more flexibility in the method of notification and removes potential barriers as electronic methods of communication become more prevalent. The method selected should be agreed with the recipient.

Notification of modifications – Amendment regulation 6(3)

28. A new provision is included in COMAH at regulation 6(4)(ba) to require the operator to notify the Competent Authority (CA) forthwith of any modifications to the establishment that could have significant repercussions with respect to the prevention of major accidents. In practice, this will only affect lower tier operators as top tier operators are required to notify the CA of proposals for modifications under regulation 8(4)(b). (See also paragraph 30 below.)

Review and revision of safety reports – Amendment regulation 8

29. Paragraphs (a) and (c) in regulation 8(1) of COMAH have been transposed to draw more attention to the on-going nature of the review process. The order in which the requirements for review and revision now appear is:

- a) whenever the operator makes a change to the SMS;
- b) whenever a review is necessary because of new facts/new technical knowledge; and
- c) at least every five years.

30. Also, where the operator was previously required to “inform” the CA of details of revisions to safety reports (regulation 8(1) and 8(4)(b) of COMAH) and instances where safety reports have been reviewed but not revised (regulation 8(2) of COMAH), the operator must now “notify” the CA.

Consultation on the on-site emergency plan – Amendment regulation 10

31. In COMAH 1999 the operator is required by regulation 9(3)(a) to consult “persons employed in the establishment” when preparing the on-site plan. From 30 June 2005 consultation should be with “persons working in the establishment”. This is intended to include sub-contractors as well as the operator’s own employees.

Role of the Agency as a consultee on off-site plans - Amendment regulation 11

32. As part of the CA the Agency (EA and SEPA) is consulted on the preparation of off-site plans under regulation 10(6) of COMAH. That regulation is amended so that the Agency is named as a consultee in its own right to enable it to comment on plans from an emergency response point of view.

Consultation with members of the public – Amendment regulation 12

33. An amendment to COMAH regulation 11(1) requires the local authority to consult members of the public when it carries out a review of the off-site plan.

Provision of information to the public – Amendment regulation 13

34. Regulation 14(1) of COMAH is amended to require that operators additionally supply information on safety measures etc to schools, hospitals and other establishments serving the public, and to make all information supplied available permanently to the public.

Safety management system – Organisation and personnel/Training for emergencies – Amendment regulation 15(1) and (2)

35. There are two changes to Schedule 2 of COMAH 1999 concerning the preparation of MAPPs.

36. A minor amendment to paragraph 4(a) (organisation and personnel) is amended to require that all persons working at the establishment are involved in arrangements to manage major accident hazards (COMAH 1999 refers to employees and sub-contractors). The change is to introduce consistency of phraseology between this and other requirements and is not expected to result in any practical change.

37. There is a similar amendment to paragraph 4(e) which deals with planning for emergencies within the context of the safety management system. From 30 June

2005 operators will be required to provide specific training for all people working in the establishment on the procedures to be followed in emergencies. This will need to include sub-contractors and others working at the establishment as well as the operator's own employees and the nature and level of training will need to be tailored accordingly.

Notification of petroleum products – Amendment regulation 16

38. There are special notification arrangements for dangerous substances in this new category to reflect the variety of hazards associated with petroleum products. From 30 June 2005 operators notifying petroleum products under regulation 6/paragraph 5 of Schedule 3 will be required to specify the quantity falling within each class. This provides the CA with information about the types of substances present and the potential risk.

Information to be included in a safety report - Amendment regulation 17(2) and 17(3)

39. As part of the assessment of the extent and severity of the consequences of identified major accidents required by Schedule 4, Part 2, paragraph 4(b) of COMAH, top tier operators should additionally provide maps, images or equivalent descriptions as part of the safety report to show the areas liable to be affected by a major accident. Many operators already supply this information in one form or another as part of their safety report but from 30 June 2005 all operators should provide some pictorial evidence.

40. A new paragraph 6 in Part 2 of Schedule 4 means that operators should also include in their safety report the names of the relevant organisations who have been involved in drawing up the safety report. This will provide information about the extent to which external expertise has been used and the nature of the specialist assistance provided.

Notification that a safety report has been reviewed but not revised – Amendment regulation 18

41. There is a new requirement inserted into Schedule 8 of COMAH at paragraph 1(ba) to require that a notification from the operator to the CA that a safety report has been reviewed under regulation 8(2) of COMAH (as amended by the 2005 Regulations) is placed on the public register.

Provision of an amended report for the public register – Amendment regulation 19

42. A new duty is inserted into Schedule 8 at paragraph 13A to require the operator to provide an amended report to the CA if information is to be excluded from the public register. The amended report is to be provided within three months after notification of the exclusion, or a longer period if allowed by the CA.

This implements an outstanding provision from the Seveso II Directive (96/82/EC) that was not originally transposed through COMAH. As a result the 1999 Regulations were unclear whether the duty to provide an amended report lay with the operator, the CA or the person who applied for the exclusion.

GUIDANCE ON THE INTERPRETATION OF “PETROLEUM PRODUCTS”

BACKGROUND

The previous entry for "Automotive petrol and other petroleum spirits" has been replaced with the new category of:

	Qualifying Quantities	
"Petroleum products"		
(a) gasolines and naphthas,		
(b) kerosenes (including jet fuels),	2500	25000
(c) gas oils (including diesel fuels, home heating oils and gas oil blending streams)		

This is now essentially an exclusive category, so if the substance in question is not gasoline/naphtha, kerosene or gas oil then it is presumed that it is not a named substance.

Note: these qualifying thresholds are half those of the former automotive petrol category.

INTERPRETATION

Crude oil is identified in the European Inventory of Existing Commercial Chemical Substances (EINECS) as Petroleum. The three sub categories relate to blending streams from petroleum refining processes.

While often it may be relatively straightforward to recognise what is meant by “jet fuels” and “gas oils”, the aim of this appendix is to provide further guidance on the definition and interpretation of the phrases used.

Naphthas and Gasolines

Naphtha is a generic term applied to a petroleum fraction with an approximate boiling range between 50 to 200 °C.

This sub category refers to the EINECS grouping of low boiling point naphthas (LBPNs). These are mobile, volatile, liquids obtained by a variety of refinery processes using either crude oil or other feedstocks. LBPNs are blended to produce the hydrocarbon entity known as gasoline (CAS No. 86290-81-5).

LBPNs consist mainly of hydrocarbons having carbon numbers from C4 to C12. They contain aliphatic hydrocarbons (normal-, branched-chain and cyclo-alkanes), aromatic hydrocarbons (mainly alkylbenzenes) and olefins.

Kerosenes (including jet fuels)

Kerosenes are middle distillate fuels obtained from crude oil by various refining processes. Kerosenes consist mainly of C9 to C16 hydrocarbons and have a boiling range from 145 to 300°C. Normally, they consist of 70-80% aliphatic hydrocarbons, 20-30% aromatic hydrocarbons and contain no more than 5% of olefins.

Gas oils (including diesel fuels, home heating oils and gas oil blending streams)

Gas oils are middle distillate fuels obtained from crude oil by various refining processes. Gas oils consist mainly of C9 to C30 hydrocarbons and have a boiling range from 145 to 450°C. Straight-run and vacuum gas oils typically contain 70-80% aliphatic hydrocarbons, 20-30% aromatic hydrocarbons and less than 5% of olefins. However, cracked gas oils may contain up to 75% of aromatic hydrocarbons and up to 10% olefins. Since part of the gas oils distil at temperatures in excess of 350°C, they may contain minor concentrations of 4 to 6 ring polycyclic aromatic hydrocarbons.

Gas oil is also held as a sample definition for all hydrocarbons as derived from boiling fractions of petroleum processing in a range of about 170° C to 400° C.

An exact legal definition may be taken from Commission Regulation 1789/2003 of 11 September 2003 on tariff and statistical nomenclature: "gas oil means any petroleum-derived liquid substance of which at least 85 % by volume distils at 350° C by the ASTM 86 method".

For comparison, the same document defines "heavy oils" as oils and preparations of which less than 65% by volume...distils at 250°C. Note that heavy fuel oils, such as those that require preheating, are not covered by the definition of "gas oils".

REFERENCE

The primary reference for this appendix is the "Environmental Classification of Petroleum Substances - summary data and rationale" prepared by CONCAWE Petroleum Products Ecology Group, CONCAWE, Brussels, October 2001, report no. 01/54

(CONCAWE is the oil companies' European association for environment, health and safety in refining and distribution. **CON**servation of **C**lean **A**ir and **W**ater in **E**urope.)

The following table from report no. 01/54 (Table 2, Page 25, Environmental classification and labelling of petroleum substances) summarises the environmental classification recommendations that have been incorporated into the Seveso II amendments.

Appendix No	Petroleum substance group	Risk phrase
1	Crude oil	R52/53
2	Petroleum gases	
3	Low boiling point naphthas	R51/53*
4	Kerosenes	R51/53*

5	Gas oils	R51/53*
6	Heavy fuel oils	R52/53
7	Greases	R53**
8	Unrefined/acid treated oils	R53**
9	Highly refined base oils	
10	Other lubricant base oils	
11	Residual aromatic extracts	R53**
12	Untreated distillate aromatic extracts	R53**
13	Treated distillate aromatic extracts	R53**
14	Other aromatic extracts	R53**
15	Paraffin and hydrocarbon waxes	
16	Foot Oils	
17	Slack waxes	
18	Petrolatums	
19	Used oils	R53**
20	Rerefined oils	R53**
21	Bitumens	
22	Petroleum cokes	
23	Other petroleum gases	
24	Reclaim petroleum substances	-
25	Other petroleum substances	-

* Certain hydrocarbon solvents with EINECS numbers included in this group may have compositional and environmental test data supporting a particular classification.

** Applies unless chronic data justify no classification, other classifications may apply based on acute toxicity data.

Note: The above listed substances may also qualify on the basis of other categories e.g. flammable

APPENDIX 2

TIMESCALES FOR COMPLIANCE WITH REQUIREMENTS FOR MAPPS, NOTIFICATION, SAFETY REPORTS AND ON-SITE EMERGENCY PLANS

Note: Reference to regulation numbers are to regulations in COMAH as amended by the 2005 regulations

Scenario	Regulation 2 Interpretation	Regulation 5 MAPP	Regulation 6 Notification	Regulation 7 Safety Report	Regulation 9 On-site emergency plan
Proposed construction/first time operation of new lower tier establishment	2(5) Date construction/operation of establishment starts	5(1) MAPP to be provided without delay but within three months	6(1), 6(2) Pre-construction/operation notification to be sent within a reasonable time before start of construction/operation	n/a	n/a
Proposed construction/first time operation of new top tier establishment	2(5) Date construction/operation of establishment starts	5(6) MAPP incorporated into safety report	6(1), 6(2) Pre-construction/operation notification to be sent within a reasonable time before start of construction/operation	7(1), 7(5) Pre-construction/operation report to be sent within a reasonable time before start of construction/operation	9(2)(c) Plan to be prepared before operation starts
Non-COMAH establishment enters at lower tier due to:					
<ul style="list-style-type: none"> increase in quantity of dangerous substances 	2(6) Date of increase is date of start of operation	5(1) MAPP to be provided without delay but within three months	6(2) Pre-operation notification to be sent within a reasonable time before start of operation	n/a	n/a
<ul style="list-style-type: none"> change in dangerous substance classification or qualifying quantity in Schedule 1 or knowledge about what dangerous substances may be generated during loss of control 	n/a	5(1) MAPP to be provided without delay but within three months	6(3A) Notification to be sent within three months of regulation applying	n/a	n/a

Scenario	Regulation 2 Interpretation	Regulation 5 MAPP	Regulation 6 Notification	Regulation 7 Safety Report	Regulation 9 On-site emergency plan
Non-COMAH establishment enters at top tier due to: <ul style="list-style-type: none"> • increase in quantity of dangerous substances • change in dangerous substance classification or qualifying quantity in Schedule 1 or knowledge about what dangerous substances may be generated during loss of control 	2(6) Date of increase is date of start of operation	5(6) MAPP incorporated into safety report	6(2) Pre-operation notification to be sent within a reasonable time before start of operation	7(5) Pre-operation report to be sent within a reasonable time before start of operation	9(2)(c) Plan to be prepared before operation starts
	n/a	5(6) - MAPP incorporated into safety report	6(3A) Notification to be sent within three months of regulation applying	7(10A) Report to be sent without delay but within one year of the regulation applying	9(2)(d) Plan to be prepared without delay but within one year of the regulation applying
Lower tier establishment moves to top tier due to: <ul style="list-style-type: none"> • increase in quantity of dangerous substances • change in dangerous substance classification or qualifying quantity in Schedule 1 or knowledge about what dangerous substances may be generated during loss of control 	2(6) - Date of increase is date of start of operation	5(6) MAPP incorporated into safety report	6(4)(a) Notification of increase to be sent forthwith	7(5) Pre-operation report to be sent within a reasonable time before start of operation	9(2)(c) Plan to be prepared before operation starts
	n/a	5(6) MAPP incorporated into safety report	n/a	7(10A) Report to be sent without delay but within one year of the regulation applying	9(2)(d) Plan to be prepared without delay but within one year of the regulation applying
Top tier establishment moves to lower tier due to:					

Scenario	Regulation 2 Interpretation	Regulation 5 MAPP	Regulation 6 Notification	Regulation 7 Safety Report	Regulation 9 On-site emergency plan
<ul style="list-style-type: none"> decrease in quantity of dangerous substances 	n/a	5(4) Review and where necessary revise MAPP	6(4)(c) Notification that regulation 7 no longer applies due to decrease to be sent forthwith	n/a	n/a
<ul style="list-style-type: none"> change in dangerous substance classification or qualifying quantity in Schedule 1 or knowledge about what dangerous substances may be generated during loss of control 	n/a	5(4) Review and where necessary revise MAPP	6(4)(iii) Notification of change in information previously notified to be sent forthwith	n/a	n/a
Lower tier establishment leaves COMAH for any reason	n/a	n/a	n/a	n/a	n/a
Top tier establishment leaves COMAH due to:					
<ul style="list-style-type: none"> decrease in quantity of dangerous substances 	n/a	n/a	6(4)(c) Notification that regulation 7 no longer applies due to decrease to be sent forthwith	n/a	n/a
<ul style="list-style-type: none"> change in dangerous substance classification or qualifying quantity in Schedule 1 or knowledge about what dangerous substances may be generated during loss of control 	n/a	n/a	6(4)(b)(iii) Notification of change in information previously notified to be sent forthwith	n/a	n/a