INFORMATION NOTE

FOR APPLICANTS FOR THE APPROVAL OF CLASSIFICATION OF EXPLOSIVES

INTRODUCTION

1. This note provides guidance to applicants requiring the approval of classification of explosives under the Classification and Labelling of Explosives Regulations 1983 (CLER)1 and Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2004 .

2. It relates to Great Britain only. The requirements for Northern Ireland are similar but separate Regulations apply. For detailed information relating to Northern Ireland, the Northern Ireland Office should be contacted at the address given in Annex 2.

CLASSIFICATION

What is it?

3. The purpose of classification is to identify the hazard posed by explosive substances and articles as packaged for transport. Classification under CLER involves the assessment of an explosive to determine whether it is assigned to, or excluded from, Class 1 of the UN classification scheme3 for the transport of dangerous goods. Explosive assigned to Class 1 is accorded an appropriate United Nations Serial Number, hazard code and compatibility group, having regard to its composition, type, and hazard. CLER requires that an explosive be classified before it may be imported or conveyed. Detailed requirements are given in "A Guide to the Classification and Labelling of Explosives Regulations 1983" published by HSE4. HSE is the classifying authority for commercial explosives while military explosives are classified by the Explosives Storage and Transport Committee (ESTC) of the Ministry of Defence. (Addresses are given in Annex 2).

4. All substances and articles with explosive properties that are to be imported into or conveyed in Great Britain, whether used or manufactured to produce a practical effect by explosion, or a pyrotechnic effect, or not, should be referred to HSE for classification under CLER.

5. Note: the classification of explosive substances is also required under the Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 (CHIP3)5. The CHIP3 requirements are separate and are not covered by this note.

What information is required?

6. A number of routes are recognised for the classification of explosives. Assignment may be on the basis of UN test results and information supplied, or by analogy with a similar explosive previously classified by HSE or ESTC, or through documentary evidence of classification by the Competent Authority of another country. Additionally, for fireworks only, a default classification may be claimed - see paragraph 11.

The three different routes are discussed in more detail in the following paragraphs:

(a) Test Results

7. Acceptance of an article or substance into Class 1 or substances with explosive properties excluded from Class 1 and assignment to a hazard code is made on the basis of the UN Series Tests as described in the Orange Book3, part 2, chapter 2, and in more detail in the Tests and Criteria Manual6. This approach is most appropriate where the explosive involved is either new or packaged in a novel way or where test data is not available for an analogous explosive.

8. Companies are expected to make their own arrangements to have the necessary tests carried out. The opportunity should be given to HSE to witness tests. This applies particularly to the Series 6 and 8 tests which determine the hazard division to be assigned. Where it is not possible for HSE to witness the tests, evidence must be provided to show that they have been satisfactorily carried out. Such evidence should include test reports, photographic or video records and must be sufficient to enable HSE to verify that the UN criteria have been met. Important points to be considered in providing evidence of Series 6 test results include:-

    I. Camera positions should be carefully chosen to properly record the trial. The use of two or more cameras may be necessary to properly record all events. Allowance should be made for possible obscuration by smoke when positioning the cameras.

    II. A record of the packaging arrangement used should be made at the outset of the trial.

    III. Marker posts or other aids should be used to indicate distances. This is particularly relevant to bonfire tests where the scattering of debris or size of fireball is important.

    IV. Where relevant to the assessment of the trial, records should be made of the condition of the site after the trial. This should include the condition of witness screens, the scattering of debris and the condition of package remains.

(b) Analogy

9. It is often possible to draw on the results of tests carried out on explosives similar to those to be classified. Where applications are made for classification on this basis, sufficient information must be submitted to demonstrate that the claimed analogy is sound. The analogy must be based on an explosive previously classified by HSE or ESTC on the basis of test data. In establishing an analogy it is important to demonstrate similarity in terms of explosive type, composition, explosive content (NEC), design features if an article, and method of packing. This route can be used in applications from the company holding the classification document for the analogous explosive.

(c) Acceptance of Competent Authority Documents of other Countries

10. This will be the normal route for imported explosives. Whilst it is not obliged to, the HSE will normally accept a classification document issued by the recognised Competent Authority (CA) of another country as a basis for classification within Great Britain. The documents submitted must be specific in relation to the items classified and the method of packing allowed. Documents must originate from the authority responsible for the classification of explosives in the relevant country. Where the CAD is not in English, an English translation should also be provided. Where a CA

Document is not available the importer will need to seek classification either by analogy or testing.

Default Scheme for Fireworks [1]

11. A default system for the classification of fireworks has been agreed between HSE and the industry. The default system provides a list of classification of fireworks according to type. The classifications are those which the HSE would normally award where information from specific UN tests or competent authority documents is not available. In practice it is applied to most imported fireworks. The default system may also be used at HSE's discretion for fireworks manufactured, assembled or modified in Great Britain.

    The publishing of the default list does not replace the requirement for HSE to classify all individual fireworks, and should not be used as a basis for "self classification". Classification by the default route may be claimed where test results are not available or where no satisfactory documentary evidence of classification in the country of manufacture can be obtained. Packagings used for Explosives must comply with the packaging requirements in the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2004 (CDG2004)7 (as amended) which implement the European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR) in Great Britain.

12. Classifications on the basis of test results will take precedence over those [2]derived by default. Classifications awarded by another competent authority may also be considered by HSE to override the default system. Where the default system is employed applicants may be asked to demonstrate that the fireworks as packaged are safe to convey by satisfactorily undergoing the UN Series 4(b) (ii) 12 metre Drop Test.

    Relationship between CLER and packaging

13. The description of the packaging of an explosive is of major significance since the classification assigned under CLER is specific and limited to the form and packaging described. The Regulations dealing with classification and packaging address different concerns but are complimentary in setting requirements for the safety of explosives and both must be met. They are related in the following way:-

    a) Classification under CLER establishes the hazard presented by the explosive as packaged and includes an assessment of the effect of the packaging on the hazard and ease of ignition of the explosive. In some cases a lower hazard classification may be achieved by a suitable packaging design.

    b) Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2004 and ADR deals with the added requirements of any packaging to contain and protect the contents during transport and handling,

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[1] Fireworks*: in this context fireworks are considered to be pyrotechnic articles for entertainment purposes as defined in the UN Recommendations for the Transport of Dangerous Goods and expected to be assigned on classification to UN Nos. 0333-0337. Pyrotechnic Articles assigned to other UN Nos. and pyrotechnic substances are not included in the default scheme. The current default classification is given in Table 1.

*The fireworks form is available as a spreadsheet on the HSE website www.hse.gov.uk/explosives (click on classification) or direct from the Explosives Inspectorate. Submission of firework applications in this format significantly speeds up the process and minimises costs.

and considers factors such as the robustness and leak-proofness of packagings and their compatibility with the explosives they contain.

14. A classification document will not normally be issued until documentary evidence is received that the packaging requirements of ADR have been met. The CAD will include the UN Mark allocated.

APPLICATION PROCEDURE

How do I apply?

15. Applications for classification of commercial explosives should be made to the HSE at the address given in Annex 2 using the appropriate form. Separate forms are available for a) fireworks*, b) explosives, other than fireworks, manufactured in Great Britain, and c) explosives, other than fireworks, transferred or imported into Great Britain. The forms should be completed as fully as possible and the declaration signed. Unsigned applications will be returned to sender. The forms include specific notes to assist the applicant. Applications should only be submitted for explosives which are not already listed in LOCEF.

16. Where sufficient information has been supplied the classification awarded will be issued to the applicant on a Competent Authority Document (CAD). This will detail the classification assigned and summarise the conditions attached. The explosives will also be added by name to LOCEF.

17. The HSE powers on classification relate to explosives which are to be carried or imported into Great Britain and CADs are only issued to companies or individuals with an official address in Great Britain.

18. A fee is charged in connection with each application for classification as determined by the current Health and Safety (Fees) Regulations9. The current rates may be ascertained from HSE at the address given in Annex 2.

19. Explosives are not classified until the CAD has been signed and issued. The explosives therefore cannot be legally supplied, imported or carried until then. The CAD will not be signed and issued until the fee has been paid. A fee is also payable for the work done on applications which are terminated before completion.

AFTER ISSUE OF COMPETENT AUTHORITY DOCUMENT

What will the Health and Safety Executive do?

20. HSE may from time to time undertake checks for compliance with the terms of the classification as set out in the CAD issued. This may be at the supplier's own premises or at any point along the distribution chain.

21. HSE may also pass information contained in the CAD to other relevant authorities e.g. local authority trading standards officers, to help in their regulatory duties.

What are my ongoing responsibilities?

22. You should ensure that the labels required by CLER reflect the information in the CAD in respect of each explosive article or substance including
    a) its name;
    b) its United Nations Serial number; and
    c) its hazard classification code.

If a change is made to the explosive do I have to re-apply for classification?

23. All significant changes affecting the classification of an explosive should be notified to the HSE and may require the issue of a new competent authority document or other change to the entry in LOCEF. Where any doubt exists with regard to what is significant HSE should be consulted. Examples of modifications which may be regarded as significant include:-

    a) A change in the composition of an explosive substance.

    b) A change to the quantity or type of explosive filling in an article.

    c) A change to the design or specification of the explosive.

    d) Any change to the packagings of an article or packaged substance.

What if I need to change the name of a firework

24. Provided that you are the holder of the CAD and provided that all other details (the firework type, size, manufacturer, construction and design) remain the same the procedure below should be followed:

    a) The holder of the Competent Authority Document (CAD) in which the firework is classified sends to the Explosives Inspectorate (by letter, fax or email) notification of the alternative name. The notification must include the original name and HSE reference number of the firework and confirm that all other details of the firework (type, size, manufacturer, construction and design) remain the same.

    b) In reply, the CAD holder will receive from the Explosives Inspectorate a letter confirming that the alternative name has been added to our records and stating that the firework is now classified both under its original name and the alternative name. This letter will be signed by an Explosives Inspector and should be retained together with the CAD as documentary evidence of classification of the firework under the alternative name.

    c) There is no limit as to how many alternative names may be given to a firework. Each notification must refer to the original name of the firework as first classified.

However, it must be emphasised that:

    d) notifications by the holder of the relevant CAD, where it is only the name of the firework that is to be changed, are covered by the above procedure. In all

other cases, it will be necessary to apply for classification of the firework in the normal way.

e) fireworks for which alternative name(s) have been notified are not classified under those alternative names until the CAD holder has received the letter referred to in paragraph (b) above. This means that until such time as the letter has been received by the CAD holder, fireworks bearing the alternative name(s) cannot be legally imported or carried.

Once a notification of an alternative name has been processed by the Explosives Inspectorate, the original and alternative names of the firework will appear in the List of Classified Explosives and Fireworks (LOCEF) as separate entries having the same HSE serial number. It will not be possible to determine from that list which name is the original name.

Changes to Company Name or Registered Address

These should be notified to HSE as soon as they occur.

TABLE 1 – DEFAULT CLASSIFICATION LIST FOR THE FIREWORKS **REV 3 DECEMBER 2003**

Notes:

1. In this table "flash composition" means pyrotechnic compositions containing an oxidising substance and metal powder fuel used to produce an aural report effect or used as a bursting charge in fireworks.
2. References to percentages in the table, unless otherwise stated, relate to the total mass of the pyrotechnic composition.
3. Reference to combinations includes batteries
4. Any combination containing shell in mortar defaults to 1.1G
5. Default classification depends on effects - eg. lancework battles with Roman candles ≤ 30mm inner diameter default to 1.4G

Type	**Includes: / Synonym:**	**Definition**	**Calibre /Weight**	HD
Report shell	report shell, maroon, salute, titanium salute	**See note 1** spherical or cylindrical device with or without propellant charge, with delay fuse and bursting charge, flash unit(s) or loose flash composition and designed to be projected from a mortar	all report shells	1.1G
Star shell	spherical display shell: aerial shell, colour shell, dye shell, multi-break shell, multi-effect shell, nautical shell, parachute shell, smoke shell, star shell;	**See notes 1 and 2** spherical or cylindrical device with or without propellant charge, with delay fuse and bursting charge, pyrotechnic unit(s) or loose pyrotechnic composition and designed to be projected from a mortar	colour shell: ≥ 200 mm	1.1G
			colour shell: < 200 mm with > 25% flash composition, as loose powder and/ or report effects	1.1G
			colour shell: < 200 mm with ≤ 25% flash composition, as loose powder and/ or report effects	1.3G
			colour shell: ≤ 50 mm or ≤ 60 g pyrotechnic composition with > 2% flash composition as report effects	1.3G

Type	**Includes: / Synonym:**	**Definition**	**Calibre /Weight**	HD
			colour shell: ≤ 50 mm or ≤ 60 g pyrotechnic composition with ≤ 2% flash composition as report effects	1.4G
Shell in mortar	aerial shell kit, preloaded mortar, shell in mortar	assembly comprising a shell inside a mortar from which the shell is designed to be projected	all report shells	1.1G
			colour shell: ≥ 200 mm	1.1G
			colour shell: < 200 mm	1.2G
Combination **See note 3**	set piece, cakes, barrage, finale box, shellcakes, single ignition box (SIB), display cake	assembly including several elements either containing the same type or several types each corresponding to one of the types of fireworks listed in this table, with one or two points of ignition	the most hazardous firework type determines the classification **See note 4**	
Roman candle	aerial bomb, air bomb, shot tube, candle,	Type 1 tube containing alternate propellant charge(s), pyrotechnic bombette(s) or unit(s) containing only flash composition and transmitting fuse(s)	> 45mm inner diameter	1.1G
			> 30mm and ≤ 45 mm inner diameter	1.3G
			≤ 30mm inner diameter	1.4G
Roman candle	candle,	Type 2 tube containing alternate propellant charge(s), pyrotechnic bombette(s) or unit(s) and transmitting fuse(s) not in Type 1 Roman Candles	>60mm inner diameter	1.1G
			> 30mm and ≤ 60 mm inner diameter	1.3G
			≤ 30mm inner diameter	1.4G
Report rocket	Flash rocket, report rocket, maroon rocket	An assembly of a tube containing a rocket motor and payload device with flash unit(s) or loose flash composition. Designed to be propelled in the air when equipped with sticks	All rockets without sticks	1.1G
			≥ 40g flash composition as loose powder and/or report effects, with sticks.	1.1G

Type	**Includes: / Synonym:**	**Definition**	**Calibre /Weight**	HD
		and to produce report effect(s)	> 6g and < 40g flash composition as loose powder and/or report effects, with sticks.	1.3G
			≤6g flash composition as loose powder and/or report effects, with sticks.	1.4G
Rocket	sky rocket, display rocket, shell rocket, star rocket	An assembly of a tube containing a rocket motor and payload device with or without delay fuse, with or without bursting charge, pyrotechnic unit(s) or loose pyrotechnic composition, equipped with or without sticks. Designed to be propelled in the air when equipped with sticks	>100mm maximum external diameter of payload device	1.1G
			≤ 100mm maximum external diameter of payload device and > 40g flash composition as loose powder and/or report effects	1.1G
			≤ 100mm maximum external diameter of payload device and > 10g, < 40g flash composition as loose powder and/or report effects	1.3G
			≤ 100mm maximum external diameter of payload device and < 10g flash composition as loose powder and/or report effects	1.4G
Mine	pot-a-feu, ground mine		> 100mm in diameter	1.3G
			≤ 100mm in diameter	1.4G
Fountain	volcanos, gerbs, lances, Bengal flame, cylindrical fountains, cone fountains, waterfall, illuminating torch		≥ 1 kg pyrotechnic composition	1.3G
			< 1 kg pyrotechnic composition	1.4G
Lancework on frames				1.4S

Type	**Includes: / Synonym:**	**Definition**	**Calibre /Weight**	HD
Lancework & effects			**See note 5**	
sparklers	handheld sparklers, non-handheld sparklers, colour sparklers, electric sparklers	rigid wire or thin stick partially coated (along one end) with slow burning pyrotechnic composition with or without an ignition tip	BS 7114: Category 2 & 3	1.4G
			BS 7114: Category 1	1.4S
low hazard fireworks and novelties	cap, table bombs, throw downs, smoke device, serpents, party poppers, cracker snaps	device designed to produce very limited visible and/ or audible effect which contains small amounts of pyrotechnic and/ or explosive composition.	BS 7114: Category 1	1.4S
Wheel	Catherine wheels, wheel, pin wheel, Saxon	assembly including drivers containing pyrotechnic composition and provided with a means of attaching it to a support so that it can rotate	no report effect, each whistle (if any) ≤ 5 g, ≥ 1 kg total pyrotechnic composition	1.3G
			no report effect, each whistle (if any) ≤ 5 g, < 1 kg total pyrotechnic composition	1.4G
Aerial wheel	flying Saxon, UFO's, rising crown	tubes containing propellant charges and sparks- flame- and/ or noise producing pyrotechnic compositions, the tubes being fixed to a supporting ring	no report effect, each whistle (if any) ≤ 5 g, > 60 g pyrotechnic composition per driver or > 200 g total pyrotechnic composition	1.3G
			no report effect, each whistle (if any) ≤ 5 g, ≤ 60 g pyrotechnic composition per driver and ≤ 200 g total pyrotechnic composition	1.4G
BS 7114: Category 2 & 3 fireworks (other than those listed above)				1.4G

Type	**Includes: / Synonym:**	**Definition**	**Calibre /Weight**	HD
Selection pack	display selection box, display selection pack, garden selection box, garden selection pack, indoor selection box, indoor selection pack	A pack of fireworks of more than one type, or of the same type with different names and corresponding to one of the types of fireworks listed in this table	the most hazardous firework type determines the classification i.e. 1.1G>1.2G>1.3G>1.4G>1.4S	
BS 7114: Category 4 fireworks (other than those listed above)			No default classification	

Annex 1 - References

1. S.I. 1983/1140, Classification and Labelling of Explosives Regulations 1983 (CLER). (as amended)

2. S.I. 1993/ 2714, Placing on the Market and Supervision of Transfers of Explosives Regulations 1993 (POMSTER).

3. Recommendations on the Transport of Dangerous Goods, Model Regulations, 13th revised edition, United Nations, ST/SG/AC.10.1/Rev 13, ISBN 92-1-92-1-139091-5 (Vol I), 92-1-139092-3 (Vol 2).

4. A Guide to the Classification and Labelling of Explosives Regulations 1983, HS(R) 17, HMSO, £3.25, ISBN 0 883706 0.

5. S.I. 2002/1689, Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 (CHIP3).

6. Recommendations on the Transport of Dangerous Goods, Tests and Criteria 2nd Edition, United Nations, ST/SG/AC.10/11/Rev .1, ISBN 91-1-139033-8.

7. Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2004 (as amended)

9. SI 2003 No 547, Health and Safety (Fees) Regulations 2005.
(current at date of publication of this note).

Annex 2

1. For information and advice on all aspects of Classification of explosives other than military explosives:

Health and Safety Executive, Explosives Inspectorate, Building 1, Floor 2, Redgrave Court, Merton Road, Bootle, Merseyside, L20 7HS

Tel: 0151 951 4024/4874/4830; Fax: 0151 951 3891.
E-mail: cad.explosives@hse.gsi.gov.uk

2. For information relating to Northern Ireland:

Northern Ireland Office, Police Division, Block A Castle Buildings, Stormont Estate, Belfast, BT4 3SG

3. For military explosives:

Secretary ESTC, Ministry of Defence, Abbeywood, Bristol, BS34 8JH