PYROTECHNIC SPECIAL EFFECTS

Classification and Authorization General and Detailed Requirements for 7.2.5

March 1, 2005



Table of Contents

1.	. Introduction		 	 1
	1.1 Scope	e	 	 1
		ovals - Authorization of the Explosives		
		ılation of Use		
		ired Documentation		
	17. 110 4	200200000000000000000000000000000000000	 	
2	Request for Au	authorization		3
۷.	-	of Articles		
		sport Classification		
	2.3 Outso	ourcing	 • • •	 3
2	Culturiasian Da	and Complian		1
٥.		Review and Sampling		
		ucts Not Authorized in Canada		
		rances		
		2.1 Chemical		
		2.2 Physical		
		2.3 Charge Weights		
	3.3 Marki	king and Labeling	 	 5
	3.4 Sampl	oling of the Submission	 	 6
	3.4	4.1 One or Two Articles	 	 6
	3.4	4.2 More Than Two Articles or Types of Articles	 	 6
		4.3 Special Sampling - Chemical Stability		
4.	I. Testing and Au	Authorization	 	 7
		aging for Samples		
		nical Analysis		
		eptance Criteria		
	_	3.1 For Each Article		
		3.2 Authorization of Articles and Submission		
	4.4 Transp	sport Classification	 	 9
۸.	۸			11
Aj	Appendix A - Ger	eneral Requirements	 • • •	 11
	1' D T'	(D) (1 'G '1 D)		1.0
Αĵ	Appendix B - List	st of Pyrotechnic Special Effects	 • • •	 19
	1. 0 0 1			
Αį		bmission Form for Authorization and Classification of		2.2
	Pyro	rotechnic Special Effects	 	 23

1. Introduction

This standard is published in accordance with Sections 20 to 24 of the Explosives Regulations (C.R.C., c.599). It is written in conjunction with the Explosives Regulatory Division (ERD) document titled *Authorization and Classification of Explosives* and specifies the documentation and testing needed for authorization¹ of pyrotechnic special effects.

Pyrotechnic special effects, also known as theatrical effects or proximate pyrotechnics (as described in Section 14(9) of the Explosives Regulations and with a Canadian Classification of 7.2.5), are devices that are typically used by licensed pyrotechnicians in the entertainment industry and that may be similar in nature to consumer fireworks in terms of their chemical composition.

1.1 Scope

This standard applies to manufactured pyrotechnic special effects intended to be used before a proximate audience. It specifies the requirements for obtaining a Canadian product authorization and classification. In addition, it specifies what must be declared by the manufacturer or the manufacturer's representative. It also describes minimum requirements for the design, technical information, performance, primary package and labeling requirements, and corresponding test methods for the product.

It does not apply to detonating cords (covered by the Standard for the authorization and classification of initiation systems), igniters and soft-jacketed detonators (e.g., bullet hits), or to black powder or smokeless powder and/or high explosives that may be used in combination with flammable liquids that are manufactured for a one-of-kind pyrotechnic special effect for the film and television industry. Such effects and/or their use are regulated by the *Pyrotechnics Special Effects Manual* and/or by the local authority having jurisdiction.

Change(s) to any authorized products, unless otherwise indicated in the approval, void the authorization or approval.

This standard will be applied immediately to the authorization of all new explosives and to any currently authorized products that have been significantly modified or changed.

Authorization is the process by which an explosive substance or explosive article, as defined in the *Explosives Act* and Regulations, is declared authorized by the Chief Inspector, at which time it becomes legal to manufacture, sell, possess or use that explosive or explosive article in Canada or import it into Canada; only after approval is the item added to the list of authorized explosives. As part of this process, the explosive substances or explosive articles are classified in accordance with the Explosives Regulations. Only an explosive substance or explosive article under the care and control of the Department of National Defence is exempt from authorization. The authorization process is detailed in Section 6.1 of the ERD document titled *Authorization and Classification of Explosives*; as indicated in Section 6.1 supplementary documentation and test data may be requested in the product test plan. As a condition of authorization, explosive safety-related incidents involving authorized products are to be reported.

Products and systems that are now authorized and that now appear on the current list of authorized explosives, unless materially changed, involved in safety-related incidents, or any safety issues that may be currently unknown or not well understood, will not be required:

- a) to meet all requirements of this standard,
- b) to re-submit documentation, or
- c) to perform additional test results or testing.

ERD requires documentation to ascertain that the manufacturer has applied sound principles in design and exercised due diligence in evaluating the safety-related properties of the explosive.

As documentation reveals the details of design, which constitutes the intellectual property of the manufacturer, the submission will be kept confidential in accordance with the *Explosive Act* and Regulations.

1.2 Approvals - Authorization of the Explosives

Authorization of the explosives may be granted after review of required documentation, including any applicable test results. Part 6 of the ERD document titled *Authorization and Classification of Explosives* describes this process, including documentation, language and format; explosives are classified in accordance with Section 5.1.1 and the detailed stages of this process are outlined in Section 6.1 of the same document, i.e., submission, review, test plan development, reporting, approval, etc.

1.3 Regulation of Use

ERD does not regulate the use of explosives in general, but does regulate the use of pyrotechnic special effects. The regulation that applies to their use is summarized in the ERD document titled *Pyrotechnics Special Effects Manual*. In addition, as part of the approval and testing process, ERD does request information to ensure that the item can be safely used as recommended by the manufacturer, e.g., company product information and technical data.

1.4 Required Documentation

This standard, in conjunction with the *Authorization and Classification of Explosives* document, outlines the requirements to be met by a manufacturer who applies for approval of an explosive and, when applicable, its use only with manufacturer-specified system components.

The documentation for the authorization must:

² Refer to the ERD document titled *Authorization and Classification of Explosives*, Section 6.10, Validity, for the description.

³ For example, significant reportable safety-related incidents are accidents or those that could necessitate product re-call due to complete failure or ongoing malfunction.

- a) Be as specified and structured as set out in the ERD document titled *Authorization and Classification of Explosives* and include the mandatory supporting documentation as identified in the following sections; and
- b) Be submitted by the manufacturer, who applies for approval, or by its delegate, to both the approved testing authority, the Canadian Explosives Research Laboratory (CERL), and also to the approving authority, the Explosives Regulatory Division.

2. Request for Authorization

The requirements that indicate what must be present in the submission and how it will be judged are described in Sections 7 and 8 of the *Authorization and Classification of Explosives* document. The submission is a legal declaration to the Government of Canada in order to obtain authorization. It is the first indication of the care a company exercises in achieving a product of acceptable quality. Poor submissions do affect perception.

Every submission must be accompanied by the "Submission Form for Authorization and Classification of Pyrotechnic Special Effects" in Appendix C, properly completed. The review process does not start until all information has been submitted.

2.1 List of Articles

A list of all the articles in the submission by name, effect (as per Appendix B), duration and height, preferably with an identifying part number, is required. If more than one colour is associated with a given name or part number, list all the colours that are being submitted for each name or part number. Different colours, being different chemicals, are considered to be separate articles.

2.2 Transport Classification

A letter of competent authority classifying the pyrotechnic article is to be submitted when available, accompanied by supporting information. If a letter of competent authority is not available, the applicant may indicate the expected classification.

2.3 Outsourcing

If some components of the pyrotechnic articles are purchased from another source, this must be indicated on the drawing and a reference to that source must be given. ERD will decide whether a separate testing scheme for the outsourced material will be required.

⁴Mandatory documentation: This information is expected to accompany the authorization and classification application; when such information is not presented, an appropriate test plan will be prepared to develop the needed documentation in accordance with the authorization process. At that time, supplementary documentation may also be requested.

3. Submission Review and Sampling

This section describes the requirements for the acceptance of a submission and the methodology that will be followed for the selection of samples.

3.1 Products Not Authorized in Canada

Certain articles or certain chemicals considered to be unsafe will not be authorized.

The following types of articles will not be authorized:

- articles self-propelled from the ground and rising in the air with unpredictable flight paths or moving erratically;
- articles judged excessively violent by the Chief Inspector of Explosives;
- articles not properly labeled; and
- articles that have a history of injuries.

The chemicals listed below will not be allowed:

- arsenic compounds poisons;
- gallates or gallic acid incompatible with many chemicals;
- lead and lead compounds or salts poisons (except in igniters); and
- mercury compounds poisons.

The chemicals listed below are restricted and are not allowed without a special dispensation:

- boron readily oxidizable;
- chlorates with sulphur, sulphides, ammonium salts, elemental metals (such as magnesium or aluminum), or with copper or copper salts such mixtures are friction sensitive and liable to spontaneous combustion;
- chromium or chromium compounds;
- phosphorus, except for red phosphorus in toy pistol caps;
- picric acid and picrates incompatible with many chemicals;
- thiocyanates except for snakes explosively oxidizable; and
- zirconium explosively oxidizable.

Note: If a dispensation is provided, it must appear on the certificate of authorization.

3.2 Tolerances

As indicated on the application form, tolerances are to be provided and must conform to those listed in this section. Otherwise, these will apply by default.

3.2.1 Chemical

Tolerances for chemicals must be less than \pm 20% of the percentage for any component less than 25% of the composition and \pm 10% of the percentage for any component present in more than 25%.

(For example, if the amount is 30%, then 10% of 30 is 3% and the tolerance is $30 \pm 3\%$; if the amount is 15%, then 20% of 15 is 3% and the tolerance is $15 \pm 3\%$. Companies may use more stringent tolerances.)

All declared ingredients must be present. Ingredients not declared must not be present at more than 0.5% (mass/mass of composition analyzed).

Note: Wider tolerances might be accepted under the following conditions:

- the articles are manufactured for a specific venue or tour for which the formulation has to be adjusted depending on the location(s) and time of the year; or
- the articles are manufactured as per the end user request for performance requirements.

3.2.2 Physical

Tolerances on physical characteristic may be set by the company. They must be such so as not to interfere with proper function and must not be greater than $\pm 25\%$ of the nominal.

3.2.3 Charge Weights

If maximum charge weights are specified in this document, they represent the maximum of the tolerance range. Otherwise, the following applies to charge weights:

- If $< 10 \text{ g: } \pm 25\%$
- If $\geq 10 \text{ g:} \pm 10\%$

Note: Wider tolerances might be accepted under the following conditions:

- the articles are manufactured for a specific venue or tour for which the formulation has to be adjusted depending on the location(s) and time of the year; or
- the articles are manufactured as per the end user request for performance requirements.

3.3 Marking and Labeling

In addition to the requirements described in the *Authorization and Classification of Explosives* document in Section 8.3, the following is expected for pyrotechnic special effects:

• precautions or instructions for the safe handling and use of the pyrotechnic article. The instructions must be in both English and French, clear, legible, and with equal prominence given to the two languages.

3.4 Sampling of the Submission

Not all articles are tested. Submissions are sampled and the acceptance of the submission depends on the behaviour of the sample. New articles similar to existing articles from established and known companies may be authorized by analogy to existing products.

The choice to sample rests with the inspector and depends on previous experience, on the history of complaints, on the availability of articles from the same company to use as analogues, or on the lapse of time since articles from the company were last tested.

The description of sampling below represents minimum sampling. Inspectors may decide on more samples when they believe this would better evaluate a submission.

3.4.1 One or Two Articles

It is common with pyrotechnic special effects to submit individual types of articles one at a time. Each such article will be evaluated on its merits.

3.4.2 More Than Two Articles or Types of Articles

When more than two articles are submitted, the submission may be divided into types of articles based on construction and effect. Differing duration or height of effect within a type of article are considered to be variations of a type of article although listed as individual items in the list of authorized explosives. Each such type may be represented by a sample. Each set of five (5) variations is represented by a separate sample.

(For example, if a type of article corresponds to a mine that has 14 different variations (14/5 = 2.8 = 3), only 3 members of the family, each with 24 units, will be chosen to represent that family.)

3.4.3 Special Sampling - Chemical Stability

Stability is a chief consideration for authorization. Although all samples are tested for stability, it is recognized that all articles submitted for authorization cannot be sampled. The following chemicals are recognized as components of stable pyrotechnic compositions and samples may not necessarily be requested to prove stability of all articles (samples will be required for any other chemical or if unusual combinations of any chemical are presented):

- aluminum:
- ammonium perchlorate;
- antimony, antimony sulphide;
- barium carbonate, barium nitrate, barium sulphate;
- boric acid:
- calcium carbonate, calcium sulphate;
- carbon or charcoal;
- copper metal, copper oxide;
- dextrine;
- hexamethylenetetramine;

- iron and iron alloys (ferro-titanium), iron oxide;
- magnalium, magnesium, magnesium carbonate, magnesium sulphate;
- nitrocellulose-based lacquers;
- red phosphorus (toy pistol caps only);
- potassium or sodium benzoate, potassium hydrogen phthalate, potassium nitrate, potassium perchlorate, potassium sulphate;
- sodium bicarbonate, sodium nitrate, sodium oxalate, sodium salicylate, sodium sulphate;
- strontium carbonate, strontium nitrate, strontium sulphate;
- sulphur; and
- titanium (mesh >100).

Organic compounds, such as lactose, lycopodium, shellac, red gum, chlorinated paraffin, chlorinated rubber (Parlon) and PVC, consisting of some combination of carbon with hydrogen and/or chlorine and nitrogen, may be present if it accounts for less than 10% by mass of the compound.

4. Testing and Authorization

Section 6.1 from the *Authorization and Classification of Explosives* document describes the general authorization process. This includes the selection of samples by ERD, the preparation of a test plan by CERL, and the issuance of a CIE report by CERL to ERD that includes recommendations for the authorization and classification of the products. This section describes more specifically the basis under which pyrotechnic special effects will be given a classification and authorization.

Please note that specific construction and performance requirements are described in Appendix A. The section on general requirements identifies some characteristics with the letter "C," meaning critical. More stringent acceptance criteria are used for "C" characteristics.

4.1 Packaging for Samples

When samples are sent to CERL for product testing, they are to be shipped in their intended packaging with the appropriate labeling and instructions. Improper packaging will result in rejection of the submission. Packaging must comply with the specification set out in the National Standard of Canada CAN/CGSB 43.151-97, Packaging of Explosives (Class 1) for Transportation.

4.2 Chemical Analysis

Chemicals must meet the declaration within the tolerances set by the company.

Because analytical techniques do not always analyze exactly the components in a composition, the declaration will be modified to show the information in a manner similar to what the analyses will detect. (For example, if the declaration included both aluminum and magnalium, the analyses would look for the aluminum and magnesium total.)

In the case of certain more difficult analyses, analytical error will be taken into account. However, finding any of the following is considered to be a gross discrepancy and reason for rejection:

- detection of more than 0.5% of a component not present in the declaration;
- non-detection of a component present in the declaration;
- finding ingredients outside the tolerance of \pm 20% of declared amounts for ingredients declared to be 25% of the composition or less; and
- finding ingredients outside the tolerance of $\pm 10\%$ of the declared amount for ingredients declared to be more than 25% of the composition.

4.3 Acceptance Criteria

4.3.1 For Each Article

Ten (10) units are functioned for each article tested at CERL. From these 10 units, 6 are subjected to abuse testing (e.g., 1 metre drop test, jolt test, etc.). It is mandatory that the 6 units remain functional and safe after such tests. Two (2) other units are dismantled and measured and they are subject to chemical analysis and thermal stability tests. The results of these tests must be consistent with the manufacturer's declaration while meeting the requirements listed in the standard. Overall, 10/10 must meet the critical requirements marked (C) and at least 8/10 must meet all the non-critical requirements. Failure to meet these requirements constitutes rejection of the article. For a submission with multiple articles of a specific type, all articles that were selected for testing must pass testing with success.

4.3.2 Authorization of Articles and Submission

For a submission where an applicant has elected to have one or multiple articles authorized on an individual basis, the authorization of each article will be as described in the previous section (4.3.1).

For a submission that includes one or more type of articles, the authorization of types of articles will be based on the following:

- each type of articles will be treated individually, i.e., if one or additional types from a submission successfully pass testing at CERL, and an additional type from the same submission fails testing, only the failed type will not be authorized; and
- for a type of article to be authorized, all articles that were selected for testing from that type must successfully pass testing as per the requirements of Section 4.3.1.

Note: For a large submission, it is important for the applicant, when submitting a submission, to distinguish what the various types of articles are.

4.4 Transport Classification

As per the 13th revised edition of the United Nations' *Recommendations on the Transport of Dangerous Goods - Model Regulations*, the pyrotechnic special effects are classified as shown in Table 1.

 $Table\ 1-UN\ Classification$

Shipping Name	UN Number	Classification
ARTICLES, PYROTECHNIC	0428	1.1G
ARTICLES, PYROTECHNIC	0429	1.2G
ARTICLES, PYROTECHNIC	0430	1.3G
ARTICLES, PYROTECHNIC	0431	1.4G
ARTICLES, PYROTECHNIC	0432	1.4S

APPENDIX A GENERAL REQUIREMENTS

General Requirements for Pyrotechnic Special Effects		
CHARACTERISTICS REQUIREMENTS		REQUIREMENTS
1. 1.1	Packaging Labeling (C) ⁵ Shipping name (either English or French) Product identification number (UN number) Dangerous goods label (orange label) Name of product manufacturer Registration number for packaging	Must meet <i>Transportation of Dangerous Goods Act</i> , its Regulations, and/or its referred standards.
<u>1.2</u>	Condition of Packaging Loose composition (C)	Not allowed.

5

(C): Critical requirement.

General Requirements for Pyrotechnic Special Effects	
CHARACTERISTICS	REQUIREMENTS
 English and French. Brand or trade name. Logo or code that identifies the manufacturer. Precautions and instructions for safe handling (see individual items for details): • If marking the article is not practical, the markings must appear on every inner package. In the absence of the inner package, the marking must appear on the shipping container. • When the article is too small to carry all the markings and is to be sold outside the shipping packaging, it must carry the most important safety messages appropriate to its mode of functioning and the markings must be approved by ERD. • Any alternative to the labeling proposed by this document must be approved by the Chief Inspector. (The cautionary warning must capture the method of functioning of the individual components. Instructions such as "This way up" or "for mounting" shall be added to those articles requiring special precautions due to the design of the article. In the specific requirements, a choice is given as to which instruction best meets the design of the article.) An indication of whether the article is recommended for indoor use. The duration of the effect. 	Must be present.

General Requirements for Pyrotechnic Special Effects		
CHARACTERISTICS	REQUIREMENTS	
Labeling of Articles cont'd The height or diameter of the effect. An arrow indicating the exit direction of the effect or the direction of travel for line rockets. A batch/lot number. Product expiration date.	Must be present.	
3. Physical Integrity 3.1 Construction of Articles Containing metal, such as staples or wire, or hard plastic, which could be a possible missile hazard when functioned or malfunctioned (C). Pyrotechnics falling out of the article (C).	Not allowed for all.	
Loose pyrotechnic powder present in an unintended part of the article (C). Construction of roll paper tubes, which would allow composition to migrate under the inner layer of paper. Signs of breaking or cracking in casing or composition.		
3.1.1 Tubes, Cones and Boxes Metallic construction (C). Damaged by shipping or handling.	Not allowed.	

General Requirements for Pyrotechnic Special Effects		
CHARACTERISTICS	REQUIREMENTS	
3.1.2 Base When present, becomes detached or is not secure during handling. Toppling over of articles' bases when tilted at 12° (C).	Not allowed.	
3.1.3 Means of Ignition The presence for the means of ignition of a pyrotechnic special effect, if present, shall be clearly visible and in accordance with the manufacturer's declaration (C). Attachment of igniter or electrical contacts (C): for pyrotechnic special effects with integral means of ignition, the attachment of the means of ignition to the article shall be secure. Protection of electrical contacts (C): the electrical contacts shall be	Conformity verified by visual examination. The means of ignition shall not become loose when subjected to a pull test. Conformity verified by visual examination.	
covered or joined (shunted) in a short circuit or protected by an insulated connecting device.		

General Requirements for Pyrotechnic Special Effects		
CHARACTERISTICS		REQUIREMENTS
<u>4.</u> 4.1	Performance Function	
	Did not function as described on the label (C). Did not function in a safe, reliable, reproducible and predictable manner (C). Bases that come loose during functioning (C). Unconsumed pyrotechnic composition after functioning. Loose plugs on tubes with plugs at the base affecting performance or safety.	Not allowed.
4.1.1	Height, Diameter and Duration of Effect(s) The height, diameter and duration of effect(s) were not in accordance with the manufacturer's declaration (C).	The height must not exceed declared value. The duration must not exceed declared duration. The diameter of the effect must not exceed declared value.
4.1.2	Stability For free-standing pyrotechnic special effects that are not supported in any other way, did not remain upright while functioning.	Not allowed.
4.1.3	Burning of Articles After functioning, articles must not burn for more than 5 seconds unless otherwise indicated on the safety labels of the article (C).	Not allowed.

General Requirements for Pyrotechnic Special Effects		
CHARACTERISTICS		REQUIREMENTS
4.2	Effects	
	Explosion of article (C).	Not allowed (unless designed to do so).
	Projection of unlit composition.	None.
<u>4.2.1</u>	Sound Pressure Level	
	Maximum A-weighted impulse sound pressure level (Lalmax) at a horizontal distance of 5 m from the testing point and at a height of 1.0 m above ground.	140 dB (Al) max. unless specific instructions are provided by the manufacturer (e.g., "concussion" that is to be used remotely).
4.2.3	unless declared to do so by the manufacturer and that this fallout distance is taken into consideration for the separation distance to spectators as stated on the label safety information or the instructions for use; this separation distance shall be at least twice the projection distance (C). Note: As a reference, the minimum separation distance to spectators is 5 m.	2 m max. Not allowed.
<u>5.</u>	Physical Measurements (Compared to Technical Declaration) Gross weight. Explosive charge weights.	List on a separate report.

APPENDIX B LIST OF PYROTECHNIC SPECIAL EFFECTS

List of the various pyrotechnic special effects articles:

- Air Burst
- Binary Kits
- Comet (meteor)
- Preloaded Comet
- Preloaded Mine
- Preloaded Smoke Pot
- Preloaded Report (concussion tube)
- Falls
- Fireballs/Mortar Hits
- Flame Projector
- Flare (torch)
- Flash Cotton (sparkle string)
- Flash Paper
- Flash Pot
- Flash Tray (split mine)
- Gerb (including fountain, whistle and waterfall)
- Lance
- Line Rockets
- Multi-Tube Article (multi-shot plate, multiple-shot repeater boards, bombardo board; designed to function in sequence)
- Pre-Mixed Powders
- Squib
- Strobe
- Wheel (saxon)

APPENDIX C

SUBMISSION FORM FOR AUTHORIZATION AND CLASSIFICATION OF PYROTECHNIC SPECIAL EFFECTS

SUBMISSION FORM FOR THE AUTHORIZATION AND CLASSIFICATION OF PYROTECHNIC SPECIAL EFFECTS

Note: This form must be completed, signed and returned to the Explosives Regulatory Division, 1431 Merivale Road, Ottawa, Ontario K1A 0G1, fax: (613) 948-5195. For your application to be considered, all documents and information requested in the various sections must be submitted along with this form.

SECTION 1 - APPLICANT INFORMATION	
1.1 Requesting company details	
Name of requesting company	
Street address	
City	
Province or state	
Country	
Postal code	
Telephone	
Fax	
E-m ail	
Name of contact person	
1.2 Manufacturing company details	
Name of manufacturing company	
Street address	
Province or state	
Country	
Postal code	
Telephone	
Fax	
E-mail	
Name of contact person	
Title	

1.3 Confirmation letter	
	a the manufacturing company, the requesting company MUST provide a letter from the manufacturer authorizing them to act on their behalf.
A confirmation letter is attached to thi	s submission:
SECTION 2 - LIST OF PRODUCT	s
For submissions containing more than MUST be supplied (in Microsoft Exce	10 articles, an electronic copy of the listed products and part numbers el).
	ss, you can either submit an electronic copy of the listed products and
part numbers as mentioned above, or	you can fill out the table below.
Part Number(s)	Name of Product(s)

SECTION 3 - TECHNICAL DECLARATION

3.1 Specification detailing the product(s)

The following documents and information MUST be attached to this submission:

- Technical drawing of the article(s) with dimensions and tolerances
- Chemical name(s) of the explosives and/or composition(s) with tolerances
- Explosives charge weight(s) with tolerances
- Gross article(s) weight(s)
- Description of the means and methods of disposal or destruction
- For components purchased from another source, a reference to that source must be given

3.2 Packaging and labeling
 The following documents and information MUST be attached to this submission: Drawing or description of shipping packaging (external, internal, item) All labeling as it appears on the packaging (external, internal, item) When applicable, the packaging as offered to the consumer and its labeling Examples of all instructions for use and safety warnings in English and French
When applicable, does the packaging and packing method provide mitigation of explosive effects? Yes □ No □
When packaging is opened or altered, are these effects still mitigated by the package? Yes No
SECTION 4 - MANUFACTURER PRODUCT SCOPE DECLARATION
4.1 Scope of the explosive
What is the scope of the explosive?
Provide a short description of the product and its method of function.
4.2 Reliability statement
If available, provide a summary of the testing and/or use of articles used during/for development work and/or commercialization to demonstrate the reliability of the product(s).
SECTION 5 - INTENDED DISTRIBUTION
5.1 Means of distribution, sale or use
Explain how the articles will be packaged for their distribution, sale or use (full case quantities, part case quantities, internal package, by unit, etc.)

March 1, 2005 27 Revision 1

State expected shipment mode:
State expected shipment quantity by shipment mode:
Maximum:
Minimum:
5.2 "Mixed-load" combinations
Identify the "mixed-load" combinations of other dangerous goods needed for routine use. With which other items are the articles routinely transported for use?
SECTION 6 - HAZARD CLASSIFICATION FOR TRANSPORT
A letter/certificate from a competent authority is attached to this submission:
Yes □ No □
If a letter/certificate is attached, indicate the basis of classification: 1.1G 1.2G 1.3G 1.4G Other (specify):
In disease the annual table along first in a
Indicate the expected UN classification: $1.1G \Box 1.2G \Box 1.3G \Box 1.4G \Box Other (specify):$
Please explain the reason for this expectation (i.e., shipping mode, freight cost, compatibility, etc.)
Willing to have tests conducted? Yes □ No □
SECTION 7 - DISCLOSURE OF CONFIDENTIAL INFORMATION
The Explosives Act states:
"23. (1) Subject to subsection (2), any person who, without the express authority of the Minister, knowingly discloses any confidential information obtained under this Act:

March 1, 2005 28 Revision 1

- (a) is guilty of an offence punishable on summary conviction and is liable to a fine not exceeding five thousand dollars; or
- (b) is guilty of an indictable offence and is liable to a fine not exceeding ten thousand dollars or to imprisonment for a term not exceeding six months or to both.
- (2) A person may disclose information referred to in subsection (1) for the purposes of the performance of duties and functions under this or any other Act of Parliament or the administration or enforcement of this Act or as required by any other law, or where the disclosure may reasonably be considered necessary for the protection of any person or property."

In order to address security issues and the protection of persons and properties, the information you submit may be shared with the RCMP, CSIS, ATF and FBI or other statutorily created agencies in Canada or the United States.

SECTION 8 - SIGNATURE	
Name of Applicant (print)	
Applicant Signature	
Date (mm/dd/yy)	

March 1, 2005 29 Revision 1