EXHIBIT B – SIGNAL FLARES & HIGHWAY SIGNAL DEVICES SPECIFICATIONS

IFB No.:	03317
Bidder:	

Bidder shall indicate with a Yes or No that the products provided meet the following specifications. A response of No will result in disqualification.

Specification	**Yes/No**
All products offered are in accordance with UL 912 specification. See pages 2 - 23	
All products are non-perchlorate formulation only.	

UL 912

STANDARD FOR SAFETY

Highway Emergency Signals

UL Standard for Safety for Highway Emergency Signals, UL 912

Sixth Edition, Dated November 26, 1997

Summary of Topics

This revision of UL 912 includes the addition of requirements for flares containing no potassium perchlorate.

Text that has been changed in any manner or impacted by UL's electronic publishing system is marked with a vertical line in the margin. Changes in requirements are marked with a vertical line in the margin and are followed by an effective date note indicating the date of publication or the date on which the changed requirement becomes effective.

The new and revised are substantially in accordance with Proposal(s) on this subject dated September 20, 2013.

The requirements in this Standard are now in effect, except for those paragraphs, sections, tables, figures, and/or other elements of the Standard having future effective dates as indicated in the note following the affected item. The prior text for requirements that have been revised and that have a future effective date are located after the Standard, and are preceded by a "SUPERSEDED REQUIREMENTS" notice.

NOVEMBER 26, 1997
(Title Page Reprinted: November 5, 2013)

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UL 912

Standard for Highway Emergency Signals

First Edition – September, 1938
Second Edition – September, 1940
Third Edition – June, 1973
Fourth Edition – July, 1979
Fifth Edition – February, 1993

Sixth Edition

November 26, 1997

Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at http://csds.ul.com.

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FOREWORD

A. This Standard contains basic requirements for products covered by Underwriters Laboratories Inc. (UL) under its Follow-Up Service for this category within the limitations given below and in the Scope section of this Standard. These requirements are based upon sound engineering principles, research, records of tests and field experience, and an appreciation of the problems of manufacture, installation, and use derived from consultation with and information obtained from manufacturers, users, inspection authorities, and others having specialized experience. They are subject to revision as further experience and investigation may show is necessary or desirable.

B. The observance of the requirements of this Standard by a manufacturer is one of the conditions of the continued coverage of the manufacturer's product.

C. A product which complies with the text of this Standard will not necessarily be judged to comply with the Standard if, when examined and tested, it is found to have other features which impair the level of safety contemplated by these requirements.

D. A product employing materials or having forms of construction which conflict with specific requirements of the Standard cannot be judged to comply with the Standard. A product employing materials or having forms of construction not addressed by this Standard may be examined and tested according to the intent of the requirements and, if found to meet the intent of this Standard, may be judged to comply with the Standard.

E. UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. The opinions and findings of UL represent its professional judgment given with due consideration to the necessary limitations of practical operation and state of the art at the time the Standard is processed. UL shall not be responsible to anyone for the use of or reliance upon this Standard by anyone. UL shall not incur any obligation or liability for damages, including consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Standard.

F. Many tests required by the Standards of UL are inherently hazardous and adequate safeguards for personnel and property shall be employed in conducting such tests.

INTRODUCTION

1 Scope

1.1 These requirements cover highway emergency signals intended to be carried on commercial automotive vehicles and to be used as emergency traffic warning signals in the event of enforced parking of the vehicle on a highway.

1.2 These requirements cover three types of warning signals: Liquid-Burning Flares, Red Electric Warning Lanterns, and Fusees.

1.3 A product that contains features, characteristics, components, materials, or systems new or different from those covered by the requirements in this standard, and that involves a risk of fire or of electric shock or injury to persons shall be evaluated using appropriate additional component and end-product requirements to maintain the level of safety as originally anticipated by the intent of this standard. A product whose features, characteristics, components, materials, or systems conflict with specific requirements or provisions of this standard does not comply with this standard. Revision of requirements shall be proposed and adopted in conformance with the methods employed for development, revision, and implementation of this standard.

1.3 revised July 18, 2000

2 General

2.1 Except as indicated in 2.2, a component of a product covered by this standard shall comply with the requirements for that component.

2.1 revised July 18, 2000

2.2 A component is not required to comply with a specific requirement that:

a) Involves a feature or characteristic not required in the application of the component in the product covered by this standard, or

b) Is superseded by a requirement in this standard.

2.2 revised July 18, 2000

2.3 A component shall be used in accordance with its rating established for the intended conditions of use.

2.3 revised July 18, 2000

2.4 Specific components are incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions.

2.4 revised July 18, 2000

LIQUID-BURNING FLARES

CONSTRUCTION

3 General

3.1 These devices shall be provided in sets of three contained in a metal rack or box which can be securely mounted on the motor vehicle.

3.2 If a value for measurement as given in these requirements is followed by an equivalent value in other units, the first stated value is the requirement.

4 Fuel

4.1 Flares shall be designed for use with liquid fuel having a classification not greater than that of kerosene in accordance with the requirements in the Standard for Tests for Comparative Flammability of Liquids, UL 340.

5 Fuel Containers

5.1 Fuel containers and liquid-confining parts shall be made of material having a melting point (solidus temperature) of not less than 950°F (510°C) and affording resistance to corrosion equivalent to that of sheet steel having a thickness of not less than 0.026 inch (0.66 mm).

6 Burner Hoods

6.1 The burner shall be provided with a hood which can be secured to the body over the burner against a gasket which will prevent leakage of fuel while the device is not in use.

7 Stability

7.1 The design shall be such that the device will right itself when tilted so that the bottom forms an angle of 45 degrees with the horizontal.

PERFORMANCE

8 Vibration and Shock Test

8.1 Three sample flares, in the metal rack or metal box provided and mounted as in service, shall not show evidence of structural failure or leakage in the body, or at a joint, while and after being subjected to 1 hour of vertical displacement of an amplitude of 1/8 inch (3.2 mm) at a frequency of 12 – 13 cycles per second (Hz).

8.2 For this test, amplitude is defined as the maximum displacement of sinusoidal motion from position of rest or one-half of the total vibration table displacement.

9 Rain Test

9.1 The flares used for these tests shall be filled with kerosene to the level recommended in the manufacturer's instructions and shall have the wicks adjusted as recommended by the manufacturer.

9.2 After a preheating period of 5 minutes in still air, a sample flare, lighted and mounted in its normal operating position on a table rotating at 4 revolutions per minute (rpm) and in a wind of approximately 2 miles per hour (3.2 km/h), shall be subjected to a water spray from an adjustable, solid-cone nozzle[a] (such as the ordinary garden hose spray nozzle) set so that the nozzle outlet is 8 – 12 feet (2.4 – 3.6 m) horizontally from the sample and 1 – 3 feet (0.3 – 0.9 m) vertically above the sample, with the nozzle axis pointing upward at an angle of approximately 45 degrees from the horizontal and with the water striking the sample at an angle of approximately 45 degrees from the horizontal in a downward direction.

[a]Solid cone spray nozzles operating at 5 – 7-1/2 psi (34 – 52 kPa) give a spray consisting of relatively large drops when set so that the center of the stream at the flare shows 0.10 inch (2.5 mm) per minute precipitation. At higher pressures, the drops are smaller. These conditions are comparable to actual rain.

No Text on This Page

9.3 Under these conditions and with a water pressure of 5 – 7-1/2 psi (34 – 52 kPa) at the nozzle, the rate of precipitation at the location of the sample is to be adjusted to 0.10 inch (2.5 mm) per minute. The sample is to be introduced gradually into the spray and after being placed in the test location shall continue to operate under these conditions for 15 minutes. This test is to be made on each of the three flares constituting a set. Two out of the three flares shall pass the test.

9.4 With the rate of rotation and the wind condition the same as specified in 9.2 and 9.3, the water pressure shall then be increased to a value of 10 – 12 psi (70 – 83 kPa) and the sample moved farther from the nozzle, if necessary, to a location giving a precipitation of 0.03 inch (0.8 mm) per minute, striking the sample at approximately 45 degrees from the horizontal. Under these conditions, the sample shall continue to operate for 30 minutes. This test shall be made on each of the three flares constituting a set. Two out of the three flares shall pass the test.

9.5 With the rate of rotation and the wind condition the same as described in 9.2 and 9.3, the water pressure shall be further increased to a value of 18 – 20 psi (124 – 138 kPa) and the sample moved farther from the nozzle, if necessary, to a location giving a precipitation of 0.01 inch (0.3 mm) per minute, striking the sample at approximately 45 degrees from the horizontal. Under these conditions, the sample shall continue to operate for 45 minutes. This test shall be made on each of the three flares constituting a set. Two out of the three flares shall pass the test.

10 Wind Test

10.1 The flares used for these tests shall be filled with kerosene to the level recommended by the manufacturer and shall have the wicks adjusted in accordance with the manufacturer's instructions.

10.2 A flare shall be lighted and allowed to burn in still air for a preheating period of 5 minutes. It shall then be placed suddenly in an air stream of 40 mph (64 km/h) and withdrawn. After rotating through approximately 45 degrees, it shall again be placed in the air stream and withdrawn. It shall be rotated again through an additional 45 degrees, approximately, and placed in the air stream and withdrawn a third time. If the flame is extinguished during any one of these three operations, the sample shall have failed to pass the test. The test shall then be repeated on each of the other two samples constituting a set. Two out of the three samples shall pass the test.

10.3 A flare, lighted and mounted in its normal operating position, rotating about its vertical axis at 4 rpm, shall be subjected to a horizontal current of air having a velocity the equivalent wind at 40 mph (64 km/h). This test shall continue for 15 minutes, and the flare shall remain lighted throughout the entire 15-minute period.

10.4 Upon completion of the above test, while lighted and rotated as specified above, the flare is to be subjected to a horizontal current of air having a velocity of 5 mph (8 km/h). The total uninterrupted burning time, including the first 15 minutes at 40 mph (64 km/h), shall be at least 12 hours.

10.5 The flare shall be capable of burning in "still" air following the foregoing tests.

11 Photometric Test

11.1 A sample flare, when subjected to a wind velocity of 5 mph (8 km/h) and 40 mph (64 km/h), respectively, shall produce a minimum of 0.10 candlepower (1.1 lx) in a horizontal direction.

INSTRUCTIONS AND MARKING

12 Instructions for Use

12.1 The manufacturer shall furnish printed instructions as to wick adjustment, maximum filling level, and method of installation.

13 Marking

13.1 Each device shall be marked with the following:

a) The manufacturer's or private labeler's name or identifying symbol and

b) The model, size, or style designation.

13.2 If a manufacturer produces liquid-burning flares at more than one factory, each device shall have a distinctive marking to identify it as the product of a particular factory.

ELECTRIC LANTERNS

CONSTRUCTION

14 General

14.1 These devices shall be provided in sets of three contained in a metal rack or box which can be securely mounted on the motor vehicle.

15 Color

15.1 The device shall provide a red light which may be flashing or steady burning.

15.2 The red lens provided for the foregoing purpose is considered to be a lens, the color of which under service conditions, employing a light source having the quality of International Commission on Illumination Illuminant A (incandescent lamp at 2,848°K), has a value of y not greater than 0.335, and a value of z not greater than 0.002, y and z being trichromatic coefficients derived on the basis of the 1931 ICI Standard Observer and Co-ordinate System. See the Standard Practice for Computing the Colors of Objects by Using the CIE System, ASTM E308-96.

15.3 A red lens shall not be acceptable if it is paler or yellower than the light-limit standard glasses when the two are illuminated by incandescent-lamp light.

PERFORMANCE

16 Test Sequence

16.1 The vibration and shock, rain, dust, and reliability and life tests shall be made on the same sample in that order.

17 Vibration and Shock Test

17.1 Three sample lanterns, in the metal box or rack provided and mounted as in service, shall not show evidence of structural failure, material physical weakness, loosening, or rupture of parts, after being subjected to 1 hour of vertical displacement of an amplitude of 1/16 inch (1.6 mm) at a frequency of 12 – 13 Hz.

17.2 Failure of the bulb shall not be considered as failure of the unit.

17.3 For this test, amplitude is defined as the maximum displacement of sinusoidal motion from position of rest or one-half of the total vibration table displacement.

18 Rain Test

18.1 A sample lantern, mounted in its normal operating position, and the container in its normal service position with drain holes open, shall be subjected to a precipitation of 0.1 inch (2.5 mm) of water per minute, delivered at an angle of 45 degrees from a nozzle with a solid-cone spray. During this test, the lamp shall revolve about its vertical axis at a rate of 4 rpm. This test shall be continued for 12 hours.

18.2 The lantern and container shall then be examined. An accumulation of more than 0.0169 ounce (1/2 cm^3) of water inside the lantern shall constitute a failure.

19 Dust Test

19.1 A sample unit shall be mounted in its normal operating position, at least 6 inches (152 mm) from the wall, in a box measuring 3 feet (0.9 m) in all directions, containing 10 pounds (4.5 kg) of finely powdered Portland cement in accordance with the Standard Specification for Portland Cement, ASTM C150-96. At intervals of 15 minutes, this dust is to be agitated by compressed air or fan blower by projecting blasts of air for a 2-second period in a downward direction into the dust in such a way that the dust is completely and uniformly diffused throughout the entire cube. The dust is then allowed to settle. This test shall be continued for 5 hours.

19.2 After the dust test, the exterior surface shall be cleaned, and if the maximum candlepower is within 10 percent of the maximum as compared with the condition after the unit is cleaned inside and out, it shall be considered adequately dust-tight.

20 Reliability and Life Tests

20.1 In the case of red electric warning lanterns which can be turned on or off at will, a sample unit shall be set up in complete form and operated for 1,000 cycles, using the operating unit or switch submitted with the device as a part thereof. This test shall be made at a rate not to exceed 50 times per minute. In the case of flashing units, the rate shall be slow enough to permit the unit to flash at least twice for each operation of the switch.

20.2 When this test is completed, the operating unit shall not show any evidence of physical weakness, excessive wear, or high resistance.

20.3 The lantern is to be turned on for a period of 12 hours. During this test, the "on" period for the flasher, if one is provided, shall be long enough at all times to permit the filament to come up to full brightness. The rate of flashing during the test shall not be more than 150 cycles per minute.

20.4 The device shall be operated in the manner intended and shall provide red light of at least the intensity prescribed below at the end of the 12 hour test, as provided in 20.3.

21 Photometric Tests

21.1 The lamps shall meet the following photometric requirements.

21.2 Directly to the front and rear of the lantern, on a horizontal line through the light source parallel to the road, the light shall have an intensity of at least 0.50 candlepower (5.4 lx).

21.3 In all directions within 10 degrees of this line there shall be at least 0.30 candlepower (3.2 lx).

21.4 In all directions within 30 degrees of this line there shall be at least 0.10 candlepower (1.1 lx).

21.5 The intensity shall not exceed 25 candlepower (268 lx) in any direction.

22 Low-Temperature Test

22.1 The device shall operate as intended at a temperature of minus 10°F (minus 23.3°C).

MARKING

23 General

23.1 Each device shall be marked with the following:

a) The manufacturer's or private labeler's identifying symbol;

b) The model, size, or style designation;

c) The shelf life of the battery; and

d) A warning to replace the battery after the expiration of the manufacturer's date.

23.2 If a manufacturer produces electric lanterns at more than one factory, each lantern shall have a distinctive marking to identify it as the product of a particular factory.

FUSEES

CONSTRUCTION

24 General

24.1 A fusee shall consist of material containing flare composition and an integral means for effecting ignition by friction. The assembly shall be in the tubular form.

24.2 A fusee shall be identifiable by its standard burning time. The standard burning time shall be given in minutes and be one of the following:

5 minutes
10 minutes
15 minutes
20 minutes
30 minutes
24.2 revised November 5, 2013

24.3 A fusee shall burn with a red flame. The tube shall be colored red to indicate its burning color.

24.4 A fusee having a nominal burning time of 5 minutes shall not exceed a 9-inch (229-mm) overall length and a 1-1/8-inch (29-mm) diameter exclusive of a handle. A fusee having a nominal burning time of 10 minutes shall not exceed a 14-inch (356-mm) overall length and a 1-1/8-inch (29-mm) diameter.

25 Heads and Caps

25.1 The head of a fusee shall be protected by a removable cap not less than 1-3/4 inches (44.5 mm) long. The head composition shall not completely cover the end of the fusee and shall be protected from moisture by a waterproof coating. The entire rim of the head shall be free from ignition compound.

25.2 The cap shall be constructed so that after detachment it forms a device for lighting the ignition composition by friction. The ignition composition and the scratch surface shall be protected against accidental exposure and ignition.

25.3 The cap shall be constructed to prevent the inner surface of the cap from contacting the head. The cap shall be fastened to the body of the fusee to prevent unintentional detachment.

25.4 A cap and its fastenings shall not cover or obscure any of the marking requirements included in Marking, General, Section 35.

26 Chemical Compositions

26.1 A flare color composition containing sulphur shall not contain any amount of a chlorate in excess of 0.5 percent.

26.2 A fusee containing any amount of chlorate shall not contain ammonium salts.

26.3 A fusee deemed not to have potassium perchlorate contained therein shall not contain potassium perchlorate as an additive in either the fuse composition or the ignition composition.

26.3 added November 5, 2013

PERFORMANCE

27 Strength Test

27.1 A complete fusee shall withstand without breaking or rupture a weight of 80 pounds (352 N) applied at the center of a 6-inch (152-mm) horizontal span of the fusee, or a weight of 120 pounds (528 N) so applied over a 4-inch (102-mm) horizontal span, for a period of 5 minutes.

27.2 In conducting the test the fusee is to be horizontally supported by two flat bearing surfaces 1/4 inch (6.4 mm) wide with the clear distance between the supports maintained as specified in 27.1. The appropriate load is to be applied at the center of the span using a wire loop bearing on the center of a 1 inch (25 mm) wide half-ring section of rigid metallic tubing having an inside diameter of 1-1/4 inches (32 mm).

27.3 The 4-inch (102-mm) span is to only be used for testing those fusees having a length incapable of accommodating the 6-inch (152-mm) span.

28 Striking Test

28.1 The ignition or head composition of a fusee shall withstand the application of the effort necessary to effect ignition without breaking or becoming detached in whole or in significant part from the fusee.

28.2 At least two fusees of each size or rating are to be exposed to the test for striking.

29 Water Immersion Test

29.1 The ignition compound, as provided on a fusee, shall withstand immersion in water at a temperature of 70°F (21.1°C) for a period of 10 minutes without impairing the efficiency of accomplishing full and prompt ignition in the usual manner.

29.2 This test is to be performed using at least one sample of each size fusee both with the cap in place and removed. The body of the test sample is to be immersed horizontally so that the upper portion is maintained at a depth of 2 inches (51 mm) below the water surface. At the end of the submergence period, excess water shall be removed from the striking surface of any cap used, and in all cases from the ignition mix, by wiping or other means.

30 Submerged Burning Test

30.1 A fusee shall be capable of continued burning following normal ignition and then complete submergence in water for a period for 1 minute.

30.2 At least five samples of each size and style of fusee are to be subjected to this test. Not more than 20 percent of the samples of each style and size are to be extinguished during the period of submergence. It is not required that a sample continue to burn following removal from the water.

30.3 Ignition of each sample is to be effected in the prescribed manner and the fusee allowed to burn for 10 seconds in air. The sample is then to be slowly submerged in water in a vertical position with the head down and held in this position for a period of 1 minute. During this period the head is to be submerged at least 4 inches (102 mm) below the water surface. The water bath is to be at 70°F (21.1°C) at the start of each test.

31 Inclined Burning Test

31.1 A fusee burning in the normal ignition end up position shall not "chimney" in such a manner as to materially obscure the flame when tilted to an angle of 20 degrees from the vertical.

31.2 One sample of each size and style of fusee is to be subjected to this test. The "chimney" effect is not to materially obscure the flame throughout the normal burning time.

32 Burning Time Test

32.1 A fusee containing the chemical potassium perchlorate, burning in the position described in 31.1, and in the horizontal position, shall burn effectively within the limits in Table 32.1.

32.1 revised November 5, 2013

Table 32.1
Burning times with potassium perchlorate

Table 32.1 revised November 5, 2013

Marked, minutes	Minimum, minutes	Maximum, minutes
5	5	6.5
10	10	13.0
15	15	18.0
20	20	23.0
30	30	33.0

32.1.1 A fusee containing no chemical potassium perchlorate, burning in the position described in 31.1, and in the horizontal position, shall burn effectively within the limits in Table 32.2.

32.1.1 added November 5, 2013

Table 32.2
Burning times, no chemical potassium perchlorate

Table 32.2 added November 5, 2013

Marked, minutes	Minimum, minutes	Maximum, minutes
5	5	8.5
10	10	13.0
15	15	18.0
20	19	23.0
30	27	33.0

32.2 The burning time is to be calculated immediately upon ignition of the fusee.

32.3 At least two samples of each size and type of fusee are to be subjected to burning in both the upright (tilted 20 degrees), and the horizontal positions. All samples tested shall have burning times falling within the specified limits shown in Table 32.1 or Table 32.2.

32.3 revised November 5, 2013

33 Ignition Temperature Test

33.1 The ignition temperature of the igniter composition and the flare color composition shall be not less than 350°F (177°C).

33.2 The apparatus employed is to consist essentially of a combustion chamber surrounded by a molten alloy bath heated by a special electric furnace having low resistance rod-type heating elements and thermostatic control. The combustion chamber is to consist of a heat resistant glass or quartz flask of conical form with flat bottom 4.5 inches (11.4 cm) in height, 2.4 inches (6.0 cm) in diameter at the bottom, and 1.1 inches (2.8 cm) in diameter at the top. It is to be about 5.41 ounces (160 ml) capacity, having a ratio of surface area to volume of about 1:1. The temperature of the bath is to be measured by means of a calibrated thermocouple provided with a quartz tube for protection of the hot junction. The thermocouple is to be held in the alloy bath so that its hot junction is about level with the bottom of the combustion chamber and 1/4 inch (6.4 mm) from the side of the chamber.

33.3 Small amounts of the material taken from at least two sample fusees are to be dropped into the flask at intervals of 9°F (5°C) and it is to be observed whether or not ignition is obtained. A little additional air may be introduced into the flask by means of a rubber bulb and a bent-glass delivery tube. After each trial, the gases, vapors, and residue are to be completely removed by the aid of a slow stream of air. The lowest temperature at which ignition occurs (without application of flame), which results in flaming or glowing combustion within 2 minutes, is to be taken as the ignition temperature.

34 Heating Test

34.1 The moistened compositions of a fusee shall withstand 72 consecutive hours of exposure to a temperature of 212°F (100°C) without occurrence of spontaneous ignition.

34.2 The apparatus for the heating test is to consist essentially of a vertical cylindrical test chamber, 7 inches (178 mm) in height and 4 inches (102 mm) in diameter, surrounded at the side and bottom by a water bath heated by an electric hot plate. The test chamber is to be provided with a cover having two air vent tubes and an opening for introduction of a thermocouple. The sample is to be contained within the test chamber by a cylinder of wire gauze, 6 inches (152 mm) in height and 1-1/2 inches (38 mm) in diameter. This cylinder is to be concentric with the axis of the test chamber, providing an annular space through air of 1-1/4 inches (32 mm) between the cylinder and the wall of the chamber.

34.3 In conducting the test, a 4.2-ounce (120-gram) portion of the combustible mixture of the fusee is to be moistened with 0.169 ounce (5 ml) of distilled water and placed in the containing cylinder within the test chamber. A thermocouple connected to a recording potentiometer is to be inserted in the test sample so as to measure the temperature at the approximate center of the mass. The cover is then to be placed on the test chamber, and the water bath surrounding the chamber is to be maintained at boiling 212°F (100°C) for a period of 72 hours.

34.4 A rise in the temperature of the sample above the temperature of the ambient water bath under the conditions of the test is to be taken as an indication of spontaneous heating of the material.

34A Potassium Perchlorate Chemical Test

34A added November 5, 2013

34A.1 A violet precipitate produced by the reaction will indicate the presence of perchlorate.

34A.2 The apparatus employed is to consist of two 250 ml beakers or similarly sized clean glass containers, a glass or stainless steel stir rod or spatula, a funnel, and a piece of filter paper of the proper size to fit the funnel. A 0.3% by weight solution of methylene blue in water will be prepared as the indicating reagent.

34A.3 A small amount of material (roughly 5 grams) from at least two sample fusees is to be placed into one of the glass containers. This material will be mixed with 100 milliliters of distilled/deionized water by stirring with a clean glass rod or stainless steel spatula. After stirring, the contents of the first beaker will be filtered through the funnel containing the filter paper into the second glass container. Five drops of the 0.3% methylene blue solution will be added to the solution in the second glass container. Mix the contents of the second glass container by swirling.

MARKING

35 General

35.1 Each fusee shall be marked with the following:

a) The manufacturer's or private labeler's name or identifying symbol;

b) The model, size, or style designation;

c) The burning time (see 24.2);

d) Contains Potassium Perchlorate - allow to burn completely or Does not Contain Potassium Perchlorate; and

e) The directions for use in capital letters. These directions shall consist of the following:

ALWAYS POINT FUSEE AWAY FROM FACE AND BODY WHILE IGNITING AND AFTERWARDS.

35.1 revised November 5, 2013

35.2 If a manufacturer produces fusees at more than one factory, each fusee shall have a distinctive marking to identify it as the product of a particular factory.