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## CHINA FIREWORKS COMPONENT TESTING AND CERTIFICATION PROGRAM

At the request of the U.S. industry AFSL is implementing a program to test and certify fireworks components under the China Fireworks Quality Improvement Program (QIP). **During the start-up phase, four types of components will be tested as described below. Other types may be added depending on the needs of individual importers.**

### I. Definitions.

- A. **Aerial Mine and Shell Inserts.** Aerial mine and shell inserts consist of either single or multiple tube devices with or without bases attached and/or with or without fuses attached, that are unfinished and designed to be re-assembled into a larger outer package that may or may not have a fixed base attached. A fuse typically is already attached to the insert, which must be inserted through the side of the outer package to create a finished fireworks device. In some cases, the insert and outer package may have a base attached during the finishing process.
- B. **Reloadable Tube Aerial Shell Insert.** Reloadable tube aerial shell insert consist of single shells (either single or multiple breaks) with fuse and orienting loop attached, that are packaged in a blister pack or other packaging and ready for assembly with launch tubes into a retail package consisting of multiple aerial shells and at least one mortar tube which together create a finished reloadable tube aerial shell device. The shell insert may or may not have required cautionary labeling and other markings (such as the directional arrow) already affixed to the shell.
- C. **Reloadable Tube Aerial Shell Tube.** Reloadable Tube aerial Shell Tubes consist of a launcher tube designed to be used in conjunction with reloadable tube aerial shell described in paragraph B, above. The launch tube may or may not have finished artwork, graphics, and cautionary labeling affixed.
- D. **Missile Component.** Missile components consist of the motor tube with fuse inserted, designed to be assembled into a finished missile by the attachment of nose cone and or bases to the tube. The component tube may or may not have finished artwork, graphics, and cautionary labeling affixed.

**E. Sparkler Components.** Devices in the Sparkler category that shipped as unfinished components. They consist of individual sparklers packaged in bulk, usually in polybags, without retail packaging and without any of the required cautionary labeling.

## **II. Testing to Specific Standards.**

The components described in paragraph I above, will be tested to the requirements of the specific AFSL Standards applicable to the category of consumer fireworks to which the component will belong when final assembly is completed. For example, Reloadable Tube Aerial shell components will be tested to the requirements in the Standard for Reloadable Tube Aerial shell devices. All requirements within the applicable standard will be tested for to the extent that the feature being tested does not require any remanufacturing during final assemble that could affect the outcome of that elements performance. For example, fuses on reloadable tube aerial shell components do not require any additional processing to create a finished product, and will therefore be tested as part of the component testing. Fuses on mine and shell components, on the other hand, must be inserted through and affixed to the finished outer package, which could affect the performance of the fuse on the finished product; therefore, fuses will not be tested during the component testing program.

Following is a list of the specific tests that will be performed for the four categories of components covered by this program.

**A. Mine and Shell Components.** Mine and Shell inserts shall be tested for the following requirements were applicable:

1. Pyrotechnic leakage
2. Total pyrotechnic weight
3. Report weight
4. Specific requirements for devices with more than 200 grams of chemical composition.
5. Hard discs

**B. Reloadable Tube Aerial Shell Components.** Reloadable shell components shall be tested for the following requirements, where applicable.

1. Pyrotechnic leakage.
2. Total pyrotechnic Weight
3. Break Charge weight.
4. Fuse Attachment.
5. Orienting Loop attachment.
6. One Piece Safety Fuse requirement.
7. Color and shape of shell.
8. Report Weight.
9. Fuse Side Ignition.
10. Fuse Burn Time.
11. Reloadable Shell Diameter.
12. Break Charge Composition.
13. Hard Discs.

14. Aerial effects.
15. Function of Effects.
16. Flight Trajectory.
17. Time between Effects.
18. Cautionary labeling (if present).

C. **Reloadable Tubes Components.** Reloadable Tubes shall be tested as components for the following requirements, provided the shipper (applicant) can make available to the AFSL Testers previously certified shells that are intended to be used with the tube.

1. Base to Height Ratio.
2. Stability
3. Base Attachment.
4. Burnout/Blowout.
5. Reloadable Tube Integrity Test.
6. Reloadable Tube Abuse Test.
7. Aerial Effects.
8. Function of Effects.
9. Flight Trajectory.
10. Time between Effects.
11. Cautionary Labeling, if present.

D. **Missile Components.** Missile Components will be tested for the following requirements where applicable.

1. Pyrotechnic Leakage.
2. Total Pyrotechnic Weight.
3. Report Weights.
4. Hard Discs.

E. **Sparkler Components.** Sparkler components will be tested for the following requirements:

1. General construction requirements (sharp fragments) during functioning.
2. Flaming during functioning.
3. Composition limits for chlorate sparklers.
4. Requirement for slag and molten particles.
5. Handle length and sharpness requirements.
6. Droop of handle.
7. Wave test.

### **III. Certification of Shipments.**

Certification of lots of components will be identical to all certification procedures under the QIP. Shipping cartons within each Lot will be certified by the application of an AFSL sticker to each carton within the Lot. Stickers for Lots of components will be identified with the addition of the letter "C" before the numeric, similar to the use of the letter "A" to designate Assortments.

#### **IV. Administrative/Operational Procedures.**

All administrative and Operational procedures will be identical to those applied to regular merchandise certified under the QIP, including applications for testing, assignment of Lot ID numbers, sample size and selection procedures, recording of test results, entry of data into the AFSL Testing Data base, with the following exceptions:

- A. Applications for testing will identify the category of the component and include a product name, if assigned, and a model number (required), which must appear on the individual product and shipping carton to allow for tracking of the tested component.
- B. Test Report for the components will be the same as those used for finished products in that product category, except that when completing the test report, the technician will hand-write "Component" at the top of the test report.
- C. AFSL will create a separate product category for components in the Database to allow for tracking of all testing for components.

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