



U.S. Department of Transportation  
**Pipeline and Hazardous Materials  
Safety Administration**

1200 New Jersey Ave, SE  
Washington, D.C. 20590

Mr. Jesse Beyers  
Compliance Manager  
B&W Pantex, LLC  
P.O. Box 30020  
Amarillo, TX 79120

OCT 20 2011

Ref. No. 10-0010

Dear Mr. Beyers:

This responds to your letter requesting clarification of the packaging requirements for certain Division 1.4S explosive articles under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). I apologize for the delay in responding and any inconvenience it may have caused. You ask several related questions that are paraphrased and answered as follows:

- Q1. For Division 1.4, Compatibility Group S explosive substance or articles, is the classification assignment always packaging-dependent?
- A1. Not always. Generally, the assignment of Compatibility Group S to an explosive substance or article is based on the results of certain tests conducted on the completed package as intended for transportation. However, some substances and articles of Division 1.4 are conditionally assigned to Compatibility Group S based on authorized formulations or manufacturing criteria and are not packaging dependent for their classification. If there is a note in the EX-Approval which assigns the packaging, then it is packaging-dependent.
- Q2. If a Compatibility Group S assignment for a Division 1.4 substance or article is packaging-dependent for its classification, what methods are available to ensure any alternative form of packaging other than what was originally tested maintains the same level of performance?
- A2. The packaging specified in the approval note is the only packaging authorized. A change in packaging would require a new laboratory examination.
- Q3. For a Division 1.4 explosive substance or article conditionally authorized assignment to Compatibility Group S by the manufacturer without testing to determine its classification, how is the required packaging selected for such materials?

- A3. Provided the classification or compatibility group assignment of an explosive substance or article is not packaging-dependent (i.e., no packaging note is in the approval specifying the packaging), any authorized packaging in the packing method for the substance or article specified in the § 173.62(c) Table of Packing Methods may be used. Unless otherwise excepted in the HMR, the packaging design used to package the substance or article must be examined by the laboratory with inner packagings of similar size, mass and density as the substance or article to be packaged for transportation at the Packing Group II performance level.
- Q4. An explosive manufacturer receives approval from the Associate Administrator for an article classed as a Division 1.4S. Is it then permissible for a third party to test the article in a different packaging design authorized under § 173.62 and submit an approval request to the Associate Administrator on its own?
- A4. If the original approval for the article includes a specific packaging configuration when its classification is packaging-dependent, the answer is yes, but the laboratory must examine and recommend it. If approval of an article is not packaging-dependent (i.e., no packaging note is in the approval specifying the packaging), it may be repackaged in any authorized packaging prescribed in § 173.62 for the article that is successfully tested (and documented) to the Packing Group II performance level without further testing or approval.
- Q5. In reference to the § 173.52 Table 1 entry for Compatibility Group S, where it states “substance or article is so packed or designed...”, if an article meets the definition of Division 1.4S by design (i.e., explosive effects are largely confined within the article itself upon initiation), is the classification assignment of Division 1.4S appropriate for the packaged article regardless of what packagings are used under the referenced packing instruction?
- A5. We do not agree with the premise of your question; specifically, that a Division 1.4S article is defined in the HMR as having “explosive effects that are largely confined within the article itself upon initiation.” You may be misinterpreting the statement in § 173.58(a)(5) that assigns Division 1.4S “if the hazardous effects are confined within the package or the blast and projection effects do not significantly hinder emergency response efforts.”

There are numerous identification numbers with Division 1.4S classification that are assigned a corresponding packing instruction in the § 173.62(c) Table of Packing Methods. If the Competent Authority approval letter issued by the Associate Administrator does not provide a packaging note (normally indicated below the product description), then the shipper must select an authorized packaging from the packing instruction assigned to the product in the Competent Authority approval letter. Each of the § 173.62(c) Packing Instructions typically provide a list of authorized inner, intermediate and outer packaging choices. A shipper is not required to have its choice of packaging for such a product examined or approved by the Associate Administrator under this scenario. Further, it is a shipper’s responsibility to ensure that any packaging design used has been successfully tested at the Packing Group II performance level for the maximum gross mass intended to be packaged.

I trust this satisfies your inquiry. Please contact us if we can be of further assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "T. Glenn Foster". The signature is written in a cursive style with a large, sweeping initial "T" and a long horizontal flourish at the end.

T. Glenn Foster  
Chief, Regulatory Review and Reinvention Branch  
Standards and Rulemaking Division



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Stevens

§ 173.52

§ 173.62

Explosives  
10-0010

U.S. Department of Transportation  
Pipeline and Hazardous Materials Safety Administration  
Office of Hazardous Materials Standards, Attn: PHH-10  
East Building, 2nd Floor  
1200 New Jersey Ave., SE  
Washington, DC 20590

December 28, 2009

Subject: Packaging of 1.4S Explosives

Dear PHH-10:

Our company has the need to ship articles classed as 1.4S by other companies or government agencies such as the U.S. Departments of Defense (DoD) and Energy (DOE). We are having a growing problem of finding the "as-tested" type packaging submitted during the 1.4S classification approval process.

It is understood that explosives in general are packaged in accordance with the Table of Packing Methods found in 173.62; however, packaging is specifically mentioned for Compatibility Code "S" in the 49 CFR 173.52 Table of Classification Codes and for 1.4S in 173.58(a)(5). Table 1 says "the substance or article is so packed or designed that any hazardous effect arising from accidental functioning are limited to the extent they do not significantly hinder. . . emergency response efforts in the immediate vicinity of the package." In 173.58(a)(5) for 1.4S, it says "if the hazard effects are confined within the package or the blast and projection effects do not significantly hinder emergency response efforts." This paragraph is also the only paragraph which mentions hazard class and division along with a compatibility group.

Based on the wording in the above mentioned CFR references, we are requesting clarification on the packaging requirements for 1.4S for the following questions.

Question 1: Is it correct that 1.4S explosives are different than explosives in general in that packaging can be a part of the classification?

Question 2: How would we know if the package configuration meets the requirements of 173.58 if each packaging configuration is not tested and documented?

Question 3: If an article has a DOT classification of 1.4S, are we free to select any packaging configuration provided in the referenced packing instruction in 173.62 each time the article is

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packaged for shipment, regardless of the packaging configuration tested, or, do we package the article in the "as-tested" packaging configuration each time the article is shipped in order to maintain the 1.4S classification during transport?

Question 4: If the manufacture/owner of an article received the DOT classification of 1.4S, can someone else test a different packaging configuration based on authorized packaging in 173.62 and submit to DOT for approval?

Question 5: This question is in reference to 173.52 Table 1 for Compatibility Code S where it states "Substance or article so packed or designed. . . ". If the design of an article meets the definition of 1.4S, i.e. explosive effects largely confined within the article itself upon initiation, is a 1.4S classification assignment appropriate for the packaged article regardless of what packaging are used under the referenced packing method?

Respectfully,



Jesse Beyers  
Compliance Manager  
B&W Pantex