



U.S. Department
of Transportation

**Pipeline and
Hazardous Materials Safety
Administration**

APR 9 2005

400 Seventh Street, S.W.
Washington, D.C. 20590

Mr. Art Rutledge
President
Saf-T-Pak, Inc.
10807 - 182 Street
Edmonton, Alberta
T5S 1J5 Canada

Ref. No. 04-0057

Dear Mr. Rutledge:

This responds to your letter regarding testing and use criteria for non-bulk UN standard packagings under the U.S. Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). I apologize for the delay in responding. Your questions are paraphrased and answered as follows:

Q1. If the competent authority of a country other than the United States authorizes a variation from the United Nations' Recommendations on the Transport of Dangerous Goods (UN Recommendations) packaging protocols, is it permissible to use that packaging in the United States and, if so, under what conditions?

A1. Currently, the answer to your question is yes. Section 173.24(d)(2) of the HMR authorizes in the United States the use of packagings manufactured outside the United States, provided they are manufactured in accordance with national or international regulations based on the UN Recommendations. A packaging having specifications different than those in the HMR or UN Recommendations, or which is tested using methods or test intervals other than those specified in the HMR or UN Recommendations, may be used in the United States if approved by the Associate Administrator or the competent authority of the country of manufacture, respectively. Under both the HMR and UN Recommendations, any variance must provide for an equivalent or greater level of performance than what is prescribed. In such circumstances, the letter "W" must follow the packaging identification code (e.g., 4G) marked on the packaging. If appropriate, the competent authority authorizing such a variance would be urged to take action to amend the UN Recommendations (and ultimately the HMR) to include the provisions covered by the variance.



040057

§ 171.2
§ 173.24(d)(2)(i) &
(iii)

Q2. For packaging designs, what is considered an acceptable failure rate under the periodic retesting criteria in § 178.601(e)?

A2. A packaging manufacturer must achieve successful test results (i.e., 100%) for each packaging design tested.

Q3. If a retail agent for a packaging manufacturer knowingly sells a packaging that does not meet the standard for which it is marked, who is in violation of the HMR, the manufacturer, the seller, or both?

A3. Civil or criminal penalties may be assessed on all parties involved in any conspiracy to intentionally misrepresent a packaging as meeting a particular standard. See § 171.2(c).

Q4. Who is responsible for ensuring compliance with the regulations with regard to a packaging's marked integrity, the manufacturer, the testing laboratory, or the end-user (e.g., the shipper)?

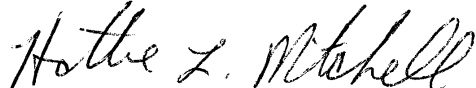
A4. The manufacturer, that is, the person whose mark appears on the packaging, is solely responsible for ensuring that the packaging meets the standard for which it is marked. A shipper may be held responsible for violations that occur involving assembling or filling of a packaging in accordance with a packaging manufacturer's customer notification instructions. See § 178.2.

Q5. Is a person who sells or otherwise represents a packaging as meeting a UN standard or DOT specification required to be trained as a hazmat employer or a hazmat employee, as appropriate?

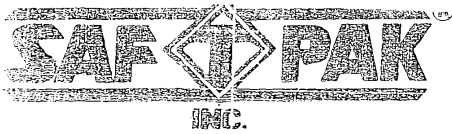
A5. Yes. A hazmat employer is a person who uses one or more of its employees in connection with representing, marking, certifying, selling, offering, manufacturing, reconditioning, testing, repairing, or modifying containers, drums, or packagings as qualified for use in the transportation of hazardous materials. A person who is employed by a hazmat employer and manufactures, tests, reconditions, repairs, modifies, marks, or otherwise represents containers, drums, or packagings as qualified for use in the transportation of hazardous materials is a hazmat employee and is, therefore, required to be trained as specified in § 172.702.

I trust this satisfies your inquiry. Please contact us if you need further assistance.

Sincerely,

A handwritten signature in cursive script that reads "Hattie L. Mitchell". The signature is written in dark ink and is positioned above the typed name.

Hattie L. Mitchell
Chief, Regulatory Review and Reinvention
Office of Hazardous Materials Standards




* DUPLICATE COPY

October 12, 2003

Bob Richard
Coordinator International Standards
Office of Hazardous Materials Safety
U.S. Department of Transportation
400 W 7th St.
Washington, DC 20590

Stevens

§ 171.2
§ 173.24(d)(2)(i) 
§ 173.194
§ 178.601(e)
04-0057

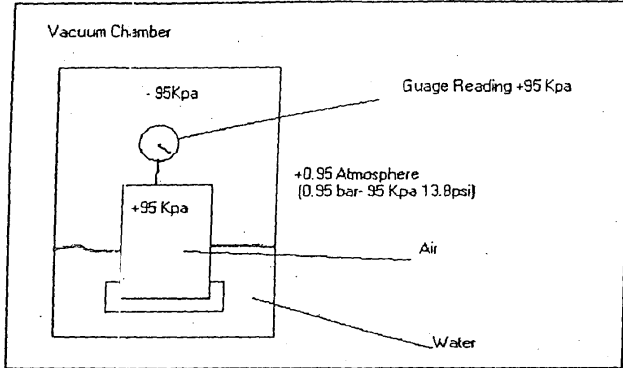
Re: Industry Packaging Observations

Dear Bob,

It is worthy to note that our own testing as well as that of an independent lab has revealed high failure rates, in some cases 100%. On several packages commonly available in the marketplace. Because we have been curious as to how such a large discrepancy in performance vs. claims could exist we have undertaken some research. The results have been enlightening.

1. ASTM Designation D 4991-94 is quoted by testing labs, but is commonly not followed. In having several brands of packages independently tested, in an approved UN/DOT certification Lab. It was observed that one very prominent facility in Minnesota did not follow ASTM Designation D 4991-94. The standard is very specific in its methods and requirements

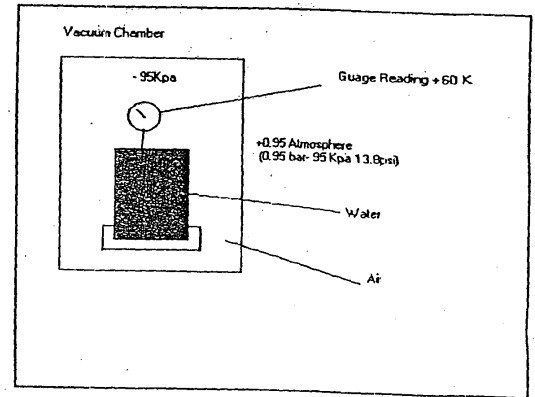
- Empty containers. (1.1)
- Rigid containers ONLY, and even then they must have less than 0.5% expansion at test pressures, It even states "glass" perhaps implying that this method is also unsuitable for "rigid" plastic or thin metal containers. (3.2.1)
- Filled with AIR at one atmosphere(4.1)
- Placed under WATER(6.4, 9.1)
- Surrounding containment evacuated to 5 kpa absolute pressure (9.2)
- Leaks detected by escaping AIR. (4.1, 9.3)



It was our observation that this lab (and we do not believe they are the only ones misusing this method) had placed water in the containers and then placed the containers in vacuum chamber completely filled with air. This invalidates the test method. In our own testing it was found that the actual pressure differential generated using this improper method, was significantly less

than the required 95 kPa. The reasons are not immediately obvious. In filling the container to be tested with water the original elastic medium (air) has been replaced with a non elastic medium (water) any expansion of the container under test will result in the reduction of the internal pressure due to the increase of volume of the container (expansion) and the non increase of the volume of the contents. Actual results are impressive. In a non rigid container filled with water it is possible to get a near ZERO kPa differential at an applied 95kpa evacuation! Rigid containers will vary from this result. The fuller the container is with water the smaller the resultant internal pressure will be. As some labs have confused the requirements for outage with this test, it is not uncommon to see the secondary container under test filled to 95% or more of capacity. Our reproduction of these conditions, produced results varying from 45

to 60 kPa. Certainly far less than the required 95 kPa. There is an additional hidden problem. By substituting the methods, the leakage is now done with water, a much easier media to contain than the intended air. See also 49CFR-178.604 for a clear indication that air is to be the media used in a leakproofness test, in the case of single packagings.



- 2 Closure methods used in the testing lab may be impossible to achieve in the field. One package submitted for testing required a torque closure so high it could only be achieved with special fixtures. The designs using this container also fail to disclose this torque setting or method. This particular container is used in at least 5 designs, and in our testing has achieved the unenviable failure rate of 100%, often failing at less than 10 kPa. Even when the torque settings are followed. Another package required a special press to close the packages. This was not revealed to the

*Claims
T&E
is using
a hydro
test*

*violation
of 178.2*

end users, and in fact the method shown to the end users (a rubber mallet) was never tested.

- 3 Non disclosure of what exactly was tested. Another design uses a "Paint Can", with a special closure ring, seemingly to pass the pressure requirements. A closer reading of the relevant test report reveals that this secondary container was not tested for leakproofness (our tests show a 100% failure rate). The PRIMARY containers were tested for leakproofness. The manufacturer does not reveal this information to the end users of the packaging, implying that the secondary container (paint can) is the required containment. As a result it is unlikely that any of the shipments made with this packaging meet the requirements, unless by blind luck the end user is using the same brand and model of primary container as was tested. Our anonymous calls to the customer service line for the manufacturer resulted in being instructed. "you can use any primary container of any size you like, it is approved by the DOT"
- 4 Not all package designs are tested! For example the Competent Authority in Great Brittan does not consider a leakproofness test a part of the requirements for an ICAO/IATA 620/602 package. (Personal conversation with Martin Castle, PIRA Amsterdam, 2000, Jeff Hart PIRA meeting 2001). In our own testing of packages bearing a GB approval, we have been unable to find a single package or design that passes the leakproofness test. Some fail at less than 15 kPa.
- 5 Some suppliers of regulated packaging have not trained their representatives as required by 49-cfr. Most notably several of the large national scientific supply houses. These representatives are in a front line position in recommending and selecting packaging for their customers, and often have a permanent office in the customer's place of business. Their duties certainly make them hazmat employees. It is also I think not co-incidental that these same distributors have package designs that fail the test requirements 100% of the time in actual testing.

These unfortunate situations all represent a very real danger to the public and the carrier. Safety has been compromised.

In view of the information we have uncovered in our investigations I respectfully request answers to the following questions.

- 173.24(d)(2)(G) + (f)*
- 1 In view of 49-172.24 (2) (i) (ii) which indicates the requirements for reciprocal package acceptance. Packages approved in Great Brittan fail on several clauses including, failure to meet 49-CFR 173.196 (f), and failure



In view of the information we have uncovered in our investigations I respectfully request answers to the following questions.

(a) (b)
there is
no para
(f)

- 1 In view of 49-172.24 (2) (i) (ii) which indicates the requirements for reciprocal package acceptance. Packages approved in Great Brittan fail on several clauses including, failure to meet 49-CFR 173.196 (b), and failure to meet ICAO minimum requirements. How can packages approved in Great Brittan be acceptable?
- 2 A large number of the packages we tested had 100% failure rates.
 - a. In view of 49CFR 178.601 (e), 171 2(c) what is an acceptable failure rate?
 - b. Is it legal to sell packages that do not meet the minimum requirement?
 - c. What is to be done with the thousands of packages already in use every day that do not meet the MINIMUM requirements? If these packages do not meet the minimum requirement are they legal for use?
 - d. Who is responsible, the manufacturer or the shipper?
- 3 Who is responsible that a package be compliant? The manufacturer, the lab or the end user?
- 4 Do persons selling and representing Certified packaging for Hazmat have to be trained?

no fail
is acce

Warmest regards,



Art Rutledge
President

Saf-T-Pak, Inc.

173.159
pressure
d. Hazard
test

