



U.S. Department
of Transportation
**Research and
Special Programs
Administration**

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

AUG 18 2000

Mr. Earl Lind
Director, Technology & Regulatory Affairs
Russell-Stanley
686 Route 202/206
Bridgewater, NJ 08807-1762

Ref. No. 00-0156

Dear Mr. Lind:

This is in response to your letter dated May 25, 2000, regarding the packaging requirements contained in 49 CFR 173.227, for materials poisonous by inhalation. Specifically, you ask if the closure configuration described in your letter satisfies the requirements of § 173.227(b)(2)(iii).

You described a plastic packaging having an opening that is internally threaded to accept a plug type screw closure that has external threads designed to accept a screw cap closure. The screw cap closure is further held in place by the use of wire or plastic ties. The plug type screw closure is capable of meeting an internal pressure of 250 kPa. The screw cap closure is capable of meeting an internal pressure of 100 kPa. It is the opinion of this office that the closure configuration described in your letter satisfies the requirements of § 173.227(b)(2)(iii).

I hope this satisfies your inquiry.

Sincerely,

Thomas G. Allan
Senior Transportation Regulations Specialist
Office of Hazardous Materials Standards



000156

173.227



RUSSELL-STANLEY
685 Route 202/206, Bridgewater, NJ 08807-1762

TEL: (908) 203-9546 FAX: (908) 203-1944
e-mail: elind@russell-stanley.com

May 25, 2000

Mr. Edward T. Mazzullo
Director, Office of Hazardous Materials Standards
U.S. DOT/RSPA (DHM-10)
400 7th Street S.W.
Washington, D.C. 20590-0001

Case
§ 173.227
00-0156

Transmitted by e-mail

Re: 49 CFR § 173.227 (b).

Dear Mr. Mazzullo,

A. I am writing on behalf of Russell-Stanley Holdings, Inc. manufacturers of UN 1A1, UN1A2, UN 1H1, UN1H2 and UN 3H1 containers made in compliance with the performance oriented packaging standards of 49 CFR Part 178 to request interpretation regarding the provisions set forth in the section referenced above.

Specifically, I am requesting an opinion regarding the cap seal requirements outlined in 173.227(b)(2)(iii). As set forth in this section the primary closure must be secured with a cap seal capable of withstanding and internal pressure of 100 kPa. This issue was addressed in an interpretation dated August 8, 1994, ref. 7522 in which RSPA stated that if a hydrostatic pressure test is used to determine this capability a five minute test duration was adequate.

No specific design of a secondary seal is identified. In the industry the term "cap seal" is generally taken to mean a metal or combination plastic and metal seal which is applied over the primary closure, typically a plug, using a special tool. This type of seal is difficult to apply so as to be capable of meeting the 100kPa requirement. There is an interpretation dated April 22, 1994, ref. 7534, in which RSPA said that a 6HA1 composite packaging in which the inner receptacle having a screw type closure is capable of meeting the performance requirements of Packing Group I and the inner receptacle is contained in a steel overpack with gasketed cover in turn capable of meeting the 100 kPa internal pressure requirement meets the requirements of 173.227(b)(2)(iii). This interpretation seems to permit alternate cap seal designs for achieving the desired purpose, namely, safety in transporting PIH materials.

Russell-Stanley has proposed another means of achieving this objective that consists of a plastic UN having an opening that is internally threaded to accept plug type screw closure and also having external threads designed to accept a screw cap closure.

The screw cap closure is retained in place by the use of wire ties or plastic ties. A drawing of this proposed closure system is shown below as Figure 1. Figures 2 & 3 show a composite with a closure system similar to the one proposed here. This was found on an imported UN P.G. I composite.

The buttress plug is capable of meeting an internal pressure of at least 250 kPa and the screw cap is the same as used on UN P.G. II drums having a 100 kPa pressure rating.

We are asking if this closure system satisfies the provisions of 173.227(b)(2).

B. In a separate issue with 173.227(b); the regulations authorize a UN 1H1 cylindrical shaped drum for use in this service. As you may know there is a large number of UN 3H1 drums having a rated capacity of 60 liters or less manufactured for chemical distribution. Russell-Stanley manufactures three different 20 liter 3H1 designs, all with plug closures as an option. It has been our experience that the 3H1 design has been able to achieve higher performance ratings than the cylindrical shape. Part of this is due to the shape. We currently manufacture a 3H1 design that has been tested to the 350-kPa rating. The 1H1 designs primarily are rated to a lower rating, usually 100 – 150 kPa and have cap closures. The cap closure is not conducive to cap sealing because of its inherent design. Therefore, we believe the 3H1 should also be a choice for shippers of small quantities in a single non-bulk packaging. Was the exclusion of this packaging an oversight when this section was written?

MSD

I look forward to your reply and would greatly appreciate an early response as we have customers looking forward to a positive reply.

Thank you in advance for your attention to this request.

Very Truly Yours,



Earl V. Lind
Director, Technology & Regulatory Affairs

cc: T. Moses, M. Hunter, J. Bentz