Appendix A

NIST Handbook 130 – Uniform Packaging and Labeling Regulation

Item:

231-2: 10.3. Aerosols and Similar Pressurized Containers

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From: Sefcik, David
To: Warfield, Lisa
Subject: FW: More interesting aerosol information

Date: Monday, January 23, 2012 5:16:21 PM

From: Scott Ciurana [sciurana@bluemagicusa.com]
Sent: Sunday, January 22, 2012 9:55 AM
To: judy.cardin@wisconsin.gov; Sefcik, David
Cc: Morgan Gibson; Joe Stewart
Subject: FW: More interesting aerosol information

Hi Judy and David,
The communication below from Beaumont Products may answer some of the questions before the committee.

Thank you,
Scott Ciurana

From: Steve Molnar [mailto:smolnar@beaumontproducts.com]
Sent: Friday, January 20, 2012 4:55 PM
To: Scott Ciurana
Subject: Fwd: More interesting aerosol information

This is from a recycling organization:
http://infohouse.p2ric.org/ref/32/31985/Aerosol_Cans.htm
"Aerosol cans are expensive and have greater environmental consequences. Ounce for ounce, spray-on product sold in aerosol cans is roughly twice the cost of bulk product. You pay for propellants in every aerosol can you purchase. Most aerosol cans contain 10-15% propellant by weight. "

The British are required to report aerosol fill by volume:
http://www.bama.co.uk/prescribed_quantities/

"**PRESCRIBED QUANTITIES LEGISLATION**

- Effective from April 2009
- Aerosols are deregulated from prescribed quantities sizes
- All aerosols can be labeled with volume only
- Containers must show nominal fill capacity

Industry Self Regulation

- BAMA with FEA – the European Aerosol Federation – have produced a standard for 'standard fill'
- This is designed to ensure that aerosols are not overfilled (dangerous) or under filled (deceptive packaging)"

The CSPA (Consumer Specialty Products Association)may have useful information, but we'd have to pay for it:

http://www.cspa.org/news-media-center/publications.html

1560 Big Shanty Drive Kennesaw,
GA 30144
www.beaumontproducts.com

BAG-ON-VALVE TECHNOLOGY
and
NIST Handbook 130, Section 10.3

NATIONAL CONFERENCE ON WEIGHTS AND MEASURES LAWS AND REGULATIONS
2012 INTERIM MEETING
January 22-25, 2012
New Orleans, LA

Paul C. Van Slyke
Partner
Locke Lord LLP
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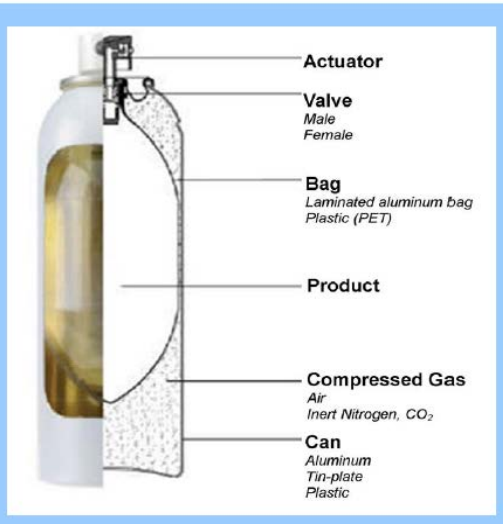
pvanslyke@lockelord.com

BOV Technology



BOV v. Conventional Aerosol

Feature	Conventional Aerosol	PURE CITRUS "Non-Aerosol"
Spray Content	Fragrance, water, odor reducers and other ingredients, and chemical propellant	**Fragrance only (no added water or chemical propellant)**
Inactive ingredients	90% - 95%	**0%**
Active ingredient (fragrance) expelled	**5% - 10%**	**100% Fragrance**

Labeling BOV Products With Current Regulations Leads To Customer Confusion

	Total (wt. oz.)	Active Ingredient (%)	Active Ingredient (wt. oz.)	Container Price ($)	Price/Total ($/wt. oz.)	Price/Active Ingredients ($/wt. oz.)	Price of Container with 100% Active Ingredients ($)
Exemplary conventional aerosol air freshener	9	5%	0.45	$1.19		$2.64	$23.80
Exemplary conventional aerosol air freshener	9	10%	0.9	$1.19	$0.13	$1.32	$11.90
Exemplary BOV technology air freshener	5.88	100%	5.88	$4.49	$0.76	$0.76	$4.49

Consumer Confusion - Labeling BOV Products Under Conventional Aerosol Regulations

- Incomplete labeling for inactive ingredients in conventional aerosols leads
  - to deception with BOV products
  - misinformation for comparisons with BOV
- Consumers can be misled into purchasing a seemingly less expensive conventional aerosol product that can be more expensive than BOV

Consumer Confusion - Labeling BOV Products Under Conventional Aerosol Regulations

Underlying assumption of an ability to accurately compare BOV technology to conventional aerosol technology under the current regulations is flawed.

Solutions

10.3. The declaration of quantity on an aerosol package and on a similar pressurized package shall disclose the net quantity of the commodity (including propellant), in terms of weight, that will be expelled when the instructions for use as shown on the container are followed.

Solution 1

10.3. The declaration of quantity on an aerosol package and on a similar pressurized package shall disclose the net quantity of the commodity (including propellant), in terms of weight, that will be expelled when the instructions for use as shown on the container are followed.

10.3.1 Containers that separate propellant from the expelled product so that the propellant is not expelled (such as containers using bag-on-valve technology) shall be prominently labeled NON-AEROSOL. The declaration of quantity shall disclose the net quantity of the commodity in terms of fluid measure.

Solution 2

10.3. The declaration of quantity on an aerosol package and on a similar pressurized package shall disclose the net quantity of the commodity (including propellant), in terms of weight, that will be expelled when the instructions for use as shown on the container are followed, provided however that containers that separate propellant from the expelled product so that the propellant is not expelled (such as containers using bag-on-valve technology) may be labeled either with weight or volume of the quantity of the commodity that will be expelled.

Summary of BOV Differences

- Fundamentally and inherently different since the propellant need not be expelled
- Consumers cannot make accurate and meaningful comparisons with conventional aerosols
- Compliance with existing NIST and state standards inhibits accurate consumer comparison
- Solutions to Avoid Confusion: Modify the conventional aerosol standards 1) to allow BOV labeling as NON-AEROSOL, or 2) to exclude BOV technology from weight labeling requirement
- Determining a volumetric amount of contents in a BOV product is simple

July 10, 2012

Judy Cardin
Wisconsin Weights and Measures
2811 Agriculture Drive
P.O. Box 8911
Madison, WI 53708-8911

Delivered via E-Mail
judy.cardin@wisconsin.gov

Re: Item 231-2 Section 10.3 Aerosols and Similar Pressurized Containers

Dear Ms. Cardin:

The Consumer Specialty Products Association[1] (CSPA) and its Aerosol Products Division (APD) represent the USA aerosol products industry, representing approximately 140 companies engaged in the manufacture and marketing of aerosol products. CSPA and its members are therefore vitally interested in the issues raised at the Interim Meeting of the National Conference on Weights and Measures in January regarding the appropriate net contents declaration for aerosols and similar pressurized containers. Starting in February, the CSPA APD formed a workgroup on this issue, and soon after reached out to product marketers interested in this issue that were not already CSPA members. This CSPA workgroup has been engaged since that time in seeking an industry consensus on this issue.

CSPA has worked for decades to support the development of fair and reasonable regulations that promote the public good, provide a fair marketplace for all consumer specialty products, and are enforceable by regulators. The Association fully supports the goal of the Fair Packaging and

[1] The Consumer Specialty Products Association (CSPA) is the premier trade association representing the interests of companies engaged in the manufacture, formulation, distribution and sale of more than $80 billion annually in the U.S. of familiar consumer products that help household and institutional customers create cleaner and healthier environments. CSPA member companies employ hundreds of thousands of people globally. Products CSPA represents include disinfectants that kill germs in homes, hospitals and restaurants; candles, and fragrances and air fresheners that eliminate odors; pest management products for home, garden and pets; cleaning products and polishes for use throughout the home and institutions; products used to protect and improve the performance and appearance of automobiles; aerosol products and a host of other products used every day. Through its product stewardship program, Product Care®, and scientific and business-to-business endeavors, CSPA provides its members a platform to effectively address issues regarding the health, safety and sustainability of their products. For more information, please visit www.cspa.org.

1667 K Street, N.W., Suite 300 | Washington, DC 20006 | www.cspa.org | p.202-833-7304 f. 202-223-2636

Labeling Act to assure that product labels give accurate information regarding the net quantity of contents, and thereby facilitate value comparisons by consumers. We also fully support the goals of the National Conference on Weights and Measures (NCWM) to assure that compliance can be consistently and effectively monitored by those regulators.

We have determined that CSPA members are in strong consensus that net weight is the appropriate measure of net contents for traditional aerosol products. CSPA is still seeking consensus, however, regarding some types of pressurized products such as bag-on-valve (BOV) products. Our APD workgroup continues to work to determine whether there are any classes of these products for which net volume declaration would be more appropriate.

While our search for an industry consensus continues, we urge that the NCWM Laws and Regulations Committee keep this issue in information gathering status. While I will not be able to attend the upcoming NVWM Annual Meeting, CSPA members will be in attendance and can answer any questions that you may have regarding our deliberations. In addition, please feel free to contact me at any time to discuss what we are doing, and provide your viewpoint on the issue.

Sincerely,

D. Douglas Fratz
Vice President, Scientific & Technical Affairs
& Aerosol Products Division Staff Executive

Cc: CSPA Aerosol Products Division Executive Board, Advisors, and BOV Workgroup
David Sefcik, NIST, Office of Weights and Measures, david.sefcik@nist.gov

Beaumont Products, Inc.

January 17, 2012

Mr. David A. Sefcik
NIST, Weights and Measures
100 Bureau Drive - M/S 2600
Gaithersburg, MD 20899-2600

Mr. Don Onwiler
National Conference on Weights and Measures
1135 M. Street, Suite 110
Lincoln, Nebraska 68508

Re: Comments on Laws and Regulations Committee Interim Agenda for 2012 Regarding the Proposal for NIST Handbook 130, Section 10.3.

Gentlemen:

As President of Beaumont Products, Inc., I am writing in support of Blue Magic, Inc.'s position on the aerosol/non-aerosol labeling issue raised by Mr. Charles H. Carroll of the Division of Standards, from the Commonwealth of Massachusetts.

Beaumont Products, Inc. has been marketing a number of natural citrus air care products in non-aerosol packages since 1991. In addition, I personally managed a Conventional Aerosol business prior to founding Beaumont Products, Inc.

I agree with Blue Magic's position that the Aerosol labeling regulations do not and should not apply to the Citrus Air Freshener products for two reasons.

1. Such products are not Aerosols, and
2. Aerosol weight designations are misleading.

Aerosol Background

The term "aerosol" is derived from AERated SOLution as a concept, dating back to 1790, and as an invention in 1926. Conventional Aerosol products include a gas propellant mixed inside a container with a liquid ("payload"). Once sprayed, the propellant evaporates quickly, leaving the payload suspended as very fine particles or droplets. In the Conventional Aerosol container, the sprayed output is not pure, because the payload is mixed with the gas propellant. The liquid payload is aerated by dispensing a mixture of liquid and gas from the gas pressurized

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Conventional Aerosol container. The consumer benefit of a Conventional Aerosol is convenience of delivery and rapid disbursement.

The derivation of the term Aerosol (AERated SOLution) provides the definition of a Conventional Aerosol as being an aerated (mixed gas & payload) solution, mixed in both the container and in the air.

Another pertinent definition of a Conventional Aerosol, from Hawley's Condensed Chemical Dictionary is: "A suspension of liquid or solid particles in a gas, the particles often being in the colloidal size range. Fog and smoke are common examples of natural aerosols; fine spray (perfumes, insecticides, inhalants, anti-perspirants, paints, etc.) are man-made."

A newer packaging alternative with similar consumer benefits, known as "Bag-on-Valve" (BOV), avoids some of the problems with the Conventional Aerosol technology. The BOV Technology uses a bag to contain the payload. The bag is contained within a can, and an environmentally friendly gas is placed outside the bag, but within the can. The bag is sealed to the stem of the valve within the can so the payload and the environmentally friendly gas never mix. When the valve actuator is pressed, the ambient pressure within the can "squeezes" the payload out of the sealed bag into the air, without the propellant leaving the can. As such, the payload is sprayed, in its pure form, without the mixed gas propellant, out of the sealed bag into the air.

The BOV Technology keeps the propellant and the payload separate so they never mix, either in the container or in the air upon disbursement. In the BOV, the propellant is not sprayed with the payload; instead the propellant remains in the can. With the BOV Technology, the payload does not need to mix with gases that add weight and volume to the container just to spray/aerate the payload.

Aerosol Labeling Requirements

The Uniform Packaging and Labeling Regulations require an "Aerosol package and similar pressurized containers to disclose the net quantity of the commodity in terms of net weight.

The declaration of quantity on an aerosol package and on a similar pressurized package shall disclose the net quantity of the commodity (including propellant), in terms of weight, that will be expelled when the instructions for use as shown on the container are followed."

Citrus Air Freshener Products Are Not Aerosols.

Such products, which use the newer BOV technology, are not Conventional Aerosols because:

a. In the BOV container, the pressurized gas does NOT mix with the payload;

b. The pressurized gas is NOT expelled with the payload;

c. The pressurized gas does NOT aerate the liquid payload.

Proof of the differences in Conventional Aerosols and the BOV technology is in the package instructions. All aerosols require "shake before using" (to mix the product and gas propellant

within the can). The BOV package does not require "shaking" because there is no mixing required, as the gas never leaves the can.

To "disclose the net quantity of the commodity (including propellant) 40 terms of weight that will be expelled" applies to the Conventional type of aerosol air freshener of which we are not.

Misleading Labeling

All liquids packaged and sold in the US, except aerosols, are labeled with a fluid ounce declaration. When Conventional Aerosols were first introduced in the 1920s, the Aerosol Industry wanted to declare fill levels in Aerosols on a weight basis in order to include the weight of the gas propellants in the aerosol mixture in the cans.

In my opinion, the Conventional Aerosol product label is misleading to consumers, because by claiming the weight of both the payload and the propellant, the consumer is led to believe that he is buying more active product than actually exists since the weight of the gas is claimed as part of the weight of the product. In fact, the gas is not product, but part of the delivery system. The true "tare" should be the weight of the payload, net of the gas propellant.

Even if one can justify claiming the weight of the gas as part of the product in a Conventional Aerosol, that same logic does not apply to the BOV container because the gas propellant does not leave the container. The weight of the gas in the BOV system is not "consumed" with the payload as it is with a Conventional Aerosol. Unlike Conventional Aerosols, when fully exhausted, the weight of the gas remains in the "empty" BOV package.

Please let me know if you need any additional information.

Sincerely yours,

Hank Picken
President & CEO
Beaumont Products, Inc.

cc: Scott Ciurana – Blue Magic, Inc.

Curriculum Vitae

Mr. Picken has been in the Consumer Products business since the early 1970's and has held various management positions at Colgate-Palmolive, Lever Brothers and Pfizer.

He also managed a Conventional Aerosol business, AMREP a manufacturer and supplier of Aerosol cleaning chemicals to the Janitorial Supply business, before founding Beaumont Products in 1991. At Beaumont, Mr. Picken pioneered the use of non-aerosol spray delivery systems such as the BOV and the EXXEL/ATMOS package because of environmental concerns.

Prior to beginning his career in Consumer Products, he worked for Price Waterhouse where he earned his CPA from New York State.

Mr. Picken has an AB in Government & Law from Lafayette College and an MBA from the Amos Tuck School of Business Administration at Dartmouth College.

He also served in the United States Army as an Infantry Captain with a tour of duty in Vietnam.

He is currently a Board Member on the Kennesaw State University Advisory Board to the School of Marketing and Professional Sales and is a past Director of the Tommy Nobis Rehab Center in Marietta, Georgia.

Beaumont Products, Inc.

July 11, 2016

Corrected date:
July 11, 2012

Ms. Judy Cardin
NIST, Weights and Measures
100 Bureau Drive – M/S 2600
Gaithersburg, MD 20899-2600

Dear Ms. Cardin:

I am writing to you in support of Scott Ciurana's, (of Blue Magic, Inc.) position on the BOV volume declaration issue.

We, Beaumont Products, Inc., manufacturers of Citrus Magic®, recommend that the declaration issue (item 231-2, Section 10.3 Aerosols and Similar Pressurized Containers) currently before the Laws and Regulations Committee remain in the information gathering status pending an industry consensus on the proper way to measure compliance of the liquid fill declaration of a pressurized BOV container.

It is Beaumont's opinion that Liquid Fill is the proper label declaration for our BOV product because the pressurized gas that propels the product from the BOV container, remains in the container after the product is fully dispensed. Therefore, the gas and its weight – which in our case is filtered, ambient air – should be considered part of the package and not part of the product. To label otherwise would be misleading to consumers.

The fact that the gas in our BOV container, remains in the can and is never mixed with the product, or dispensed with the product is the distinguishing characteristic that differentiates our BOV package from Conventional Aerosols.

Beaumont Products will be represented at the NCWM annual meeting and I am planning to address the Law & Regulations Committee accordingly, during the open hearings.

I look forward to meeting you in Portland next week

Sincerely yours,

Hank Picken
President & CEO
Beaumont Products, Inc.

cc Don Onwiler
David Sefcik
Scott Ciurana

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January 16, 2012
Via Email: dsefcik@nist.gov
NIST, Weights and Measures
100 Bureau Drive – M/s 2600
Gaithersburg MD 20899-2600

CC:
Scott Ciurana: sciurana@bluemagicuse.com
Judy Cardin: judy.cardin@wisconsin.gov
Don Onwiler: dononwiler@NCWM.net
David Sefcik: dsefcik@nist.gov

Re: Comments on laws and regulations committee interim Agenda for 2013 Regarding the Proposal for NIST Handbook 130 Section 10.3 and all other agencies and or Corporations considering the matter of Bag-On-Valve (BOV's) weights and measurements regulations.

Dear David:

This letter is in reference to proposals being made for regulation changes to the NIST Handbook 130 Section 231-2 section 10.3 Aerosols and Similar Pressurized containers currently under consideration before the National Conference on weights and measures laws and regulations. This letter also responds to the November 13, 2011 letter from the National Aerosol Association.

We are BOV Solutions, Inc., one of the founders of Bag-On-Valve technology and contract packagers and promoters of the same for more than twenty years. Please see our following comments below:

Hundreds of different products are currently on the market using Bag-On-Valve alternative aerosol technology (BOVs). Each would be greatly affected by the proposed regulation change requiring weight, not volume, to be listed on all BOV's.

BOV's (Bag-On-Valve technology) is entirely different from standard aerosol systems if for no other reason than no propellants are discharged with the product, only pure product.

BOVs are also different because they do not require gas propellants. BOVs use the air we take in with each breath, eliminating the hazards associated with standard aerosol systems. They should not be listed as standard aerosols for the same reasons.

Most products currently packaged in BOVs are products that were packaged prior to being packaged in BOVs. They were previously packaged in tubs, bottles or similar Non-Aerosol containers! In these cases product reformulation was not necessary or required therefore the products that were or may still be in

tubs, bottles or similar Non-Aerosol containers all note fluid ounce measurements. These are, in fact, still the very same products the consumer used when the products were only packaged in tubs, bottles or other Non-Aerosol containers. If BOVs are not allowed to continue the use of fluid ounce measurement it will greatly confuse the consumers who are using them.

When you dispense a product from standard aerosol system into a container and measure the volume you will find it is less after the propellants evaporate. When consumers dispense from BOVs they can measure the volume very simply and they know what they are getting.

Marketing companies who are offering the very same product in tubs, bottles or other Non-Aerosol containers, as well as in BOVs, but are not allowed to market them as the same volume will greatly confuse consumers.

Proposed changes requiring BOVs to be labeled the same as standard aerosol products should not be considered because, if for no other reason, it has been more than twenty years since we have been listing fluid once weight on BOVs, as well as making the claim that they are non-aerosol and all natural when referring to products like Pure Citrus.

BOV Solutions, Inc. are the inventors and promoters of all natural citrus odor eliminating air fresheners, the real reason for BOVs becoming commercially available. For many years the Pure Citrus type products were the only products packaged in BOV's here in the United States. The idea behind the BOV's invention was for following reasons:

1. To offer a natural non-aerosol product with a continuous spray action.

2. To keep product formula separated completely from propellants.

3. To protect the product from air and light.

4. To provide a better delivery system for dispensing products without the interference of propellants or the harmful effects caused by them.

5. To provide a system to help cut back on the harmful emissions of aerosols being released into the atmosphere and keep the pure citrus fragrances from going bad. (No oxidation in BOV's)

It is also confusing to allow foods to be filled in BOV's and use volume when standard aerosol must use weights for food items. We fill eatable cooking oils in BOV's yet ConAgra who fills cooking oil sprays (Pam) in standard aerosol they must use weight. We agree they should not be allowed to use volume because it is not a pure product. When we fill Extra Virgin Olive oils in a BOV's it is the very same oils that you purchase in a bottle, how confusing would that be if we could not use the same measurement system used for the same product and setting in the stores right next to each other? Same goes for other product filled in a BOV's.

When regulations were researched back in the early 1980's, before BOVs were made commercially available, it was noted that the definition for aerosol did not coincide with that of BOV's. After many discussions and a number of phone calls to various governing agencies, it was determined BOVs should be considered different for contents than aerosols because of how BOVs dispense products.

Now decades after the fact, the National Aerosol Association and the Weights and Measures wants to consider changing the method used with BOVs and understood by consumers for more than a Generation. Why did it take these agencies so long to look into this issue and come to the understanding it was necessary to make changes now to a system that has not caused any confusion in the market place? Could the reason be BOVs are taking a bite out of the standard aerosol markets? Regardless of the reason, we do not feel it is justifiable to make changes to a system that is fundamentally different from the system to which it is being compared.

BOV Solutions, Inc. agrees fully with the contents of the letter prepared by Paul C. Van Slyke and addressed to the David A. Sefcik with NIST, Weights and Measures dated January 6, 2012. Any changes in the requirements for the labeling of BOVs will inflict great financial harm to all those required to make what we consider unrealistic label changes.

It is hoped that those making the decisions will do so with an open mind and only after considering the alternatives and repercussions that may come about as a result of such unnecessary changes.

Sincerely Yours,

Paul R. Hertensen
Founder/CEO
BOV, Solutions, Inc.
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Lecanto, Florida 34461

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Ms. Judy Cardin
NIST, Weights and Measures
100 Bureau Drive – M/S 2600
Gaithersburg, MD 20899-2600

July 13, 2012

Dear Ms. Cardin:

We write to you in support of Scott Ciurana's (Blue Magic, Inc.) position on the BOV volume declaration issue.

It is BOV Solutions, Inc. recommendation that the declaration issue (item 231-2, section 10.3 Aerosols and Similar Pressurized Containers) currently before the Laws and Regulations committee remain in an information gathering phase until industry consensus on the proper way to measure compliance of the liquid fill declaration of a pressurized BOV container can be reached.

We at BOV Solutions, Inc. strongly support Liquid Fill as the proper label declaration for our BOV products as the pressurized gas that propels our products from the container remains in the container after the product is fully dispensed. The gas and its weight, which in our case is simply air, should be considered part of the packaging, not the product. Including the weight of the gas in the label will be misleading to customers.

By its very nature, BOV packaging prevents the gas in our container from ever mixing with or being dispensed with our products. This distinguishing characteristic of our packaging system sets us far apart from conventional aerosols.

Sincerely Yours,

Paul Hertensen Founder &
CEO BOV Solutions, Inc.

From: Cardin, Judy L - DATCP
To: Doug Raymond
Cc: ncwm-laws-and-regulations@lists.ncwm.net; Warfield, Lisa; Peter, Stephen T - DATCP; don.onwiler@ncwm.net; Lindsay Hier (lindsay.hier@ncwm.net); Sefcik, David
Subject: RE: Item 231-2 Section 10.3 Aerosols and Similar Pressurized Containers

Date: Friday, July 13, 2012 5:54:32 PM

Mr. Raymond,

The item will be in an Informational status for this meeting. We will next consider the voting status at our January, 2013 NCWM Interim meeting. I appreciate your efforts reach to a consensus proposal from your industry, and look forward to hearing more from you. The four regional weights and measures associations meet in September or October, and if you are ready in time, you should forward your recommendation to the Regional groups also- Lisa Warfield or I can help you get the proposal to the regions.

Judith L. Cardin
Chief, Wisconsin Weights and Measures
Division of Trade and Consumer Protection
608 224 4945

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From: Doug Raymond [mailto:djraymond@me.com]
Sent: Friday, July 13, 2012 4:48 PM
To: Cardin, Judy L - DATCP
Subject: Item 231-2 Section 10.3 Aerosols and Similar Pressurized Containers

July 13, 2012

Judy Cardin
Wisconsin Weights and Measures
2811 Agriculture Drive
P.O. Box 8911
Madison, WI 53708-8911

Re: Item 231-2 Section 10.3 Aerosols and Similar Pressurized Containers

Dear Ms. Cardin:

The National Aerosol Association (NAA) presented at the January meeting of the National Conference on Weights and Measures (NCWM) in New Orleans, on the Bag on Valve issue with the weights/volume declaration. The item number 231-2 section 10.3. Aerosols and Similar Pressurized Containers. This item is currently in an information gathering status.

After the January meeting, NAA representatives met with Blue Magic and others to discuss this issue. In addition, NAA informed other organizations interested in the pressurized

packages of this issue. Currently, we are all working together to try and determine the most appropriate avenue to use to convey net contents for comparison to the consumers for our products.

Unfortunately at this time the industry does not have a working proposal to provide to the National Conference on Weights and Measures (NCWM). We are hopeful to be able to have a consensus position by January to present to your organization. Thus at this time we recommend that the issue be kept in the information gathering status.

I will be attending the July conference and available to discuss this issue with you. Thank you for your attention to this issue.

On behalf of the NAA

Doug Raymond

116 Swift Street
Edgerton, WI 53534
608-884-3411
Lawrence B. Midtbo
President

11 January 2012

Ms. Judy Cardin

Dear Ms. Cardin:

I recently saw your name on a copy list from a Mr. Paul Slykes, in reference to a letter Mr. Slykes sent to the Bureau of Weights and Measures regarding an upcoming hearing on the reclassifying of BOV (Bag on Valve) form of packaging from an aerosol class where the unit of measure is Net Weight to a unit declaration of Fluid Ounces. Our company, (a Wisconsin company since 1955) has been involved in the pressurized packaging of products and would like you to be aware of some of Mr. Slykes' misconceptions. First, the BOV technology is not "new", it has been commercially used for more than 10 years. Secondly, it uses standard aerosol packaging components, the main difference being in the "Bag" attached to the aerosol valve. Thirdly, it inaccurate to call the package environmentally more friendly, when in fact, it has additional plastic or metal (from the bag) than a standard aerosol. He makes
his claim based, not on the package, but rather on the propellant type used.

We urge that you understand the process before you give your support to Mr. Slykes. Should you desire to follow up on this letter, I would be happy to invite you to tour our facility in Edgerton, WI (30 miles south of Madison) to discuss this matter in more depth.

Very truly yours,

Lawrence B. Midtbo
President

Locke Lord LLP

Attorneys & Counselors

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January 6, 2011

Via Email: dsefcik@nist.gov
And U.S. Mail

Mr. David A. Sefcik
NIST, Weights and Measures
100 Bureau Drive - M/S 2600
Gaithersburg MD 20899-2600

Re: Comments on Laws and Regulations Committee Interim Agenda for 2012 Regarding the Proposal for NIST Handbook 130, Section 10.3

Dear David:

This letter is in response to the request for comment to the proposal for NIST Handbook 130, Section 231-2 Section 10.3 Aerosols and Similar Pressurized Containers currently under consideration before the National Conference on Weights and Measures Laws and Regulations (L&R) Committee Interim Agenda. This letter also responds to the November 13, 2011 letter from the National Aerosol Association ("NAA"). We represent the interests of our client Blue Magic, Inc. that markets the product PURE CITRUS Air Freshener.

As explained in more detail below,

- The new bag-on-valve (BOV) technology is inherently and fundamentally different than the conventional aerosol technology since the propellant is not expelled with active ingredients.
- The consumer cannot make an accurate or meaningful comparison between the conventional aerosol products and the BOV technology products, when existing conventional aerosol regulations are applied to BOV products.
- Compliance with existing NIST and state standards inhibit this consumer comparison.
- A solution is to modify the conventional aerosol standards to require labeling of active ingredients (either net weight or volume) in lieu of total net weight or in addition to total net weight.
- Determining a volumetric amount of contents in a BOV technology product is relatively simple by just emptying the contents through the container nozzle into a container and measuring the volume.

Table of Contents

We have organized our remarks under the following main points:

I. Aerosol and BOV Technologies Are Inherently and Fundamentally Different

A. Conventional Aerosol Design

Conventional aerosol technology uses a compressed liquid diluent and other liquids mixed with the active ingredients to create a mixture that is expelled through a release nozzle. The amount of active ingredients (such as a fragrance in an air freshener) is generally understood to be about 5% to 10%. Most of the weight (estimated at 90% to 95%) is from other ingredients, including water, propellants, emulsifiers, solubilizes, stabilizers, and other chemicals (for purposes herein termed "inactive ingredients").

The consumer is purchasing the container for the results that the *active ingredients* produce (such as, air freshness from air fresheners) and *not for the inactive ingredients*--but is paying for a container with 90% or more inactive ingredients.

The propellants in a conventional aerosol are generally petroleum-based products having volatile organic products (VOCs). The most common propellants are propanes and butanes, with dimethyl ether (DME) and methyl ethyl ether also used. All of these chemicals have the disadvantage of being flammable. Nitrous oxide and carbon dioxide are also used as propellants to deliver foodstuffs (for example, whipped cream and cooking spray). Medicinal aerosols, such as asthma inhalers, use hydrofluoroalkanes (HFA): either HFA 134a (1,1,1,2,-tetrafluoroethane) or HFA 227 (1,1,1,2,3,3,3-heptafluoropropane) or combinations of the two. Conventional aerosols are considered to be responsible for two percent (2%) of all human VOC emissions. Studies report health hazards from regular exposure to such aerosols.[1]

[1] Supporting documents are provided as exhibits in our letter to you dated February 28, 2011.

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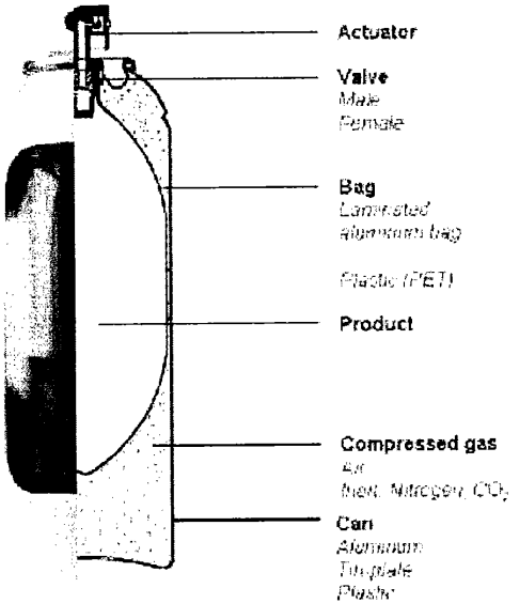
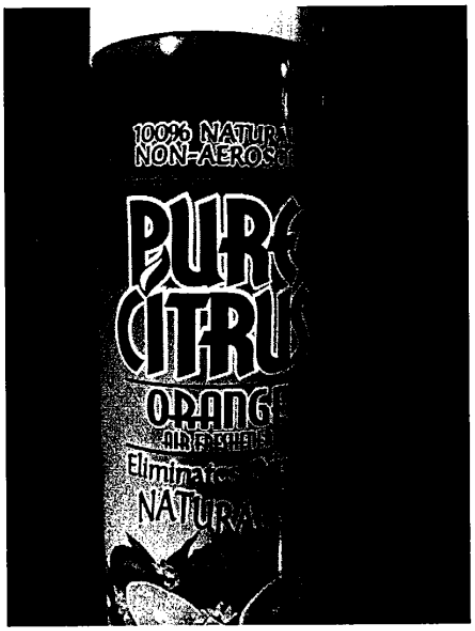
B. BOV Design

In contrast, the newer BOV technology uses compressed gas (such as air, nitrogen, or inert gases) to pressurize an external surface of a bag filled with a material to be released and "squeezes" the material in the bag through the release nozzle. The active ingredients are expelled through the nozzle, but the compressed gases are *not* expelled through the nozzle. The active ingredients are not dependent on a mixture of other ingredients to be expelled. The BOV technology has therefore the advantage of using a gas rather than a liquid, because no propellant solution or suspension is necessary to expel the active ingredients. In contrast to the conventional aerosol technology, *the compressed gas in a BOV container has virtually no weight.* Because the gas used as a pressurized source around the bag is not expelled into the atmosphere in normal use, BOV technology is inherently environmentally-friendly. Additionally, the gas itself is generally a harmless gas, such as air, nitrogen, or an inert gas.

For illustrative purposes, a typical construction of a BOV technology container is shown below on the left. The contents of the bag are isolated from the compressed gas around the bag. The intended contents are expelled from the container; the compressed gas remains in the container. A PURE CITRUS® container constructed using BOV technology is shown on the right. It is labeled as a "NON-AEROSOL" product to differentiate from the conventional aerosol technology.





C. Exemplary BOV Products

Examples of BOV technology products currently on the market include: Simply Saline™ wound wash saline from Blarix Laboratories, Ultra Defense™ sunscreen from Banana Boat from Connecticut, Citrus Magic air freshener from Beaumont Products, Inc. (not from the supplier of the PURE CITRUS® air freshener) from Georgia, and Coppertone Sport® sunscreen from Schering-Plough from Tennessee, among others, including the PURE CITRUS® air fresheners by our client. It is common to designate BOV

Technology products in volume, such as fluid ounces.[2] *All five of the above BOV technology products designate their products in fluid ounces.*

The table below shows representative differences from the design and technology between a typical conventional aerosol air freshener and the PURE CITRUS non-aerosol product, and are believed to be a reliable calculation of the percentage based on laboratory tests by a vendor.

Feature	Conventional Aerosol	PURE CITRUS "Non-Aerosol"
Spray Content	Fragrance, water, odor reducers and other ingredients, and chemical propellant	Fragrance only (no added water or chemical propellant)
Inactive ingredients	90% - 95%	0%
Active ingredient (fragrance) expelled	5% - 10%	100% Fragrance

BOV technology represents a radical shift away from conventional aerosol technology. BOV technology delivers an intended substance without the weight, without the non-active ingredients, and without the potentially harmful effects on humans and the environment. Thus, comparisons between conventional aerosol technology products and BOV technology products are like comparing "apples and oranges."

II. Conventional Aerosol Technology Benefits From an Industry-Accepted Misnomer

A. Current Aerosol Regulations

The pertinent part of Section 10.3 in the Uniform Packaging and Labeling Regulations reads as follows:

> 10.3. The declaration of quantity on an aerosol package and on a similar pressurized package shall disclose the net quantity of the commodity (including propellant), in terms of weight, that will be expelled when the instructions for use as shown on the container are followed.

[2] On April 8,. 2011, we forwarded to Mr. Charles H. Carroll examples of other BOV products with markings showing their contents in fluid ounces. Specifically, the list included Coppertone Sport Sunscreen (active ingredients 24%, 6 fl. oz.), Citrus Magic air freshener (not from the supplier of the PURE CITRUS air fresheners) (active ingredients 100%, 3.5 fl. oz.), Simply Saline, Wound Wash Saline (active ingredients 0.9%, 3.0 fl. oz.), and Banana Boat, Ultra Defense Sheer Protection (active ingredients 34%, 6 fl. oz.).

These regulations were written under the decades-old technology of conventional aerosols with the propellant and other inactive ingredients mixed with the active ingredients, so that the mixture of all contents is expelled. Therefore, the regulations specifically included the term "(including propellant)" as part of the "commodity" to be expelled, as the accepted method of indicating the contents. However, such regulations lead to at least three misperceptions with consumers.

B. Conventional Aerosol Products Labeling is Misleading to Consumers

1. *Most Conventional Aerosol Consumers Unknowingly Purchase a Product With Only About 5 – 10% of Active Ingredient*

First, the typical consumer purchases a product to deliver the results of the active ingredients in the product. An air freshener delivers fragrance to freshen air, a lubricant spray delivers lubricant to lubricate, and so forth. The consumer does not purchase a product for the inactive ingredients. Most consumers have no idea that only about 5% - 10% of the net weight in the container that they are purchasing is the intended product.

Consider the following example of a conventional aerosol technology air freshener purchased at a local grocery store. The container is labeled as a 9 oz. container and was purchased for $1.19.[3] Assuming the standard contents of about 5% to 10% fragrance, the active ingredients are about 0.5 to 0.9 wt. oz. with the remaining 9.1 to 9.5 wt. oz. being inactive ingredients. Thus, most of the advertised net weight of the contents is based on non-active ingredients—not the ingredients for which the consumer is purchasing the product. At an exemplary price of $1.19 for a 9 wt. oz. aerosol, the consumer is paying $0.13 per wt. oz., as might be labeled on the shelf next to the product, even though only a fraction of the contents is active ingredients. The equivalent price for the active ingredients in the container with 10% active ingredients is $1.32 per wt. oz. (1.19 divided by (9 x 10%)). Stated differently, if the aerosol container expelled 9 ounces of active ingredients, then at the price of $1.32 per wt. oz. of active ingredients, the aerosol container price would calculate to be $11.90 for the 9 wt. oz. aerosol at 100% active ingredients. This misnomer by labeling the weight of *all* ingredients, even the inactive ingredients, creates a misrepresentation to consumers of more value from more net weight, and appears to have become entrenched in the conventional aerosol industry.

2. *Conventional Aerosol Consumers Are Not Able to Compare Conventional Aerosol Products Based on the Actual Amount of Active Ingredients*

Second, consumers cannot compare two conventional aerosol products under current regulations, even of the same type of product and even when both are labeled with the same weight. One brand of a conventional aerosol product with 9 wt. oz. might have 5% active ingredients (0.45 wt. oz.), yet another brand of conventional aerosol product with the same weight might have 10% active ingredients (0.90 wt. oz.). At an exemplary price of $1.19 for the

[3] Conventional GLADE aerosol container purchased on sale at Kroger grocery store in Houston, Texas on December 1, 2011—standard price is $1.29. Interesting, the container simply states "9 OZ" --neither weight or volume, so is even more confusing to customers. It does have a secondary note in parenthesis of "(225 g)", but the consumer would have to understand that the "g" is an abbreviation for grams and would have to then understand the measurement is for weight. It is likely that many consumers are not sophisticated to this understanding.

a conventional aerosol, the consumer is paying $2.64 per wt. oz. of active ingredients for the 5% active ingredient aerosol and $1.32 per wt. oz. of active ingredients for the 10% active ingredient aerosol.

Thus, the consumer does not know the *real* value for an *accurate comparison*, because the total net weight of water, propellant and other inactive ingredients is included in the net weight of the container with an *unknown quantity of active ingredients.*

C. Current Label Regulations Make the BOV Products Misleading to Consumers

Third, using the weight comparison for an entirely different technology, such as the BOV technology, only exacerbates the misnomer above. The use of a total net weight comparison, if applied under current regulations, will cause a misperception and consumer confusion. For example, the net weight of a PURE CITRUS® air freshener using the newer BOV technology is approximately 5.9 wt. oz. and retails at grocery stores for about $4.49.[4] The full amount is active ingredient. Because the gas is virtually weightless and the only material released is the active ingredients, then 100%, rather than 5% or 10%, of the net weight is calculated into a price of $0.76 per wt. oz. of active ingredients.

This $0.76 per wt. oz. of active ingredients in the BOV technology aerosol compares with the above $1.32 to $2.64 per wt. oz. of active ingredients for the conventional aerosol. Yet, the shelf label for the BOV technology aerosol will likely be $0.76 per wt. oz. and the shelf label for the conventional aerosol will likely be $0.13 per wt. oz., nearly 6 times *less*, even though in actuality, the amount of active ingredients using the conventional aerosol technology costs the consumer one and one-half (1 1/2) to three and one half (3 1/2) times *more* than the PURE CITRUS air freshener using BOV technology.

The table below summarizes the above calculations and shows the resulting confusion in an attempted comparison between existing conventional aerosol products and between a BOV product.

	Total (wt. oz.)	Active Ingredient (%)	Active Ingredient (wt. oz.)	Container Price ($)	Price/Total ($/wt. oz.)	Price/Active Ingredients ($/wt. oz.)	Price of Container with 100% Active Ingredients ($)
Exemplary conventional aerosol air freshener	9	5%	0.45	$1.19	$0.13	$2.64	$23.80
Exemplary conventional aerosol air freshener	9	10%	0.9	$1.19	$0.13	$1.32	$11.90
Exemplary BOV technology air freshener	5.88	100%	5.88	$4.49	$0.76	$0.76	$4.49

[4] Based on PURE CITRUS® aerosol using BOV technology that was purchased at Kroger grocery store in Houston, Texas on December 1, 2011.

III. The Underlying Assumption of an Ability to Compare Using Conventional Aerosol Technology is Flawed

The underlying assumption in attempting to apply BOV technology to the current regulations drafted for conventional aerosol technology is that a weight comparison of the total contents (1) is appropriate, and (2) is accurate to the consumer.

The evidence shows that a weight comparison of the total contents is neither appropriate nor accurate. Such a comparison based on incomplete labeling under current practice in the conventional aerosol technology leads to a deception and misinformation to the consumer, *because the consumer does not have sufficient information from the conventional aerosol technology labeling.*

Consumers can be easily misled into purchasing a seemingly less expensive conventional aerosol product that in fact is much more expensive—potentially several times more expensive than the exemplary BOV technology product.

A forced net weight comparison of BOV technology products under existing regulations for conventional aerosol technology products also leads to unfair competition against the newer BOV technology. A forced net weight comparison of an inaccurate and unfair metric leads to a misrepresentation of the nature and quality of the product compared to non-equivalent conventional aerosol technology.

In summary, these reasons are sufficient to show why the apples of conventional aerosol technology should not be compared to the oranges of BOV technology based on total net weight of the contents, as NAA alleges. Conventional aerosol technology benefits from an industry-accepted misnomer that includes propellants in the net weight that are inactive ingredients and a large majority of the contents that are purchased. In contrast, BOV technology does not expel propellant and inherently has much less net weight for a given product without the expelling propellant. Conventional aerosol consumers are not able to compare conventional aerosol products based on the actual amount of active ingredients that may be 5-10% against BOV technology products that may contain much higher levels of active ingredients, such as 100% in PURE CITRUS air fresheners. Enforcing current label regulations against the BOV products would be confusing and misleading to consumers, because current regulations can result in the BOV products being perceived as having much less value per quantity of active ingredients compared to conventional aerosol products, when the above example shows quite the opposite could in fact be true. Thus, the underlying assumption of an ability to accurately compare BOV technology to conventional aerosol technology under the current regulations is flawed.

IV. NAA's Definitions Should Not Control A Different Technology

We also respond to the November 13, 2011 comments provided by the National Aerosol Association (NAA) on the BOV technology's inclusion under the conventional aerosol technology standards.

A. NAA's Three Citations to Regulations Do Not Apply to BOV Technology

We make the following observations to NAA's three citations in its letter. Quoted text below is taken from the NAA letter.

1. ***NAA**: "NIST Handbook 130 sections 2.2.6 and 2.2.7 references the Office of Weights and Measures of the National Institute of Standards 10.3."*

The NIST Handbook 130 that references the NIST section 10.3 for the weight of the "commodity (including propellant), that will be expelled" applies to "aerosols" and "similar pressurized packages." Consistent with the observations in our letter of February 28, 2011, this Section can apply to the BOV technology only if the BOV technology is deemed to be an "aerosol." We suggest that the BOV technically is not an "aerosol" as the term is conventionally defined and used. Even under this regulation, the BOV technology does not apply. The regulation requires, or at least assumes, the commodity to have a propellant that is expelled when it states a "commodity (including propellant)." Using BOV technology, *no propellant* is expelled. There is no solution, dispersion, or suspension of the propellant with the active ingredients to be expelled. The BOV technology is an inherent and foundationally different technology and so is not "a "similar pressurized package," as well.

2. ***NAA**: "CFR 49 section 171.8"*

The 49 CFR 171.8 definition of an "aerosol" requires a receptacle containing a gas under pressure to expel a liquid, paste, or powder and fitted with a release device "allowing the contents [of the receptacle] to be ejected by the gas." (emphasis added). Here, too, the BOV technology does not apply to this definition, which is based on conventional aerosol technology. Under conventional aerosol technology, the propellant combined with the active ingredients constitutes the *contents* of the receptacle. In conventional aerosol technology, the *contents* are ejected. In BOV technology, the *contents* of the receptacle are *not* ejected, because the compressed gas *remains* in the receptacle. Thus, this definition actually illustrates the differences between BOV technology and conventional aerosol technology, and is further evidence that the BOV technology is not an "aerosol."[5]

3. **NAA:** *"CFR 49 section 173.306a(3)"*

Actually, the citation to 49 CFR 173.306(a)(3) can be understood as *supporting a labeling requirement by* volume rather than weight. This section relates to labeling requirements for a compressed gas based on *volumetric* quantities and pressures of the containers. The cited section specifically measures containers in terms of liters and not weight. It states "Capacity must not exceed 1 L". The full citation is noted in the footnote below."[6]

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[5] Further, some BOV technology products label in volume, such as fluid ounces. Please see examples in Note 2.

[6] The 49 CFR 173.306(a)(3) subsection reads as follows:

(3) When in a metal container for the sole purpose of expelling a nonpoisonous (other than a Division 6.1 Packing Group III material) liquid, paste or powder, provided all of the following conditions are met. Special exceptions for shipment of aerosols in the ORM-D class are provided in paragraph (i) of this section.

(i) Capacity must not exceed 1 L(61.0 cubic inches).

(ii) Pressure in the container must not exceed 180 psig at 130 °F. If the pressure exceeds 140 psig at 130 °F., but does not exceed 160 psig at 130 °F., a specification DOT 2P (§ 178.33 of this subchapter) inside metal container must be used; if the pressure exceeds 160 psig at 130 °F., a specification DOT 2Q (§ 178.33a of this subchapter) inside metal container must be used. In any event, the metal container must be capable of withstanding without

NAA refers to the BOV as "simply one of the barrier pack aerosol options." In reply, the nomenclature itself illustrates the fundamental differences between conventional aerosol technology and BOV technology in using the term "barrier pack", that is, a package having a barrier between the pressurized gas and the contents to be expelled. The nomenclature of an "aerosol" applied to BOV technology is irrelevant to the fundamental differences between conventional aerosol technology and BOV technology.[7] Such nomenclature is also irrelevant to the likely misperception and confusion to consumers when attempting to make a comparison between conventional aerosol technology and BOV technology.

NAA states that labeling the BOV with volume would be confusing to consumers. To the contrary, labeling the new BOV technology according to the conventional aerosol regulations of net weight results in confusion and deception to consumers. Consumers would misperceive that a greater quantity of useful material is in the conventional aerosol technology product due to the heavier weight of the large percentage--90% or more--of *inactive* ingredients that are expelled out of the container. By comparison, a BOV technology product can propel out 100% active ingredients with much less net weight, because it can have no inactive ingredients in the commodity to be expelled, and it can use a virtually weightless compressed gas external to the bag to expel the contents.

V. Additional Considerations for Testing of BOV Technology Products

A. Contents Are Easily Tested in BOV Containers

The question was raised at the 2011 Northeastern Weights and Measures Association (NEWMA) Interim Meeting on testing for contents as to whether the contents can easily be tested, just as manufacturers test the contents periodically for quality assurance and control ("QA/QC"). The answer is yes. The advantage of a BOV technology product is that there is no propellant in the expelled contents to compromise the testing in contrast to the volatile propellants in a conventional aerosol container. The procedure of testing BOV contents can be as simple as emptying the contents into a bottle and noting the volume.

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bursting a pressure of one and one-half times the equilibrium pressure of the content at 130 °F.
(iii) Liquid content of the material and gas must not completely fill the container at 130 °F.
(iv) The container must be packed in strong outside packagings.
(v) Each container must be subjected to a test performed in a hot water bath; the temperature of the bath and the duration of the test must be such that the internal pressure reaches that which would be reached at 55 °C (131 °F) (50 °C (122 °F) if the liquid phase does not exceed 95% of the capacity of the container at 50 °C (122 °F)). If the contents are sensitive to heat, the temperature of the bath must be set at between 20 °C (68 °F) and 30 °C (86 °F) but, in addition, one container in 2,000 must be tested at the higher temperature. No leakage or permanent deformation of a container may occur.
(vi) Each outside packaging must be marked "INSIDE CONTAINERS COMPLY WITH PRESCRIBED REGULATIONS."

[7] It is possible that the term "aerosol" may have been loosely applied in initial inceptions of the BOV technology for commercial reasons of acceptability in the marketplace. However, if so, then such initial usage of the term does not reduce in any way the fundamental differences between the technologies and the impact that conventional aerosol regulations have on the labeling requirements of BOV technology that create misleading and inaccurate comparisons with consumers.

For example, a regulatory inspector can use the same method that the maker of PURE CITRUS uses to test for QA/QC the net volumetric content, such as the volume of PURE CITRUS fragrance extract. The inspector could use a simple tool that the manufacturer can provide or even more simply empty the BOV container in a few seconds by using the nozzle spray to spray the droplets of fragrance extract into some measuring cup to allow the droplets to form a liquid volume. The measuring cup can be a laboratory graduated cylinder that permits measurement of volume in fluid ounces to compare against the net fluid ounces indicated on the BOV container. This simple act does not require puncturing or otherwise destroying the BOV container in order to obtain the correct volume.

Even a consumer could use a similar measurement method to the one described above to verify the contents in volume. Using the same technique, a consumer could simply empty the container in a few seconds by using the nozzle to spray the droplets of fragrance or other contents from the BOV container into a measuring cup where the droplets form a liquid volume. The measuring cup could have fluid measuring marks on the side. The consumer could then read the amount of fluid ounces corresponding with the level of the liquid in the pitcher.

The method recommended above could measure accurately the volume of contents dispensed of what is delivered. These contents are in contrast to the deliverables dispensed in a conventional aerosol spray like Glade that include large amounts of flammable and noxious gas propellants, odor reducers, and water, and much small amounts of fragrance extract.

We suggest that the volumetric measurement method recommended is at least as simple and perhaps simpler than the standard methods inspectors use to measure the net weight in a conventional aerosol spray like Glade. Under current standards, simply placing a container of conventional aerosol spray on a weight scale will give net weight of the entire contents of the container, but will not give the net weight of the useful part that contains the active ingredients for which the consumer is purchasing. To test the net weight of a conventional aerosol container, an inspector could purchase a container, measure the total weight, release the contents of the container by pressing the nozzle, and reweigh the empty container to confirm the net weight. Thus, it appears that the effort to measure the volumetric contents of the BOV container would be a straightforward effort and no more complicated than current procedures.

B. Contents Are Generally Fully Expelled in BOV Containers

Another question that was raised at the 2011 NEWMA Interim Meeting was whether the entire contents of a BOV technology product is expelled. The answer is yes, where as usual sufficient pressure is loaded into the container surrounding the bag of deliverable product. The amount of pressure surrounding the bag with the deliverable contents is generally sufficient at least in the PURE CITRUS products to "squeeze" the contents out of the bag through the nozzle.

VI. Two Suggestions for Resolution

NAA's concerns can be addressed by one or more relatively simple and straightforward additions to the standards, such as Sections 6.4 and/or 10.3. There are two solutions listed below, either of which reduces the probable confusion and misrepresentations to consumers that would occur if conventional aerosol technology regulations were applied *carte blanche* to BOV technology products. Proposed adjustments to Section 10.3 are shown in underlined format below each suggestion.

1. NIST standards can require that the label for a BOV technology product differentiate it from a conventional aerosol technology product. Consumers would thus be under no illusion or confusion to compare fundamentally different technology products. There are several optional wordings that can show this differentiation, such as "Non-Aerosol", "Non-Propellant Based Technology", and others. For example, for Section 10.3, a subsection 10.3.1 could be added as follows:

> ***10.3. The declaration of quantity on an aerosol package and on a similar pressurized package shall disclose the net quantity of the commodity (including propellant), in terms of weight, that will be expelled when the instructions for use as shown on the container are followed.***
>
> > ***10.3.1 Containers that separate propellant from the expelled product so that the propellant is not expelled (such as containers using bag-on-valve technology) shall be prominently labeled NON-AEROSOL. The declaration of quantity shall disclose the net quantity of the commodity in terms of fluid measure.***

(OR)

2. NIST can amend the standards to recognize that the BOV technology is so substantially different from the conventional aerosol technology and not require that containers with the BOV technology be labeled with net weight. That amendment would avoid the problem of inadvertently creating misperception and confusion in attempted comparisons among consumers as to the value of the BOV product. For example, Section 10.3 can be amended as follows:

> ***10.3. The declaration of quantity on an aerosol package and on a similar pressurized package shall disclose the net quantity of the commodity (including propellant), in terms of weight, that will be expelled when the instructions for use as shown on the container are followed, provided however that containers that separate propellant from the expelled product so that the propellant is not expelled (such as containers using bag-on-valve technology) may be labeled either with weight or volume of the quantity of the commodity that will be expelled.***

VII. Conclusion

BOV technology products are desirable. They are "green", environmentally-friendly products that can be used to help meet the increasing higher standards for EPA. The use of BOV technology will most likely increase with time. The current standards are outdated and were written in the context of and for conventional aerosol technology existent at the time. They fail to take into consideration recent advances in container technologies that are not only green but labeled in a way that clearly informs the consumer about the quality of the product and weight of the contents that they are purchasing.

Attempts to compare the BOV technology with the conventional aerosol technology under the current standards of weight results in more misinformation and misleading advertising to the consumer, primarily because of the lack of sufficient information labeled on conventional aerosol

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technology products that combines the large percentage of inactive ingredients with much smaller amounts of active ingredients.

Further, current standards written for conventional aerosol technology should not unfairly burden or hinder the deployment and sale of the newer BOV technology from becoming more widespread in the marketplace.

Either adjustments in the standards need to be initiated for the newer BOV technology or the BOV technology needs to be excluded from the current standards. Updating of the labeling standards is more appropriate than trying to fit the "square peg into a round hole."

Such adjustments in the standards or exclusion of the BOV technology from a net weight labeling applied to the different conventional aerosol technology allows the most important part of underlying public policy to be met: to avoid creating a misperception and confusion to the consumer.

Yours truly,

Paul C. Van Slyke

cc: Ms. Lisa Warfield (Technical Advisor, NIST)
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April 6, 2011

Via Email: dsefcik@nist.gov
And U.S. Mail

Mr. David A. Sefcik
NIST, Weights and Measures
100 Bureau Drive - M/S 2600
Gaithersburg MD 20899-2600

Dear Mr. Sefcik:

It was a pleasure to speak with you by telephone on March 30, 2011 to discuss the questions and comments raised in your email letter regarding the quantity designation on the label for the PURE CITRUS non-aerosol room spray product.

FDA Regulations

During our conversation, I mentioned that the FDA had in its regulations for packaging and labeling, an exception for foods packed in containers designed to deliver the food under pressure. I was able to locate the exact FDA regulation that is found in the FDA Manual Guide, 7563.7, in the regulation designated 21 CFR 101.105(g) reading as follows:

> *[i]n the case of foods packed in containers designed to deliver the food under pressure, the declaration shall state the net quantity of the contents that will be expelled when instructions for use as shown on the container are followed. The propellant is included in the net quantity declaration.* [net quantity is defined in 21 CFR 101.105(a) as "fluid measure if the food is liquid]

Other Pressurized Spray Products Labeled in Fluid Ounces

Also, during our conversation, we discussed that other manufacturers using the new BOV technology include fluid ounces as the label designation. Specifically, the manufacturer of Coppertone uses BOV technology in its SPORT Sunscreen product and labels its package in 6 fluid ounces. Likewise, the manufacturer of SIMPLY SALINE for Wound Wash Saline uses BOV technology in its product and labels its package as 3.0 fluid ounces.

NIST Guidelines

The above FDA exception for foods in pressurized containers is inconsistent with the guidelines section of NIST Handbook 130 , Sections 6.4 and 10.3 when read together:

> **"6.4. Terms: Weight, Measure, Volume, or Count.** – The declaration of the quantity of a particular commodity shall be expressed in terms of:
>
> (a) weight if the commodity is solid, semisolid, viscous, or a mixture of solid and liquid; or
> (b) volume measure if the commodity is liquid or dry, if the commodity is dry; or
> (c) linear measure or area; or
> (d) numerical count.
>
> However, if there exists a firmly established general consumer usage and trade custom with respect to the terms used in expressing a declaration of quantity of a particular commodity, such a declaration of quantity may be expressed in its traditional terms, provided such traditional declaration gives accurate and adequate information as to the quantity of the commodity. Any net content statement that does not permit price and quantity comparisons is forbidden."

"10.3. Aerosols and Similar Pressurized Containers. The declaration of quantity on an aerosol package and on a similar pressured shall disclose the net quantity of the commodity (including propellant), in terms of weight, that will be expelled when instructions for use as shown on the can."

Currently the NIST is interpreting the requirement in Section 6.4 that the declaration of quantity be a volume measurement if the commodity is a liquid like air freshener as being overridden by the provision in 6.4 that net weight may be used since net weight is "a firmly established general consumer usage and trade custom"

Unfortunately, NIST's interpretation of the requirements of Section 6.4 to permit labeling of air freshener by net weight overlooks the most important part of Section 6.4:

> *Any net content statement that does not permit price and quantity comparisons is forbidden.*

For conventional aerosol air sprays like Glade, "the firmly established general consumer usage and trade customer" that permits a declaration of net weight does not permit price and quantity comparisons without a requirement to declare the weight or volume of **active** ingredients expelled.

- The net weight declaration deceives the consumer into believing that the active ingredients expelled are the net weight.
- In fact, the active ingredients are not listed on the package.
- What is expelled includes mostly water, and propellant.

- Only a small quantity of active ingredients are expelled (perhaps 5% or less).
- The consumer expects to buy fragrance and odor-reducing active ingredients that are expelled.
- The consumer is not expecting to buy water and propellant that is the majority of the contents expelled.
- NIST guidelines do not require the declaration of the weight or volume of active ingredients.
- The consumer cannot compare the weight or volume of active ingredients expelled.
- The "commodity" referred to in Sec. 6.2 is only the active ingredient.
- The weight or volume of "active ingredients" are what the consumer needs to compare from one product to another.

Since the NIST guidelines do not currently require a declaration of the weight or volume of **active** ingredients expelled, the consumer cannot make price and quantity comparisons required by the guidelines for different mixtures of active ingredients. For example, one manufacturer of aerosols can mix 5% active ingredients of fragrance and another manufacturer can mix 10% and each charge the same price, yet the consumer cannot make a price and quantity comparison of the commodity (fragrance) for which the consumer is purchasing the product.

PURE CITRUS currently shows on its can the volume of its active ingredients expelled in fluid measurement. PURE CITRUS is actually more in compliance with the guidelines that the conventional aerosol manufacturers. **PURE CITRUS reveals the active ingredients (100%), the quantity, and the price.**

There are two solutions to the serious violation of the guideline against "*Any net content statement that does not permit price and quantity comparisons is forbidden":*

1. NIST can amend Sections 6.2 and 10. to require adding to the declaration of net weight the weight or volume of active ingredients expelled, or

2. NIST can amend Sections 6.2 and 10 to require air sprays to declare only the active ingredient expelled in terms of weight or volume

Until NIST makes one of these changes to its guidelines, the maker of PURE CITRUS requests that NIST consider the new BOV Technology as not within the scope of a conventional aerosol package or a "similar pressurized package" for which the current NIST guidelines were apparently drafted and have been applied. Alternatively, the makers of PURE CITRUS requests a waiver of compliance with the current guidelines.

Reponses to Questions Raised in Your Letter

In answer to your questions raised in your email letter of March 1, 2011, please consider the responses below:

1. In order for a regulatory inspector to verify the net content in volume, he would need to be able to accurately obtain the net contents. This would likely mean that the packaging would have to be punctured or otherwise destroyed, in order to obtain the correct volume. How would you recommend volume be accurately determined? Would volume if dispensed be based on what is "delivered"?

- We recommend that a regulatory inspector use the same method that the maker of PURE CITRUS uses to accurately determine net content of the active ingredients; i.e. the PURE CITRUS fragrance extract. They would use a simple tool that the maker can provide or even more simply empty the can in a few seconds by using the nozzle spray to spray the droplets of fragrance extract from contents of the can into a container where the droplets will condense to form a liquid volume. The container can be a laboratory graduate marked with volume markers that permit measurement of volume in fluid ounces to compare against the net fluid ounces indicated on the can. This does not require puncturing or otherwise destroying the can in order to obtain the correct volume.

- Even a consumer could use a similar measurement method to the one described above to verify the accuracy of the PURE CITRUS contents in volume. Using the same technique, consumer would simply empty the can in a few seconds by using the nozzle spray to spray the droplets of fragrance extract from contents of the can into a standard glass measuring pitcher where the droplets will condense to form a liquid volume. The glass measuring pitcher would have fluid measuring marks on the side. The consumer would then read the amount of fluid ounces corresponding with the level of the liquid in the pitcher.

- The method recommended above would measure accurately the volume dispensed of what is "delivered"; namely, the pure fragrance extract in the can. This is in contrast to the "deliverables' dispensed in a conventional aerosol spray like Glade that include small amounts of fragrance extract, and much larger amounts of noxious gas propellant, odor reducers, and water.

- The volumetric measurement method recommended is much simpler and more useful than the standard methods inspectors use to measure the net weight of "net weight" in a conventional aerosol spray like Glade. Currently, placing a can of conventional aerosol spray on a weight scale will give net weight of the entire contents of the can, but will not give the net weight of the useful part of the net weight that contain the active deliverables the consumer is paying for.

- To achieve the same results as the recommended volumetric measurement, an inspector would have to buy multiple cans of conventional aerosol, release the contents of one or more full cans by pressing the nozzle, and weigh the full and empty cans to obtain a comparison of a NET weight It appears that the effort to measure the volumetric contents of the PURE CITRUS can with BOV technology would be easier, faster and cheaper to determine compliance with the quantity of product showing on the can.

2. Is there any concern that if packaging was "destroyed" that there would be a risk of explosion or harm?

- With the recommended volumetric measurement, the can is not punctured or destroyed. Even if the PURE CITRUS can were accidentally punctured or destroy, there is no risk of inflammability or explosion since the can contains no propellant that presents a risk of flame or explosion. The PURE CITRUS can using BOV technology uses pure air to apply pressure around the bag of contents to create the force to dispense the active ingredients. Also, If the PURE CITRUS can is accidentally punctured, the escaping air does not harm the environment.

- In contrast, conventional aerosols generally use a flammable propellant, such as isobutene and propane and their labeling warns consumers to keep the can away from flames. But a conventional aerosol dispersion makes an impressive blow torch when sprayed across a flame.

3. It appears your product is marketed in the same category and very similar to aerosol deodorizers. How do consumers compare value if one product is sold by weight and the other by volume?

- Consumers cannot compare the net quantity of active ingredients of any of the aerosols currently on the market.

- Until and unless NIST guidelines require a declaration of the weight or volume of active ingredients, the consumer can make no comparison of price or quantity as to the actual commodity that the consumer wants, that is, the active ingredients.

- Net weight of the entire contents of the can is not what consumers are buying.

- Consumers are deceived into believing that net weight is the active ingredients.

- Active ingredients vary from one product to another.

- The current firmly established trade custom of declaring net weight is misleading and deceptive.

- The current firmly established trade custom of declaring net weight does not permit the consumer to make comparisons of price or quantity of active ingredients.

4. Below is a definition I found online.

aer•o•sol
–noun
1. Physical Chemistry . a system of colloidal particles dispersed in a gas; smoke or fog. 2. a liquid substance, as a disinfectant or deodorant, sealed in a metal container under pressure with an inert gas or other activating agent and released as a spray or foam through a push-button valve or nozzle: an aerosol for cleaning ovens.

Based on this definition, Pure Citrus would seem to fit this category. Any thoughts?

- ✓ **it is a liquid substance**
- ✓ **it is sealed in a metal (aluminum) container**
- ✓ **it is under pressure**
- ✓ **has an activating agent (air)**
- ✓ **is released as a spray through a push button**

My thoughts are as follows:

First, based on this definition, PURE CITRUS does not fit this category .

- The liquid substance is not sealed in a metal container.
- It is sealed in a bag inside of a metal container.
- The word "sealed" is derived from the noun "seal' defined as "a tight and perfect closure: or the verb "seal" defined as "to make secure against access, leakage, by a fastening or coating." Webster's Ninth New Collegiate Dictionary, 1991.
- The liquid is "sealed" by the enclosure bag, not by the can under these definitions.
- The bag containing the liquid substance is separate and apart from the metal container.
- The sealing of the liquid substance in a separate bag is crucial to BOV technology.
- The activating ingredient (air) is not released as a spray through a push button.
- The activating ingredient (air) remains in the can.

Second, you picked a definition of "aerosol" from the science of Physical Chemistry. I submit that the proper definition to be used is the one best understood by consumers who typically buy and use aerosol sprays. In our earlier letter, we simply used the definition readily at hand in a Webster's New World Collegiate Dictionary, a definition a typical consumer would understand. Further, in the earlier letter, we tried to use the term "conventional aerosol" for the main part of our discussions to emphasize whatever definition is used, PURE CITRUS with the BOV technology is fundamentally different than an aerosol.

For these two reasons, I suggest that the PURE CITRUS product is not an "aerosol" or "a similar pressurized container" within the meaning of the NIST guidelines.

The National Conference on Weights and Measures recommends all aerosol packages and similar pressurized containers be labeled by net weight. (The PURE CITRUS product is not an "aerosol" or "a similar pressurized container" for the reasons stated above) **The reasons for recommending such changes are as follows:**

1. Net quantity labeling of aerosol packaged products in terms of net weight is a firmly established trade practice for such products.

- I agree.

- The current method of selling does not disclose the weight of active ingredients.

- Failure to disclose or declare the weight of volume of active ingredients misleads and deceives consumers.

2. Net quantity labeling of aerosol packaged products (and similar pressurized containers) in terms of volume is difficult (if not impossible) to verify with consumer verification methods or by conventional package inspection methods. State or local enforcement action is discouraged by such labeling.

- This is true of aerosol packaged products.

- It is not true for the substantially different PURE CITRUS non-aerosol product.

- The measurement method described above for the quantity of active ingredients in PURE CITRUS is not difficult to verify with consumer verification methods or by package inspection methods.

3. Since the labeling of aerosol packaged products (and similar pressurized containers) by volume cannot be compared with the labeling of such products in terms of net weight, labeling in terms of volume and weight inhibits value comparisons and causes consumer confusion with respect to the quantity of products the consumer is buying and can be a form of deceptive labeling.

- As indicated above, the consumer can easily empty the contents of PURE CITRUS to verify the labeled fluid content.

- A more accurate and less misleading format is to require aerosol spray products to display the amount of **active ingredients** to be delivered—either by weight or by volume.

- The consumer is not buying the aerosol can for the amount of isopropane and butane in the can.

- The consumer is primarily interested in the end result—here, a pleasant dispersed fragrance in a room or other area.

- An aerosol can that is labeled with the active ingredients, weight or volume would help establish the true value to the consumer.

- The propellants, water, and other miscellaneous ingredients would not be included in the net weight (or volume) designations, and be a more accurate amount of the delivered active ingredient to the consumer.

- The PURE CITRUS product already shows on the label the amount of active ingredients, because of its BOV technology allows the active ingredients in the bag to be separated from the compressed air around the bag.

4. Uniformity between all state and federal regulations is highly desirable for both enforcement and fair competition in the marketplace. The Uniform Packaging and Labeling Regulation and the FTC and EPA Regulations require net quantity labeling of aerosol packaged products in terms of net weight.

- Uniformity is desirable for aerosol packaged products.
- FDA regulations already permit net quantity labeling of food products by volume.
- PURE CITRUS is not an aerosol packaged product.
- Therefore, PURE CITRUS is not subject to these aerosol based uniform standards.
- Pressurized products with BOV Technology are not aerosols or a "similar pressurized package" for which the current NIST guidelines were apparently drafted and have been applied.
- Alternatively, the makers of PURE CITRUS requests a waiver of compliance with the current guidelines.
- Either solution will avoid misunderstandings by state authorities, like Mr. Carroll in Massachusetts.

Yours truly,

Paul C. Van Slyke
PCV/jb

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