

Bag-On-Valve Technology

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Meeting on B.O.V. product method of sale.
National Institute of Standards and Technology.



We are a Bag-on-Valve Contract Manufacturer operating at two locations with a combined capacity of 50 million units per year. We are opening a third facility later this year for food production only with a capacity of over 100 million units per year. Our facilities practice non-GMO and are FDA, USDA, and EPA Registered, and Kosher K, Kosher OU, Organic, 100% Organic, GFSI, NSF, Health Canada cGMP, and SQF Level 3 CERTIFIED

We Represent

200 +SKU's of B.O.V. products
and the companies we package for.

AND Consumers who purchase these products

who have the right to know what kind of packaging they are purchasing for themselves, their families, their pets, and the planet we all live on.

Bag-On-Valve Products have been marketed and represented as non-aerosol for more than twenty five years. Most display non-aerosol on the front panel and with no industry objection of using the term non-aerosol until recently.

So why now?

As a pressurized packaging consultant, I can assure you all B.O.V.'s are pressurized systems, the same as aerosol products are pressurized systems, but all B.O.V.'s are **NOT Aerosol!**

There are Three Types of Bag-On-Valve (B.O.V.) Products

1. The Aerosol B.O.V.

uses liquid gas propellants (Hydrocarbons) to compress the B.O.V. within the container or added in with the product inside the B.O.V. to create post foaming products. Either way, this B.O.V. aerosolizes. Therefore, they should be considered an aerosol product because they aerosolize as they release the liquid gas vapors into the air when the product is dispensed, or when the container is recycled, or sometime after being sent to a land fill.

These B.O.V. containers should all require a Net. Wt. measurement so regulators can test by weight.

2. The Standard B.O.V.

uses only air or nitrogen to compress the B.O.V. system within the container so it will spray. We believe these Standard B.O.V.'s do not aerosolize because they do not release Hydrocarbons. Standard B.O.V.'s do however atomize liquid products when they spray. It is true most Standard B.O.V.'s have been sold as non-aerosol. Most B.O.V. marketers have been using Fl. Oz. measurements for as long as they have been marketing their products and we are part of them, but we believe they all need to change to Net Wt. so they cannot be measured correctly by regulators.

Net Wt. may not be the best for all Standard B.O.V. products because some marketers sell the very same product in other containers not under pressure such as bottles and may cause confusion having different measurements on the very same product used for the same purpose, just packaged in a different system. Although it will greatly effect us and cause us to change hundreds of labels, we strongly feel if it sprays or cannot be easily poured for measurement purposes, Net Wt. should be required.

3. The Non-spray/low pressure B.O.V.'s

are somewhat new to the market. They use only very low air or nitrogen pressure in the container (2 to 6 psi) to gently compress the bag system so the product will dispense in a pouring fashion.

These B.O.V. products do not spray, they do not aerosolize, and they do not atomize whatsoever. These B.O.V.'s are used for products like wound washes, eye wash saline's, and food products like coffee and tea concentrates that need to be poured into a cup or glass. These B.O.V.'s are also used for cooking oils, pancake mixes, jellies, flavorings, and many other food products.

These B.O.V.'s ARE NON-AEROSOL and use Fl. Oz. measurements. Regulators can simply pour contents from a low pressure B.O.V. container into a measuring device to test the fill amount.

Bag-on-Valve Applications:

The list below provides only some of the many areas and product types that successfully use the Bag-on-Valve systems.

MISC.

- Liquid Fire Extinguishers
- Air Fresheners
- Odor Eliminators
- Car Care Products
- Insect Repellant
- Hunting Products
- Disinfectants
- Furniture Polish & Cleaners
- Many more

NOTE:

- Dry Powders, paints, glues, or hairsprays that can clog actuators are not currently viable for B.O.V.'s

COSMETICS

- Sun Care
- Lotions
- Creams
- Facial Wash
- Self-Tanning Sprays
- Personal Hygiene

FOOD

- Cooking Oils
- Liquid Flavorings
- Vinegars
- Salad Dressings
- Liquid Tea & Coffee
- Many more

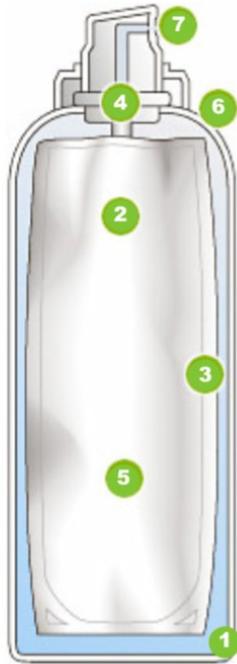
PHARMACEUTICAL & OTC

- OTC Products
- Wound Washes
- Nasal Sprays
- Ear Washes
- Eye Washes
- First Aid Sprays
- Baby Care

VETERINARY & PET PRODUCTS

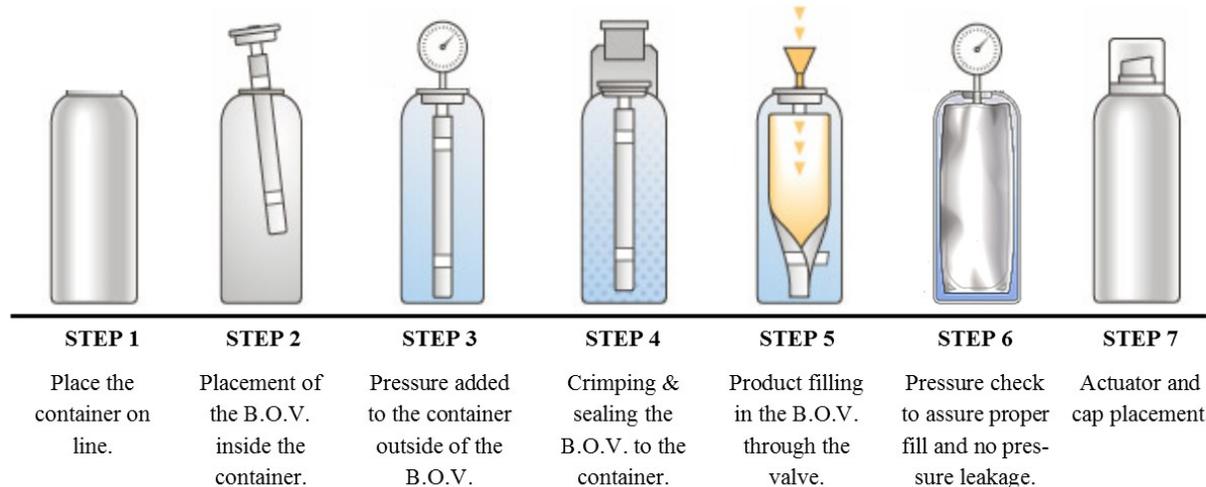
- Equine Wound Washes / Anti-fungal Spray
- Flea & Tick Spray
- Hair Polish & Detangler
- Leather Cleaner & Conditioner
- Many more

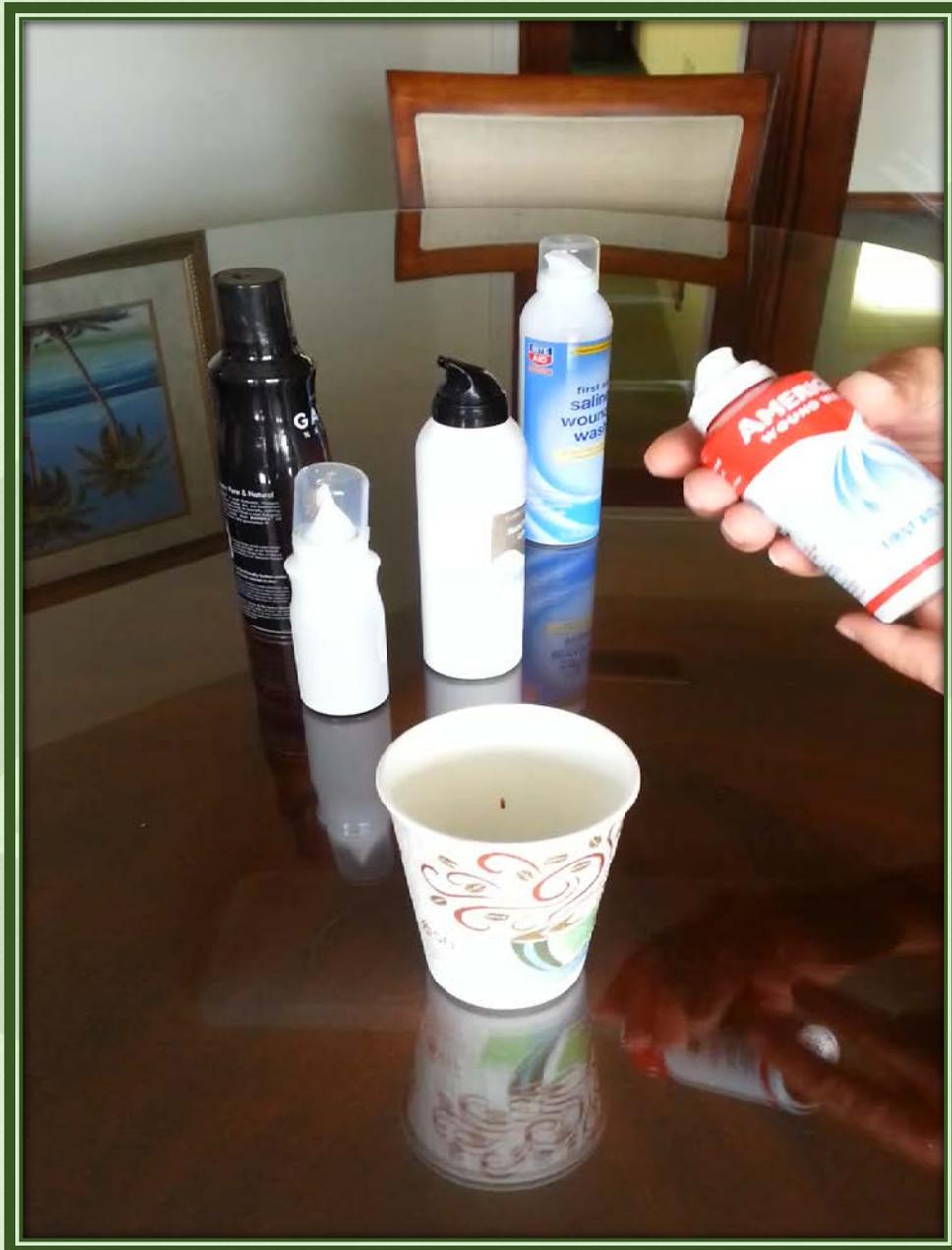
B.O.V. NON-Aerosol TECHNOLOGY



- **The Valve** - Bag-on-Valve (B.O.V.) systems are available with both female and male valves.
- **The B.O.V.**- FDA-approved multi-layer laminated pouch. Available in a large range of sizes from 1/2 fl. oz. to 14 fl. oz.
- **The Product** - Suitable for liquid as well as most viscous products like creams & lotions, in a number of application areas. Optimized for oxygen-sensitive and sterile products. No dry powders work with B.O.V.'s.
- **The Pressure**- air or nitrogen ONLY, NEVER liquid gasses.
- **The Actuator & Cap** - A large range of standard actuators depending on product demands. Certain actuators do not require a cap such as a twist lock actuator. Standard overcaps can be used with many types of containers and actuators.
- **The Can** - Standard DOT pressure rated containers: aluminum, steel, tinplate, or plastic. A wide variety of shaped containers may be used.

Filling Process





Thank you for allowing B.O.V. Solutions, Inc.
to present their side of Bag-On-Valve.

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B.O.V. solutions
dispensing *beyond green* since 1982