



news release

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Performance Packaging of Nevada Launches "AIRSHIELD" to Extend Shelf Life for Packaged Foods

Safe 'Powder-based Additive' is a Key Advantage Over Competitors' Offerings

LAS VEGAS - - Performance Packaging of Nevada, an innovative supplier of flexible and folding carton packaging the world over, has introduced its AIRSHIELD capability, which has the goal of extending the shelf life of packaged foods. The process is designed to chemically remove oxygen from rigid and flexible packages such as pouches and packages containing fitments or solid closures. The AIRSHIELD process has been in development for two years and only uses compounds considered GRAS ("generally recognized as safe") by the U.S. Food and Drug Administration (FDA). It is anticipated that AIRSHIELD, which has a patent pending, will be available to food processors and packagers by early 2017.

“AIRSHIELD provides oxygen ‘scavenging’ (the removal of oxygen) and an oxygen barrier all in one product,” explained Rob Reinders, president of Performance Packaging. “AIRSHIELD includes a polymer-incorporated, powder-based additive which removes the oxygen that is trapped during the filling process and then acts as an enhanced-oxygen barrier to keep the oxygen out of the container to extend the product’s shelf life.”

The first applications of AIRSHIELD will be to flexible pouches of foods which are found through two of Performance Packaging’s patented offerings: its PouchPops™ and SipP™ pouches.

While highly proprietary, it can be acknowledged that AIRSHIELD’s technical components are constructed so that they don’t start working *until* food is placed into the package. Any oxygen permeating through the pouch encounters *tortuosity* (a maze-like path for oxygen permeation created by the addition of mineral compounds in the package). The addition of AIRSHIELD facilitates oxidation in the presence of moisture, giving AIRSHIELD its unique capabilities.

Advantages of AIRSHIELD:

- AIRSHIELD’s first development is for the burgeoning pouch baby-food industry. Spouts and caps treated with AIRSHIELD will no longer have the ‘browning and clumping’ at the top of the pouch where the foil barrier is absent.
- AIRSHIELD is seen as a better, more cost-effective agent for an oxygen barrier than EVOH (ethylene vinyl alcohol) for bottles such as condiments, etc.
- When AIRSHIELD is added to a pouch cap, this eliminates the need for a foil liner on the top of the package, saving costs in manufacturing and better consumer convenience.
- In addition to the oxygen benefits, early tests have shown that AIRSHIELD stabilizes the ambient relative humidity within the container that is treated. This could be a boon for items that require a high oxygen transmission rate (OTR) and a stable moisture vapor transmission rate (MVTR).
- AIRSHIELD can be formulated in various ways so whatever the equilibrium relative humidity is of the product, the AIRSHIELD activity will trigger at that water activity.

An example would be HDPE bottles for medicines and supplements: blow-molding the bottles and injection molding the caps with AIRSHIELD will allow for the oxygen scavenging

and then high OTR barrier while providing the stable moisture content. This would prolong shelf life and eliminate the need for a desiccant to be added to the bottle.

In flexible packaging, AIRSHIELD can be applied to a low-cost polyolefin and provides an oxygen environment equal to foil. This would (1) greatly reduce packaging costs, (2) allow for the consumer to see in the package [which is the new trend], and (3) provide a more environmentally friendly package than one with foil. In fact, depending on the laminate, the package could be either recyclable or totally biodegradable.

Where AIRSHIELD Excels in Comparison to Competitive Efforts:

Competing products in the industry include sachets (desiccants) which are inserted as packets into the container (not always a welcome addition to a food package). Some polymer organic oxygen-removing systems exist, but suffer from one or more of the following disadvantages:

- Too slow for this use (AIRSHIELD has a high oxygen burn rate).
- Cannot remove enough oxygen. Competing systems use organic compounds which have a large molecular weight and low density per unit of activity. Therefore, a high loading level in the polymer is required.
- Compounds are not suitable for food contact. Competing systems often have compounds not approved by the FDA for direct food contact
- A need to be activated by UV light or some other mechanism. AIRSHIELD is inactive until a moisture-containing food is placed in the package.
- Are continuously reacting so they must be used immediately after manufacture. AIRSHIELD activates when a moisture-containing food is added to the package.
- The cost of many alternatives is high. The AIRSHIELD additive is only *a fraction of a cent* per unit.

Other Food Packaging Developments Recently Achieved by Performance Packaging

The introduction of AIRSHIELD follows an announcement by Performance Packaging in late 2015 regarding the company's "Pixie Dust" capability: a new and economical way to sterilize flexible packaging and its contents. The patented process features a 'liquid-to-gas' sterilization process that is so unique it has been code-named "Pixie Dust" by the company.

About Performance Packaging of Nevada

Founded in 1995, Performance Packaging is a leading supplier of flexible and folding carton packaging, including coffee bags, roll stock, spouted and zippered pouches, and pre-made retortable pouches. Performance Packaging's innovations can be found on products from such diverse companies as Russell Stover Candies Inc., Vi-Jon, Tom Clark Confections Inc. and Baby Gourmet Foods Inc. The flexible packaging provides products ranging from Pharmaceutical Grade package to surface-printed Low Density Polyethylene (LDPE). Folding cartons range from CCNB materials to Litho Laminate B-flute cartons. Shrink materials include PET, OPS, PVC OPP and shrink LDPE. The company's motto is "*Your single source for ALL of your packaging needs.*" For more information, please visit www.pplv.co

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