



SafeGuard Treatment & Delivery System™



The World of Food Safety Is Changing

In today's new reality, taking action to source food-safe ingredients is imperative.

Manufacturers and consumers understand the risks of eating unpasteurized or untreated farm products like eggs or milk. Yet many don't consider the risks posed by one of the most universal ingredients: flour.

RISKS

Flour is at risk of exposure to naturally occurring microbiological threats, including *E. coli* and *Salmonella*. USDA data indicate that pathogens are present in the flour supply. While most flour-based products undergo a validated kill step—such as baking or cooking—at the point of production, many products also include additional cooking steps on the packaging. Research from Ardent Mills shows that a significant percentage of consumers consume raw or undercooked products, such as cookie dough, unbaked pizza and countless other foods.



Do you believe ingredients such as all-purpose white flour are safe to eat before cooking or baking?

YES: 50%

Source: 2016 Ardent Mills Flour Food Safety at Home and Restaurants Summary

In today's food-safety-conscious environment, sophisticated DNA analysis and advanced data-tracking networks can quickly link seemingly random foodborne illness incidents, implicating the consumer product and company responsible.



If you actually got food poisoning after eating a food you bought at the grocery store, would you ...

Not buy anything from that brand again: 37%

Not buy that specific flavor or variety of that brand again: + 23%

Source: Ardent Mills Flour Food Safety at Home and Restaurants Summary



Food companies have little control over their products' proper storage, preparation and consumption once they leave their facilities. The manufacturers who produce these products are seeking to hold suppliers responsible for recalls and consumer illnesses that can result from improper handling.

CONSUMER INSIGHT

CONSUMER EATING HABITS

The Raw Truth:



Which do you think are safe to eat without cooking or baking?

(lick the spoon or eat a pinch of dough)

Which have you ever eaten without fully baking?

Cake or Cupcake Mixes	36%	55%
Brownie Mixes	39%	55%
Muffin Mixes	25%	26%
Refrigerated Cookie Dough	42%	55%
Refrigerated Biscuit, Roll or Croissant Dough	20%	14%
Frozen Pie Shells	16%	4%
Cookie Mixes	37%	52%
Pie Crust Mixes	16%	6%
White All-Purpose Flour	28%	9%
"Take and Bake" Pizza Dough	14%	4%



57%

Allow children to lick the beaters or mixing spoon after mixing cakes, cupcakes, muffins or brownies.

Have you tasted or eaten **homemade** cookie dough before baking it?

Yes: 73%

Have you tasted or eaten **store-bought** cookie dough before baking it?

Yes: 65%

Source: Ardent Mills Flour Food Safety at Home and Restaurants Summary

Products at Risk

- ▶ Refrigerated cookie, pastry and biscuit dough
- ▶ Frozen pizzas
- ▶ Frozen pies and appetizers
- ▶ Cake, brownie and other bakery mixes
- ▶ Instant gravy and sauce mixes
- ▶ Soup mixes and bases
- ▶ Seasoning blends
- ▶ Infant formulas
- ▶ No-bake-dough inclusions
- ▶ Cold-pressed bars
- ▶ Retail flours



SOLUTION

THE SAFEGUARD TREATMENT & DELIVERY SYSTEM™

A truly integrated flour food-safety solution



PRISTINE MILLS



PROCESSING



POST-TREATMENT HANDLING



DELIVERY



YOUR END PRODUCTS

SafeGuard Treatment & Delivery System™ is a proprietary milling treatment technology, and a bulk delivery process that provides a validated micro-reduced flour for ready-to-eat applications.

PRISTINE MILLS	Wheat is milled into flour in our pristine, BRC-certified facilities.
PROCESSING	The flour is milled in a closed system, where it undergoes our proprietary treatment. Our SafeGuard® Flour goes through a series of validated, precise controls that deliver up to a 5-log reduction.
POST-TREATMENT HANDLING	For bulk needs, SafeGuard® Flour is then loaded out through dedicated piping and bins designed for cleaning and sanitizing, using a validated process that exceeds common flour-milling standards. The facility uses dedicated filtered air handling for transporting the SafeGuard® Flour through the system.
DELIVERY	We've engineered every aspect of delivery to optimize food safety.
YOUR END PRODUCTS	Validated flour is delivered directly to your facility through our tightly managed process to maintain ingredient integrity and safety. The unique process results in a product that minimizes flour food-safety risks.

The Gold Standard

The SafeGuard Treatment & Delivery System™ is the standard for delivering reduced microbial, functional, quality flour:

- ▶ Delivers up to a 5-log validated pathogen reduction that can be customized based on your specific product requirements.
- ▶ Validation studies performed by a third party.
- ▶ Reduces microbial risk without the need for ionizing radiation or chemical treatments.
- ▶ Maintains flour's natural flavor, color, absorption, appearance and gluten functionality.

THE PROOF IS IN THE BREAD



SafeGuard Ready-To-Eat Application Flour™ maintains acceptable gluten functionality, flour absorption, starch quality and enzyme activity across numerous applications—even in bread.

◀ See comparison between two bread loaves: (Left) made with conventional flour (Right) made with conventional flour that has been treated with SafeGuard®.

SAFEGUARD READY-TO-EAT APPLICATION FLOUR™ OPTIONS



SafeGuard® End-to-End (E2E) Ready-to-Eat Application Flour

Ardent Mills provides the only option for delivering reduced micro, functional, quality flour in bulk. Our integrated milling, treatment, storage and transportation system ensures safety.

- ▶ 4-log validated pathogen reduction
- ▶ **12-13%** moisture
- ▶ **Bulk** dedicated trailers
- ▶ Available in Cake, Pastry, Bread and All-Purpose flours



SafeGuard Ready-to-Eat Application Flour™

Our validated, mill-to-bag process ensures quality and safety are achieved in our bagged flour.

- ▶ 4-log validated pathogen reduction
- ▶ **12-13%** moisture
- ▶ **50-lb. Bags**
- ▶ Available in Cake, Pastry, Bread and All Purpose flours

ALSO AVAILABLE: CUSTOMIZED HEAT-TREATED OPTIONS FOR WHOLE KERNEL, FLAKE AND GRAIN BLENDS. IDEAL FOR COLD-PRESSED BARS AND TRAIL MIXES.

OUR GUARANTEE

Ardent Mills SafeGuard Treatment & Delivery System™ allows you to update your existing products while maintaining the flavor, texture, appearance and performance that your production team and consumers expect. It's not just a product or a process, but a proprietary, comprehensive, integrated solution that extends flour safety assurance from our plant to yours, assisting in protecting your brands and your business.

For sales inquiries or more information, contact your Ardent Mills account manager, visit ardentmills.com/safeguard or email info@ardentmills.com.

