

COATING WORLD®

SPECIAL REPORT ON NONSTICK COATINGS AND HOUSEWARES FOR RETAILERS

Understanding Nonstick Coatings: How Specifying The Right One Saves Time And Money



Three different pans, each with a dark nonstick coating. While the coatings may look alike, one may cost three times as much as another — and, because it is a top-end nonstick, provide more than six times the wear life. Choosing the right nonstick at the right price is essential.

The explosion in the world of nonstick coatings has made it even more difficult for those who source and buy products. There are so many coatings being offered, all claiming various advantages, that it has become overwhelming.

- How do you make your coating selection?
- Which coating will help support the warranty and expected performance level of your product?
- How do you know which coating is right for the substrate used or a particular applications or use?
- Even if you are not the one who selects the coating, how do you know that you are getting what you are paying for?

In the sections that follow,

CoatingWorld provides you with an overview of the key points to consider in choosing a nonstick coating. For more in-depth information on nonstick coatings, visit our information portal, The Product Knowledge Network at www.productknowledge.com.



Whitford has nonstick coatings designed for virtually every kind of cookware and bakeware (more on bakeware coatings in a future issue).

A brief history

Nonstick coatings began reaching the consumer on fry pans in the early 1960s. The first nonsticks were made primarily of polytetrafluoroethylene (PTFE). PTFE has the lowest coefficient of friction of any known solid. In simple terms, this means that materials do not stick to it. PTFE's low coefficient of friction "releases" the foodstuffs, making it easy to separate them from the coating. Therefore, on nonstick pans, most substances are easily removed from the surface.

Unfortunately, PTFE is also very soft and, if unprotected, wears quickly. While early nonsticks had good release, they were soft and wore out after little use. So cookware with nonstick coating earned a reputation of being "disposable".



Many manufacturers of top-end stainless-steel cookware specify Excalibur, the toughest, longest-lasting, most durable nonstick on the market (and created for use on stainless steel).

R&D pays off

Over the years, a few manufacturers of nonstick coatings have invested considerably in research and development — and the results have been dramatic. Today 3 out of every 4 pieces of cookware and bakeware sold come with a nonstick coating.

The better, longer-lasting nonstick coatings have proved so superior that they are now used on high-end products. Manufacturers are offering guarantees on the coatings for as long as the life of the product itself.

Nonstick coatings are completely safe to use and they are here to stay. They provide additional features and benefits to a product line as well as enhancing its perceived value.

Benefits of nonstick coatings

Convenience and ease of cleaning are the key enhancements that housewares products with nonstick coatings bring to the consumer. But there's also the related benefit of saving time in the kitchen, meaningful given today's busy lifestyles.

The health factor is also very important. With nonsticks, one can use little or no oil — something of great importance to anyone concerned about

more healthful living.

With all the improvements made to nonstick coatings in recent years, the addition of nonstick to any product can elevate its performance, thus increasing the perceived value.

The differences among nonsticks

There are two major types of nonstick coatings, which are differentiated primarily by the ingredient used to provide the nonstick characteristic: fluoropolymer or silicone.

Silicone coatings are cheaper, but they tend to lose their nonstick characteristic sooner than fluoropolymer coatings, and they do not withstand wear very well. Fluoropolymer coatings retain the nonstick quality far longer and, with advances in coating technology, they are far more resistant to wear.

There are five basic elements that make up a coating before it is applied:

1. The binder (or resin), which adheres to the surface of the pan.

2. The pigment, which provides the color.

3. The nonstick (PTFE, silicone, etc.), which provides the release.

4. The reinforcing agents, which strengthen the coating and resist wear.

5. The carrier (water or solvent), in which the other materials are suspended, and which evaporates when the coating is cured.

To understand how all the elements work together, let's take a look at a typical three-coat nonstick to see the differences among the coats, or layers.

- The primer is principally binder, since its primary function is to promote adhesion to the substrate and provide a solid foundation.

- The midcoat tends to contain more fillers and pigment, which provide excellent hiding power (masking the substrate) and help build up the thickness of the coating.

- The topcoat is rich in fluoropolymers, since its primary role is release.

It is generally safe to say that the more coats of nonstick that are applied to a pan, the longer and better the performance will be, up to a point.



More and more cookware manufacturers in many countries have moved to Eclipse® for its easy application and unsurpassed wear life.

Quality levels

There are five basic quality levels of nonstick coatings on the market today, ranging from the least expensive (with the lowest performance) to the most expensive (with the highest performance and longest life):

1. One-coat nonsticks:

These are used on inexpensive, opening price-point housewares because they add only a little to the cost of the finished product. They perform adequately, but don't last as long as the other levels.

2. Two-coat nonsticks: This category represents most of the lower to moderate housewares. They have good adhesion to the item, because the first, or primer, coat is formulated for adhesion. They also offer better release (the "nonstick" feature), because the second, or topcoat, usually has a higher percentage of PTFE.

3. Three-coat nonsticks: These are generally used on upper-moderate housewares, and, due to the formulating of each coat to provide specific benefits, take the advantages of a two-coat nonstick and extend them.

4. Three-coat nonsticks that are internally reinforced: These use microscopic, hard reinforcing elements mixed into the coating to increase the wear and abrasion resistance, and are used on better housewares goods, mostly upper-moderate to gourmet-level products.

5. Three-coat nonsticks that are externally reinforced: These employ a step in which a reinforcing agent (such as stainless steel) is first sprayed onto the surface of the cookware, forming a series of tiny "peaks" and "valleys" into and over which the nonstick coating is applied. The peaks lock the nonstick into place, protecting it



As the American Heart Association says, "A pan made with nonstick metal or coated with a nonstick surface is a terrific investment, because it lets you use little or no oil without having food stick".

from wear and abrasion. For example, if a metal spatula is used on the surface, it will come in contact primarily with the peaks, leaving the nonstick in the valleys virtually untouched. Used mostly on gourmet-level housewares products.

Selecting the right coating

Selecting the right coating can save both time and money. Whitford's Retail Marketing Program offers several ways to help you do this quickly and easily.

Get coating recommendations for any product line quickly and easily using the Whitford On-line Nonstick Coatings Development Checklist. After submitting the form to us, we will send you coating recommendations, including the exact product codes to ask for (which helps if you are pricing it out with more than one vendor). Visit whitfordww.com/retail/checklist.

On the next page is a basic guide to help you select the coating that is best suited for the product and target market you wish to achieve.

"How do I make sure I'm getting what I paid for?"

In the world of housewares, where many products are on a re-order basis, and with numerous suppliers and man-

ufacturers to deal with, it is not always easy to be sure that you are getting exactly what you ordered.

In many cases this task is difficult: You can measure the thickness of a pan or its diameter, but how do you make sure the nonstick coating is the one you selected when so many look alike?

If you have specified a Whitford coating on your product, we offer free testing to verify that your product comes with that specific coating (and not an adulterated or cheaper version).

We also verify whether it has been applied properly.

Whitford does this through our Quality Cooperative Program (QCP). Membership is completely voluntary on the part of the retailer, and is absolutely free.

Simply send us samples of your product, and we will conduct tests to confirm proper application, correct film thickness and vendor compliance on application specifications.

We also offer the Quality Controlled Product seal, should you choose to use it on your packaging. This special seal reassures customers that the nonstick coating on the product they are about to buy has been checked and certified "top quality".

For more information please contact your Whitford representative or Whitford directly (see address below).


Coming in future issues:

- Opening-price-point products and the range of coating options available to you

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SELECTING THE RIGHT COATING

Product range	Basic specifications	Nonstick suggested	Coatings
Upper moderate/ Gourmet	Heavyweight substrate, features/benefits as important as price (“quality, performance and value”)	Three-coat systems internally and/or externally reinforced	Excalibur, Eclipse, HALO
Moderate	Medium-weight substrate, features/benefits of some importance, price still focus (“performance/value”)	Three-coat nonstick	QuanTanium, Quantum2
Opening price point/Promotional	Lightweight substrate, price is driving selling point (“convenient and economical”)	One- or two-coat system	Quantum2, Xylan

WHITFORD BRAND	DESCRIPTION	RATING/USE
 <p>Excalibur®</p>	The toughest, longest lasting, most durable coating in the world. 3-coats, externally reinforced with patented stainless-steel alloy to lock coating into place. Designed for use on stainless steel.	10 Gourmet, Commercial
 <p>HALO®</p>	The nonstick that helps cook quickly and evenly, while still providing unsurpassed wear life. 3 coats with special internal reinforcing materials that promote even and fast heat distribution.	10 Upper Moderate/ Gourmet/ Commercial
 <p>Eclipse®</p>	The nonstick engineered to outlast other internally reinforced coatings. 3 coats with unique primer reinforced with an unusually high percentage of materials virtually as hard as diamonds.	10 Upper Moderate/ Gourmet/ Commercial
 <p>QuanTanium®</p>	Reinforced with titanium to stand up to almost anything. 3 coats with high loadings of reinforcements, including titanium, for outstanding abrasion resistance and long-lasting performance.	9 Upper Moderate/ Moderate
 <p>Quantum2®</p>	The nonstick doubly reinforced to outlast all conventional nonsticks. Has at least twice the durability of conventional nonsticks.	8 Moderate cookware/ OPP
 <p>Xylan® Eterna</p>	The nonstick with convenience, easy clean, and good durability for more demanding use. Has improved release and third layer for increased durability.	7 Opening price point
 <p>Xylan® Plus</p>	The nonstick with convenience, easy clean two-coat with improved durability for everyday use.	6 Opening price point/ Promotional
 <p>Xylan®</p>	The nonstick with convenience, easy clean. Good release and durability.	5 Promotional (price is driv- ing factor)