

Whitford coatings for bakeware: coil and spray



Whitford

Where good ideas come to the surface

How Whitford helps above and beyond the coatings themselves

Whitford makes the largest, most complete line of fluoropolymer and decorative exterior coatings in the world for bakeware, cookware and small electrics.

Most of our consumer coatings are designed for ease of application and, depending on the formulation, are readily applied by conventional spray, roller, coil or curtain-coating. Cure temperatures offer some flexibility. We offer bakeware coatings for both spray and coil-coat applications in this brochure.

Whitford is a privately held company, so we can spend a higher percentage of sales on research

and development than most of our publicly held competitors. We continue to invest significant funds in R&D and have fully operational laboratories in the US, England, Italy, India, Brazil, China and Singapore.

We run formal educational programs worldwide for our people and our customers to train them in the use and handling of our products.

Often, we formulate special coatings to solve a customer's specific problem rather than reach for an off-the-shelf product that may not work as well. We provide unsurpassed technical support for our products around the world.



Many bakeware formulations are available, just ask.

Coil vs spray-coated bakeware

The basic difference between coil and spray coatings is the application process itself. With coil, sheets of metal are squeezed through paint-covered rollers which apply the coating to the substrate. The sheets are then cut into blanks and formed (called post-forming) into the final bakeware item, i.e., roasting pan. While this application method is efficient, there are some limitations with the metal thickness and the choice of substrate.

One important point to keep in mind is that in order to have coil bakeware produced and coated, you need a manufacturer that has highly specialized processes and equipment, and these manufacturers are only available in certain regions. Contact Whitford for applicator recommendations, if you intend to go this route.

In spray, the already formed bakeware item is placed onto a conveyor of sorts and the coating is spray-applied to the item using one or two layers of coating. If you still have trouble deciding which way you should go for your coated bakeware item, please consult your Whitford representative.

Coil-coated Bakeware

- Nonstick benefits come from PTFE.
- The coating tends to be thinner.
- Uses less coating, uniform coating application.
- Application method is faster, more efficient.
- Coil bakeware is post-formed.
- Designed for both sweet and savory release.
- Able to use unique effect options.
- Limited choice of colors.

Spray-coated Bakeware

- Nonstick benefits come from silicone.
- Substrate options are more varied.
- Able to use thicker substrates.
- Able to apply wider range of film thickness.
- Many spray applicators worldwide.
- Perfect for high-sugar-content baked goods.
- Tends to be better-quality bakeware.
- Available in a wide range of colors.

Whitford's Quality Cooperative Program

Years ago, we established the QCP. Its primary purpose is to maintain the highest quality by preventing problems from occurring before any coated products reach point-of-sale. The QCP establishes certain quality standards that must be met, and outlines specific test procedures that must be carried out on random samples of all coated products to make sure they are maintained. Only members of the QCP are entitled to use the Whitford trademarks.

How "green" is Whitford?

The "green" movement has been around for years, but it has recently taken a giant step forward due to many such factors as fear about global warming, reaction to accelerating energy prices, concern over "carbon footprints". As a result, many manufacturers are working overtime to produce "green" products. Some are simply using the word "green" to position themselves as environmentally friendly, or at least more so than their competitors.

Whitford has been offering and continues to offer a wide variety of "greener" coating options. We strive to make our coatings more environmentally friendly as we maintain and even improve their performance (which reduces environmental impact as it contributes to the "green" aspect by extending useful life). All food-contact formulations are made without PFOA and we offer formulations without BPA and NMP too.



Gray is still a popular color for bakeware, but today, we offer many different colors.



Regulatory compliance

Regulations covering many different products are becoming more complicated and stringent. For this reason, Whitford maintains regulatory experts in its major offices worldwide.

It's comforting to know that all Whitford coatings formulated for food-contact applications comply with applicable regulations of the countries in which they are sold.

More information

The Product Knowledge Network (PKN) is a free online information portal providing everything you need to know about nonstick coatings and the products that use them. Go to: productknowledge.com.







If you would like information on any product, product category, specific application or coatings in general, let us know. Most of our literature can be downloaded from our website: whitfordww.com/download-literature.html.

Or, if you prefer, contact us directly at: sales@whitfordww.com, we'll be glad to help.



We offer nonstick coatings for virtually every kind of bakeware, cookware and small electric.

COIL Bakeware coatings from Whitford

LOGO	WHITFORD SERIES	CONSUMER POSITIONING	APPLICATION/ # of COATS	FILM THICKNESS	FEATURES	RELEASE RATING	ABRASION RATING
	78-188 78-380	The world's longest-lasting nonstick we've tested.	PTFE Coil; 2-coat	12 - 15 microns	Our best coil coating for bakeware with ultimate nonstick properties	10	10
	78-145 78-355	Reinforced to outlast competitive nonsticks.	PTFE Coil; 2-coat	12 - 14 microns	Reinforced with titanium-based particles for exceptional abrasion resistance.	9	9
	78-880 88-320	Two-coat with outstanding stain resistance and release.	PTFE Coil; 2-coat	12 - 14 microns	Offers consistent migration performance in 3X4 hour Acetic Acid Test. Perfect for severely drawn bakeware shapes.	8	7
	78-880 88-320	Two-coat, low-film thickness, with outstanding release.	PTFE Coil; 2-coat	7 - 9 microns	A two-coat, high-cure system with outstanding release. Good migration performance in the 3X2 hour Acetic Acid Test at low DFT.	7	6
	88-120 88-320	Two-coat, high gloss nonstick.	PTFE Coil; 2-coat	10 - 14 microns	A two-coat version providing higher gloss and increased color options.	6	5
	88-320	Economical alternative to spray coatings.	PTFE Coil; 1-coat	6 - 10 microns	One-coat, high-cure system that is resistant to sugar and poultry fat. Use when price is driving factor.	6	4

NOTES:

Coil substrates are electrolytic chromium-coated steel (ECCS), tin-free steel (TFS) or aluminized steel.

Dry-film thickness (DFT) required to achieve correct performance and use of brand name.

Nonstick rating based on BS-EN13834 Annex D (steak test) and Annex C (cake test).

All coatings exceed the minimum pass requirement of 5 cycles for EN13834.

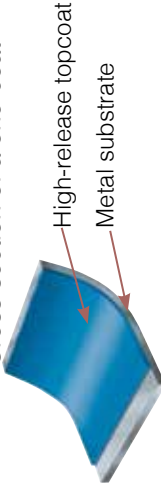
Abrasion rating based on the Whitford Dry RAT Test (WTM 135C, available upon request).

Food contact: All coatings are 1935/2004/EC and/or US FDA 175.300 compliant.

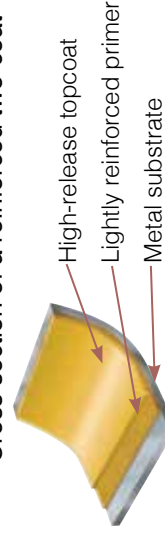
Use temperatures: 230 °C/445°F continuous and 260 °C/500 °F intermittent.

1 = low; 10 = high; Colors: All come in a wide range of colors including metallics.

Cross section of a one-coat



Cross section of a reinforced two-coat



Hgh End

Upper Moderate

Moderate

Economical

Notes

Best: High End

Eterna (78-188/78-380) is an innovative PTFE-based, two-coat nonstick system for all kinds of bakeware products.

- Exceptional long-lasting nonstick properties.
- Sustained durability.
- Superior stain resistance; easy cleanup.
- Perfect for all bakeware including roasting and baking trays.
- Available in a variety of colors, including metallic effects.
 - EN 13834 for Steaks: 70+; for Cake: 70+
 - Dry RAT: 45,000 cycles
 - Release rating: 10
 - Abrasion rating: 10

Better: Upper Moderate

QuanTanium (78-145/78-355) is the durable, two-coat PTFE system, reinforced with titanium-based particles for moderate- to high-end bakeware products.

- Better release properties.
- Titanium-based reinforcements improve resistance to scratching, abrasion and wear.
- Comes in many colors, including metallics.
- Attractive glossy finish; easy cleanup.
 - EN 13834 for Steaks: 30+; for Cake: 30+
 - Dry RAT: 35,000 cycles
 - Release rating: 9
 - Abrasion rating: 9

Good: Moderate, Best Selling

Skandia Xtreme Plus (78-880/88-320) is a two-coat, coil coating with exceptional nonstick and migration performance.

Skandia Xtreme (78-880/88-320) is a two-coat, coil coating with exceptional nonstick at minimum DFT.

- Good release and abrasion resistance.
- Available in a variety of colors.
- Smooth, glossy finish; easy cleanup.
 - EN 13834 for Steaks: 20+; for Cake: 20+
 - Dry RAT: 7,000 cycles
 - Release rating: 7-8
 - Abrasion rating: 6-7

Economical: Promotional, OPP

Skandia2 (88-120/88-320) is the two-coat, high-cure coil coating for moderate-level bakeware.

Skandia (88-320) is the economical alternative to spray coatings for bakeware.

- Versatile nonstick OPP performance.
- Cost-effective branded nonstick.
- Easy cleanup.
- Available in a range of colors.
 - EN 13834 for Steaks: minimum 5+; for Cake: minimum 5+
 - Release rating: 6
 - Abrasion rating: 4-5

Other information

EN 13834 (TM199T for cake and TM199S for steak): These test the ability of coated bakeware to release cake or steak. They are appropriate release tests for certain markets in Europe. The tests can be subjective and are very dependent on cooking times.









Dry Rat TM 135C: This test measures the resistance of coatings to abrasion by a reciprocating Scotch-Brite pad. The test subjects coating to abrasion in a back and forth motion. The test is a measure of the useful life of coatings that have been subjected to scouring and other similar forms of damage caused by cleaning.

Rating system: 1 = Low; 10 = High



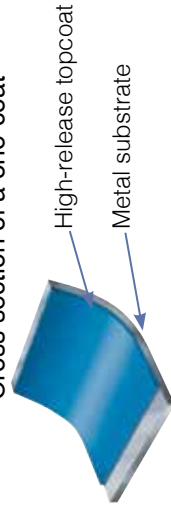
Ask about our spatter and marble-like nonstick coatings for bakeware.

SPRAY Bakeware coatings from Whitford

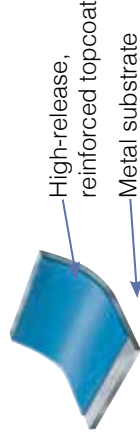
LOGO	WHITFORD SERIES	CONSUMER POSITIONING	APPLICATION/ # of COATS	SURFACE PREP/ FILM THICKNESS	FEATURES	RELEASE RATING	ABRASION RATING
	8007/ 8008	The world's longest-lasting nonstick we've tested.	Silicone Spray; 2-coat	Alkaline etch or grit blast 25 - 35 microns	Our best reinforced nonstick coating for bakeware that releases longer. Suitable for aluminized or carbon steel.	10	5
	8688/ 8688S	Reinforced to outlast competitive nonsticks.	Silicone Spray; 2-coat	Alkaline etch or grit blast 20 - 30 microns	Best reinforced coatings for ultimate abrasion resistance. Suitable for aluminized or carbon steel.	8	10
	8687 8687S	Reinforced with titanium-based particles for long-lasting performance.	Silicone Spray; 2-coat	Alkaline etch or grit blast 20 - 30 microns	Best reinforced coating to balance price and performance. Suitable for aluminized or carbon steel.	8	8
	8686/ 8686S	Doubly reinforced to stand up to almost anything.	Silicone Spray; 2-coat	Alkaline etch or grit blast 20 - 30 microns	A step above conventional nonsticks with added reinforcements for durability. Suitable for aluminized or carbon steel.	8	7
	8678S	Slightly reinforced to outlast conventional nonsticks.	Silicone Spray; 1-coat	Alkaline etch or grit blast 15 - 25 microns	Better than conventional one-coat nonsticks. Suitable for aluminized or carbon steel.	6	6
	8666S	Economical everyday nonstick.	Silicone Spray; 1-coat	Alkaline etch or grit blast 14 - 22 microns	Good release for daily use. Use when higher heat resistance is needed. Suitable for carbon steel.	6	2
	8620S	Economical everyday, lightly reinforced nonstick.	Silicone Spray; 1-coat	Alkaline etch or grit blast 14 - 22 microns	Better abrasion resistance for a one-coat. Use when cost is a driving factor. Suitable for carbon steel.	5	5
	8610S	Economical everyday nonstick.	Silicone Spray; 1-coat	Alkaline etch or grit blast 14 - 22 microns	Use when price is the driving factor. Suitable for carbon steel.	5	2

Notes: Abrasion and release ratings are relative to Whitford coatings for the systems recommended, any alteration might change these ratings. Colors: Bakeware coatings are available in many metallic and nonmetallic colors; Codes: 1 = low; 10 = high; OPP = Opening Price Point; S = Silicone

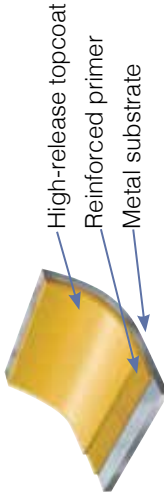
Cross section of a one-coat



Cross section of a reinforced one-coat



Cross section of a reinforced two-coat



Notes

Entry Level, OPP, Promotional

Gourmet

Gourmet, Upper

High end, Moderate

Moderate

A class apart: Gourmet

EternaSI (8007/8008) is the longest-lasting non-stick we've ever tested on bakeware; in fact, it lasted 33 times longer than the competition on release of sugary baked goods.

- Extremely glossy finish to attract the consumer's eye at point-of-sale.
- Comes in a wide variety of rich colors, with special ingredients that provide a high-sparkle finish.
- Good abrasion resistance.
- Easy cleanup.
 - Release rating: 10+
 - Abrasion rating: 6

Best: Gourmet, Upper moderate, Commercial

Eclipse (8688/8688S) is a two-coat system, with unique reinforcements and excellent nonstick properties.

- Exceptional, long-lasting nonstick properties.
- Sustained durability.
- Superior wear resistance.
- Perfect for all bakeware including roasting and baking trays.
- Variety of colors, including metallic effects.
- Attractive glossy finish.
- Easy cleanup.
 - Release rating: 8
 - Abrasion rating: 10

Better: High end, Moderate

Quantanium (8687/8687S) is the durable, two-coat nonstick system, reinforced with titanium-based particles for upper moderate bakeware products.

Quantum2 (8686/8686S) is a reinforced, two-coat nonstick system for upper-moderate bakeware.

- Better release properties.
- The titanium reinforcements improve resistance to scratching, abrasion and wear.
- Comes in many colors, including metallics.
- Glossy finish.
- Easy cleanup.
 - Release rating: 8
 - Abrasion rating: 7-8

Good: Moderate, Opening Price Point

Quantum (8678S) is a one-coat, reinforced spray nonstick for moderate-level bakeware.

- Good release and abrasion resistance.
- A unique combination of ceramic particles helps improve resistance to wear.
- Variety of colors, including metallic effects.
- Smooth, glossy finish.
- Easy cleanup.
 - Release rating: 5
 - Abrasion rating: 6

Entry Level: Moderate, Promotional, OPP

Xylan family of coatings (8668S, 8620S or 8610S) can be used for entry-level bakeware that requires a branded cost-effective nonstick coating.

- Available in one-coat spray system.
- Used for cookie sheets, pie tins, etc.
- Formulations with light reinforcement are available upon request.
- Range of colors, including metallics.
- Easy cleanup.
 - Release and abrasion resistance vary depending on the coating, but all fall into the value-for-money category.



Eclipse for bakeware helps release cookies easier.

Whitford manufacturing sites, sales offices and agents



How to contact Whitford

Whitford manufactures in eight countries with sales offices and agents worldwide. For more information, please contact your Whitford representative or the nearest Whitford office (see our website: whitfordww.com) or email us at: sales@whitfordww.com.



Scan this code to access
Whitford's Mobile Housewares Coatings site.

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