The Non-Stick Split
Can Ceramic Momentum Chip Away At PTFE Dominance?
Can Ceramic Coating Momentum Chip Away At PTFE Dominance?

BY DIANE FALVEY
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NEW YORK—Introduced in 2007 with the launch of GreenPan cookware in the U.S., ceramic non-stick coatings have gained momentum as an alternative to traditional PTFE-based non-stick coatings in the past several years.

A HOMEWORLD BUSINESS 2013 Forecast survey revealed that consumers would more likely buy ceramic non-stick cookware coatings than “traditional” PTFE (Polytetrafluoroethylene) non-stick coatings this year by a slim margin, 50.9% to 49.1%. However, that percentage represents a 12-point jump compared with consumers surveyed in the 2012 Forecast survey, where 39.1% said they would have more likely bought ceramic non-stick coatings.

While PTFE coatings were the only non-stick option for a long time, competition, according to coatings suppliers, is not necessarily a bad thing. The introduction of ceramic non-stick coatings has benefited suppliers on both sides. From our perspective, good competitors are healthy for everyone,” said Carolmarie Brown, global communications manager for DuPont Fluoropolymer Solutions. “It’s great for a low-emotion category when new things come into the marketplace and consumers can get excited about them. Healthy competition makes you better.”

Ceramic non-stick coatings initially emerged in the market on the heels of consumer media reports suggesting that PTFE-based coatings could have health risks. Reports included issues such as PTFE coatings releasing fumes at high heat, as well as concern that PFOA, a surfactant used in the manufacture of the coatings, could potentially be linked to cancer. These reports opened the door for the ceramic non-stick alternatives, which have built marketing messages around “natural” and “eco-friendly” claims, suppliers said.

But, can ceramics’ newly found momentum actually stick? Both PTFE and ceramic non-stick coatings have advantages and disadvantages, according to cookware suppliers and coatings manufacturers. It’s a matter of determining what resonates with the consumer. Ceramic non-stick coatings, for example, are touted as being able to withstand higher heat than traditional non-sticks.

Ceramic coatings are made of a much harder material than PTFE-based coatings, according to suppliers. The recommended cooking temperature for PTFE non-stick is under 500°F, where ceramic non-sticks are said to withstand heats as high as 850°F before they begin to wear out quicker than traditional.

“Ceramic non-stick cookware coatings have begun incorporating ceramic non-sticks into their lineups. For example, Bradshaw International has Bialetti Aeternum, a ceramic non-stick cookware line; Groupe SEB has added Pure Living to its WearEver brand; and Berndes introduced its SignoCast Pearl collection in recent years. While PTFE coatings were the only non-stick option for a long time, competition, according to coatings suppliers, is not necessarily a bad thing. The introduction of ceramic non-stick coatings has benefited suppliers on both sides,” said Ravin Gandhi, co-founder of GMM Nonstick Coatings.

The majority of GMM clients are either using or are about to use ceramic coatings, not for everything but for some products.

Ceramic non-stick cookware has evolved to the point where it has a meaningful share of the market, and introductions from new players as well as established cookware manufacturers have increased visibility and awareness for the newer non-stick surface. Companies such as Starfrit and Beko have offered ceramic non-stick coatings for some time, and more recently, cookware suppliers with traditional non-stick-coatings-based assortments have begun incorporating ceramic non-sticks into their lineups. For example, Bradshaw International has Bialetti Aeternum, a white ceramic non-stick cookware line; Groupe SEB has added Pure Living to its WearEver brand; and Berndes introduced its SignoCast Pearl collection in recent years.

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“The first companies with ceramic non-stick coatings promoted that it could go under the broiler,” Whitford’s Groesbeck said. “High heat is the biggest enemy of all coatings though. The release agent is going to wear out quicker when exposed to high heat.”

As for the perceived dangers of PFOA in PTFE coatings, that debate has been addressed, with the Environmental Protection Agency having mandated that PFOA be removed from all PTFE coatings by 2015, something with which coatings manufacturers, such as Whitford, DuPont and...
Coatings Suppliers Weigh The Future Of Ceramic Non-Sticks

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GMM have already complied. According to coatings suppliers, this has been more of a perception issue because PFOA burns off during the curing process. Ultimately, however, it has become a non-issue in every way except consumer perceptions, as all PFOA must be removed from PTFE coatings under the EPA's 2010/2015 PFOA Stewardship Program.

However, there is confusion around PFOA and PTFE too, suppliers have said. "We notice that the PTFE industry is turning away from PFOA, after decades," said Dieter Naessens, president of The Cookware Company, manufacturer of GreenPan branded cookware. "However, we do believe that the consumer has a right to know what the PFOA has been replaced with."

DuPont's Brown added, "People think PFOA is the magic ingredient, but it actually has nothing to do with the non-stick properties of the coating." She added, "There is great confusion at the consumer level."

According to some coatings suppliers, marketers have leveraged consumer confusion to create marketing initiatives that claim ceramic non-stick coatings are all natural and, therefore safer, than PTFE-based coatings, a claim DuPont disputes. "Any kind of processed material, just like PTFE, starts from the earth and goes through chemical processes. It shouldn't be called natural or mineral-based," David DeVoe, DuPont's North America marketing manager, said.

DuPont has launched an online consumer marketing campaign to challenge some of the "eco-friendly claims" of ceramic non-stick coatings, as well as to reassure consumers that PTFE coatings are safe and have performance properties that differ from ceramic non-sticks.

In a DuPont study, testing against its high-quality PTFE coating, Teflon Platinum, DuPont claims that the Platinum non-stick coating releases lasted seven times longer than that of a ceramic non-stick coating. "If you have to discard a pan after four months or a year, are claims of being environmentally friendly really valid?" DuPont's DeVoe asked rhetorically.

DuPont has also challenged some of GreenPan's eco-friendly claims through the National Advertising Division, an investigative unit of the advertising industry's system of self-regulation, administered by the Council of Better Business Bureaus. Following its review, NAD concluded that "the frequent juxtaposition of GreenPan's PFOA-free claims with broad 'eco-friendly' claims and tag lines, and the frequent juxtaposition of its PTFE-free claims with broad health and safety claims, transformed what may be composition-al claims when standing alone into comparative superiority claims," and recommended that GreenPan's claims be adjusted.

That "natural" claim, however, has been important to the growth in popularity for ceramic non-sticks. Even the names of some ceramic coatings leverage the "natural" message, such as GreenPan and As Seen on TV's OrGreenic, and feed the consumer perception that these products are eco-friendly. That's not by accident.

"We've chosen brand names that are not confusing to the consumer," said The Cookware Company's Naessens, referring to GreenPan. "We've simplified our brand message since we introduced it [GreenPan] in 2007. Healthy ceramic non-stick."

Whether or not ceramic non-sticks are a healthier way to cook, meeting consumers' expectations from a durability and performance perspective is also important to the ceramic coatings longevity in the market. Some coatings suppliers contend that ceramic non-stick coatings don't perform as well as PTFE-based non-sticks over the long-term, yet.

While they may offer easy release at first, some coatings suppliers have said, ceramic coatings lose their non-stick properties more quickly than quality PTFE-based non-stick coatings. "There is no ceramic that can compete with the best PTFE," Groesbeck said.

Consumers are looking for a non-stick pan that will maintain its release properties and be easy to care for, said coatings suppliers. "It better perform the way they [consumers] expect," said Whitford's Groesbeck. "If they get burned, they won't go back to the same place. Your product better perform to their expectations."

GMM's Gandhi added that ceramic coatings have added lifetime guarantees on the cookware, and they want the most durable coatings, he added. He noted that ceramic non-stick coatings may not meet that benchmark just yet. "The [long-term] release isn't there," he noted.

While ceramic non-stick coatings may not be able to tout the track record of PTFE coatings, they have come a long way since first being introduced, according to coatings suppliers.

And there is work being done to evolve the technology even more quickly. "Ceramic coatings are improving at a tremendously fast rate. It's a radically different story every year," GMM's Gandhi said.

He added that GMM is making strides on the ceramic non-stick coating side, allocating a significant portion of its R&D budget to improve the release properties of its ceramic non-stick coatings. "One breakthrough in ceramics to make the release better could turn the coatings industry upside down," Gandhi said.

The Cookware Company's Naessens noted that his company is expanding on Thermonol with some new ceramic coatings that will be introduced at the International Home + Housewares Show this year. This year too, Naessens added, The Cookware Company will introduce ceramic non-stick bakeware at the Housewares Show.

GMM, too, will be rolling out a hybrid ceramic technology that will be flexible enough for bakeware.