

Case #5519 (10/31/12)

GreenPan™ INC.

Thermolon™ Ceramic Coated Cookware

Challenger: *E.I. DuPont de Nemours and Company*

Product Type: *Household Products*

Issues: *Comparative Performance Claims / Disparagement Claims / Efficacy Claims / Health & Safety Claims / Implied Claims / Superiority Claims*

Disposition: *Substantiated In Part/Modified-Discontinued In Part*

- **An environmental marketing claim should not overstate, directly or by implication, an environmental attribute or benefit.**
- **A claim that is literally true may, in the context in which it is presented, still convey a message that is false or misleading.**
- **In order to produce meaningful results for the purpose of claim support, product testing should be conducted under consumer relevant conditions, using accepted methodology and protocols, and should relate directly to the advertising claims.**

Basis of Inquiry: Advertising claims made by GreenPan™ Inc. (“GreenPan” or “advertiser”) for its Thermolon™ ceramic coated cookware were challenged by E.I. DuPont de Nemours and Company (“DuPont” or “challenger”), manufacturer of the competing DuPont™ Teflon® non-stick coating systems for cookware. The following claims are representative of those that served as the basis for this inquiry:

Express claims:

“No potentially dangerous chemicals inside. It’s completely PTFE-free and contains no silicone oil.”

“Thermolon™ non-stick ceramic (=mineral) coating is completely PTFE-free, contains absolutely no silicone oil and uses no PFOA during its manufacture.”

Thermolon™ “is a non-stick mineral-based coating with superior release properties.”

“High-quality non-stick coating.”

“GreenPan products are healthy, eco-friendly and provide great performance and convenience.”

“Less energy is used when Thermolon™ is applied on GreenPan™ products, which means 60% less CO₂ emission compared with the production of PTFE-coated pans.”

“The perfect heat distribution also allows even cooking, which makes the food brown beautifully. It allows you to mostly cook on low to medium temperatures, which is great for your energy bill & the environment!”

“Please recycle.”

“Safe for you & the environment.”

“No harmful fumes.”

Implied claims:

GreenPan Thermolon™ ceramic coated non-stick cookware is healthier, safer and better-performing than other non-stick cookware.

GreenPan products are healthier, safer and better for the environment than all PTFE products.

All PTFE non-stick coatings are unsafe.

All PTFE non-stick coatings are made with PFOA and/or are unsafe compared to Thermolon™ coatings.

Challenger’s Position:

The challenger manufactures DuPont Teflon® non-stick coating systems for cookware using DuPont fluoropolymer resin.¹ The advertiser, GreenPan, is a manufacturer of Thermolon™ coated cookware, a ceramic coating based on sol-gel technology. GreenPan™ manufactures and sells numerous collections of Thermolon™ cookware lines available at mass and online retailers, such as Target, Crate & Barrel, Amazon.com, and HSN. According to the challenger, the advertising at issue explicitly and implicitly conveys the false and disparaging message that GreenPan and its products are greener, healthier, safer, and superior in non-stick performance than PTFE non-stick coatings, such as DuPont’s Teflon® non-stick coating systems.

I. PFOA-free and PTFE-free claims.

According to the challenger, repeated claims by GreenPan that its products are “*PTFE-free*” and “*PFOA-free*” falsely disparage DuPont’s products and overstate the comparative environmental and health benefits of GreenPan’s products.² These claims convey the misleading message that PTFE non-stick coatings, including Teflon® non-stick coating systems manufactured *without* PFOA (perfluorooctanoic acid), are unsafe, unhealthy and environmentally harmful. The challenger maintained that GreenPan provides no substantiation for its claims that its product is safer, healthier, or better for the environment than products with PTFE coatings (with or without PFOA).

More specifically, the challenger contended that GreenPan’s advertising conveys the misleading message that all PTFE non-stick coatings are made with PFOA. However, the fact is that none

¹ Teflon® is a registered trademark of DuPont for its brand of polytetrafluoroethylene (“PTFE”) fluoropolymer resins.

² According to the challenger, the comparative distinction that GreenPan products are “*PFOA-free*” is particularly misleading in light of the claims which improperly conflate PTFE and PFOA.

of DuPont's Teflon® non-stick coatings for cookware are currently made with PFOA.³ Historically, DuPont used PFOA as a processing aid during the manufacturing of coatings for its non-stick pans. However, as a participant in the Environmental Protection Agency's 2010/2015 PFOA Stewardship Program, DuPont committed itself to eliminating PFOA from its manufacturing process by 2015 or earlier.⁴ In fact, by 2010 – five years ahead of schedule, DuPont introduced a new generation of Teflon® non-stick coating systems made with a new patented DuPont technology (GenX) which enables the company to make high-performance fluoropolymers without the use of PFOA, and began to phase out the use of PFOA in the manufacture of PTFE.⁵ Further, as of January 1, 2012 DuPont no longer uses PFOA to manufacture non-stick coatings for cookware and consumer bakeware. Teflon® non-stick coating systems, made with a different polymer processing aid, are commercially available for purchase at mass and online retailers.

Further, the challenger took issue with GreenPan's claims which convey the falsely disparaging message that all PTFE non-stick coatings – both those manufactured with and without PFOA - are unsafe, even for normal household use. To the contrary, evidence shows that PTFE coatings – even those manufactured *with* PFOA – have been found to be safe and appropriate for household use at normal cooking temperatures. The challenger noted that regulatory authorities around the world as well as the U.S. Environmental Protection Agency have found PTFE coatings for cookware, including Dupont's Teflon® non-stick coating systems, to be safe for their intended use.

The challenger referred to scientific literature which supports the safety of PTFE coatings manufactured *with* PFOA, noting that:

- The materials used in the final sintered coating are safe and stable under normal use conditions.
- Documented testing of the final coated product shows that it is safe under circumstances of ordinary use.
- Health regulatory agencies around the world have approved or permit the use of Teflon® branded cookware; in 2003, the U.S. Consumer Product Safety Commission rejected a petition to require a warning label for non-stick coatings.
- Products with Teflon® brand non-stick coatings have been used safely by consumers for over 50 years.

³ E.g., “PTFE coatings are manufactured with the aid of PFOA (PerFluoroOctanoic Acid), which is classified as a ‘persistent pollutant of the environment’”.

⁴ In 2002 the Office of Pollution Prevention and Toxics at the Environmental Protection Agency (“EPA”) began a review of PFOA to determine whether the chemical poses a risk to humans and the environment, and whether any environmental action was appropriate. In the course of the review, the EPA said that “products made with fluoropolymers and fluorinated telomers, including Teflon® and other trademark products, are not PFOA,” that the information available “does not indicate that the routine use of consumer products poses a concern,” and “there are no steps that EPA recommends that consumers take to reduce exposure to PFOA.”

⁵ Even though DuPont ceased its use of PFOAs, it noted the lack of evidence that PFOA's in cookware coatings posed a danger to consumers. The challenger stated that published research confirms that any trace levels of PFOA that may be present in cookware coatings are so small that it would result in negligible consumer exposure to PFOA.

In addition, several studies have confirmed that there is no detectable migration of PFOA under simulated cooking conditions.

With regard to PTFE coatings manufactured *without* PFOA, the challenger noted that any potentially harmful effects from PTFE itself would only occur when food has been overcooked way past the edible stage, thus it is unlikely that typical usage of a coated fry pan would cause harm to consumers.⁶

Finally, the challenger asserted that GreenPan unfairly disparages PTFE-coated cookware by claiming, for example, that PTFE is “proven lethal to small pets like birds.”⁷ To the contrary, the DuPont Haskell Laboratory for Toxicology and Industrial Medicine presented test results on animals demonstrating that fumes from overheated PTFE non-stick cookware manufactured with PFOA only present an exposure risk at an elevated temperature (300°C/572°F – which is higher than normal cooking temperatures and higher than the temperature range recommended by DuPont) *and* only if the cookware is heated for extended periods of time (around four to six hours).⁸

In sum, considering all the aforementioned scientific evidence and test data, the challenger’s expert concluded that “DuPont Teflon® nonstick coating systems, including those previously manufactured with the aid of PFOA as well as those manufactured with the new DuPont processing aid, are safe for consumer use as directed.”

II. Non-stick performance claims.

The challenger explained that GreenPan positions itself as a safer, healthier, greener and superior *non-stick* alternative to PTFE-coated pans through website claims such as “*great non-stick*” and “*superior non-stick performance.*” According to the challenger, these unqualified comparative performance claims are false and misleading because head-to-head testing comparing the non-stick release performance of GreenPan Thermolon™ coating to DuPont Teflon® Platinum non-stick coating demonstrates that the Thermolon™ coating is inferior to Teflon®.

A. DuPont’s release testing.

⁶ Speaking to the safety of using PTFE-coated utensils, including coated fry pans, Dr. A.J. Lehman then-Director, Division of Pharmacology, U.S. FDA stated: “It has been demonstrated that polytetrafluoroethylene, when overheated, will decompose to yield toxic fumes. However, these temperatures are considerably above the smoke point of cooking fats and oils. The wide range between the smoke points of fats and oils and the thermal stability temperature of the resin, on the order of 130-150°C, not only make it quite unlikely that decomposition temperatures will be reached in the customary use of the coated fry pan without scorching the food to the inedible stage, but also permits considerable leeway, as well as abuse, in the use of the coated utensil. Polytetrafluoroethylene resin-coated utensils are safe for conventional kitchen use.”

⁷ GreenPan relies on the “canary in the kitchen” study from 1973 to support this claim. See Franklin D. Griffith, Susan S. Stephens, and Figen O. Tayfun, *Exposure of Japanese Quail and Parakeets to the Pyrolysis Products of Fry Pans Coated with Teflon® and Common Cooking Oils*, 34 AMER. INDUS. HYGIENE ASSOC. J. 176 (1973).

⁸ The tests were conducted by overheating PTFE nonstick cookware manufactured with PFOA over the range of 225-300°C (437-572°F).

The challenger conducted brand-blind testing to rate the release performance of GreenPan Thermolon™ coating as compared to DuPont Teflon® Platinum non-stick coating.⁹ In the absence of industry standards, the challenger explained that it developed a long term release performance test protocol that rates non-stick performance by simulating typical consumer use and expectations. This test protocol, used by DuPont for internal performance and durability evaluation of all new and developing products, measures three aspects of long-term quality: long term release potential, resistance to stain and ease of cleaning. With regard to long term release potential specifically, which is relevant to the claims at issue here, the test protocol was designed to simulate normal household use of a frypan over time (i.e., not just the first few times the consumer uses the pan). The ease of release was rated for each side of a fried egg from the pan, followed by a complete food cycle that introduces fats, carbohydrates, proteins and acidic food to the pans. The purpose of the test is to determine whether the non-stick performance of the pans endure or degrade over time.

The challenger further explained that the first step of the testing involves an egg, which is cracked and cooked in a pan for three minutes, after which the egg is flipped with a spatula and cooked on the other side. The first “flip” of the egg is the initial release and the second “flip” is the second release. Each egg release is rated for ease of release from a 5 (smooth, effortless, residue/utensil-free release) to a 1 (egg stuck to the pan and requires scraping to be removed). After the second egg release, the pan is washed and rinsed by hand and the food cycle continues with the cooking of a hamburger and onions, tomato sauce, a dishwasher cleaning, the cooking of a pancake and, finally, another dishwasher cleaning. After the entire cycle is completed, a new cycle begins with a new egg. A pan is deemed to have “failed” in non-stick performance after two consecutive initial egg release ratings of 1.

According to the challenger, results from this testing show that the GreenPan Thermolon™ Endurance 2 pan failed the egg release test on only its 10th cycle, with an average release score of only 2.45 out of 5 (averaging ratings of the first and second egg cycle). In contrast the Teflon® Platinum non-stick coated pan had an average release rating of 4.7 after 10 cycles and did not fail the release test until its 67th cycle. Even after 67 cycles, the Teflon® non-stick coated pan had an average release score of 4.08 – demonstrating comparatively longer term durability and slower degradation of its non-stick performance.

Thus, the challenger contended that the results of the head-to-head testing demonstrate that, despite superiority claims by GreenPan, the Thermolon™ coating has *inferior* non-stick performance when compared to Teflon® Platinum non-stick coating. Moreover, the testing results call into question whether GreenPan has a reasonable basis to call its product “non-stick” at all.

B. The challenger’s critique of GreenPan’s testing.

⁹ The Teflon® Platinum series coating is a mass market coating used on pans with a price point similar to the GreenPan Thermolon™ coating Endurance 2 pan tested.

The challenger contended that the performance comparisons submitted by GreenPan do not substantiate its non-stick superiority claims because they: (1) used irrelevant or questionable test methods to measure non-stick release under simulated consumer use conditions; (2) failed to compare GreenPan's products against all significant comparatively priced products as required to support an unqualified superiority claim; and (3) did not provide test methodology for NAD or the challenger to evaluate.

More specifically, the challenger argued that the Intertek test report submitted in support of GreenPan's non-stick performance claim does not address the non-stick release performance of the product tested. The Intertek test analyzed a GreenPan Vienna Black Aluminum Endurance model fry pan according to a European standard used to assess the *mechanical properties* of non-stick cookware, such as whether it corrodes when exposed to a solution.¹⁰ This test is not designed to measure non-stick release performance, and thus does not provide a reasonable basis for substantiating GreenPan's non-stick superiority claims.

Likewise, the challenger asserted that GreenPan's 2007 and 2009 OnSpeX testing contains numerous problems that demonstrate these tests results are not sufficiently relevant, reliable, or robust to substantiate GreenPan's non-stick or superior non-stick claims. In particular, the 2009 OnSpeX testing purports to follow Cooking Manufacturers Association ("CMA") Engineering Standards for Cookware & Bakeware Manual Sec. 21.6.1 for its "Egg Test," but the challenger claimed that a comparison of OnSpeX's protocols to the actual CMA standard reveals that there is no CMA protocol to heat up the pans to 500°F 25 times before cooking the eggs as the OnSpeX protocols describe.¹¹ These heat cycles raise the pan to a temperature above normal cooking temperatures and are in direct conflict with most PTFE-coated cookware instructions directing consumers not to heat empty pans at high heat for long periods of time. It was the challengers contention that the test OnSpeX used in 2009 (and used in 2007 referred to as the "500°F Heat/Cool Test") thus seemed designed to abuse the PTFE-coated pans and bears no relevance to assessing non-stick release performance.¹² Moreover, the OnSpeX testing uses an extremely short-term non-stick release measure (only three egg release measures). Such short term use results, which do not reflect realistic consumers use of fry pans, cannot possibly substantiate non-stick release claims. For these reasons, the testing is irrelevant and insufficient to support GreenPan's non-stick performance and superiority claims.

Further, the challenger noted that none of GreenPan's data rebuts DuPont's longer-term comparative release test protocols. Nor did it test leading representative cookware coated with DuPont Teflon® non-stick coating systems at price and quality points competitive to GreenPan's

¹⁰ DD CEN/TS 12983-2: 2005 Domestic Cookware for Use on Top of a Stove, Cooker or Hob, Clause 5 – Non-stick Coatings.

¹¹ See Cookware Manufacturers Association Engineering Standards Manual for Cookware & Bakeware, §21.6.1 Egg Test, rev. April 2011 (Standard has no protocol to heat the cookware to 500°F or repetitively heat before cooking the egg, but does instruct: "Heat the cookware so that the surface of the base is between 300° and 350°F").

¹² In addition, the 2007 OnSpeX report shows photos of some discoloration on the *exteriors* of the PTFE-coated pans after heating each to 500°F 25 times (but no photos of the *interior* of those pans) which calls into question the relevance of this testing for nonstick release of the interior coatings of the pans.

products,¹³ thus the OnSpeX testing cannot support any broad non-stick superiority claims that by implication include comparison to the significant non-stick coating systems on the market today.

Finally, the challenger rejected GreenPan's customer reviews of various Thermolon™ cookware products as substantiation for GreenPan's non-stick performance claims, contending that they are unverifiable, irrelevant, and/or inherently unreliable. The challenger explained that the Cooking Club of America consumer use surveys do not provide any information regarding methodology, controls, factors, standards or anything that the NAD or the challenger can assess to determine whether the results are valid or support GreenPan's claims. The consumer commentary and numerical scores are devoid of any quantifiable or qualitative information. Moreover, consumer reviews are rife with bias and other factors that render them unreliable as evidence to support GreenPan's non-stick performance claims.¹⁴

III. Eco-friendly claims.

The challenger argued that GreenPan's broad and pervasive green claims and imagery convey an unqualified general eco-friendly message that is contradicted by the evidence and misleading to consumers. In addition, GreenPan's specific eco-benefit claims further mislead consumers by overstating the actual environmental profile of the products. When considered in the context of the full environmental impact of the production and use of GreenPan products, the specific environmental attributes touted by GreenPan are meaningless, and therefore the claims are misleading.¹⁵

A. General environmental claims.

The challenger argued that GreenPan's entire marketing campaign, including its name and its tagline: "Health * Environment * Convenience," convey unqualified, general environmental benefit messages that are likely to mislead consumers. In order to support such broad environmental claims GreenPan would have to show that its pans create no or negligible negative environmental impact. As noted in the FTC's comments to its proposed revised Green Guides:

¹³ Despite the June 6, 2007 OnSpeX report stating "The project was to compare non-stick cookware with Teflon coatings against GreenPan's non-stick coating . . ." only one of the six products tested including a DuPont Teflon® coating – the Invitations Everyday product. The DuPont Teflon® nonstick coating used on that product is an entry-level coating and not representative of the Teflon® nonstick coatings used on comparably priced and quality pans to the GreenPan product tested.

¹⁴ "[P]roduct reviews relied upon by the advertiser, do not constitute competent and reliable evidence sufficient to support the advertiser's unequivocal establishment claims of superior accuracy." *Exergen Corp. (Exergen Temporal Thermometers)*, Report #5296 at 17 n. 57, *NAD/CARU Case Reports* (Mar. 2, 2011).

¹⁵ "What makes one product better than another from an environmental standpoint is not clear at first blush. For instance, one product may produce less solid waste than another and while this may seemingly appear to be more environmentally beneficial, a cradle-to-grave life cycle analysis may show it is more harmful for the environment because it creates greater chemical emissions than the product that produces more solid waste. *Church & Dwight Co., Inc. (Arm & Hammer Detergent)*, Report #4848 at 11, *NAD/CARU Case Reports* (May 2008).

[U]nqualified general environmental marketing claims remain very difficult, if not impossible to substantiate. Very few products, if any, have all of the attributes consumers appear to perceive from general environmental benefit claims. In addition, given that all products have some environmental impact, it is doubtful that a marketer could substantiate that a product has no or negligible negative environmental impact. The Commission, therefore, proposes revising the Guides to more directly caution marketers not to make unqualified general environmental benefit claims.¹⁶

GreenPan cannot meet this standard for several reasons. The challenger explained that, in accordance with the methodology of ISO standards 14040 and 14044, which are well accepted industry standard methodologies, it performed a life cycle evaluation comparing two 10-inch frypans with 8-gauge aluminum bodies and stainless steel handles: one coated with Thermolon™ and the other coated with Teflon® Platinum series non-stick coating system. The evaluation compared the “lifetime” environmental impact of each product across the entire supply chain, including the use-phase and end-of-life. The environmental impacts of interest for the study included climate change potential,¹⁷ fossil fuel depletion potential,¹⁸ acidification potential,¹⁹ and freshwater and marine eutrophication potential.²⁰ According to the challenger, the results of the comparative life cycle analyses show that the GreenPan product has greater negative environmental impact than the Teflon® non-stick coated pan across all impact categories analyzed. The test results indicated that the pan with the Teflon® Platinum nonstick coating contributes about 65%-75% lower burdens in all impact categories studied.

Further, the challenger noted that in light of the fact that non-stick coated cookware is purchased with expectations of providing non-stick release performance for a certain period of time, the life cycle analyses conducted considered the results of DuPont’s release testing (described in detail in Section II.A.). Due to the inferior release performance of the GreenPan Thermolon™ coating compared to the Teflon® Platinum non-stick coating, consumers would need to replace their GreenPan pans 6.7 times to maintain the non-stick release performance of one Teflon® Platinum

¹⁶ Proposed Revisions to the Guides for the Use of Environmental Marketing Claims, 75 Fed. Reg. 63563 (Oct. 15, 2010).

¹⁷ According to the challenger’s expert: “Climate change is also often described as calculating the carbon footprint. The International Panel on Climate Change (IPCC) has identified gases which, when present in the atmosphere, may generate a “greenhouse” effect resulting in the gradual increase in the average temperature of the earth. In the impact assessment, each chemical is given a weighting factor called a global warming potential (“GWP”) relative to its ability to trap heat in the atmosphere with respect to carbon dioxide, the most prevalent of greenhouse gases. . . . The climate change potential for a given product system is calculated by multiplying the mass of each emission by its individual GPW and summing across all chemicals emitted.”

¹⁸ Fossil fuel depletion potential consists of measuring coal, lignite, oil and natural gas consumed in the production and transport of raw materials, product manufacture, use, and end-of-life of the functional unit.

¹⁹ Terrestrial acidification potential is defined as a deviation from optimum soil acidity to a point which is harmful to most plants (acid rain). It is measured by determining the effect of emissions of inorganic substances (such as mon-nitrogen oxides, ammonia, and sulfur dioxide) on acidity levels in soils.

²⁰ Freshwater and marine eutrophication potential measures the increase in nutrients in a marine body. Algae growth, though affected by many factors, is primarily constrained by the amount of either phosphorus or nitrogen available. An increase in these chemicals in a water body may result in an unwanted increase in algae growth, consequently adversely affecting all other plant and animal species present.

non-stick coated pan. The shorter non-stick life of GreenPan Thermolon™ coating means that for each of the impact categories analyzed, the environmental burden of owning, using, and more frequently replacing a GreenPan pan far exceeds the environmental burdens of owning and using a Teflon® non-stick coated pan. Thus, the challenger contended that the life cycle analysis quantitatively confirms that GreenPan’s unqualified general environmental marketing messages are false and misleading.

The challenger also took issue with GreenPan’s definition for “green products” (that its products are PFOA-, lead-, and cadmium-free, emit 60% less CO₂ during the application of the Thermolon™ coating, and offer less than a penny a day in energy savings) and GreenPan’s argument that, under this definition, it is free to tout its products as “green” without qualification.²¹ According to the challenger, this definition for “green products” is taken seemingly at random from Enviro-News.com and such a definition does not meet the legal standard published by the FTC in its “Green Guides” pertaining to broad unqualified environmentally friendly claims.²²

Finally, the challenger noted that GreenPan’s attempt to substantiate claims of ecological superiority (i.e., that GreenPan is “green” or “greener” than all PTFE-coated cookware) based on the absence of measurable heavy metals, PFOA, or Triton X-100 in Thermolon™ is inadequate. Notably, DuPont *does not* use PFOA in the manufacturing of Teflon® non-stick coating systems, nor does it use Triton X-100 or contain heavy metals. Moreover, GreenPan provides no scientific evidence that DuPont Teflon® coating systems (or other significant competitive PTFE coatings) actually contain these chemicals. Thus, evidence that GreenPan’s products may be “free” of such chemicals is not enough to support GreenPan’s broad unqualified and comparative environmental claims.

B. Specific environmental claims.

The challenger also took issue with GreenPan’s product packaging which contains the unqualified statement, “60% CO₂ REDUCTION.” According to the challenger, such a message is misleading because it conveys the unsubstantiated message that production and/or use of the product provides a 60% overall reduction in CO₂ emissions.

In addition, the claim that GreenPan uses “60% less CO₂ during the application of the non-stick coating” may be technically true, but misleadingly conveys—especially in the context of the other pervasive green marketing claims and the reference to such a large percentage—that GreenPan has a significant environmental advantage over all PTFE coated cookware. Notably, GreenPan fails to disclose that the coating application step is only a small fraction of the total environmental impact from manufacturing a pan. Thus, 60% CO₂ savings sounds a lot larger than what it actually represents, that is, a 60% CO₂ savings of a portion of manufacture that

²¹ Furthermore, the challenger argued that contrary to GreenPan’s assertion, federal trademarks registration does not immunize brand names from review for truthfulness and deceptiveness under Section 5 of the FTC Act. The FTC routinely enjoins the use of deceptive or misleading trademarks.

²² See Proposed Revisions to the Guides for the Use of Environmental Marketing Claims, 75 Fed. Reg. 63522 (Oct. 15, 2010).

represents only 6% of the total manufacturing process to make the pan. Also, the actual energy savings from the *application* of the Thermolon™ coating has little overall comparative climate change potential impact savings. Therefore, according to the challenger, the repeated CO₂ savings claims, particularly juxtaposed with its other environmentally-friendly messaging, convey a more significant environmental benefit than GreenPan can substantiate because GreenPan has not established that this reduction in CO₂ is environmentally meaningful.

Similarly, the challenger contended that GreenPan's claims touting the use of upcycled aluminum bodies and stainless steel handles overstate the degree of environmental benefit of using GreenPan products. It is well recognized in the metals industry that it is the recycling of metal at the end of a product's life, not the use of recycled metal in its production that conveys quantifiable environmental benefits.²³ Unless the user recycles the metals – which GreenPan has not established and which is likely not possible given the lack of recycling facilities available that accept coated cookware product in the United States – the life cycle assessment methodology would not consider the use of recycled or upcycled metals in the manufacturing to be accorded any environmental burden offsets. Thus, the purported use of upcycled metals in manufacturing the pan does not earn any environmental “credit” in the life cycle analysis for GreenPan.

The challenger also contended that listing specific environmental benefits does not mean GreenPan may repeatedly claim its products are “green” and “ecofriendly.” Each specific benefit requires substantiation for every reasonable consumer interpretation and must be viewed in the context of the broader advertising statements. Where such claims overstate benefits that are not supported by competent and reliable scientific evidence, and where the benefits are outweighed by other environmental impacts, such specific claims are false and misleading.

IV. Energy savings and recyclable claims.

The challenger took issue with GreenPan's energy savings claims that consumers will “*save on your energy bill too*” when using Thermolon™ coated pans because “*the thermal conductivity of Thermolon™ is much better than PTFE, therefore it also needs a little less energy to heat up and stay warm.*” According to the challenger, such an unqualified energy savings claim is misleading.²⁴ Although GreenPan likely relies on the results of its “boil dry” test outlined in its Technical Information (dated October 2010) for its claim that Thermolon™ coating conducts heat better than PTFE, the challenger stated that its protocols are flawed. The challenger's expert explained that the boil dry test protocol does not represent standard cooking practice and

²³ The metals industry explains that: “The specific origin of the input material (whether it be primary or recycled) is not relevant because it is the net conservation of material that typically minimizes total environmental impacts. Under this framework, consistent with ISO 14044, it is acknowledged that material not recycled needs to be replaced by material feedstock.” Declaration by the Metals Industry on Recycling Principles, November 30, 2006.

²⁴ The challenger noted that at a minimum, GreenPan's energy savings claim should be modified to disclose the actual expected average energy savings. Press Release, FTC Warns Internet Marketers about Making Misleading Claims about the Benefits of Gas-Saving and Other Energy-Related Devices, April 18, 2002 (J. Howard Beales, III, Director of the FTC's Bureau of Consumer Protection stated: “Our message to the industry is that false or inflated energy-saving claims will not be tolerated. Our message to consumers is that they should be skeptical of dramatic fuel-savings claims for automotive and other products”).

is subject to significant potential error associated with pan flatness and the extent to which the cooktop is level. The boil dry test would also tend to require the pan to be much hotter than would be required during normal cooking use since not all the pan surface is covered and since the burner is on high heat, leading to potentially non-representative results.

Therefore, the challenger designed and conducted its own comparative heat transfer testing. Such testing, conducted on a GreenPan Thermolon™ coated frypan and a frypan with DuPont Teflon® Platinum non-stick coatings, was designed to estimate the efficiency of the frypans in transferring energy from the burner to the food in a manner more representative of actual consumer use. The testing was conducted on a standard electric kitchen burner rated for 2350W. The challenger's expert explained that the procedure employed was similar to the GreenPan boil dry test, but with two key differences: Like the GreenPan test, water was added to a pan placed on a burner which is set on high and already at temperature. However, unlike the GreenPan test, much more water was added to the pan – 500-750ml instead of 100ml – to ensure the bottom surface of the pan is always covered during the test. Keeping the bottom of the pan covered more closely mimics boiling practice during actual cooking and allows for easier calculation of the pan surface area involved in heat transfer to the food. The second difference from the GreenPan test is that the pan is removed from the burner as soon as the bottom surface is no longer completely covered by the water and the remaining volume of water is measured. Tests were repeated five times each for two 12" 8-gauge aluminum frypans, one with each of the coatings studied.

The tests results calculated the thermal efficiency for each type of pan tested and showed an average thermal efficiency of 87% for the GreenPan Thermolon™ coated pan, and an average thermal efficiency of 75% for the pan with Teflon® Platinum non-stick coating. For the study, an average of 350 BTU/cook was estimated based on an average of cooking either four eggs, or one pound of ground beef plus heating one 24-oz. jar of spaghetti sauce. For the GreenPan, 54 BTUs were required (in addition to the 350 BTUs) for the food at 87% efficiency. For the pan with Teflon® Platinum non-stick coatings, an additional 120 BTUs were required. Therefore, it was estimated that the pan with Teflon® Platinum non-stick coatings will require an additional 66 BTUs of energy per cook ($120 - 54 = 66$) as compared to a GreenPan Thermolon™ coated pan. Further, the average residential cost for electricity in the U.S. in 2010 was 11.81¢ per kWh. So, based on the results of its testing, the challenger contended that even if a consumer cooks three times a day, every day, the electricity cost savings would be less than 22¢ per month if a consumer chose to use a Thermolon™ pan instead of a DuPont Teflon® Platinum non-stick coated pan. The challenger emphasized that this energy savings - less than a penny a day (even assuming that a customer uses a frypan three times per day) – is hardly a meaningful savings.

Thus, according to the challenger, the amount of actual savings is de minimis and immaterial and is precisely the type of inflated energy-savings claim the FTC warns marketers not to make. Moreover, the challenger contended that GreenPan misstates DuPont's analysis when it asserted that once daily use of GreenPan products by 150 million Americans would result in nationwide savings of \$1.5 million per day. To the contrary, DuPont's analysis actually calculated a savings of only a penny per day per consumer for thrice daily use. Thus, the savings shared by all 150 million Americans under GreenPan's aggregated view would be only \$500,000 per day (not \$1.5

million). Notwithstanding, GreenPan's aggregated calculation is hardly substantiation for its claims that *individual consumers* will “*save on your energy bill too*” and that using a GreenPan product “*is great for your energy bill.*” (emphasis added). The challenger argued that what GreenPan is acknowledging through this math is that savings for each individual customer, even with once daily use, would be less than \$1.22 per year or *less than three tenths of a penny a day*.

Finally, the challenger objected to GreenPan's unqualified “*Please Recycle*” claim on its website, arguing that such claim is misleading because most communities do not have facilities to recycle coated cookware products.²⁵ Absent evidence that recycling facilities for coated cookware are available to a substantial majority of communities, this unqualified recyclable claim should be discontinued or appropriately qualified. In response to GreenPan's contention that “please recycle” refers to its wish that consumers recycle the GreenPan packaging, the challenger noted that the unqualified claim remains misleading. Moreover, the fact that GreenPan encourages recycling in general and may have recyclable packaging does not distinguish it from most other competitive non-stick products with similar packaging and recycling commitments. Thus, its “please recycle” claims are not adequate support of GreenPan's claims that it is “greener” than its competitors.

V. Health and safety claims.

The challenger maintained that GreenPan makes a number of unsubstantiated and false claims that its cookware and coating are non-toxic, chemical-free, and healthier and safer than PTFE coated non-stick cookware, including “*no toxic fumes will be released,*” there are “*no potentially dangerous chemicals inside*” and “*if you overheat your pan, even up to 450°C/850°F , no toxic fumes will be released.*” GreenPan focuses support for its eco-superiority over the entire category of PTFE-coated cookware on assertions that its products contain no heavy metals, are manufactured without the use of PFOA, and do not use Triton X-100 surfactant. Taking GreenPan's evidence of such as valid, the challenger argued that this still fails to establish that GreenPan is “green” or “greener” than all PTFE-coated cookware—as its claims convey—because DuPont does not use PFOA in manufacturing of Teflon® non-stick coating, nor does it use Triton X-100 or contain heavy metals.

The challenger argued that GreenPan's expert toxicologist reports, concluding that Thermolon™ is a healthy alternative to PTFE non-stick coatings, are flawed and do not provide the rigorous level of scientific evidence necessary for substantiation of GreenPan's health and safety claims. Likewise, none of GreenPan's submitted test reports establish that its products contain no toxic chemicals or emit no toxic fumes under consumer use conditions, as its claims imply. These reports only prove the absence of chemicals for which they tested and detected (i.e., PTFE, PFOA, lead and cadmium), but do not speak to the potential existence of those chemicals which were not tested for.

²⁵ Under the FTC's proposed revised Green Guides, such an unqualified recyclable claim under these circumstances is deceptive where recycling facilities that process ceramic coated cookware are not “available to a substantial majority of consumers or communities where the item is sold.” See Guides for the Use of Environmental Marketing Claims.

A. Temperature data.

GreenPan also unequivocally claims that “*if you overheat your pan, even up to 450°C/850°F, no toxic fumes will be released*” (emphasis added). Based on its own analysis of Thermolon™ coating, the challenger contended that this claim is false. In support of its position, DuPont conducted chemical off-gassing testing of GreenPan Thermolon™ coating, which revealed that numerous toxic chemicals are off-gassed at normal cooking temperatures, much below the 450°C/850°F temperature at which GreenPan asserts its coating produces no toxic fumes. Such testing involved cutting up pieces of a GreenPan frypan and placing them in a tube desorption apparatus to heat the pieces to various cooking temperatures for 30 minutes at each temperature. The off-gasses were then trapped and injected directly into a gas chromatograph with mass spectrometer for analysis of chemical off-gassing. The testing detected the release of a number of potentially toxic chemicals, including benzene, ethyl benzene, xylene, 2-butoxyethanol, Benz aldehyde, trimethylbenzene, acetophenone, and naphthalene at temperatures of 180°C/356°F (a normal cooking temperature for household use) and 260°C/500°F (below the temperature at which GreenPan states Thermolon™ does not emit any toxic fumes). According to the challenger’s expert, the concentration level of each toxic chemical detected is statistically significant given that no compounds were detected during control runs when the thermal experiments were conducted without frypan samples. The challenger noted that each of those chemicals is known to be a carcinogen, a mutagen, and/or an irritant.²⁶ Thus, the emission of these toxic chemicals at temperatures much below the 450°C/850°F (a temperature at which GreenPan claims its products produce no toxic fumes) demonstrates that its emissions claims are false and misleading. In addition, even though its products may not be unsafe for use, the emission of numerous toxic chemicals calls into question whether GreenPan has adequate support for the comparative claims that its products are healthier, safer, and more eco-friendly than all PTFE coatings.

Further, according to the challenger, GreenPan’s reliance on TUV Rheinland German food safety standard testing is not sufficient substantiation because those governmental protocols do not test or detect off-gassing of a broad range of toxic chemicals under simulated consumer use conditions. The German food contact safety protocols use mild test conditions (most at 60°C and only one test at 200°C) that do not reach temperatures advertised by GreenPan (“*safe even up to 450°C*”). Further, the German agency test results do not conflict with or invalidate DuPont’s off-gas test results showing the off-gassing of a number of toxic chemicals under simulated consumer use conditions.

B. Health and safety of PFOA (C8) and C6.

To the extent that GreenPan bases its claims that its products are healthier and safer than PTFE coated non-stick cookware on the Environmental Working Group’s suggestion that DuPont’s new processing aid for PTFE cookware coatings is a “C6” product (which may be as great a

²⁶ The challenger noted that GreenPan did not submit any evidence that contradicts or invalidates DuPont’s test results.

concern as PFOA),²⁷ the challenger stated that GreenPan is incorrect. The DuPont processing aid is not a C6 material.

VI. Natural claims.

The challenger argued that GreenPan makes a number of false claims about the natural and mineral properties of its Thermolon™ coating, for example, “*mineral materials are natural substances that are safe to use. The ceramic mineral materials that are used in Thermolon™ are the same as used to make glass and pottery.*”²⁸ GreenPan goes further to convey the message that being natural and made of minerals means its products are safer, healthier, and more eco-friendly than PTFE coatings. According to the challenger, GreenPan’s Thermolon™ ceramic coating begins with sand (SiO₂) and carbon (C) and, through a series of chemical processes known as sol-gel chemistry, creates a synthetic compound known as sol-gel. Sol-gel chemistry requires several chemical reactions and creates and/or uses toxic chemicals such as methyltrimethoxysilane and methanol.²⁹ The chemical process and resulting synthetic ingredients used to make Thermolon™ coating are not natural, and certainly are no more natural or mineral based than PTFE non-stick coatings.

Moreover, GreenPan concedes that its Thermolon™ coating is not completely mineral-based: “the coating is predominantly mineral-based because the inorganic mineral-type content is high (86% by weight) whereas the organic content (i.e. carbon content) is only around 14% by weight.” The challenger emphasized that GreenPan’s claims not only falsely convey that Thermolon™ coating contains no synthetic ingredients and undergoes no chemical processes that may create synthetic compounds, but also that PTFE non-stick coatings (like Teflon®) are comparatively unsafe, unnatural, and more “synthetic” than Thermolon™ coating. GreenPan has not substantiated its comparative natural and mineral claims that unfairly disparage and inaccurately distinguish Thermolon™ coating as healthier, safer, and more eco-friendly than PTFE products.

Advertiser’s Position:

²⁷ “The EWG has suggested that this replacement is a ‘C6’ compound. The suspected replacement chemical contains six carbon atoms...”

²⁸ DuPont noted that the NAD has held that despite the lack of a regulatory or industry standard as to what constitutes “natural,” analysis of such claims will depend on a number of factors, including: “a) the origin of the ingredients; b) how the term ‘natural’ is presented in the context of the challenged advertising; and c) reasonable consumer expectation as to the meaning of the term.” Tom’s of Maine (Natural Mouth Wash), Report #3470 at 4 (June 1998). Further, DuPont cited a case involving natural claims pertaining to a laundry detergent where the NAD found that while it was literally true that the two main ingredients in the detergent were “naturally derived,” the initial ingredient was “chemically processed such that the composition of the resulting [ingredients] is dramatically altered” Given this chemical processing, the NAD held that the message reasonably conveyed by the natural claims—that the product is natural in whole or in substantial part—was not supported. See Church & Dwight Co. Inc. (Arm & Hammer Detergent), Report #4848, *NAD/CARU Case Reports* (May 13, 2008).

²⁹ According to the challenger, its own Teflon® Branded PTFE coatings begin with a natural mineral (fluorspar) and undergo chemical reactions to create PTFE coatings, but unlike GreenPan, DuPont does not claim Teflon® branded PTFE is “natural” or “mineral-based.”

It was the advertiser's position that its claims are truthful and accurate and that Thermolon™ ceramic coated cookware offers the American consumer a safe alternative to cookware made with PTFE and PFOA. According to the advertiser, GreenPan Thermolon™ cookware is indeed more ecological, healthier and safer than PTFE-type non-stick products. GreenPan is at the forefront of a technological sea change in the non-stick cookware industry and the high quality of the products speak for themselves.

I. PFOA-free and PTFE-free claims.

By way of background, the advertiser stated that PTFE was discovered by DuPont in 1938. Health concerns regarding PTFE were first raised in the 1950's and increased in the following decades. DuPont's own scientists identified a condition among their workers that they called "polymer fume fever," that causes influenza-like symptoms and a potentially fatal condition called pulmonary edema. These effects upon the respiratory system were later confirmed when it was discovered that PTFE could give off fumes and particulates that are fatal to birds, which have a highly developed respiratory system. Many other independent studies followed, during which suspicions began to focus on a chemical called PFOA (Perfluorooctanoic acid). PFOA is a substance used as an aid in the manufacture of water-based PTFE dispersions. Animal studies have suggested that PFOA could cause tumors and birth defects.

By July 2007, the advertiser claimed that consumers were already alerted through numerous media reports as to the possible dangers of using PTFE non-stick cookware. GreenPan Ltd. came on the market with an innovative non-stick technology that the public embraced—a fact proven by the rapid growth in sales of GreenPan. Many other non-PTFE coatings began to appear on the market and the PTFE industry was concerned about the effect this would have on its business. Eventually, the advertiser explained, many companies that introduced ceramic non-stick coatings began labeling them as "PTFE and PFOA free."³⁰

As an initial matter, the advertiser acknowledged that, unlike in 2007, when GreenPan was introduced, now many PTFE-type non-stick coatings are available without PFOA being used in their manufacture.³¹ The advertiser maintained that its "*PTFE-free*" and "*PFOA-free*" claims do not convey the message that all PTFE non-stick pans are made with PFOA, or that PTFE non-stick pans are unsafe compared pans to with Thermolon™ coating. Nevertheless, the advertiser noted that it is willing to modify and qualify its claims about the manufacture of PTFE non-stick coatings, by conveying that, unlike GreenPan's Thermolon™ coating, all PTFE non-stick dispersions are made with *either* PFOA *or* one of its replacements that may include PFCAs (Perfluorocarboxylic Acids).

³⁰ In addition, the advertiser asserted that its claims are, in essence, echoed by DuPont. According to the advertiser, the implied claim that non-stick cookware without PFOA is generally safer, healthier and kinder to the environment than non-stick cookware with PFOA is, in fact, claimed by DuPont in its own marketing materials wherein DuPont describes its PFOA substitute as "kinder to the environment" precisely because it is made without the use of PFOA.

³¹ The advertiser stated that it recognizes this fact, even though there is still a shift in progress (and not yet complete) from PFOA towards PFOA replacements such as C6 chemistries, which themselves come with a dearth of publicly available scientific evidence or safety data and with possible serious health concerns.

Further, the advertiser asserted that its “PTFE-free” and “PFOA-free” advertising claims are truthful and accurate. With regard to the health concerns associated with PFOA, the advertiser explained that in the early 2000s, the Environmental Protection Agency set up a panel to study the potential dangers of PFOA. The panel reported that PFOA should be labeled as a “likely human carcinogen.”³² In 2006, the EPA brokered a voluntary stewardship program with DuPont and seven other Fluorchemical manufacturers whereby they agreed to lower the content of PFOA in their products and reduce emissions into the environment to zero by 2015, with an interim 95% reduction by 2010.³³ According to the advertiser, however, the vast majority of PTFE production now occurs in Asia, thus these manufacturers are not participants in the EPA’s stewardship program on phasing out PFOA. Consequently, a significant part of this production still utilizes PFOA.³⁴ GreenPan sells Thermolon™ coated products in over 80 countries world wide. The advertiser asserted that its advertising avoids mentioning the Teflon® brand, instead referring to the generic material PTFE. Therefore, advertising touting GreenPan products as PTFE-free and PFOA-free is still a valid comparative benefit of GreenPan over its global competitors.

In sum, the advertiser contended that its “PTFE-free” and “PFOA-free” claims, as it has agreed to modify them, truthfully refer to the fact that PTFE non-stick coatings are made with either PFOA or PFOA substitutes (such as PFCAs), unlike its Thermolon™ coated products.

II. Non-stick performance claims.

According to the advertiser, its non-stick performance claims are supported by competent and reliable scientific evidence.

A. GreenPan’s testing.

With regard to its non-stick performance claims (e.g., “*High-quality non-stick coating*”; “*The Thermolon surface provides great non-stick*”), the advertiser contended that GreenPan’s Thermolon™ coating meets two common definitions of “non-stick” that are used in the cookware industry³⁵ - EN Standard 12983-2³⁶ and Standard BS7069.

³² <http://www.ewg.org/release/epa-science-panel-says-teflon-chemical-likely-cause-cancer>.

³³ <http://www.epa.gov/oppt/pfoa/pubs/stewardship/index.html>. The advertiser noted that the term “product content” as used in the stewardship program only refers to the basic substance/mixture manufactured, and not the end product to which they are applied. As the EPA points out: “the final formulations themselves and the articles to which they may be applied – such as cookware . . . – would not be included in the definition of “product” for the purpose of reporting under the PFOA Stewardship Program. *These formulations and products are produced by other companies beyond the scope of the Program.*” (emphasis added).

³⁴ See, e.g., October 31, 2007 letter from DuPont to the EPA re. DuPont progress towards meeting the Environmental Protection Agency 2010/15 PFOA Stewardship Program noting that “some of the world’s PFOA is made and used by companies not committed to a stewardship program” at http://www.epa.gov/oppt/pfoa/pubs/DuPont_AppF.pdf.

³⁵ The advertiser rejected DuPont’s assertion that it was necessary to use the test method described in the CMA Manual. The test method described in the CMA Manual (of which DuPont only submitted selected sections) is merely one valid test method that exists out of many around the world. In fact, there is little substantial difference between the test methods and equipment described in the CMA Manual and the EN Standard as used by GreenPan.

EN Standard 12983-2: First, the advertiser stated that its Thermolon™ products satisfy the EN Standard (“EN12983-2”) that any surface which claims to be “non-stick” must meet the requirements of “endurance and corrosion resistance.” The advertiser explained that GreenPan passes both requirements, as confirmed by a 2008 Intertek test report. The test analyzed the “endurance”³⁷ and “corrosion resistance” of a GreenPan 24cm frypan (model Vienna black aluminum no induction, Endurance) and concluded that it “passed.”³⁸ According to the advertiser, this method is representative of non-stick performance and durability (what DuPont terms “Endurance”) in everyday consumer use. In addition, as support for its *superior* non-stick performance and durability claims, the advertiser compared the results of this report to those of a separate 2008 Intertek test report analyzing the “endurance” and “corrosion resistance” of a T-Fal 26cm frypan and concluding that the T-Fal pan “failed” the endurance testing because “50% of the surface area of the pancake was adhered on the tested sample after the test.” Specifically, the T-Fal pan failed the requirement that “any surface claimed to be non-stick shall leave no portion greater than 10% of the surface area of the pancake still adhering to the test surface.”

Standard BS7069: Second, the advertiser asserted that its Thermolon™ products also pass the abrasion, adhesion, scratch and nonstick performance tests of Standard BS7069, which defines a non-stick surface as “a surface, usually applied as a coating to the interior of an item of cookware, from which food prepared in the cookware is readily removable and which may be cleaned by washing without the need for scouring or scraping.” In support of its claims, the advertiser explained that the Scotch-Brite abrasion test is very similar to the test described in BS7069, in which Thermolon™ coatings pass extremely well in comparison to famous branded PTFE-types. This is shown by the results of the 2009 OnSpeX report, based on the CMA Manual, whose results showed that Thermolon™ was superior. As further support, the advertiser explained that additional testing used the BS7069 Scratch resistance test method (but with more force) instead of the method described in the CMA manual, and a comparison of method descriptions shows that the principles of the two methods are very similar. According to the advertiser, a 2009 Intertek test report showed that Thermolon™ ROCKS was superior to the other types of materials (competitive cookware) tested because more downward force was required before it reached substrate exposure (failure). This testing also showed that it took more abrasion cycles to expose the substrate of Thermolon™ ROCKS than with any of the other materials.

Further, the advertiser asserted that its claims regarding GreenPan’s superior release properties (e.g., *Thermolon™ “is a non-stick mineral-based coating with superior release properties”*) are supported by the results of testing conducted by OnSpeX, which compared both Thermolon™

Further, CMA’s testing gives no pass/fail, but is only “designed to assist in evaluating the resistance of coatings . . .”

³⁶ The advertiser noted that the equipment used in the CMA test method §21.6.3 Life Cycle Endurance Testing is very similar if not identical to that described in EN 12983-2. Also, it is clear from Sections 5.1 to 5.3 of the EN 12983-2 standard, that this test is concerned with characterizing non-stick performance.

³⁷ Endurance in this context means non-stick durability, that is, whether the non-stick performance is enduring.

³⁸ The test standard used was DD CENT/TS 12983-2: 2005 Domestic Cookware for Use on Top of a Stove, Cooker or Hob, Clause 5 – Non-stick Coatings.

Endurance (2007 report) and Thermolon™ ROCKS (2009 report) against various different famous brands of cookware coated with different brands of PTFE-type non-stick surfaces. In fact, on a range of quality measures, Thermolon™ ROCKS and Thermolon™ Endurance outscore famous brand PTFE coatings, and thus the advertiser argued that Thermolon™ has superior release properties.

2007 OnSpeX testing: This testing compared five brands of non-stick cookware with Teflon® coatings³⁹ against GreenPan's non-stick coating (Thermolon™ Endurance), which does not contain PTFE. The OnSpeX "Egg Test" protocol involved heating the cookware surface to 325°F, cooking an egg until the cooked surface is lightly browned (using no lubricant), and once the egg is cooked, tilting the cookware until the egg slides off the cooking surface. The technician recorded if the egg slid off un-assisted or required assistance from a cooking tool (spatula), verified if the whole egg was removed or if parts of the cooked egg have stuck to the cooking surface, and noted if the egg yolk breaks when removed from the surface. After cooking an egg in each pan, the technician used a rating between 1 and 5 in reference to how difficult it was to lift the egg from the skillet's surface (1 = easiest lift; 5 = most difficult lift). Out of six models of pans tested, GreenPan was the only one to receive a rating of 1 (easiest lift). The "Egg Test" was also performed again after the "500°F Heat/Cool Test"⁴⁰ and the results showed that the egg severely stuck in all samples except for the GreenPan. The GreenPan's egg slid out easily (1 on the rating scale).

2009 OnSpeX testing: This testing compared seven brands of non-stick cookware⁴¹ against GreenPan's Thermolon™ ROCKS. The protocol was similar to that used in the 2007 OnSpeX testing. However, the "Egg Test" specified that it was to be repeated three times. Similar to the 2007 protocol, the "Egg Test" was conducted both before and after the "500°F Cycle Test" – thus providing a comparison of before and after results for each type of pan. The results showed that the GreenPan Thermolon™ ROCKS had the best overall rating for "ease of lift" in the Egg Test.

Finally, the advertiser rejected DuPont's critique that GreenPan's OnSpeX testing cannot support its non-stick superiority claims because it failed to test leading representative cookware coated with DuPont Teflon® non-stick coating systems at price and quality points competitive to GreenPan's products. The advertiser stated that it does not mention DuPont Teflon® or any other particular known brand in its performance claims, just a generic class of PTFE-type coatings, and T-Fal is a well-known brand of PTFE-type non-stick cookware that GreenPan happened to purchase for testing, along with several others. It is simply irrelevant whether the PTFE-type coatings tested were or were not specifically coated with DuPont Teflon®.

III. Eco-friendly claims.

³⁹ The five brands were Kenmore, Swiss Diamond, Invitations Everyday, Cuisinart, and Tools of the Trade.

⁴⁰ The "500°F Heat/Cool Test" involved heating each pan (on a burner) to a temperature of 500°F ± 10°F and then allowing the pans to cool at room temperature. Repeating 25 times and then, following the 25th cycle, performing the Egg Test. The results showed that during this process, all the pans, except for the GreenPan, created fumes/an odor that got stronger each cycle.

⁴¹ The seven brands were Cuisinart, All-Clad, Kitchen Aid, Calphalon, Circulon 2, Swiss Diamond and T-fal.

The advertiser maintained that its general environmental claims are appropriately qualified and not misleading. Moreover, according to the advertiser, its products are “ecological” compared to traditional non-stick cookware.

A. General environmental claims.

The advertiser contended that its general environmental claims are in compliance with FTC guidelines because its claims are both qualified and substantiated. The FTC’s currently existing Green Guides⁴² provide that:

marketers can make unqualified claims if they can substantiate all express and implied claims; only if that duty is not met should such claims be avoided or qualified as necessary to prevent deception; any qualifications should be clear and prominent and should limit the claim(s) to specific benefit(s); and marketers should ensure the ad’s context does not imply deceptive environmental claims.⁴³

Moreover, the advertiser stated that under NAD precedent, an advertiser can provide a reasonable basis for making a general environmental benefit claim based on specific environmental benefits or attributes that are clearly and conspicuously disclosed.⁴⁴ In addition, NAD has held that the general claim “better for the environment,” when appearing in the context of qualifying language setting forth specific ways the product is better, was adequately qualified and substantiated.⁴⁵

According to the advertiser, its environmentally friendly, health and safety claims are all appropriately qualified in context by clear and conspicuous references, placed in close proximity to the claims being modified. For example, on GreenPan’s own (non-sales) website, “healthy” and “environmentally friendly” are always qualified by terms such as “PTFE-free” and “uses no PFOA.” For claims appearing at points of sale, such as the West Elm catalogue and GreenPan packaging, general claims such as “safe for the environment,” “eco-friendly,” and “healthy” are always properly qualified by terms such as “PTFE-free,” “no PTFE/no PFOA,” “no harmful fumes,” and “60% CO₂ reduction.” And such claims on HSN likewise are properly qualified; for example, “healthy,” “good for you” and “good for the environment” are appropriately qualified by terms such as “PTFE-free,” “no silicone oil” and “no toxic fumes.”

Further, the advertiser explained that traditionally the PTFE industry has considered products to be “green” under the following definition: “Green products are those that have less of an impact on the environment or are less detrimental to human health than traditional equivalents. Green

⁴² The advertiser noted that DuPont has cited the FTC’s proposed revisions to its Green Guides, which are neither final nor effective at this time.

⁴³ Green Guides, Summary of Proposal, found at <http://www.ftc.gov/bcp/edu/microsites/energy/documents/Green-Guides-Summary-of-Proposal.pdf>.

⁴⁴ FP International (Biodegradable SUPER 8 Loosefill Environmentally Friendly Packaging), Report #5256, *NAD/CARU Case Reports* (December 2010).

⁴⁵ SC Johnson (ZIPLOC Evolve), Report #5225, *NAD/CARU Case Reports* (September 2010).

products might, typically, be formed or part-formed from recycled components, be manufactured in a more energy-conservative way, or be supplied to the market with less packaging (or all three).”⁴⁶ Further, the advertiser noted that DuPont’s own brochure claims that its PFOA-free non-stick is ecological solely because it does not use PFOA during its manufacture. Thus, the advertiser argued that its fry pans are green as compared to other existing non-stick technology because they do not contain PTFE, PFOA (C8) or any persistent organic chemicals such as C6. Moreover, GreenPan argued that its products do not contain lead or cadmium.

In addition, Thermolon™ manufacture and application does not involve the use of any POPs (Persistent Organic Chemicals) such as PFOA (or any analogs of PFOA) – dispersion aids that are commonly used in the manufacture of PTFE. Also, manufacture or application of Thermolon™ does not require the use of any non-ionic surfactants, such as Triton X-100.⁴⁷ The advertiser contended that even though DuPont states that it does not (currently) use the non-ionic surfactant Triton X-100 in its own non-stick coating system, the use of this chemical is still a valid safety concern because other manufacturers are likely still using Triton X-100 (as well as PFOA) as a surfactant. Thus, the advertiser’s comparative environmental claims, which are not limited to DuPont or any particular maker of PTFE-type non-stick cookware, are valid as against other manufacturers who use such chemicals.

The advertiser also submitted that DuPont’s own internal testing shows that GreenPan creates energy savings of \$0.01 per usage, and pointed out that if 150 million American households used GreenPan’s product once a day, it would equate to savings of \$1,500,000 per day or \$547,500,000 per year.

B. Specific environmental claims.

As support for its claim, “*less energy is used when Thermolon™ is applied on GreenPan products, which means 60% less CO₂ emission compared with the production of PTFE-coated pans,*” the advertiser cited a comparative study of the energy-efficiency of coating applications conducted by Tianjin University that shows that curing of Thermolon™ gives rise to 60% less energy-related CO₂ emissions than the curing of a PTFE coating. According to the advertiser, its application is more environmentally-friendly because, when comparing the curing of the coatings, 60% less energy is used by the curing ovens. Thus, the reduced energy demand results in 60% less CO₂ being emitted. The Tianjin study noted that the curing of Thermolon™ saves energy in the following ways:

- Thermolon™ is cured at a significantly lower temperature compared with PTFE, thus reducing energy consumption;
- Line speed through curing ovens for Thermolon™ is 1.3 m/minute compared with a typical value of 0.8 m/min for PTFE coatings;

⁴⁶ http://www.enviro-news.com/glossary/green_products.html.

⁴⁷ Until recently, non-ionic surfactants, such as Triton X-100, have been widely used in the manufacture of water-based PTFE dispersions. Exposure to Triton X-100 has been linked to changes in the gender of fish.

- With conventional coatings the PTFE interior is cured first. Then the exterior is applied and cured in a second pass through the oven;
- Thermolon™ can be coated both inside and outside and then both are cured in one single pass through the curing oven, thereby saving considerable energy.

The study calculated that the estimated CO₂ emissions per 1,000 fry pans (24 cm diameter) cured was 156 kg for Thermolon™ and 473 kg for PTFE. Thus, the reduction in CO₂ emissions by using Thermolon™ is approximately 317 kg per 1,000 units coated. On an assumed world wide market of 250 million units coated annually, the savings in CO₂ emissions is approximately 79,250 tons per year.

The advertiser rejected DuPont's contention that its "60% CO₂ reduction" claims are misleading, noting that such claims are appropriately qualified by clearly, conspicuously and in close proximity referring to *only* the process of application of Thermolon™ (i.e., the curing of the coating) itself, and not to the entire production of the pan or the lifetime use of the product. Further, such claims are *only* made in comparison to the curing process of the competitive PTFE-coated (and not all) pans. Thus, consumers would not take away the message that production and/or use of the product provides a 60% overall reduction in CO₂ emissions. The advertiser emphasized that NAD precedent allows qualified CO₂ emissions comparative claims to be made, as long as it is clearly understood both what the CO₂ emissions refer to, and the basis of the comparison.

In addition, the advertiser argued that, contrary to DuPont's position, there is no NAD precedent stating that a reduced CO₂ emissions claim should be made only as to the manufacture of the entire product or only as to "lifetime use" of the product. Also, according to the advertiser, its reduced CO₂ emissions claim is properly qualified as to reduction amount and basis for comparison in compliance with FTC guidance which simply advises that reduction claims be properly qualified as to amount and comparison basis.⁴⁸ The qualified claim refers to the fact that there are 60% less CO₂ emissions from the curing of the Thermolon™ non-stick coating versus the PTFE-based non-stick. Finally, the qualified claim refers to the plural "GreenPan products," meaning all such products, and not just the prospective consumer's product. The advertiser asserted that its claim is substantiated because the reduced CO₂ emissions from manufacture of all such products are substantial and relevant to a consumer's purchasing decision. For example, 250 million units produced worldwide per year, based on the average coated area of each unit, would result in a CO₂ emissions reduction of 79,250 tons per year as a result of reduction in energy used during curing of the coating.

The advertiser stated that it would be willing to modify the claims "*Less energy is used when Thermolon™ is applied on GreenPan™ products, which means 60% less CO₂ emission compared with the production of PTFE-coated pans*" and "*Manufactured without PFOA and*

⁴⁸ The advertiser stated that in its proposed revised Green Guides, the FTC recognizes that there is no uniform definition for "carbon footprint" and proposes retaining without change the section on source reduction claims, advising "marketers to qualify source reduction claims to avoid deception about the amount of the reduction and the basis for any comparison." <http://www.ftc.gov/os/fedreg/2010/october/101006greenguidesfrn.pdf> at 117.

applied in an environmentally friendly way, resulting in 60% less CO₂ emissions” to refer even more precisely to the “curing” of the Thermolon™ coating on the pan.

IV. Energy savings and recyclable claims.

With regard to GreenPan’s energy savings claims that consumers will “*save on your energy bill too*” when using Thermolon™ coated pans because “*the thermal conductivity of Thermolon™ is much better than PTFE, therefore it also needs a little less energy to heat up and stay warm,*” the advertiser maintained that testing establishes the superior thermal conductivity of GreenPan. The thermal conductivity of Thermolon™ is approximately $2.4 \text{ W m}^{-1} \text{ K}^{-1}$, whereas that of PTFE is approximately only $0.24 \text{ W m}^{-1} \text{ K}^{-1}$ - i.e. heat conductivity is a factor of 10 lower for PTFE. In addition, GreenPan’s OnSpeX test report verified that the GreenPan was the fastest to heat up to 500°F, as compared to the models of cookware tested from Kenmore, Swiss Diamond, Invitations Everyday, Cuisinart, and Tools of the Trade.

The advertiser submitted that “*please recycle*” is printed on the GreenPan packaging to encourage consumers worldwide to recycle. In particular, GreenPan asserted that “please recycle” refers to its wish that consumers recycle GreenPan packaging. In addition, GreenPan submitted that most of its packaging is made out of paper or carton, which consumers worldwide recognize as easily recyclable due to the availability of well organized paper recycling centers. GreenPan noted that its packaging is also made out of PET parts. The advertiser explained that it knowingly chose PET as a packaging material because recycling of PET is extremely advanced.

V. Health and safety claims.

GreenPan rejected DuPont’s arguments that its products are not healthier or safer than other non-stick pans. In response to these accusations, GreenPan reiterated that it contains no PTFE, PFOA, C6, lead or cadmium. GreenPan argued that neither the manufacture nor application of Thermolon™ requires the use of any non-ionic surfactants, such as Triton X-100 which has been linked to change in gender of fish. Furthermore, GreenPan argued that three highly renowned toxicologists concluded that Thermolon™ is a healthy alternative to PTFE non-stick coatings.

- Professor Tytgat: “Taking into account the issues of volatility of PTFE-particles (particles that can be released by overheating and/or mechanical damage) and the possibly related PTFE- and PFOA-lungtoxicity, it can be put forward that the use of GreenPan cooking utensils and the Thermolon anti-stick technology does not pose this risk. Normal use of GreenPan cooking utensils and Thermolon anti-stick technology doesn’t cause (measurable or scientifically significant/relevant) migration to the food of for instance polycyclic aromatic hydrocarbons (PAH), heavy metals, common solvents, acids or bases.”
- Dr. Elcomb: “Thermolon contains no PTFE or PFOA. The non stick coating is therefore safe to use in the kitchen. Also, no potentially harmful chemicals are emitted during the production process.”

- Dr. Petrosyan: “It has been shown in independent studies of the GreenPan cooking utensils that at temperatures up to 460°C there are no emissions of toxic gases. Test reports further demonstrate that the coating contains no PTFE and no PFOA. Consequently, no toxic compounds can migrate into the food that is cooked or warmed up by means of this type of cooking utensil. . . . Analytical reports show the Thermolon coating applied on the GreenPan cooking utensils contains no heavy metals, polyaromatic hydrocarbons (PAHs) or harmful solvents, acids or alkalis. Test reports in compliance with FDA regulations on regular food contact coatings show no migration of any such toxic materials from the Thermolon coating, which means that no contaminants can enter the food during cooking or warming up.”

In addition, GreenPan explained that its products are manufactured and rigorously tested in compliance with the internationally recognized EN/JIS/CMA standards on cookware safety and that GreenPan’s quality is established through test reports from independent labs, independent consumer reports, and press articles.

A. Temperature data.

In support of its claims that there are “no potentially dangerous chemicals inside,” the advertiser first noted that a dangerous substance is defined as being toxic, corrosive, flammable or otherwise dangerous, or declared by relevant regulations to be a dangerous substance. In contrast, the Thermolon™ coating on GreenPan’s products is a glass like material comprising Silicon atoms joined to oxygen atoms plus some R (alkyl) groups.

Further, the safety of Thermolon™ is confirmed by the fact that there is no detectable weight loss of Thermolon™ coating when a GreenPan is heated to temperatures as high as 460°C, and by the fact that the decomposition products which are lost at that temperature have “no toxicological significance.” The advertiser referred to the results of a 2007 Intertek test which assessed the emission of toxic gases when the pan was heated up to 460°C within a timeframe of 5 minutes. According to the test report, there were only traces (insignificant quantities) of certain gases and they did not “pose any toxicological hazards.” The advertiser argued that, to the contrary, a PTFE-type coating is dangerous because when heated to 460°C it can lose a very high percentage of its weight. This result is seen in testing conducted by OnSpeX in 2007 which analyzed the coating on several frying pans to determine what compounds, if any, are coming off when heated. The results showed that those with more organic content (i.e., PTFE-type coatings) lose more weight. In addition, while decomposition of PTFE at 460°C is relatively slow, the advertiser contended that PTFE-type coatings contain many other additives which decompose more rapidly. As an example, GreenPan noted that PAI (an organic adhesive that is commonly used in the basecoat of PTFE non-stick) starts to decompose at around 260°C. Thus, the decomposition of PTFE itself comprises a cocktail of toxic and carcinogenic materials, one of which includes PFOA.

The advertiser submitted that published temperature-time data for heating a dry frying pan on an ordinary domestic stove demonstrates that the maximum safe use temperature of PTFE and other

fluoropolymer coatings can easily be exceeded under everyday pre-heating of cookware within just a few minutes. GreenPan further noted that it has been proven that everyday cooking temperatures often unwittingly and easily exceed the commonly accepted maximum use temperature of PTFE of 500°F (260°C), such as in situations of pre-heating a pan on a domestic stove or in a boil-dry situation.⁴⁹ In response to DuPont's contention that overheating non-stick pans is contrary to the PTFE products' directions or instructions, the advertiser contended that the directions are irrelevant when actual or typical use is to the contrary. In fact, argued the advertiser, it is a somewhat common occurrence that, contrary to instructions, actual users overheat nonstick pans - especially during preheating, given the extreme speed at which such overheating can occur. The advertiser noted that there are numerous publicly available references to such rapid overheating.⁵⁰ Since actual, real-world use is most relevant for efficacy claims, the advertiser asserted that NAD should focus on such usage when evaluating the claims at issue.⁵¹

The advertiser further explained that the many toxic chemicals that are emitted from PTFE when used in cooking and accidentally overheated on a domestic stovetop are well-documented in scientific literature. Thermolon™, the advertiser argued, is safer because it can withstand the commonly used cooking temperatures that often exceed the accepted maximum safe use temperature for PTFE.⁵² Moreover, GreenPan does not emit toxic fumes when accidentally overheated.

B. Health and safety of PFOA (C8) and C6.

The advertiser claimed that it was surprised by DuPont's initiative, especially in light of the Environmental Working Group's latest report on PTFE-PFOA which stated, "[a]n independent scientific panel approved by DuPont as part of a class action lawsuit has linked an industrial chemical known as C-8 or PFOA to kidney and testicular cancer in humans."⁵³

⁴⁹ *Nervous About Nonstick?*, Good Housekeeping (November 2007) - The Good Housekeeping Research Institute investigated how fast it takes for a non-stick pan to reach 500 °F, the point at which its coating can start to decompose. For example, the results showed that, when preheating pans, each of the three empty non-stick pans heated on high reached temperatures above 500 degrees in less than five minutes – and the cheapest, most light-weight pan got there in under two minutes. Further, the cheapest pan reached more than 500 degrees in two and a half minutes, even with oil in it.

⁵⁰ See, e.g., *Nervous About Nonstick?*, Good Housekeeping (November 2007) (507°F in 1 3/4 minutes); Environmental Working Group test report at <http://www.ewg.org/node/8303> (754°F in 3 1/3 minutes).

⁵¹ See *The Procter & Gamble Company (Secret Sheer Dry and Sure Clear Dry Gel Solid Antiperspirants)*, Report #3468, NAD/CARU Case Reports (June 1998) ("long established norms of efficacy testing call for real world, consumer relevant testing").

⁵² The advertiser also cited the German Federal Risk Assessment Institute: "Polytetrafluoroethylene (PTFE is frequently used as the coating material – known under the trademark Teflon®. A non-stick PTFE finish to cookware and roast ware can pose a health threat if the coating is overheated. Then PTFE generates toxic fumes." http://www.bfr.bund.de/en/frequently_asked_questions_about_cookware_and_roastware_with_a_non_stick_coating-60855.html.

⁵³ The EWG is a respected American environmental organization that specializes in research and advocacy in the area of toxic chemicals. <http://www.ewg.org/release/chemical-food-packaging-fabric-coatings-linked-cancer>.

Further, as substantiation for its claims that its Thermolon™ products are healthier and safer than PTFE coated non-stick cookware, the advertiser noted the Environmental Working Group's suggestion that DuPont's new processing aid for PTFE cookware coatings is a "C6" compound, so called because it contains six carbon atoms. The advertiser stated that insufficient information is known about the C6 compound, but that there are grounds to suspect that it might have associated health risks. The advertiser questioned whether DuPont's PFOA replacement substance truly has a "favorable toxicological profile," as DuPont contends.⁵⁴ In addition, the challenger pointed out that in 2008 a DuPont lawyer stated that C6 based compounds (DuPont's PTFE replacement) are "much, much less toxic and don't have the same persistence issues that PFOA and some of the C8s have" That same year, the EWG published an article entitled "How Green is DuPont's Replacement for Teflon® Chemical?" which states:

[p]ublic records show that DuPont, Asahi, and Clariant are all shifting from PFOA to C6 chemistries despite an absolute dearth of public safety data, and despite the fact that on 3 critical counts, C6 may be as great a concern as PFOA:

- C6, like all the other PFCs, is extraordinarily persistent in the environment.
- C6 is potentially 3 to 5 times more toxic than C8 to aquatic organisms.
- C6 crosses the placenta to contaminate children before birth, according to an EWG study of umbilical cord blood from 10 newborn babies⁵⁵

VI. Natural claims.

The advertiser characterized as truthful and accurate its claim that Thermolon™ is a "*mineral-based coating.*" The Thermolon™ coating is predominantly mineral-based because the inorganic (i.e., mineral-type) content is high (86% by weight) and the organic content (i.e., carbon content) is only around 14% by weight. The advertiser rejected DuPont's contention that consumers would reasonably interpret this claim as a description of the pre-manufacturing materials, the materials used during the manufacturing process, or that "xxx-based" means

⁵⁴ In particular, the advertiser noted that DuPont recently produced a document that provided some limited information on its PFOA replacement. In the document DuPont stated that the replacement is "chemically stable and, if released, would be environmentally persistent. To address this, the goal of the DuPont GenX exposure control strategy is to contain the new processing aid within the manufacturing site and to minimize worker exposures. This strategy utilizes various combinations of environmental engineering controls which work both individually and collectively to minimize releases and exposures." The environmental engineering controls include: filters and scrubbers, carbon canisters, thermal converters, deep-bed scrubbers, autoclaves, extruders and pelletizers, carbon beds, oven dryers, and emissions monitoring. The advertiser questioned why all these measures are needed for a substance that DuPont claims has a "favorable toxicological profile."

⁵⁵ The article continued: "[t]ruly green chemistry is sustainable chemistry with products and processes that reduce or eliminate the use and generation of hazardous substances. Much remains unknown about C6, but what is known—that it is bioaccumulative, persistent and crosses the placenta to pollute human blood—is enough to disqualify it as green chemistry. Promoting a PFOA replacement that raises such serious safety concerns while simultaneously withholding critical toxicity data violates the spirit of the PFOA phase-out agreement and undermines the credibility of the entire industry." <http://www.ewg.org/reports/teflongreenwash>.

“completely-containing.”⁵⁶ To the contrary, according to the advertiser, a reasonable consumer would interpret the phrase “*mineral-based*” to mean that the actual, final product or product feature being described “basically” or “predominantly” contains “mineral” – a claim which is substantiated. Thermolon™ coatings are formed from a Sol-gel process, which is a technique widely used for engineering ceramic materials:

In general, the sol-gel process involves the transition of a solution system from a liquid “sol” (mostly colloidal) into a solid “gel” phase. . . . The starting materials used in the preparation of the “sol” are usually inorganic metal salts or metal organic compounds such as metal alkoxides. In a typical sol-gel process, the precursor is subjected to a series of hydrolysis and polymerization reactions to form a colloidal suspension, or a “sol.” Further processing of the “sol” makes it possible to make materials in different forms. . . . When the “sol” is cast into a mold, a “wet gel” will form. With further drying and heat treatment the “gel” is converted into dense materials.⁵⁷

Decision:

I. PFOA-free and PTFE-free claims.

At issue is whether GreenPan’s literally truthful compositional claims about its pans – that the pans do not contain the chemicals PFOA or PTFE – are presented in a context which conveys an unsubstantiated implied claim.⁵⁸ It was the challenger’s position that the manner in which GreenPan’s *PFOA-free* and *PTFE-free* claims are used, rather than simply and factually explaining the composition of the Thermolon coating, instead preys on consumers perceived fears of such chemicals to convey the misleading messages (1) that all PTFE non-stick coatings are made with PFOA and/or are unsafe compared to Thermolon coatings, and (2) that GreenPan products are healthier, safer and better for the environment than all PTFE products. In contrast, the advertiser maintained the truthfulness and accuracy of its *PFOA-free* and *PTFE-free claims* and contended that such claims do not convey the message that all PTFE-coated pans are made with PFOA, or that PTFE non-stick pans are unsafe compared to pans with Thermolon coating.

⁵⁶ The advertiser stated that there is no NAD precedent that “xxx-based” means “completely-containing” or “containing throughout the manufacturing process”. In fact, the Arm & Hammer case held that, in conjunction with “100% plant-based” and “100% naturally derived” claims for the product’s soaps/surfactants, that “the target audience is likely to take away the message that *the product* is natural, in whole *or in substantial part*.” Church & Dwight Co., Inc. (Arm & Hammer Detergent), Report #4848 at 11, *NAD/CARU Case Reports* (May 2008); *see also* Seventh Generation, Inc. (Seventh Generation Household Cleaning and Laundry Products), Report#5206, *NAD/CARU Case Reports* (August 2010) (noting Church & Dwight decision recommending that “100% plant-based” claim be discontinued because *final product* was not natural in whole *or substantial part*, and determining that use of “natural” on listed products be qualified to make clear that basis for claim is fact that products are plant-derived *or plant-based*).

⁵⁷ <http://www.chemat.com/chematechnology/SolGel.aspx>

⁵⁸ A claim that is literally true may, in the context in which it is presented, still convey a message that is false or misleading. *See Allstate Insurance Company (Property and Casualty Insurance)*, Report #5452, *NAD/CARU Case Reports* (April 2012).

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, transforms what may be compositional claims when standing alone into comparative superiority claims.⁵⁹

First, with regard to the product packaging, NAD noted that the claim "HEALTHY, ECO-FRIENDLY NON-STICK FRYPAN" appears in large, bold letters in the center of the cardboard overwrap, underneath which is a checklist itemizing GreenPan's key features including:

- ✓ GREAT PERFORMANCE
- ✓ HIGH HEAT RESISTANCE
- ✓ 60% CO₂ REDUCTION
- ✓ NO PTFE / NO PFOA
- ✓ NO HARMFUL FUMES
- ✓ RAPID & EVEN HEAT DISTRIBUTION
- ✓ DISHWASHER SAFE⁶⁰

Further, the top right corner of the packaging contains the claim "safe for you & the environment" within the image of a tag.⁶¹ In addition, the lower left corner of the packaging displays the claim, "NEW NON-STICK COATING, SEE BACK PANEL, EARTH FRIENDLY," sandwiched between the words "PTFE FREE" on top of the claim and "PFOA FREE" on the bottom.⁶² NAD determined that the net impression of this packaging reasonably conveys the message that the GreenPan frying pan is healthier, safer and more eco-friendly due in part to the fact that there is "NO PTFE / NO PFOA," and implies that products containing PTFE and/or PFOA are not healthy, safe or eco-friendly. NAD also noted that the appearance of the "NO PTFE / NO PFOA" claim conflates the two chemicals, such that *one* reasonable takeaway is the message that all PTFE coatings are made with PFOA – a message which is inaccurate.

Similarly, NAD determined that GreenPan's Internet advertising reasonably conveys the message that all PTFE non-stick coatings are less safe (or even unsafe) compared to Thermolon coatings. For example, a GreenPan web page advertising a pan from the Orlando collection contains the heading "Healthy and eco-friendly" followed by an enumerated list of the pan's features, including:

1. With Thermolon™ non-stick technology the patented mineral-based non-stick coating from GreenPan™. Safer for you, better for the environment.

⁵⁹ See, e.g., Born Free, LLC (BornFree Bottle System), Case #5308, *NAD/CARU Case Reports* (March 2011) (finding that the advertiser's juxtaposition of its "BPA-free" claims with the tag line, "Born Free: The Safe and Smart Bottle/Feeding System" transforms a compositional "safe" claim into an unsupported comparative safety claim).

⁶⁰ Packaging for a frying pan in the New York Collection, which was purchased at Target on September 7, 2012.

⁶¹ *Id.*

⁶² *Id.*

2. No potentially dangerous chemicals inside: It's completely PTFE-free and contains no silicone oil.⁶³
3. Manufactured without PFOA.⁶⁴

Thus, this webpage expressly conveys the messages that Thermolon coating is “safer” for consumers and “better for the environment” as compared to PTFE non-stick coatings and that PTFE is a “potentially dangerous chemical.”

Further, a webpage explaining GreenPan technology clearly conveys the message that all PTFE coatings are made with PFOA by stating that “*During the manufacturing of PTFE coatings, PFOA – Perfluorooctanic Acid – is used and emitted into the environment.*”⁶⁵ This same page also discusses the “potential” dangers of PTFE to human health in several detailed paragraphs explaining the “difference between Thermolon and traditional PTFE non-stick coatings,” thereby reinforcing the message that GreenPan products are healthier, safer and better for the environment than all PTFE products.⁶⁶ Additional website claims which convey the message that PTFE non-stick coatings are unsafe compared to Thermolon coatings include, for example, “*GreenPan™ does not use PTFE, but brings with Thermolon™ non-stick technology a healthy alternative to the market.*”⁶⁷

Having determined that GreenPan’s *PFOA-free* and *PTFE-free* claims reasonably convey to consumers messages of comparative superiority (1) that all PTFE non-stick coatings are made with PFOA and/or are less safe or unsafe compared to Thermolon coatings, and (2) that GreenPan products are healthier, safer and better for the environment than all PTFE products, NAD next turned to the record to assess whether such messages are supported.

PFOA-free: As previously described by the parties, PFOA (perfluorooctanoic acid) was historically used as a processing aid by DuPont during the manufacturing of its Teflon brand non-stick coating for pans. Due to concerns regarding the environmental impact of the PFOA released into the environment during the manufacturing process, as a participant in the EPA’s 2010/2015 PFOA Stewardship Program, DuPont committed itself to eliminating PFOA from its production process and, in fact, no longer uses PFOA to manufacture non-stick coatings for cookware and consumer bakeware. NAD appreciates GreenPan’s acknowledgement that, unlike in 2007 when GreenPan was introduced, now many PTFE-type non-stick coatings are available

⁶³ This claim appears elsewhere on GreenPan’s website as well.

⁶⁴ <http://www.green-pan.com/en/orlando-collection-2462.htm>.

⁶⁵ <http://www.green-pan.us/us/technology-2040.htm>. This same claim is made on another web page and it is followed by the claim “**We don’t use PTFE, so no PFOA** can be emitted in the environment.” <http://www.green-pan.us/us/mission-1869.htm> and <http://www.green-pan.com/en/mission-1577.htm>.

⁶⁶ The web page states, “Traditional non-stick is achieved by coating the pans with PTFE. . . . When you overheat your pan (accidentally or by habit: a lot of people have the bad custom to [sic] using maximum heat in order to speed up cooking, so overheating can start after as little as 4 minutes), you damage not only your pan but possibly also your health! How come? Above 260° Celsius, PTFE starts to decompose and is known to release a multitude of nasty toxic fumes. The released fumes are proven to be lethal to small pets like birds! On humans, these fumes can potentially harm the respiratory tract and cause nausea and headaches. . . .” <http://www.green-pan.us/us/technology-2040.htm> and <http://www.green-pan.us/us/mission-1869.htm>.

⁶⁷ <http://www.green-pan.us/us/mission-1869.htm>.

without PFOA being used in their manufacture. However, as previously discussed, GreenPan's advertising fails to reflect this fact and includes numerous statements which indicate, both expressly and by implication, that all PTFE non-stick coatings are made with PFOA, and therefore, Thermolon coatings are better for the environment than *all* PTFE products – a message which is inaccurate for a significant portion of the marketplace.⁶⁸ Further, there is no reliable evidence in the record that the processing aid currently used by DuPont (the replacement for PFOA) is more harmful to the environment than the Thermolon coating.⁶⁹ For these reasons, NAD recommended that GreenPan discontinue its *PFOA-free* claims or modify them to avoid conveying the unsupported message that all PTFE non-stick coatings are made with PFOA.⁷⁰ NAD noted that nothing in this decision precludes GreenPan from describing the composition of its products as "*PFOA-free*" as long as it does so in a non-misleading manner and context, which does not expressly state or impliedly suggest product superiority over *all* PTFE non-stick coatings (e.g. *more* environmentally friendly, safer or healthier) on that basis.⁷¹

PTFE-free: PTFE (polytetrafluoroethylene) is the fluoropolymer resin of which the nonstick coating itself is comprised. It is not disputed that when PTFE is overheated it will decompose to yield toxic fumes. At issue is whether real-world consumer usage is likely to lead to such overheating. The challenger contended that any potentially harmful effects from PTFE itself would only occur when food has been overcooked way past the edible stage, thus it is unlikely that typical usage of a coated fry pan would cause harm to consumers. Therefore, according to the challenger, GreenPan's *PTFE-free* claims, conveying to consumers that its products are healthier and safer than all PTFE products, are inaccurate. On the other hand, the advertiser maintained that everyday cooking temperatures often unwittingly and easily exceed the commonly accepted maximum use temperature of PTFE of 500°F (260°C). Thus, Thermolon coated products are healthier and safer because they do not emit toxic fumes when accidentally overheated.

The advertiser has the initial burden of presenting a reasonable basis for the claims that its Thermolon coated products are healthier and safer than PTFE-type non-stick products.⁷² In support of its claims, GreenPan referred to several publicly available references regarding the extreme speed at which overheating of frying pans can occur, including a 2007 report from The Good Housekeeping Research Institute which investigated how quickly a non-stick pan reaches

⁶⁸ Although GreenPan argued that a significant number of manufacturers operating in Asia continue to use PFOA, its unqualified claims conveying that *all* PTFE non-stick coatings are made with PFOA are misleading as to those companies which no longer use PFOA, including DuPont.

⁶⁹ GreenPan speculated that, even in the absence of PFOA, Thermolon™ coatings are better for the environment than Teflon® because DuPont's new processing aid for PTFE cookware is a C6 material, and therefore just as hazardous to the environment as PFOA. However, GreenPan offered no reliable evidence in support of this proposition. To the contrary, DuPont confirmed that its proprietary processing aid is not a C6 material and has been approved by regulatory agencies for usage in its cookware products.

⁷⁰ Although GreenPan offered to modify and qualify its claims to convey that, "unlike GreenPan's Thermolon™ coating, all PTFE non-stick dispersions are made with either PFOA or one of its replacements that may include PFCAs," in the absence of evidence providing a reasonable basis for this claim, NAD is unable to make a determination as to whether such a modification would be appropriate.

⁷¹ See, e.g., Born Free, LLC (BornFree Baby Bottles), Case #4626, *NAD/CARU Case Reports* (February 2007).

⁷² In an NAD proceeding, the advertiser has the initial burden of presenting a reasonable basis for its claims. See Unilever United States, Inc. (Vaseline Sheer Infusion), Report #5262, *NAD/CARU Case Reports* (December 2010).

500°F. Although such articles show that it is indeed possible to rapidly heat a pan to 500°F under the conditions used by the testers, such evidence is insufficient to provide a reasonable basis for the contention that such overheating typically occurs in everyday consumer household usage. GreenPan presented no evidence regarding the actual incidence of consumers overheating their non-stick pans, or that even if such overheating occurred it was prolonged enough, or released toxic fumes in amounts sufficient enough, to actually impact consumers' health and safety.⁷³ To the contrary, DuPont pointed to several sources, including internal testing, indicating that PTFE coated products are safe for conventional kitchen use because overheating non-stick pans to the point of decomposition is unlikely.⁷⁴ Moreover, in 2003 the U.S. Consumer Product Safety Commission ("CPSC") rejected a petition to require warning labels on cookware made with Teflon and other non-stick coatings because there was insufficient data to show that fumes emitted from cookware with non-stick coatings pose health risks to consumers.⁷⁵ The CPSC noted that the petitioner, the Environmental Working Group, had "not established whether humans will experience adverse health effects when Teflon or other coated cookware is used at normal cooking temperatures" or that toxic chemicals "are released in amounts during a consumer's use of a product that would cause human illness or injury."⁷⁶

The advertiser failed to establish a reasonable basis for its claims, therefore NAD recommended that GreenPan discontinue its *PTFE-free* claims or modify them to avoid conveying the unsupported message that its Thermolon coated products are healthier and safer than all PTFE-type non-stick products. NAD noted that nothing in this decision precludes GreenPan from describing the composition of its products as "*PTFE-free*" as long as it does so in a non-

⁷³ To produce meaningful results for the purpose of claim support, product testing should be conducted under consumer relevant conditions, using accepted methodology and protocols, and should be related directly to what the advertising claims. Kimberly-Clark Corporation (Kotex Ultra Thin Pads with Wings), Report #3711, *NAD/CARU Case Reports* (December 2000).

⁷⁴ For instance, speaking to the safety of using PTFE-coated utensils, including coated fry pans, Dr. A.J. Lehman then-Director, Division of Pharmacology, U.S. FDA stated: "It has been demonstrated that polytetrafluoroethylene, when overheated, will decompose to yield toxic fumes. However, these temperatures are considerably above the smoke point of cooking fats and oils. The wide range between the smoke points of fats and oils and the thermal stability temperature of the resin, on the order of 130-150°C, not only make it quite unlikely that decomposition temperatures will be reached in the customary use of the coated fry pan without scorching the food to the inedible stage, but also permits considerable leeway, as well as abuse, in the use of the coated utensil. Polytetrafluoroethylene resin-coated utensils are safe for conventional kitchen use." Further, the DuPont Haskell Laboratory for Toxicology and Industrial Medicine presented test results on animals demonstrating that fumes from overheated PTFE non-stick cookware manufactured with PFOA only present an exposure risk at an elevated temperature (300°C/572°F – which is higher than normal cooking temperatures and higher than the temperature range recommended by DuPont) and only if the cookware is heated for extended periods of time (around four to six hours).

⁷⁵ *CPSC Rejects Petition for Teflon Warning Labels*, July 21, 2003, ICB Americas.

⁷⁶ The CPSC, referencing the "Canary in the Kitchen Study," also noted that "evidence that birds are harmed is not relevant to human health." In this article, DuPont acknowledged that birds, whose lungs are more sensitive to humans, can die when exposed to fumes from Teflon® cookware heated above 500°F. It also stated that flu-like polymer fume fever in humans lasts no more than two days and is possible only when Teflon® is heated well beyond 500°F.

misleading manner and context, which does not expressly state or impliedly suggest product superiority over all PTFE non-stick coatings (e.g. safer or healthier) on that basis.⁷⁷

II. Non-stick performance claims.

NAD next addressed GreenPan's non-stick performance claims that Thermolon is a non-stick mineral-based coating "*with superior release properties,*"⁷⁸ "*The Thermolon surface provides great non-stick,*"⁷⁹ and that Thermolon is a "*high quality non stick coating.*"⁸⁰

A. Claims regarding GreenPan's superior release properties.

Although NAD has recognized that use of the term "superior" may be either a comparative or a monadic claim of general excellence depending on the context in which it appears, NAD noted that, with regard to the claim that Thermolon is a non-stick mineral-based coating "*with superior release properties,*" GreenPan did not contest the challenger's characterization of it as a superiority claim, as it appears in the advertising at issue.

First, in support of its claims, GreenPan relied on the results of testing conducted by OnSpeX, which compared the non-stick performance of both Thermolon Endurance (2007) and Thermolon ROCKS (2009) against various different famous brands of cookware coated with PTFE-type non-stick surfaces. With regard to the 2007 OnSpeX testing and 2009 OnSpeX testing, NAD generally approved of the methodology of the "Egg Test," which involved heating the cookware surface to 325°F, cooking an egg and then assessing how easily it slid off the cooking surface without lubricant.⁸¹ Such testing is similar to the "Egg Test" protocol set forth by the Cookware Manufacturers Association ("CMA"), which requires heating the cookware to between 300° and 350°F, cooking an egg, removing the egg with a spatula, and then recording whether the test food was removed intact and if the surface wiped clean.⁸² NAD noted that the

⁷⁷ See, e.g., Born Free, LLC (BornFree Baby Bottles), Case #4626, *NAD/CARU Case Reports* (February 2007). In that case, NAD determined that the advertiser is entitled to tout, and consumers are entitled to know, that Born Free bottles are made without BPA. However, the advertiser did not have a reasonable basis for the claim that polycarbonate baby bottles disrupt babies' hormones. NAD thus recommended that the advertiser either discontinue the claim that BPA is a "hormone disrupting chemical," or modify it by disclosing that the polycarbonate in competing baby bottles have not been shown to disrupt the hormones of infants or otherwise harm them.

⁷⁸ <http://www.green-pan.com/en/questions-2042.htm>.

⁷⁹ <http://www.green-pan.com/en/mission-1577.htm>.

⁸⁰ <http://www.green-pan.us/us/mission-1869.htm>.

⁸¹ Although the "Egg Test" was also performed again after the "500°F Heat/Cool Test," NAD determined that the results of this testing are not consumer relevant because heating PTFE non-stick coated pans to 500°F is contrary to their use instructions and, further, GreenPan has not established that consumers typically overheat their non-stick pans to 500°F. NAD has repeatedly reminded advertisers that torture tests "as a general rule, are insufficient substantiation to show product performance under consumer relevant conditions." Unilever United States, Inc. (Degree Men Absolute Protection Antiperspirant), Report #4971, *NAD/CARU Case Reports* (February 2009) ("[A]n advertiser making an unqualified performance claim must demonstrate that it has tested its product *under conditions that consumers are likely to encounter in the marketplace*").

⁸² The surface is deemed to be wiped clean if unaided visual examination after wiping reveals no trace of solid material. A "pass" is recorded if there is no trace of solid material after wiping. "Fail" means traces of solid material remain. Cookware Manufacturers Association, *Engineering Standards for Cookware & Bakeware*, Revised April 2011, §21.6.1 Egg Test.

non-stick performance tests set forth by the CMA are designed to “replicate cookware performance in a consumers setting.” NAD also approved of the fact that an independent laboratory conducted the testing and that it involved head-to-head testing of the advertised product against a significant portion of the PTFE non-stick coating market.⁸³ However, NAD was concerned by the fact that the results of the testing were based on the ease of release ratings of only *one* cooked egg in the 2007 OnSpeX testing, and only *three* cooked eggs in the 2009 OnSpeX testing. In order to produce meaningful results for the purpose of claim support, product testing should be conducted under consumer relevant conditions, using accepted methodology and protocols, and should relate directly to the advertising claims.⁸⁴ Here, consumers are concerned with the non-stick durability of their cookware (whether the non-stick performance is enduring), so consumer-relevant testing should have included multiple tests of each pan so that the endurance of non-stick superiority could be evaluated over time. The results of GreenPan’s limited testing relate solely to the evaluation of release performance of a new pan (i.e., pass/fail testing) and are thus, not a good fit for substantiating the claim at issue.⁸⁵

Further, GreenPan referred to the results of a 2008 Intertek test report which analyzed the endurance and corrosion resistance of a GreenPan Vienna frypan pursuant to EN Standard 12983-2 and concluded that it “passed” both requirements.⁸⁶ In order to pass the “endurance” test “any surface claimed to be non-stick shall leave no portion greater than 10% of the surface area of the pancake still adhering to the test surface.” In support of its superior non-stick release claims, GreenPan compared the aforementioned results with the results of a separate 2008 Intertek test report which concluded that a T-Fal pan (with a PTFE non-stick coating) “failed” the “endurance” testing conducted pursuant to EN Standard 12983-2. However, NAD determined that such testing is not sufficiently reliable to support the claims at issue for several reasons. First, such testing is not the best supporting evidence for comparative performance claims because it is not head-to-head testing on the products themselves.⁸⁷ Second, an unqualified superiority claim must be supported by testing of the advertised product against a significant portion of the market.⁸⁸ Testing conducted against one T-Fal pan is therefore

⁸³ NAD noted the challenger’s argument that the OnSpeX testing did not test cookware coated with DuPont Teflon® coatings at comparably priced and quality pans to the Thermolon™ products tested. Although such testing would have been useful (and necessary if the claim was specifically comparing DuPont Teflon® with Thermolon™), NAD did not conclude that the absence of this data point renders the testing fatally flawed. As a general rule, an unqualified superiority claim must be supported by testing of the advertised product against a significant portion of the market. BriteSmile, Inc. (BriteSmile Tooth Whitening System), Report # 4032, *NAD/CARU Case Reports* (April 2003).

⁸⁴ Wyeth Consumer Healthcare, Inc. (Caltrate), Report #4153, *NAD/CARU Case Reports* (March 2004).

⁸⁵ NAD noted that although in the 2007 OnSpeX testing each pan had 50 pancakes browned in it prior to the Egg Test, thereby bringing the protocol a bit closer to real-world usage, this was still insufficient to support GreenPan’s broad unqualified non-stick performance claims.

⁸⁶ The testing protocol for assessing “endurance” under EN Standard 12983-2 involves, generally, using a rotating brass brush assembly on the surface of a heated test pan (205 ± 10°C) for 3 minutes and then pouring in pancake batter and cooking it for a specified time/temperature, then freely dropping a test weight above the center of the pan and noting the percentage of the surface area of the pancake still adhering to the surface.

⁸⁷ Reynolds, Report #5484 at 26; Michelin North America, Inc. (Michelin North America, Inc. Tires), Report #5147 at 7 *NAD Case Reports* (March 2010); Bausch & Lomb, Inc. (Pure Vision and Pure Vision Toric Contact Lenses), Report # 4800 at 16 *NAD Case Reports* (February 2008).

⁸⁸ BriteSmile, Inc. (BriteSmile Tooth Whitening System), Report # 4032, *NAD/CARU Case Reports* (April 2003).

insufficient. Finally, as previously discussed in connection with the OnSpex testing, consumer-relevant testing should have included multiple tests of each pan so that the endurance of non-stick superiority could be evaluated over time. Tests (conducted separately) indicating that a single Thermolon test pan “passed” the “endurance” test requirements of EN Standard 12983-2, whereas a single T-Fal pan “failed,” are insufficient to substantiate the claims at issue.

For these reasons, NAD determined that the advertiser did not establish a reasonable basis for its broad unqualified non-stick performance claim that Thermolon has “*superior release properties*” and recommended that GreenPan discontinue such claims.

B. Claims regarding superior non-stick performance in general.

GreenPan did not dispute that the claims “*The Thermolon™ surface provides great non-stick,*”⁸⁹ and that Thermolon is a “*high quality non stick coating*” compare Thermolon to PTFE-type coatings. In addition, NAD concluded that within the context of the advertising as a whole, reasonable consumers could take away a message of comparative superiority from such claims. In particular, the entire GreenPan “Mission” webpage (which contains the “*great non-stick*” and “*high quality non stick coating*” claims) makes numerous comparative claims between Thermolon and PTFE (“traditional”) cookware throughout the entire page. Therefore, *one* reasonable interpretation of claims touting Thermolon’s non-stick performance as “*great*” and “*high quality*” is that GreenPan’s products have superior non-stick performance as compared to PTFE non-stick coatings. Any claim found to be reasonably implied by NAD need not be the *only* message conveyed by an advertisement, it need only be *one* of the reasonable messages conveyed by an advertisement.⁹⁰

In support of its claims, GreenPan referred to testing of the many attributes that contribute to the performance of a non-stick coating. The advertiser’s 2007 and 2009 OnSpex testing, and 2007, 2008 and 2009 Intertek testing (which used various standards) showed that the tested GreenPan cookware met a range of quality measures for non-stick cookware, including for example, scratch resistance, corrosion resistance, abrasion resistance, a dry cook test (which involved the browning of pancakes), an egg test (cooking an egg and then assessing how easily it slid off the cooking surfaced without lubricant), endurance, and temperature resistance.⁹¹ After thoroughly reviewing GreenPan’s testing, NAD determined that it was not sufficiently reliable to support the advertiser’s broad unqualified claims regarding *superior* non-stick performance because several of the tests conducted involved protocols that are contrary to the usage instructions of PTFE coated non-stick products and/or are torture tests which do not establish product performance under consumer relevant conditions.⁹² Moreover, as previously discussed, the advertiser did not

⁸⁹ <http://www.green-pan.com/en/mission-1577.htm>;

⁹⁰ See Lenovo (United States), Inc. (Personal Computers) Report #4820, NAD/CARU Case Reports (March 2008).

⁹¹ To the extent the challenger argued that the advertiser’s products do not meet the requirements of “non-stick” cookware at all, NAD determined that, based on these test results the advertiser established a reasonable basis for calling its GreenPan Thermolon™ cookware “non-stick.”

⁹² For instance, GreenPan’s abrasion resistance testing (2009 OnSpex “500°F Abrasion Resistance Test”) was problematic for assessing comparative superiority because the protocol involved heating the test pans up to 500°F. Such high heat is contrary to the usage instructions of PTFE non-stick coated cookware and GreenPan has not established that consumers typically overheat their non-stick pans to 500°F.

substantiate its claim that Thermolon has “*superior release properties*” – an attribute which is certainly relevant to a determination as to whether the advertiser provided a reasonable basis for its more general claims of superior non-stick performance. For these reasons, NAD recommended that the advertiser discontinue its use of the claims “*The Thermolon™ surface provides great non-stick,*” and that Thermolon is a “*high quality non stick coating*” as they appear in the comparative advertising at issue. NAD noted that nothing in this decision precludes the advertiser from promoting in a monadic context the non-stick capability of its product.

III. Eco-friendly claims.

A. General environmental claims.

NAD has, in recent years, observed the dramatic rise in environmental advertising claims in the marketplace. Unqualified general claims of environmental benefit are difficult to interpret, and depending on their context, may convey a wide range of meanings to consumers. Because the public cannot easily verify for themselves whether environmental claims are truthful or meaningful, purchasers often rely on advertising to determine any environmental benefits of a product. As a result, advertising self-regulation plays an important role in ensuring the truth and accuracy of environmental claims.

After reviewing the advertiser’s environmental claims in the context of the advertising as a whole, NAD determined that the advertising contains both qualified and unqualified “eco-friendly” claims.

Unqualified environmental claims: The advertiser’s “eco-friendly” claims appearing on its website include the unqualified tagline “*Health * Environment * Convenience,*”⁹³ as well as unqualified claims that “*GreenPan products are healthy, eco-friendly and provide great performance and convenience,*”⁹⁴ and “*Why our pans are good for you and better for the environment?*”⁹⁵

On October 1, 2012 the FTC finalized its revisions to the Green Guides.⁹⁶ With regard to unqualified general environmental benefit claims, the Green Guides state:

It is deceptive to misrepresent, directly or by implication, that a product, package, or service offers a general environmental benefit.

⁹³ <http://www.green-pan.com/en/mission-1869.htm>.

⁹⁴ *Id.*

⁹⁵ <http://www.green-pan.us/us/cookware-1872.htm>. NAD noted that this appears as a declarative statement that the GreenPan pans are better for the environment, rather than an actual question, because the “answer” does not appear on the same webpage as the claim.

⁹⁶ 16 C.F.R. Part 260: Guides For the Use of Environmental Marketing Claims (<http://www.ftc.gov/os/2012/10/greenguides.pdf>); see also <http://www.ftc.gov/opa/2012/10/greenguides.shtm>.

Unqualified general environmental benefit claims are difficult to interpret and likely convey a wide range of meanings. In many cases, such claims likely convey that the product, package or service has specific and far-reaching environmental benefits and may convey that the item or service has no negative environmental impact. Because it is highly unlikely that marketers can substantiate all reasonable interpretations of these claims, marketers should not make unqualified general environmental benefit claims.⁹⁷

NAD determined that, within the context of the advertising at issue, the advertiser's unqualified "eco-friendly" claims could reasonably convey the message that GreenPan Thermolon cookware has far-reaching environmental benefits or that it has no negative environmental impact. In the absence of any evidence in support of such a takeaway, NAD recommended that the advertiser discontinue its unqualified environmental benefit claims.

NAD next addressed the advertiser's unqualified sustainability claim "*If we do not show our children the road to sustainability, nothing will change. Do not expect that the next generation will clean up our mess, we have to start ourselves right here, right now!*"⁹⁸ NAD noted that this language appears superimposed over images which imply a general environmental benefit – a grazing cow sniffing a GreenPan pot, a woman holding a live chicken under one arm a GreenPan cookware in the other hand, and fresh vegetables being picked from the ground and placed directly into a GreenPan pot. Although the Green Guides do not address the term "sustainable," the Green Guides Statement provides relevant discussion. In particular, the FTC notes that "depending on context, 'sustainable' may convey a wide range of meanings" and that "marketers are responsible for substantiating consumers' reasonable understanding of these claims."⁹⁹ Further, "if in context reasonable consumers perceive a sustainable claim as a general environmental benefit claim, the marketer must be able to substantiate that claim and all attendant reasonably implied claims."¹⁰⁰ NAD determined that the advertiser's unqualified sustainability claim conveys a broader environmental benefit than is supported by the evidence, therefore NAD recommended that the claim be discontinued.

Qualified environmental claims: In some iterations of the advertiser's environmental claims, including the packaging covering GreenPan's cookware products (discussed in detail in Section I), NAD determined that reasonable consumers could take away the message that the GreenPan cookware is "eco-friendly" or "environmentally friendly" because it is "PTFE-free," "PFOA-free," release "no harmful fumes," and because there is a "60% CO₂ reduction." The GreenPan website also contains qualified environmental claims. For example, the GreenPan "Mission" page states, "*A healthy and happy life in an enjoyable environment is our biggest goal in life. GreenPan™ commits to this, and invests 100% in research towards healthy and eco-friendly technologies.*"¹⁰¹ This is followed by a paragraph explaining that GreenPan's Thermolon coating

⁹⁷ 16 CFR §260.4(a) – (b).

⁹⁸ <http://www.green-pan.us/us/cookware-1577.htm>.

⁹⁹ 2012 Green Guides Statement, <http://www.ftc.gov/os/fedreg/2012/10/greenguidesstatement.pdf>.

¹⁰⁰ *Id.* The FTC further counsels that "marketers who use 'sustainable' claims should test those claims in the context of their advertisements to ensure they can substantiate them."

¹⁰¹ <http://www.green-pan.com/en/mission-1869.htm>.

is PTFE-free, the implication being that the cookware is eco-friendly because it is not coated with PTFE.¹⁰²

However, despite the fact that GreenPan qualifies the aforementioned general environmental benefit claims, NAD was nevertheless concerned that GreenPan's "eco-friendly" claims, as they appear within the overall context of the advertising at issue, overstate the actual environmental profile of the products. NAD noted that the Green Guides counsel advertisers not to overstate the environmental benefits of their products: "An environmental marketing claim should not overstate, directly or by implication, an environmental attribute or benefit. Marketers should not state or imply environmental benefits if the benefits are negligible."¹⁰³ Further, the Green Guides explain that:

Marketers can qualify general environmental benefit claims to prevent deception about the nature of the environmental benefit being asserted. To avoid deception, marketers should use clear and prominent qualifying language that limits the claim to a specific benefit or benefits. Marketers should not imply that any specific benefit is significant if it is, in fact, negligible. If a qualified general claim conveys that a product is more environmentally beneficial overall because of the particular touted benefit(s), marketers should analyze trade-offs resulting from the benefit(s) to determine if they can substantiate the claim.¹⁰⁴

NAD determined that GreenPan's bold and pervasive "eco-friendly" claims, used in conjunction with "green" imagery¹⁰⁵ throughout its product packaging and website (as well as use of the GreenPan name), convey the message that the product is more environmentally beneficial overall because of the particular touted benefits (PFOA-free, PTFE-free, no harmful fumes, and 60% less CO₂ emissions). NAD noted that it is factually accurate that the GreenPan manufacturing process is more eco-friendly than manufacture of pans with the use of PFOA as a processing aid, and that the Thermolon manufacturing process (during the brief pan coating process) uses 60% less CO₂ emissions when compared with the PTFE-coated pans coating process. Moreover, NAD acknowledged that GreenPan cookware does not contain any persistent organic chemicals (such as C6), lead, cadmium, silicone oil, and that Thermolon does not require the use of any non-ionic surfactants such as Triton X-100. Further, GreenPan products have upcycled

¹⁰² A qualified environmental claim also appears in advertising in the West Elm Catalog, which states: "*Safe for you, safe for the environment – just what we were looking for in a cookware set when we discovered GreenPan.*" GreenPan is responsible for the content of third-party advertising to the extent that it provided the language to be used by West Elm. An advertiser that provided product information to a catalog retailer has an obligation to insure that the product claims made in the catalog are supported. Sonex Corporation (The Ultrasonex Toothbrushes & SoniPick Flosser), Report #3656, *NAD/CARU Case Reports* (May 2000).

¹⁰³ 16 CFR §260.3(c).

¹⁰⁴ 16 CFR §260.4(c).

¹⁰⁵ For instance, the GreenPan packaging is bright green and white and shows imagery of dewy grass blades. In addition, the Thermolon™ logo includes a green apple. The GreenPan website, which uses the Thermolon™ green apple logo throughout, has the same bright green and white color scheme and also includes nature images such as an owl in a tree with the word bubble "healthy."

aluminum bodies and stainless steel handles.¹⁰⁶ However, there is no evidence analyzing the trade-offs resulting from the specified benefits to substantiate that the product is in fact more environmentally beneficial overall than competing non-stick pans. Nor does any other evidence support the message of broad environmental benefits conveyed by the challenged claims.¹⁰⁷ Therefore, NAD recommended that the advertiser discontinue its comparative qualified “eco-friendly” claims as they currently appear in the advertising at issue. NAD noted that nothing in this decision precludes the advertiser from conveying that the GreenPan manufacturing process is more environmentally friendly than manufacturing which uses PFOA as a processing aid, or from promoting the aforementioned specific environmental benefits, as long as it does so in a non-misleading manner and context, which does not expressly state or impliedly suggest that the product is more environmentally beneficial overall than all PTFE non-stick cookware.

Finally, the challenger took issue with the “GreenPan” name, contending that it is misleading in that it overstates the environmental benefits of the advertiser’s products. As NAD has previously noted, “absent extrinsic evidence that consumers have been confused or misled, NAD is reluctant to require an advertiser to change the name of a product simply because a challenger speculates that it might be misleading.”¹⁰⁸ Therefore, in the absence of a demonstration of confusion regarding the designation “GreenPan,” NAD concluded that the advertiser may continue to use the product name and label GreenPan.

B. Specific environmental claims.

NAD reviewed the advertiser’s substantiation for its claims of “60% less CO₂ emissions” compared with the production of PTFE-coated pans.¹⁰⁹ NAD determined that GreenPan’s evidence, submitted on a confidential basis, provided a reasonable basis for these claims. The 2007 Process Evaluation Report conducted by Tianjin University calculated that the CO₂ emissions from curing 1,000 fry pans was 156 kg for Thermolon and 473 kg for PTFE. Thus, the reduction in CO₂ emissions by using Thermolon is approximately 317 kg per 1,000 units coated. On an assumed worldwide market of 250 million units coated annually, the savings in

¹⁰⁶ The claims on GreenPan’s website state “Where we can, we use upcycled materials: Our cast stainless steel handles are made from premium raw recycled stainless steel; reducing our impact on the environment” and “For aluminum bodies we use quality recycled material. The raw material is cleaned, melted and re-used.” <http://www.green-pan.us/us/technology-2040.htm>. NAD did not find that these claims themselves are likely to mislead consumers because they are factually accurate statements which do not imply that the products are more environmentally beneficial overall.

¹⁰⁷ For instance, as previously discussed GreenPan failed to establish a reasonable basis for the claim that Thermolon™ coatings are better for the environment than all PTFE products, thus it is misleading to convey that GreenPan’s cookware is “eco-friendly” on the basis that it is “PTFE-free” (or that it emits “no harmful fumes”).

¹⁰⁸ Kraft Foods Global, Inc. (All-Out Squeeze), Report #4994, *NAD/CARU Case Reports* (April 2009); see also Maybelline New York, Inc. (Instant Age Rewind® Eraser Treatment Makeup), Report #5241, *NAD/CARU Case Reports* (November 2010).

¹⁰⁹ This includes the following claims: “Less energy is used when Thermolon™ is applied on GreenPan™ products, which means 60% less CO₂ emission compared with the production of PTFE-coated pans” (<http://www.green-pan.com/en/mission-2042.htm>; <http://www.green-pan.com/en/questions-1577.htm>); “Manufactured without PFOA and applied in an environmentally friendly way, resulting in 60% less CO₂ emissions” (<http://www.green-pan.us/us/technology-2040.htm>); “This results in the use of less energy, which means 60% less CO₂ emissions than during the production of PTFE pans” (<http://www.green-pan.us/us/technology-2040.htm>).

CO₂ emissions is approximately 79,250 tons per year. Thus, the 60% reduction in CO₂ emissions refers to an aggregate amount for all products sold worldwide, not to the CO₂ savings in manufacturing each pan.

The guidance provided in the Green Guides specifies that “marketers should clearly and prominently qualify source reduction claims to the extent necessary to avoid deception about the amount of the source reduction and the basis for any comparison.”¹¹⁰ Here, although GreenPan provided a reasonable basis for its “60% less CO₂ emissions” claims, NAD shared the challenger’s concern that reasonable consumers may take away the unintended message that the 60% reduction in CO₂ emissions refers to the entire production process of each individual pan. Although some (but not all) of the advertiser’s CO₂ reduction claims refer to the plural “GreenPan products,” NAD determined that this is insufficient to prevent consumer confusion regarding the actual amount of source reduction.

NAD noted that the advertiser offered to modify its claims of “60% less CO₂ emissions” compared with the production of PTFE-coated pans to more clearly specify that the reduction in CO₂ emissions refers to one phase of production only, i.e., the “curing” of the Thermolon coating on the pan.¹¹¹ NAD determined that such a modification is necessary and proper and should be implemented wherever the “60% less CO₂ emissions” claims appear.¹¹² NAD additionally recommended that the advertiser more clearly indicate that the reduced CO₂ emissions refers to the manufacture of all such products in the aggregate, and that the reduction is in comparison to the “curing” process portion of the production of PTFE-coated pans.¹¹³

IV. Energy savings and recyclable claims.

A. Energy savings claims.

The advertiser also makes energy savings claims, including that consumers will “*save on your energy bill too*” when using Thermolon coated pans because “*the thermal conductivity of Thermolon™ is much better than PTFE, therefore it also needs a little less energy to heat up and stay warm.*”¹¹⁴ After thoroughly reviewing the evidence offered in support of the advertiser’s energy savings claim, NAD determined that GreenPan failed to establish that the increased thermal conductivity of Thermolon, as compared to PTFE non-stick pans, results in the

¹¹⁰ 16 CFR §260.17.

¹¹¹ Specifically, the advertiser offered to modify the claims “*Less energy is used when Thermolon™ is applied on GreenPan™ products, which means 60% less CO₂ emission compared with the production of PTFE-coated pans*” and “*Manufactured without PFOA and applied in an environmentally friendly way, resulting in 60% less CO₂ emissions*” to refer even more precisely to the “curing” of the Thermolon™ coating on the pan.

¹¹² For example, such modification should be implemented on the product packaging which contains the unqualified claim “*60% CO₂ Reduction.*”

¹¹³ For instance, such modification should be made to the claim “*Manufactured without PFOA and applied in an environmentally friendly way, resulting in 60% less CO₂ emissions.*” which does not clearly specify that the reduction in CO₂ emissions is in comparison to the production of PTFE-coated pans.

¹¹⁴ Another energy savings claim is “*The perfect heat distribution also allows even cooking, which makes the food brown beautifully. It allows you to mostly cook on medium temperatures, which is great for your energy bill & the environment!*”

consumer meaningful benefit of saving money on an energy bill. NAD has consistently held that product testing results must not only be statistically significant, but also consumer meaningful.¹¹⁵ Although GreenPan contended that its testing shows that heat conductivity is a factor of 10 lower for PTFE than Thermolon,¹¹⁶ it failed to extrapolate such results to real-world usage, thus the results are not sufficiently reliable to support the contention that a consumer would save money on his or her energy bill by using GreenPan's cookware. In addition, the OnSpeX test report that GreenPan relied on for the proposition that GreenPan was the fastest to heat up to 500°F, as compared to the five other models of cookware tested, suffers from the same deficiency.

Moreover, comparative heat transfer testing conducted by DuPont showed an average thermal efficiency of 87% for the GreenPan Thermolon coated pan, and an average thermal efficiency of 75% for the pan with Teflon Platinum non-stick coating. DuPont then conducted the type of calculations that GreenPan failed to do in its own testing in order to ascertain the actual amount of money that a typical consumer could save on its energy expenses by using a GreenPan product. According to DuPont's calculations, which were based on the results of its testing and an average residential cost of electricity in the U.S. in 2010 of 11.81¢ per kWh, even if a consumer cooks three times a day, every day, the electricity cost savings would be less than 22¢ per month if a consumer chose to use a Thermolon pan instead of a DuPont Teflon Platinum non-stick coated pan. Thus, NAD determined that even if consumers could save money on their energy bill by using GreenPan frying pans, the testing conducted by DuPont shows that such a benefit is not consumer meaningful. Finally, NAD determined that GreenPan's energy savings claims, which consistently use the pronouns "you" and "your," clearly refer to the savings that *individual consumers* can save on their energy bills, thus the advertiser's evidence regarding the amount of aggregated savings achieved by all 150 million Americans is irrelevant for the purposes of claim substantiation. For all of these reasons, NAD recommended that GreenPan discontinue its energy savings claims.

B. Heat conduction performance claims.

As support for its monadic "*excellent heat conduction*" claim and its comparative superiority claim that "*Thermolon™ is a better heat conductor than traditional coatings. This results in superb searing and crispy frying!*" the advertiser first referred to the results of the aforementioned heat conductivity testing (discussed above), which showed that heat conductivity is a factor of 10 lower for PTFE than Thermolon. The advertiser also referred to the Executive Summary of the 2007 OnSpex testing, which stated that "GreenPan was also the fastest to heat up to the 500°F temperature," as compared to models of cookware tested from Kenmore, Swiss Diamond, Invitations Everyday, Cuisinart, and Tools of the Trade. For these reasons, NAD determined that the advertiser established a reasonable basis for its heat conduction performance claims.

C. Recyclable claims.

¹¹⁵ The Gillette Company (Fusion ProGlide Razors), Report #5299, NAD/CARU Case Reports (March 2011).

¹¹⁶ In particular, GreenPan asserted that the thermal conductivity of Thermolon™ is approximately 2.4 W m⁻¹ K⁻¹, whereas that of PTFE is approximately only 0.24 W m⁻¹ K⁻¹ - i.e. heat conductivity is a factor of 10 lower for PTFE.

The advertiser's "please recycle" claim appears at the top of its webpage titled "About GreenPan."¹¹⁷ According to GreenPan, it intended this claim to refer solely to the packaging of the product, which is made out of paper.¹¹⁸ However, NAD determined that one message reasonably conveyed to consumers by this unqualified "please recycle" claim is that the GreenPan products themselves are recyclable – a message which is not supported. GreenPan offered no evidence that GreenPan products are capable of being recycled.

In evaluating the messages conveyed by environmental marketing claims and the sufficiency of the supporting evidence, NAD has accorded great weight to the FTC Green Guides.¹¹⁹ NAD noted that the Green Guides provide guidelines for Recyclable Claims.¹²⁰ The Guides provide that only when recycling facilities are available to a "substantial majority" of consumers in communities where the item is sold, can marketers make unqualified recyclable claims.¹²¹ When facilities are available to less than a substantial majority of consumers or communities, the Guides suggest that marketers qualify their claims by stating "This product [package] may not be recyclable in your area" or "Recycling programs for this product [package] may not exist in your area" or by providing the percentage of consumers or communities that have access to facilities that recycle the item. If recycling facilities are available only to a few consumers, the Guides recommend that marketers should use stronger clarifications. For instance, by disclosing that "This product is recyclable only in the few communities that have appropriate recycling facilities."¹²²

NAD recommended that the advertiser follow FTC guidelines in developing future marketing communications concerning the recyclability of its product packaging. NAD further recommended that the advertiser modify its "please recycle" claim, as it currently appears on its website, to avoid conveying the unintended and inaccurate message that GreenPan cookware itself is recyclable (e.g., please recycle paper packaging).

V. Health and safety claims.

The advertising at issue contains numerous claims touting the fact that GreenPan's Thermolon coatings are non-toxic and safe, including claims on the GreenPan website that "*No toxic fumes will be released and the coating will not blister or peel.*"¹²³ "*In Thermolon™ we do not use any chemicals that can be classed as toxic or persistent pollutants.*"¹²⁴ and that "*Thermolon™ is heat resistant up to high temperatures. This means that GreenPan has an extra safety feature, if you overheat your pan, even up to 450°C/850°F, no toxic fumes will be released and the coating will*

¹¹⁷ <http://www.green-pan.us/us/mission-1869.htm>.

¹¹⁸ Despite the advertiser's representation that the claim "please recycle" is printed on GreenPan packaging, NAD noted that it reviewed the packaging for a frying pan in the New York Collection, which was purchased at Target on September 7, 2012, and it did not see any "please recycle" claims.

¹¹⁹ Pactiv Corporation (Alternative Packaging Products and Plastic Packaging), Report #5472, *NAD/CARU Case Reports* (June 2012).

¹²⁰ 16 CFR §260.12

¹²¹ *Id.* The term "substantial majority means at least 60 percent.

¹²² 16 CFR §260.12.

¹²³ <http://www.green-pan.com/en/technology-2040.htm>.

¹²⁴ <http://www.green-pan.com/en/questions -1745.htm>.

*not blister or peel.*¹²⁵ Further, claims on the product packaging state “*NO HARMFUL FUMES,*” “*Cooks up to 850°F,*” “*Safe for you . . .*” and “*HEALTHY . . . FRYPAN*”¹²⁶

A. Express claims.

NAD first evaluated the evidence submitted by GreenPan in support of the express claims that the Thermolon coating is healthy, safe, does not contain any toxic chemicals or persistent pollutants and that it will not release any toxic fumes, even when the pan is heated up to 850°F. In support of its claims, GreenPan relied on the expert opinions of toxicologists Professor Tygat, Dr. Elcomb and Dr. Petrosyan, who each reviewed, among other things, a number of test reports on Thermolon coatings which found the absence of detectable heavy metals in the coating and the absence of measurable toxic gases during the heating of a GreenPan frying pan. For instance, Professor Tygat concluded that “Normal use of GreenPan cooking utensils and Thermolon anti-stick technology doesn’t cause (measurable or scientifically significant/relevant) migration to the food of for instance polycyclic aromatic hydrocarbons (PAH), heavy metals, common solvents, acids or bases.”¹²⁷ Further, Dr. Petrosyan noted that “it has been shown in independent studies of the GreenPan cooking utensils that at temperatures up to 460°C there are no emissions of toxic gases.” NAD reviewed the 2007 Intertek report, which was reviewed by Dr. Petrosyan, and which tested a frying pan for emission of toxic gases.¹²⁸ The results of the test for toxic gases indicated that “there were only traces (insignificant quantities) of ethyl hexanoic acid and aliphatic hydrocarbons detectable, neither of which pose any toxicological hazards.” NAD noted that even though the methodology, which involved heating a pan to 460°C in 5 minutes, exceeds the typical consumer use cooking temperatures, it is relevant to the claims at issue because the claims reassure consumers that even in instances of accidental overheating for a few minutes of cooking time (to 450°C/850°F) no toxic fumes will be emitted.¹²⁹ Although NAD would have also liked to see test results reflecting a longer duration of cooking time, NAD was mindful that in advertising claim substantiation, perfection is not required but, rather, that claim substantiation is based on a determination of whether an advertiser has provided a reasonable basis for its

¹²⁵ <http://www.green-pan.com/en/mission-1869.htm>. In addition, advertising in the West Elm Catalog states that the coating “*Won’t blister, peel or release toxic fumes.*”

¹²⁶ Endurance 2 Pan Packaging.

¹²⁷ Professor Tygat reviewed materials that included, for example, a comprehensive analysis by an FDA Certified Lab in California of the contents of a liquid sample of Thermolon™ coating for heavy metals, halogenated materials and aromatic hydrocarbons of which none of the aforementioned materials were detected above permissible levels. He also reviewed documents certifying that Thermolon meets certain food safety requirements of Switzerland, Germany, Japan.

¹²⁸ The test involved heating a pan to 460°C in 5 minutes and then capturing emitted fumes in an impinger bottle, after which the air in the impinger was pumped out and the gases were absorbed by a TENAX tube, which was then analyzed by thermo desorption.

¹²⁹ See e.g., Reynolds Consumer Products (Hefty® Slider Bags), Report #5484, *NAD/CARU Case Reports* (July 2012) (noting that the relevance of the testing is predicated on the fact that such tests illustrate what typical product performance would be in the *demanding* circumstances specifically described in the claims at issue – when resealable bags are shaken, dropped or stacked. Therefore, the tests are consumer relevant in that they accurately reflect the challenging usage situations presented in the Hefty® Slider bags advertising); Andersen Corporation (Andersen Patio Doors Campbell), Report #3395, *NAD/CARU Case Reports* (July 1997) (noting that “torture tests” can be used if they illustrate what typical product performance would be in the described circumstances).

claims.¹³⁰ NAD determined that the advertiser's evidence provided a reasonable basis for its express claims that the Thermolon coating is healthy, safe, does not contain any toxic chemicals or persistent pollutants and that it will not release any toxic fumes, even when the pan is heated up to 850°F.¹³¹

When an advertiser establishes a reasonable basis for its claims, the burden shifts to the challenger to show either that there was a material flaw in the advertiser's evidence or that it has more reliable evidence demonstrating a different result.¹³² As rebuttal evidence, the challenger directed NAD's attention to the results of its chemical off-gassing testing. According to DuPont, its testing on cut-up pieces of a GreenPan frypan detected the release of a number of potentially toxic chemicals, including T benzene, ethyl benzene, xylene, 2-butoxyethanol, Benz aldehyde, trimethylbenzene, acetophenone, and naphthalene at temperatures of 180°C/356°F (a normal cooking temperature for household use) and 260°C/500°F (below the temperature at which GreenPan states Thermolon does not emit any toxic fumes). However, NAD was concerned that the methodology did not reflect consumer relevant conditions. The protocols provided that 2.5 inches by .5 inch pieces of the flat bottom of a GreenPan fry pan coated with Thermolon were cut, and then three pan pieces were placed into a thermal desorption apparatus and heated in air to the desired temperatures for 30 minutes (180°C, and then in a separate test 260°C), after which the off-gasses were trapped and measured using a gas chromatograph. While this test may have some theoretical relevance in establishing that a cut up frying pan whose pieces are heated in air will give off some amount of potentially toxic chemicals, NAD noted that in order to ascertain whether any chemicals are emitted during normal consumer usage, testing should have been conducted on a whole frying pan which was heated on a stovetop (or a similar heating element). Moreover, DuPont's testing did not address whether any of the chemicals detected are present in levels sufficient to pose toxicological hazards. Thus, even if trace amounts of toxic chemicals were released, the advertiser's claim would be appropriate. As noted in the FTC's Green Guides:

Depending on the context, a free-of or does-not-contain claim is appropriate even for a product . . . that contains or uses a trace amount of a substance if: (1) the level of the specified substance is no more than that which would be found as an acknowledged trace contaminant or background level; (2) the substance's presences does not cause material harm that consumers typically associate with the substance; and (3) the substance has not been added intentionally to the product.¹³³

¹³⁰ Unilever United States, Inc. (Vaseline Sheer Infusion), Report #5262, *NAD/CARU Case Reports* (December 2010).

¹³¹ NAD noted that GreenPan also relied on the results of a 2007 OnSpeX report (submitted to NAD confidentially) which showed that pans with more organic content (i.e., PTFE-type coatings) lose more weight when heated up to 460°C than pans with Thermolon™ coating. However, NAD did not find this testing persuasive because the data showed no connection between the loss of weight and the emission of toxic gases.

¹³² Mead Johnson & Company (Enfamil with Iron), Report # 4019, *NAD/CARU Case Reports* (March 2003).

¹³³ 16 CFR §260.9(c).

After carefully considering DuPont's testing, NAD determined that it did not establish that GreenPan's evidence was fatally flawed or constitute stronger, more persuasive evidence reaching a different result. For all these reasons, NAD found GreenPan's express claims that "No toxic fumes will be released and the coating will not blister or peel," "In Thermolon™ we do not use any chemicals that can be classed as toxic or persistent pollutants," "Thermolon™ is heat resistant up to high temperatures. This means that GreenPan has an extra safety feature, if you overheat your pan, even up to 450°C/850°F, no toxic fumes will be released and the coating will not blister or peel," "NO HARMFUL FUMES," and "Cooks up to 850°F," "Safe for you . . ." and "HEALTHY FRYPAN" to be supported.

NAD also considered the evidence submitted by GreenPan (on a confidential basis) in support of the express claim that Thermolon "contains no Silicone Oil" and concluded that it established a reasonable basis for this claim.¹³⁴

B. Implied claims.

Although NAD determined that the aforementioned monadic express claims regarding the health and safety of GreenPan's products and its Thermolon coatings are literally truthful, NAD shared the challenger's concern that such claims may convey the inaccurate implied message that GreenPan's cookware is healthier and safer than all PTFE coated non-stick cookware depending on the context in which they appear. Here, the claims are mingled with pervasive claims explaining that the difference between Thermolon and traditional PTFE non-stick coatings is that PTFE coatings release potentially toxic fumes when they are overheated. In this context, reasonable consumers are likely to take away the message that GreenPan's cookware is healthier and safer than all PTFE coated non-stick cookware – a message which is not supported by the evidence in the record. Therefore, NAD recommended that the advertiser discontinue its comparative health and safety claims or modify them to avoid conveying the unsupported message that its Thermolon coated products are healthier and safer than all PTFE-type non-stick products. NAD noted that nothing in this decision precludes GreenPan from describing the health and safety features of its products as long as it does so in a non-misleading manner and context, which does not expressly state or impliedly suggest product superiority over all PTFE non-stick coatings (e.g. safer or healthier) on that basis.

VI. Natural claims.

As an initial matter, NAD noted that the advertiser's characterization of its Thermolon products as "ceramic" is a description of the appropriate non-stick cookware category.¹³⁵ Ceramic type

¹³⁴ NAD noted that this claim is part of the larger claim "No potentially dangerous chemicals inside. It's completely PTFE-free and contains no Silicone Oil." The larger claim, which conveys the unsupported message that PTFE non-stick coatings have potentially dangerous chemicals inside, is addressed by NAD's recommendation in Section I that GreenPan discontinue its PTFE-free claims or modify them to avoid conveying the misleading message that its Thermolon™ coated products are healthier and safer than all PTFE-type non-stick products.

¹³⁵ Other types of non-stick cookware, for example, are silicone, PTFE, cast iron, and anodized aluminum.

non-stick cookware is formed using sol-gel chemistry.¹³⁶ At issue, however, is the truthfulness and accuracy of the advertiser's description of its ceramic cookware as a "natural," "mineral," and "mineral based" coating. It was the challenger's position that GreenPan's advertising not only makes misleading claims about the natural and mineral properties of its Thermolon coating, but also conveys the false message that being natural and made of minerals means that its products are safer, healthier, and more eco-friendly than PTFE coatings. In contrast, the advertiser maintained that its claims are truthful and accurate.

The advertising at issue contains a variety of claims conveying the message that Thermolon is "natural," "mineral," and "mineral based." For example, GreenPan's website states that Thermolon is "a natural, non-stick mineral based coating"¹³⁷ and explains that "Our non-stick pots and pans are the first to be made with a non-stick coating made of minerals instead of plastics."¹³⁸ Similar claims also appear in advertising in the West Elm Catalog¹³⁹ which describes GreenPan as a "The Natural Approach to Nonstick" and states that "these eco-friendly skillets and saucapans use a mineral-based coating for even heat and easy cleanup."

NAD determined that the messages reasonably conveyed by the challenged advertisements and determined that consumers could reasonably take away the implied comparative messages that Thermolon products are safer, healthier, and more eco-friendly than PTFE coatings because they are "natural" and "mineral-based." In particular, in a Frequently Asked Questions page of GreenPan's website, under the Question "What is Thermolon™?" GreenPan differentiates Thermolon from PTFE non-stick coatings on the basis of composition *and* safety:

Thermolon™ is the patented non-stick coating that GreenPan™ uses on its products. Thermolon™ is completely PTFE-free, contains absolutely no silicone oil and uses no PFOA during its manufacture. It is a non-stick mineral-based coating with superior release properties. *Mineral materials are natural substances that are safe to use. The ceramic mineral materials that are used in Thermolon™ are the same materials used to make glass and pottery.* Less energy is used when Thermolon™ is applied on GreenPan™ products, which means 60% less CO₂ emissions when compared with PTFE-coated pans.¹⁴⁰ (emphasis added).

¹³⁶ Traditional ceramics are formed from mineral-type clay materials, whereas modern ceramic materials are often classified as advanced ceramics.

¹³⁷ <http://www.green-pan.com/en/technology-2040.htm>.

¹³⁸ <http://www.green-pan.com/en/mission-1869.htm>. Other express claims include, for instance, "Natural ceramic non stick layer Thermolon™" (<http://www.green-pan.com/en/mission-1869.htm>) and "Thermolon™ non-stick ceramic (=mineral) coating is completely PTFE-free, contains absolutely no silicone oil and uses no PFOA during its manufacture." <http://www.green-pan.com/en/technology-2040.htm>.

¹³⁹ GreenPan is responsible for the content of third-party advertising to the extent that it provided the language to be used by West Elm. An advertiser that provided product information to a catalog retailer has an obligation to insure that the product claims made in the catalog are supported. Sonex Corporation (The Ultrasonex Toothbrushes & SoniPick Flosser), Report #3656, *NAD/CARU Case Reports* (May 2000).

¹⁴⁰ <http://www.green-pan.com/en/technology-2042.htm>.

Further, the GreenPan webpage describing the “Technology” of GreenPan’s products, also includes claims which differentiate Thermolon from PTFE non-stick coatings on the basis of composition, safety and eco-friendliness:

Thermolon™ non-stick ceramic (= mineral) coating is completely PTFE-free, contains absolutely no silicone oil and uses no PFOA during its manufacture. *Mineral materials are derived from the earth. Such materials as used in Thermolon™ are completely food-safe and have been used to form ceramic items like pottery and glass.*¹⁴¹ (emphasis added).

Moreover, this claim appears in the context of a web page which discusses in great detail the purported dangers of PTFE non-stick coatings – both to the environment and to human safety. Thus, within the context of the advertising as a whole, consumers could reasonably take away the message that Thermolon cookware is safer, healthier and more eco-friendly than all PTFE non-stick cookware because Thermolon is made of “mineral materials” which are “derived from the earth” are “completely food-safe.”¹⁴²

As to whether the advertiser provided a reasonable basis for its claims, NAD first noted that the Revised Final Green Guides do not include specific guidance on natural claims. However, the FTC has advised that “although the final Guides do not include general advice on natural claims, they remain subject to Section 5 of the FTC Act. Thus, marketers must qualify claims appropriately to avoid consumer deception, and must ensure they can substantiate any reasonable interpretation of their claims in the context of the advertisement.”¹⁴³ NAD has previously considered cases involving “natural” claims where a product’s ingredients were derived from nature but were chemically processed to make the final product. In the Olean decision, NAD determined that Olean was not a natural product – while Olean may start off with soybean oil (or any other edible oil) and sugar, the oil molecules and the sugar molecules are chemically broken apart and then recombined (one part of an oil molecule is combined with one part of a sugar molecule) to form a new molecule not found in nature.¹⁴⁴ Thus, NAD recommended that the advertising be modified to avoid conveying the message that Olean is a natural product. Further, in the Arm & Hammer decision, NAD found that while it was literally true that the detergent’s two main surfactants were “100% naturally derived,” the initial ingredient was “chemically processed such that the composition of the resulting [ingredients] is dramatically altered. . . .”¹⁴⁵ Thus, NAD determined that the message reasonably conveyed - that the product is natural, in whole or in substantial part – was not supported.

¹⁴¹ <http://www.green-pan.com/en/technology-2040.htm>.

¹⁴² In analyzing the express and implied messages conveyed by a particular advertisement, NAD typically reviews the totality or overall net impression created by an advertisement as a whole, not merely words or phrases standing alone, taking into consideration both the words and the visual images. Your Baby Can, LLC (Your Baby Can Read!® Early Language Development System), Report #5313, *NAD/CARU Case Reports* (March 2011).

¹⁴³ 2012 Green Guides Statement, <http://www.ftc.gov/os/fedreg/2012/10/greenguidesstatement.pdf>.

¹⁴⁴ See e.g., Procter & Gamble (Olean Fat Substitute), Report #3499, *NAD/CARU Case Reports* (October 1998).

¹⁴⁵ See Church & Dwight Co. Inc. (Arm & Hammer Detergent), Report #4848, *NAD/CARU Case Reports* (May 13, 2008).

Similar to the Olean and Arm & Hammer cases, while the sol-gel process which forms the Thermolon coating may start off with compounds that are found in nature (i.e. sand and carbon), these materials undergo a chemical process which ultimately creates a synthetic compound. In evaluating the messages conveyed by the challenged claims, it is important to consider the target audience, i.e., environmentally concerned consumers who are actively seeking and willing to pay a premium for products that are natural. NAD was not persuaded by the advertiser's argument that consumers will not be misled by its claims that the Thermolon coating is "*natural*," "*mineral*," or "*mineral based*" because the final Thermolon coating, is 86% by weight inorganic (mineral-type) content. Moreover, the fact that GreenPan's advertising specifically claims that "mineral materials are derived from earth" and compares the materials used in Thermolon to those used to make glass and pottery only serves to heighten the level of confusion. The use of such language is likely to convey the message that the product is "natural" in that it is comprised of "minerals" in basically the same chemical state as those found in the earth in nature – a message which is not supported.

In addition to a lack of sufficient support for usage of the terms "*natural*," "*mineral*," or "*mineral based*" in a monadic context, the advertiser did not provide a reasonable basis for the comparative message that Thermolon products are safer, healthier, or more eco-friendly than all PTFE coatings because they are "*natural*," "*mineral*," or "*mineral-based*." For these reasons, NAD recommended that the advertiser discontinue its "*natural*," "*mineral*," and "*mineral based*" claims.

Conclusion:

PFOA-free and PTFE-free claims: NAD recommended that GreenPan discontinue its *PFOA-free* claims or modify them to avoid conveying the unsupported message that all PTFE non-stick coatings are made with PFOA. NAD also recommended that GreenPan discontinue its *PTFE-free* claims or modify them to avoid conveying the unsupported message that its Thermolon coated products are healthier and safer than all PTFE-type non-stick products. NAD noted that nothing in this decision precludes GreenPan from describing the composition of its products as "*PFOA-free*" or "*PTFE-free*" as long as it does so in a non-misleading manner and context, which does not expressly state or impliedly suggest product superiority over all PTFE non-stick coatings (e.g. more environmentally friendly, safer or healthier) on that basis.

Non-stick performance claims: NAD recommended that GreenPan discontinue its broad unqualified claim that Thermolon has "*superior release properties*," and that GreenPan discontinue its use of the claims "*The Thermolon™ surface provides great non-stick*," and that Thermolon™ is a "*high quality non stick coating*" as they appear in the comparative advertising at issue. NAD noted that nothing in this decision precludes the advertiser from promoting in a monadic context the non-stick capability of its product.

Eco-friendly claims: Given the lack of supporting evidence in the record, NAD recommended that GreenPan discontinue its "eco-friendly" claims, as they appear in the advertising at issue. NAD noted that nothing in this decision precludes the advertiser from conveying that the GreenPan manufacturing process is more environmentally friendly than manufacturing which

uses PFOA as a processing aid, or from promoting specific environmental benefits, as long as it does so in a non-misleading manner and context, which does not expressly state or impliedly suggest that the product is more environmentally beneficial overall than all PTFE non-stick cookware. In the absence of a demonstration of confusion regarding the designation “GreenPan,” NAD concluded that the advertiser may continue to use the product name and label GreenPan. Further, NAD determined that the GreenPan’s proposed modification of its “60% less CO₂ emissions” claims, to more clearly specify that the reduction of CO₂ emissions refers to one phase of production only, i.e., the curing of the Thermolon coating on the pan, is necessary and proper and should be implemented wherever the claims appear. NAD additionally recommended that the advertiser more clearly indicate that the reduced CO₂ emissions refers to the manufacture of all such products in the aggregate, and that the reduction is in comparison to the “curing” process portion of the production of *PTFE-coated pans*.

Energy savings and recyclable claims: NAD recommended that GreenPan discontinue its energy savings claims as the demonstrated individual savings were not consumer meaningful. NAD determined that the advertiser established a reasonable basis for its heat conduction performance claims. In addition, NAD recommended that GreenPan follow FTC guidelines in developing future marketing communications concerning the recyclability of its product packaging, and that it modify its “*please recycle*” claim, as it currently appears on its website, to avoid conveying the unintended and inaccurate message that GreenPan cookware itself is recyclable (e.g., please recycle paper packaging).

Health and safety claims: NAD determined that GreenPan’s evidence provided a reasonable basis for its express monadic health and safety claims. However, NAD recommended GreenPan discontinue its implied comparative health and safety claims, or modify them to avoid conveying the unsupported message that its Thermolon coated products are healthier and safer than all PTFE-type non-stick products.

Natural claims: NAD noted that GreenPan’s characterization of its Thermolon products as “*ceramic*” is an appropriate description of the non-stick cookware category into which its products fall, however, NAD recommended that GreenPan discontinue its “*natural*,” “*mineral*,” and “*mineral based*” claims as the product in its final form has been chemically altered.

Advertiser’s Statement:

GreenPan respects the self-regulatory process and the NAD’s review of this matter. GreenPan appreciates that the NAD recognized the truthfulness of its compositional “PTFE-free” and “PFOA-free” claims. GreenPan disagrees that these claims reasonably convey to consumers the messages of comparative superiority found by the NAD, but is pleased that the NAD accepts the continued use of these compositional claims in context. GreenPan is disappointed that the NAD did not find its testing sufficiently reliable to support its non-stick performance claims, but likewise appreciates the NAD’s conclusion that such capabilities may be promoted in a monadic context.

GreenPan disagrees with the NAD's findings that its general environmental claims are not properly qualified, and that certain of its qualified environmental claims are not supported. GreenPan, though, is gratified that the NAD noted the accuracy of all of its manufacturing process eco-friendly claims, including 60% less CO2 emission vs. PTFE-coated pans (as agreed to be modified), and no persistent organic chemicals, silicone oil or non-ionic surfactants used. GreenPan is also pleased the NAD concluded that, based on these true claims, it may advertise its manufacturing process as more environmentally friendly than that using PFOA, and may otherwise continue to promote these specific environmental benefits in context. GreenPan is delighted that the NAD rejected the challenger's unsupported claim as to the product name and label GreenPan.

While GreenPan disagrees with the NAD's conclusions as to its energy savings and recyclable claims, GreenPan is pleased that the NAD agreed it established a reasonable basis for its heat conduction performance claims. GreenPan is also delighted the NAD determined that its evidence supports its express claims that the Thermolon coating is healthy, safe, does not contain any toxic chemicals or persistent pollutants, and will not release any toxic fumes, and that the challenger failed to meet its burden to demonstrate a different result. GreenPan also appreciates the NAD's decision that it may continue to use these health and safety features in context. GreenPan is pleased the NAD found its ceramic claims appropriate but disagrees with the NAD's finding that its natural and mineral claims were not supported.

GreenPan will take the NAD's recommendations into consideration in future advertising and will make such modifications as necessary to comply with the NAD's decision. **(#5519 RG, closed 10/31/2012)**