

The Milkweed

Dairy's best marketing info and insight

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Silicone-Based Chemical in Pizza Hut's Cheese

—Polymethylsiloxane

by John Bunting

Last month, *The Milkweed* detailed how Pizza Hut restaurants illegally claim to use "Mozzarella" cheese on certain menu items, when in fact, Pizza Hut's salt, starch and water-laden "Pizza Cheese" does not conform to FDA standards of identity for Mozzarella.

In this issue, writer John Bunting details how Pizza Hut's cheese supplier—Leprino Foods—uses a silicone-based industrial chemical in the patented manufacturing of "Pizza Cheese." That chemical—Polymethylsiloxane—has no FDA approval for use as a food ingredient.

Polymethylsiloxane is sold by Dow-Corning as "Antifoam FG 10". **THIS MATERIAL IS APPROVED BY FDA FOR USE IN FOOD PLANTS ONLY AS AN ANTI-FOAMING AGENT FOR BOILER WATER.**

In its patented manufacturing process, Leprino Foods liberally sprays Polydimethylsiloxane on "cheese granules". Leprino's "Pizza Cheese" supplied to Pizza Huts contains about 900 parts per million of Polymethylsiloxane: 90 times higher residue concentration than FDA allows when Polymethylsiloxane is used as a boiler water anti-foaming agent.

Repeat: Polydimethylsiloxane has no FDA approval as a safe food ingredient. It is a violation of FDA rules to use an unapproved ingredient in human foods.

Silicone is amazing stuff. In its various forms, silicone may "enhance" the female anatomy (*ala* amply-endowed actress Pamela Anderson). Silicone products can caulk seams around the bathtub to seal out water. Silicone compounds are used for lubricants. However, using silicone products in human foods is a novel, if extra-legal, application.

Leprino Foods, the world's largest Italian cheese manufacturer, is the nearly exclusive supplier of "Pizza Cheese" to the 6000+ Pizza Hut restaurants in the U.S. Leprino is based in Denver, Colorado. To control costs (and boost profits), Leprino Foods uses patented manufacturing processes that add large volumes of water, salt and food starch to so-called "granules" of "Pizza Cheese" prior to flash-freezing. Food starch is a particularly profitable addition to processed foods, since food starch holds ten times its own weight in water. All that food starch, water and salt in the Leprino's "Pizza Cheese" creates problems for both cooking and refrigerated shelf-life.

To "solve" these cooking problems, Leprino's patented process for making cheese granules sprays 1.75 parts of a water-based spray containing 0.05% Dow-Corning Antifoam FG 10 for each 100 parts cheese. Yield: 900 parts per million of Antifoam FG 10 (generically known as Polydimethylsiloxane) in the "Pizza Cheese" that Leprino sells to Pizza Hut.

Polydimethylsiloxane is approved by FDA in food industry use only as an anti-foaming agent for boiler water in plants processing non-standardized foods. FDA permits no use of Dow-Corning Antifoam FG 10 directly in or on foods. FDA does allow up to 10 parts per million of Polydimethylsiloxane residues in food products, as residue from the product's use as a boiler water anti-foaming agent.

The 900 ppm of Polydimethylsiloxane in Leprino's "Pizza Cheese" that Pizza Hut puts on its pizzas is 90 times FDA's legal limit for indirect residues of that chemical in food products.

Follow the trail of evidence ...

Trace the evidence ... from Pizza Hut back to Leprino Foods' patents.

Start with an empty box of "Pizza Cheese" liberated from a dumpster behind a Pizza Hut. The contents were Pizza Hut's "Pizza Cheese." Weight (when full): 15 lbs. The box contains a statement noting the product is "packaged exclusively for use by Pizza Hut Inc., its franchises and licensees."

Leprino Foods is obviously the supplier. The USDA plant number (identifying the cheese plant at which the product was made) is "Plant No. 26-930." That's Leprino's plant at Allendale, Michigan.

The box also notes "U.S. Patent No. 4894245 and other patents pending." Leprino Foods received U.S. patent #4894245 for "coated cheese granules" in 1990 (among many other "cheesy" patents that Leprino holds). That patent's abstract states:

"Coated frozen cheese granules are prepared by freezing the granules and applying an aqueous coating containing one or more modifying additives." On baking the cheese the additives in the frozen coatings distribute throughout the cheese to obtain modifications of flavor and other properties."

The abstract from Leprino patent #4894245 clearly states that the "aqueous coating" (Polymethylsiloxane) is contained in the cheese of the finished, cooked pizza—silicone-based substance in the cheese atop Pizza Hut pizzas.

Leprino patent #494245 reveals detailed information about the role of the cheese emulsifiers:

"When the coated frozen cheese is applied to pizzas and baked thereon, the coatings will liquify first. This permits the flavor additive and/or emulsifier to spread over and into the cheese particles as their outer surfaces become thawed . . . Cheese emulsifiers applied in this way can function to soften the outer portions of the cheese granules. This will improve melting and fusing of the granules."

Leprino patent #494245 targets the emulsifier: "A silicone emulsifier (Dow Corning FG-10) is mixed with water to form a 0.05% emulsifier solution. This solution is sprayed on the frozen cheese granules at a rate of 1.75 parts of solution per 100 parts by weight of cheese. This should achieve a final content of around 0.09% emulsifier on the cheese."

No compliance with mandatory GRAS rules

The federal Food and Drug Administration requires ingredients used in human foods to comply with the "Generally Recognized as Safe" (GRAS) rules, which specify that each food ingredient developed after 1958 must meet exacting safety tests. "Polydimethylsiloxane" does not appear on FDA's Web site as a GRAS-approved food ingredient.

A call to Dow-Corning headquarters in Midland, Michigan yielded the statement that no Dow products complied with GRAS. However, information faxed by a Dow-Corning representative stated: "Dow-Corning Antifoam FG 10 complies with FDA regulation 21 CFR.173.310, which covers secondary direct food additives used as defoaming agents

and allows concentration of up to 10 parts per million active silicone (Polydimethylsiloxane) in non standardized foods." **Section 173.310 is limited to boiler water additives in food processing plants and has nothing to do with cheese or cheese-type products that a consumer might ingest.**

Clearly, Leprino Foods' use of Dow-Corning Antifoam FG 10 as an agent contained in an aqueous solution sprayed directly on "cheese granules" does not conform with FDA's rules governing ingredients used in human foods.

In *The Federal Register* of April 17, 1997 (Volume 62, Number 74), FDA published a document titled, "Substances Generally Recognized as Safe: Proposed Rule." That document details fundamentals of GRAS rules on food ingredients:

"In 1958, in response to public concern about the increased use of chemicals in foods and food processing and with the support of the food industry, Congress enacted the Food Additives Amendment (the 1958 amendment) to the act. The basic thrust of the 1958 amendment was to require that, before a new additive could be used in food, its producer demonstrate the safety of the additive to FDA."

Why use an "Antifoam Emulsion" on cheese?

Dow-Corning refers to FG-10 as an "Antifoam Emulsion". Why apply an antifoam emulsion be applied to cheese? Part of the answer is found in Leprino patent #5,200,216.

That Leprino patent incorporates a process

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December Federal Class III Steady

The federal order Class III (cheese milk) price essentially held steady in December at \$13.37/cwt., up 2 cents from November.

The Class III outlook is uncertain coming into winter, as Chicago Mercantile Exchange traders are working hard to lower cash Cheddar bids.

USDA said the December federal order Class IV (butter-powder) price had been placed at \$12.57/cwt., down 33 cents from the November Class IV.

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Industrial Chemical in Pizza Hut Cheese

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which, “Within about 48 hours after brining, the cheese should either be used or frozen. This discovery saves at least seven days of aging and permits the use of a continuous process of making mozzarella, which, from the pasteurization to loading of the frozen product on the truck, can be performed in as little time as eight hours.”

Leprino Foods’ patent has removed the aging process. But doing so risks creating huge bubbles, which rise on the pizza, then blacken and burst. That unsightly mess is avoided by adding the anti-foaming agent.

A second reason for using an “Antifoam Emulsion” in Leprino’s “Pizza Cheese” is to prevent the cheese from foaming due to the high level of food starch. Leprino patent #5,200,216 states: “By add-

ing a minor amount of starch to a natural mozzarella cheese, the baking characteristics of the cheese when used to make a pizza can be altered, making it more suitable for a particular set of baking conditions, e.g., involving time, temperature, type of oven, crust thickness, and toppings used ... Without the addition of starch, the cheese, although melted, is not browned or blistered by the time the crust is ‘done.’”

Wallpaper glue is nothing more than starch and water. Cook starch and water and the mix will bubble and foam. Hence, all that starch and water in Leprino Foods’ “Pizza Cheese” require Dow-Corning’s Antifoam FG 10” to cook in an appealing fashion. FDA GRAS food ingredient safety rules be d——d.

What’s next? Pamela Anderson promoting “stacked” Pizza Hut pizzas?