DUNKIN' BRANDS GROUP, INC.
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Shareholder Proposal No. 5 on Dunkin' Brands Group, Inc. 2014 Proxy Statement:
Product Safety Report on Nanomaterials
Dunkin' Brands Group, Inc. Symbol: DNKN

Filed by: As You Sow

Dunkin's Donuts Contain Nanoparticles Not Proven Safe, As You Sow Urges Action

Nanotechnology – the manipulation of materials at extremely small dimensions – is an emerging technology that has not been proven safe for human consumption. Initial studies indicate that nanoparticles, including nano titanium dioxide, may have the potential to cause a wide variety of health harms.

Laboratory tests demonstrate that titanium dioxide nanoparticles are used in the powdered sugar in Dunkin' Brands' white powdered donuts. This resolution asks Dunkin' to assess the extent of its use of nanomaterials, investigate the safety concerns associated with the nanoparticles it is using, and report on how it might reduce or avoid those risks.

Rationale for a Yes Vote:

1) Nanoparticles are a new technology, that have not been proven safe for health or the environment, and are not regulated by the Food & Drug Administration.

2) The limited studies that exist on nanomaterials, including the type found in Dunkin' Brands' product, have indicated that ingestion of these particles may pose health hazards.

3) The potential health hazards posed by nanomaterials in food products and packaging expose the company to material financial risk.

4) Dunkin' Brands' Proxy Statement in Opposition demonstrates the need for a much more thorough analysis of this issue.

Rationale Point 1: Nanoparticles are a new technology, that have not been proven safe for health or the environment, and are not regulated by the Food & Drug Administration.

Nanoparticles are substances with extremely small dimensions. A particle that measures one nanometer is one-millionth the size of a grain of sand. Due to their small size, nanoparticles have unique properties that companies seek. Such particles may be more effective than their larger counterparts as dispersants or pigments, or may provide a range of other utilities. However, their size enables them to go places in the body that larger particles cannot. They also can have physical, chemical, and biological properties that differ from the same type of molecule at the macroscale. Research suggests that nanoparticles of many materials are more biologically active than their normal size counterparts because they have significantly greater surface area per mass.1

In 2008, the insurance giant Swiss Re noted that "what makes nanotechnology completely new from the point of view of insuring against risk is the unforeseeable nature of the risks it entails and the recurrent and cumulative losses it could lead to, given the new properties – hence different behavior -- of nanotechnologically manufactured products."2 The President's Council of Advisors on Science and Technology, in its 2013 assessment of the National Nanotechnology Initiative (NNI), expressed concerns about "a lack of integration between nanotechnology-related [environmental health and safety] research funded through the NNI and the kind of information policymakers need to effectively manage potential risks from nanoparticles."3 In 2012, the National Research Council conducted an EPA-requested study of nanotechnology research and found that "despite increasing budgets for nanotechnology-EHS research and a growing number of publications, regulators, decision-makers, and consumers still lack the information needed to make informed public health and environmental policy and regulatory decisions."4

In 2009, the European Union's Scientific Committee on Emerging and Newly Identified Health Risks concluded that "health and environmental hazards have been demonstrated for a variety of manufactured nanoparticles," that "nanoparticles are similar to normal chemicals/substances in that some may be toxic and some may not", and that "a case-by-case approach for the risk assessment of nanoparticles is still warranted."5 Due to health concerns, bans on nanoparticles in food have been enacted by the largest organic certifiers in several countries, including the UK's Soil Association,6 Biological Farmers of Australia,7 and the Canada General Standards Board.8

1 Oberdorster, G., et al, 2005, Nanotoxicology: An Emerging Discipline Evolving From Studies of Ultrafine Particles (Environmental Health Perspectives), http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1257642/.
2 Swiss Re, Nanotechnology: Small Matter, Many Unknowns, http://www.nanowerk.com/nanotechnology/reports/reportpdf/report93.pdf
3 Congressional Research Service, 2013, The National Nanotechnology Initiative: Overview, Reauthorization, and Appropriations Issues, p.41. http://www.fas.org/sgp/crs/misc/RL34401.pdf.
4 Id.
5 European Commission, 2012, Second Regulatory Review on Nanoparticles, p.5. http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2012:0572:FIN:en:PDF.
6 Smithers, Rebecca, Jan. 15 2008, "Soil Association bans nanoparticles from organic products" (The Guardian), http://www.theguardian.com/environment/2008/jan/15/organics.nanotechnology.
7 Biological Farmers of Australia, Mar. 26 2012, "Nanotechnology prohibited from Australian Certified Organic beauty products," (Fatcow.com.au), p. 5, http://www.bfa.com.au/Portals/0/ACOS_2013.pdf .
8 The Organic & Non-GMO Report, May 5 2010, Volume 10 Issue 5 (Evergreen Publishing), p. 18, http://www.non-gmoreport.com/ArchivesTwo/org&nongmo_may10.pdf.

The U.S. Food and Drug Administration (FDA) has not yet enacted regulations governing the use of nanoparticles in food. The agency's draft guidance, however, indicates that companies may not assume that ingredients that are generally recognized as safe (GRAS) at the macro level are safe at the nano level:

At this time, we are not aware of any food ingredient or FCS [food contact substance] intentionally engineered on the nanometer scale for which there are generally available safety data sufficient to serve as the foundation for a determination that the use of a food ingredient or FCS is GRAS.9

In its draft guidance to industry, the FDA further writes that "[w]hen a food substance is manufactured to include a particle size distribution shifted more fully into the nanometer range, safety assessments should be based on data relevant to the nanometer version of the food substance."10 The same draft guidance warns that "nano-engineered food substances can have significantly altered bioavailability and may therefore raise new safety issues."11

Rationale Point 2: The limited studies that exist on nanomaterials, including the type found in Dunkin' Brands' product, have indicated that ingestion of these particles may pose health hazards.

In 2011, Berkshire Hathaway-owned Gen Re noted that "[t]here are, at this time, dozens of studies associating exposure to various nanoparticles with adverse health effects."12 Studies show that nanoparticles are able to pass through cell membranes in organisms, and their interactions with biological systems are relatively unknown.13 A 2012 study found that silver nanoparticles had a toxic effect on human and mice testicular cells, suppressing cellular growth and multiplication and causing cell death.14 A 2009 study fed mice titanium dioxide nanoparticles with their drinking water for 5 days and demonstrated that "in vivo after oral exposure, TiO2 nanoparticles induce DNA strand breaks and chromosomal damage in borrow marrow and/or peripheral blood."15 In two more 2009 studies, a Japanese team showed that male offspring of pregnant mice injected with titanium dioxide nanoparticles experienced genital malformations and neurologic damage16 as well as changes in gene expression in the brain.17 A 2006 study found that human lung epithelial cells could take up a range of TiO2 nanoparticles and that exposure to these nanoparticles, even as aggregates or agglomerates, triggered inflammatory responses from the cells.18 Other in vitro studies have suggested that some types of both titanium dioxide and zinc oxide nanoparticles are toxic to human brain and lung cells.19,20

9 Food and Drug Administration, 2012, Draft Guidance for Industry: Assessing the Effects of Significant Manufacturing Process Changes," Paragraph III Section E, http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/IngredientsAdditivesGRASPackag
10 Id.
11 Id.
12 Gen Re, Insurance Issues November 2011, http://www.sheetsdatago.com/pdf/44-1/datasheet-InsuranceIssues201111-en.htm
13 Garnett, M.C. and P. Kallinteri, 2006, Nanomedicines and Nanotoxicology: Some Physiological Principles (Occupational Medicine), http://occmed.oxfordjournals.org/content/56/5/307.short.
14 Asare, N. et al, 2012, Cytotoxic and genotoxic effects of silver nanoparticles in testicular cells (Toxicology), http://www.sciencedirect.com/science/article/pii/S0300483X11004616.
15 Trouiller, B., et al, 2009, Titanium dioxide nanoparticles induce DNA damage and genetic instability in vivo in mice (Cancer Research), http://jsanderslaw.com/blog/wp-content/uploads/2010/04/nanotechnology-titanium-dioxide-health-issues.pdf.
16 Takeda, K., et al, 2009, Nanoparticles transferred from pregnant mice to their offspring can damage the genital and cranial nerve systems (Journal of Health Science), http://www.researchgate.net/publication/228666236_Nanoparticles_transferred_from_pregnant_mice_to_their_offspring_can_

17 Shimizu, M., et al, 2009, Maternal exposure to nanoparticulate titanium dioxide during the prenatal period alters gene expression related to brain development in the mouse (PubMed), http://www.particleandfibretoxicology.com/content/6/1/20.
18 Singh, S et al, 2006, Endocytosis, oxidative stress and IL-8 expression in human lung epithelial cells upon treatment with fine and ultrafine TiO2: role of the specific surface area and of surface methylation of the particles (Toxicology Applications in Pharmacology), http://www.ncbi.nlm.nih.gov/pubmed/17599375
19 Lai, J.C., et al, 2008, Exposure to titanium dioxide and other metallic oxide nanoparticles induces cytotoxicity on human neural cells and fibroblasts (International Journal of Nanomedicine), http://www.ncbi.nlm.nih.gov/pubmed/19337421.
20 Gurr, J.R., et al, 2005, Ultrafine titanium dioxide particles in the absence of photoactivation can induce oxidative damage to human bronchial epithelial cells (Toxicology), http://www.ncbi.nlm.nih.gov/pubmed/15970370.

Meanwhile, no studies demonstrate that ingested titanium dioxide nanoparticles are safe in the human body. In fact, scientists are only now beginning to develop methods to characterize how nanoparticles react in the human body. For instance, the International Life Sciences Institute (ILSI)'s NanoRelease Food Additive Project (a project made up of representatives from industry, government, academia, and NGOs) seeks, as a first step, to evaluate and develop methods to detect, characterize, and evaluate nanoparticles released from food along the alimentary tract.21 In order to bound its scope, the Project specifically does not evaluate health harms associated with the ingestion of nanoparticles beyond the alimentary tract.22

Finally, certain researchers have concluded that there is insufficient funding for human health and safety research, and as a result there is currently limited understanding of the human health and safety risks associated with nanotechnology.23

Rationale Point 3: The potential hazards posed by nanomaterials in food products and packaging expose the company to material financial risk.

Proponents believe that Dunkin' Brands is exposed to significant risks associated with the company's use of nanoparticles. When technology is used before ensuring that it is safe for humans and the environment, and before regulatory standards exist – especially when studies indicate the potential for health harm -- significant financial, legal, and reputational risk is created. This risk is only underscored when emerging technologies are used in food products.

A. Litigation Risk

Tort claims may be the most likely to emerge following exposure to nanoparticles in food products. Other types of claims are also possible, including public entity suits to recover the cost of responding to a health crisis or of cleaning up environmental releases.

Asbestos litigation is a good example of the risks that can arise from using an emerging technology before it is proven safe. Use of asbestos (a nanomaterial) has created the longest, most expensive mass tort in national history with total U.S. costs now standing at over $250 billion.24 If companies had been asked to investigate and minimize or avoid risks prior to adopting asbestos technology, a sad and expensive chapter in worker harm could likely have been avoided.

21 International Life Sciences Institute, accessed Mar 28 2014, "NanoRelease Food Additive Project Scope," http://www.ilsi.org/ResearchFoundation/RSIA/Pages/NRFA_ProjectScope.aspx
22 Id.
23 The Project on Emerging Nanotechnologies, Apr. 16 2008, Limited Transparency in Federal Nanotech Research May Hamper Development, http://www.nanotechproject.org/news/archive/hsc_4-16/
24 The Economist, Jan. 26 2005, The War on Tort, http://www.economist.com/node/3598225.

Lead in paint provides another example of how companies can be held responsible for their actions decades later. In January, 2014, Sherwin-Williams, NL Industries, and ConAgra were ordered to pay $1.15 billion to replace or contain lead paint in millions of homes in just 10 California cities and counties based on a public-nuisance lawsuit brought by those localities. The industry's early knowledge of, and disregard for, the potential harm of lead in paint impacted the judge's decision to find the defendants responsible for the health-associated harms caused by their products.25

B. Reputational Risk

In addition to legal risk, and the associated disruption and cost, if Dunkin' is found to have used dangerous materials in its products despite studies demonstrating likely harm, its public reputation could be irreparably harmed.

Dunkin' also faces more immediate potential for loss of brand and reputational value due to rising investor and consumer concern over nanoparticles. Insurance giants, investment groups, NGOs, researchers, investors, and consumers are becoming increasingly concerned about use of nanoparticles, especially nanoparticles in food. Dunkin' Brands faces the risks of consumers moving to other brands if the company does not either demonstrate the safety of the nanoparticles or cease using them until such time as studies are done.

Rationale Point 4: Dunkin' Brands' own Opposition Statement demonstrates the need for a much more thorough analysis of this issue.

Proponent's response to each argument is set forth below.

1. Preparing the requested report is "premature and would be an unnecessary and imprudent diversion of the Company's resources with no corresponding benefit to the Company, our guests or our shareholders."

Response: Dunkin' Brands' assessment of the risks of using nanoparticles is overdue, not premature. Dunkin's course of action raises an array of risks -- health harms to customers, costly litigation and potential judgments against the company, abrupt disruption of operations if harms are discovered, and significant reputational risk.

Assessing and reporting on what, if any, of its other products might contain nanomaterials, and seeking safety data or identifying alternative ways of achieving the Company's goals with less risk is not likely to be a highly costly endeavor. Nor is the expense of such a report likely to be seen as unreasonable or imprudent by the average investor.

25 Bloomberg, 2013, "Sherwin, NL, ConAgra Lose $1.1 Billion Lead Paint Ruling," http://www.bloomberg.com/news/2013-12-16/sherwin-nl-conagra-lose-1-1-billion-lead-paint-verdict-1-.html

Comparing the cost of such a report to the millions or even hundreds of millions of dollars that could be at stake if nanomaterials used in Dunkin's products are later proven to cause harm to people or the environment, demonstrates the value of the proposed report. While any human health harm associated with titanium dioxide nanoparticles appears likely to be sub-lethal, it would nonetheless be expensive and disruptive if lawsuits are brought against the company. The reputational risks of such an outcome are obvious and significant. In addition, operations would likely be disrupted if Dunkin' had to immediately cease use of an ingredient and had identified no alternative ingredients to replace it. Finally, reputational risk is possible just by using nanoparticles if customers become aware of the potential risks of nanoparticles and choose other food companies as a result.

Proponents so far have not been informed of any benefits associated with using titanium dioxide nanoparticles in donuts or, if there are any, what the value of any such benefits might be, and how and why those benefits are worth the potential risks. Can donuts be made white without resort to nanoparticles? Is there an alternative titanium dioxide product that does not contain nanoparticles? If not, are there other whiteners that do not contain nanoparticles? Is a whitener necessary or could regular powdered sugar serve equally well as a risk-free substitute? This is the type of information that is crucial to the company and to investors as they assess the potential future value of investing in this company.

2. "The science behind, and research into, nanotechnology as it relates to the food industry remains in its very early stages. The FDA has not issued final regulations regarding nanomaterials in food products and importantly, there remains no agreed upon method for analyzing a product for the presence of nanoparticles."

Response: Rather than support the company's position, these arguments serve to highlight the need for a report to evaluate the potential risks of using this technology. As noted by Dunkin', the FDA has not proposed or issued regulations that would guide company action; it has not set safety levels or approved the use of nanomaterials. Similarly, since the science around nanomaterials is in its early stages, its safety for use in foods has not been established.

The inaction of regulators does not protect companies, especially when the regulators themselves warn of the dangers of nanoparticles' largely unknown risks. The draft guidance issued by the FDA raises questions about the safety of nanoparticles and reiterates the general lack of knowledge about the technology and its effects.26 This lack of regulation, far from being a rationale for use of nanoparticles, should serve as a cautionary point for the company.

26 Food & Drug Administration, 2011, Considering Whether an FDA-Regulated Product Involves the Application of Nanotechnology, http://www.fda.gov/RegulatoryInformation/Guidances/ucm257698.htm

The company next argues that there remains no agreed upon method for analyzing a product for the presence of nanoparticles. While there is no single agreed upon method for analyzing a product for the presence of nanoparticles, a variety of methods exist to test for the presence of nanoparticles,27 including a method called Nanoparticle Tracking Analysis.28 If, by the above argument, Dunkin' is suggesting that it cannot determine the existence or amount of nanoparticles in the titanium dioxide ingredient it is purchasing, it is simply incorrect. Suppliers of food-grade titanium dioxide analyze and produce, in product data sheets, information to purchasers about the inclusion of nanoparticles in their products.29

Not only can Dunkin' obtain the necessary information from the supplier's product data sheet, but it could also present its product to any number of laboratories to assess the presence of nanomaterials.

3. "Our investigation indicated that the ingredient of concern does not meet the definition of nanoparticles as defined under FDA guidelines used in industry today. Based on our research, our suppliers do not currently utilize nanotechnology in the production of our products."

Response: "FDA has not to date established regulatory definitions of 'nanotechnology,' 'nanoscale' or related terms." 30 Dunkin' is therefore relying on draft guidance in arguing that the ingredient does not meet the FDA's definition of nanoparticles. This draft guidance is not final and therefore provides little to no protection to companies who rely on it. This is especially true where, as here, government regulators in the draft guidance indicate that insufficient knowledge and safety information currently exists to develop regulations.31

Moreover, Dunkin's reference to this draft guidance does not support its argument. The draft FDA guidance states: "At this time, when considering whether an FDA-regulated product contains nanoparticles or otherwise involves the application of nanotechnology, FDA will ask:

1. Whether an engineered material or end product has at least one dimension in the nanoscale range (approximately 1 nm to 100 nm); or

2. Whether an engineered material or end product exhibits properties or phenomena, including physical or chemical properties or biological effects, that are attributable to its dimension(s), even if these dimensions fall outside the nanoscale range, up to one micrometer."32

Contrary to Dunkin's argument, the titanium dioxide ingredient used by Dunkin' meets the criteria set forth in provision 1. As set forth in the supplier's product data sheet, the median particle size of the titanium dioxide ingredient is 220 nm, and the graph of the particle diameter demonstrates the existence of particles in the 1 nm to 100 nm range.33 The nanoscale titanium dioxide presumably also meets the criteria set forth in provision 2, since nano-titanium dioxide is created to serve specific purposes and the negative health effects shown in preliminary studies are due to its nanoscale characteristics. Significantly, this test is imposed on materials up to one micrometer (1,000 nm) in size, a range far beyond the 1-100 nm range.

27 See, e.g., the International Organization for Standardization (ISO)'s Technical Committee 229 Nanotechnologies, http://www.iso.org/iso/home/standards_development/list_of_iso_technical_committees/iso_technical_committee.htm?commid=
28 See, e.g., over 900 third party papers published citing Nanoparticle Tracking Analysis or NTA data on the developer's website, http://www.nanosight.com/publications/third-party-papers
29 The suppliers of Dunkin's titanium dioxide provide a product data sheet upon request.
30 Food & Drug Administration, 2011, Considering Whether an FDA-Regulated Product Involves the Application of Nanotechnology, http://www.fda.gov/RegulatoryInformation/Guidances/ucm257698.htm

31 Id.
32 Id.
33 March 2, 2007, Product Data Sheet for Dunkin' supplier.

Dunkin's statement that "our suppliers do not currently utilize nanotechnology" is incorrect. As noted above, Dunkin's supplier of titanium dioxide demonstrates in its product data sheet that the nanoparticle content of its food-grade titanium dioxide has a median particle size of 220 nm, with particles below 100 nm. Furthermore, third party testing of Dunkin's product confirmed the presence of nanomaterials. As mentioned previously, several studies have reported potential health harms from titanium dioxide particles at various ranges of size up to 300 nm.

Conclusion

When technology is used before ensuring that it is safe for humans and the environment, companies create significant potential risk for themselves and their shareholders. By selling Dunkin' Brands' products containing nanoparticles without adequate safety testing, and without any notice or warning of their presence or potential hazard, the company has placed itself in potential peril.

Support of this resolution will encourage Dunkin' Brands to report on its use of nanoparticles and to investigate methods to reduce its associated risk. Shareholders need to be informed not only of the company's exposure to the risk posed by nanoparticles in food and food packaging, but also how the company is addressing and reducing this risk. Dunkin' Donuts is an iconic brand; a report on its policies and actions to reduce risk will ensure that "American Runs on Dunkin" for years to come.