



# Seeking Safer Packaging

Ranking Packaged Food Companies on BPA

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# Table of Contents

Executive Summary.....	1
Introduction .....	2
Bisphenol A is a Public Health Hazard.....	2
The Food and Beverage Industry Uses Bisphenol A in Product Packaging .....	2
Bisphenol A Poses Risks to Human Health .....	2
Chemical Industry Manufactures Uncertainty about the Risks of Bisphenol A.....	3
Risky Business of Bisphenol A .....	3
New Regulations Are Likely .....	3
Consumers Lead Companies to Look for Alternatives .....	3
Alternatives to Bisphenol A.....	4
The Packaged Food Industry is Starting to Move — but Companies Need to Do More.....	4
Company Responses to Shareholder Concerns .....	4
Recommendations .....	5
Appendices.....	6
Companies Successfully Transitioning Out of Bisphenol A .....	6
Grading Methodology .....	7
Scorecard Background .....	7
Notes.....	8

# Executive Summary

Bisphenol A (BPA) is a chemical used in the epoxy lining of canned foods and beverages and in polycarbonate, a hard, clear plastic. The chemical mimics estrogen in the body and researchers have found links between BPA and numerous health problems including heart disease, diabetes, cancer and metabolic disorders.<sup>1</sup>

A recent study by the Centers for Disease Control and Prevention found BPA in the urine of over 90% of Americans tested.<sup>2</sup>

Consumers are paying close attention to BPA and many are advocating for the use of alternatives. State and local governments have moved to ban the chemical from certain products, and federal legislators have introduced bills to regulate or ban BPA.<sup>3</sup> Alternatives to the chemical exist for plastic products and, on a more limited basis, for can linings.<sup>4</sup> The baby bottle industry and packaged food companies such as Eden Foods and Heinz have already begun transitioning to these alternatives. The continued use of BPA in products where a feasible alternative exists presents both financial and reputational risks to companies in the packaged food industry.

*Seeking Safer Packaging* is a project of Green Century Capital Management, Inc. (Green Century) and As You Sow. The authors sent letters to 20 companies in the packaged food industry to identify the actions the companies are taking to address concerns regarding BPA. Fourteen companies replied. Company scores are based entirely on their responses to these letters.

This scorecard reviews how leading packaged food companies are responding to increased consumer and investor concern about BPA. *Seeking Safer Packaging* ranks companies on three factors: 1) efforts to find and implement alternatives to BPA, 2) plans to phase out BPA in products for which alternatives exist, and 3) transparency on the issue.

The scorecard is accompanied by an introduction to health concerns linked to BPA exposure, the changing regulatory climate related to BPA, and studies of companies that have voluntarily removed the chemical from their products.

## Our main findings include:

- All companies surveyed use BPA and are taking insufficient steps to move toward alternatives.
- Hain Celestial, Heinz, and Nestlé received the top scores because all three companies are involved in researching and testing of alternatives to BPA and all have plans to phase out the chemical in some products.
- Heinz stands out as a leader as it is the only company surveyed that is currently using an alternative to BPA in some of its can linings.
- Three of the companies that responded to our questions, Del Monte, Hershey, and J.M. Smucker, are not taking action beyond monitoring the industry to identify or implement alternatives to BPA as a packaging material.

Green Century and As You Sow recommend that each of the companies featured in this scorecard switch to BPA-free technologies in every product line for which they are available and actively pursue a broader range of alternatives so as to protect public health and reduce their exposure to risks associated with BPA.

Company	Grade
Hain Celestial	C
Heinz	C-
Nestlé	D+
Kellogg	D
ConAgra	D-
General Mills	D-
PepsiCo	D-
Campbell	F
Coca-Cola	F
McCormick & Company	F
Kraft	F
Hershey	F
J. M. Smucker	F
Del Monte	F
Chiquita	F
Dean Foods	F
Hormel	F
Sara Lee	F
SYSCO	F
Unilever	F

# Introduction

Consumers, the media, and public officials alike are becoming increasingly concerned about bisphenol A (BPA), an endocrine-disrupting chemical used in hard clear plastic and can linings. In March 2009 alone, a move by baby bottle manufacturers to voluntarily eliminate BPA in the U.S. and a precautionary policy adopted by chemical giant Sunoco limiting BPA sales received significant media attention.<sup>5</sup>

Many expect the regulatory landscape in the U.S. to shift as it already has begun to do in Canada. The baby bottle industry and leading companies such as Wal-Mart, Toys R Us, and Whole Foods are taking proactive measures to address consumer concerns regarding the health impacts of BPA. As a result, these companies are better positioned to minimize their exposure to the growing risks associated with BPA, respond to consumer concerns in a timely manner, and succeed in a changing chemical marketplace.

## Bisphenol A is a Public Health Hazard

### The Food and Beverage Industry Uses Bisphenol A in Product Packaging

BPA was first identified by scientists in the 1930s as a synthetic substitute for the female hormone estrogen. In the 1950s, chemists discovered that BPA was a useful ingredient in plastic.<sup>6</sup> The chemical has been commercially developed as the primary component of polycarbonate, a hard, clear plastic.

Despite the fact that BPA was known to have drug-like effects on the human body, it became commonplace in the manufacture of a variety of materials including food containers and packaging.<sup>7</sup> In 2007, seven billion pounds of BPA were produced. The US chemical industry earns over \$6 billion every year from the manufacture of BPA.<sup>8</sup>

The lining of food cans commonly contains BPA and the chemical is a common ingredient in hard plastic food and beverage containers. Food and beverage manufacturers value the chemical for two reasons: 1) it prevents packaging materials from imparting any taste to products and 2) it is highly stain-resistant.

The U.S. food and beverage industry widely uses BPA in product packaging, even though the chemical is known to leach from packaging into the food.<sup>9</sup>

### Bisphenol A Poses Risks to Human Health

BPA mimics estrogen in the body and researchers have found links between the chemical and numerous health problems including heart disease, diabetes, cancer and metabolic disorders.<sup>10</sup> In 2007, the Centers for Disease Control and Prevention found BPA in the urine of more than 90 percent of Americans tested, signaling widespread exposure to the chemical.<sup>11</sup> Green Century and As You Sow believe this makes BPA a significant cause for both consumer and investor concern.

Findings relating BPA to risks to human health include:

- The *Journal of the American Medical Association* published the first-ever study of the chemical conducted on humans and confirmed previous reports linking the chemical to the potential for causing heart disease, diabetes, and unusually high levels of particular liver enzymes. According to the authors, their findings link BPA to “some of the most significant and economically burdensome human diseases.”<sup>12</sup>
- The Yale School of Medicine and Ontario Veterinary College conducted a study on nonhuman primates and found that exposure to low-dose BPA may have widespread effects on brain structure and function.<sup>13</sup>
- Studies on female rodents found that oral exposure to BPA during lactation increased mammary cancer and that maternal exposure to BPA can cause chromosomes to sort incorrectly in offspring. Incorrect sorting of chromosomes can lead to birth defects such as Down’s syndrome.<sup>14</sup>
- An independent study recently found that infants are most at-risk to BPA’s effects and have concentrations of the chemical up to 11 times higher than adults. BPA exposure in babies is particularly alarming as studies demonstrate it may seriously impede development of the reproductive system.<sup>15</sup>
- BPA has been linked to early puberty and long-term hormonal changes. A recent study demonstrated for the first time that “neonatal exposure to BPA altered reproductive parameters” in female rats.<sup>16</sup>

## The Chemical Industry Manufactures Uncertainty Around the Risks of Bisphenol A

For years, the chemical industry has worked to generate scientific uncertainty in attempts to stave off regulatory action related to BPA. The chemical industry's efforts in lobbying and funding studies to pacify concerns over BPA have been compared to the efforts of the tobacco industry to protect its profits against growing scientific evidence documenting the public health impact of its products.<sup>17</sup>

Independent studies draw vastly different conclusions from those studies funded by the chemical industry. According to a recent analysis:

- 92 percent of all reports funded independent from the chemical industry found adverse affects.<sup>18</sup>
- 100 percent of the industry-funded scientific reports evaluating the risks of BPA exposure found no significant impact.<sup>19</sup>

The chemical industry has also had an impact on the U.S. Food and Drug Administration's (FDA's) response to BPA. In 2008, the FDA declared that "exposure levels to BPA from food contact materials, including for infants and children, are below those that may cause health effects."<sup>20</sup> A team of independent advisors appointed by the FDA to review the agency's work concluded that the FDA's findings ignored many relevant studies and depended too heavily on two studies funded by a major trade association that represents BPA producers.<sup>21</sup> The advisors' report found that existing relevant information "provides a sufficient scientific basis to conclude that the Margins of Safety defined by FDA as 'adequate' are, in fact, inadequate."<sup>22</sup> The FDA has not yet reconsidered its position on BPA.

## Risky Business of Bisphenol A

The continued use of BPA in packaging where alternatives are available poses potential risks to companies and shareholders. According to a 2007 report published by the Investor Environmental Health Network and the Rose Foundation for Communities and the Environment, "[p]oor corporate management of toxic hazards can increase risks for investors and burden share performance, while corporate efforts to minimize or avoid exposures, or to offer safer alternatives, can benefit corporate bottom lines and potentially reward investors."<sup>23</sup>

### New Regulations Are Likely

Governments and institutions around the world are growing increasingly concerned about the health threat of BPA and are making clear policy decisions to reduce and prevent harm to humans. Increased regulations on BPA could pose a potential risk of market exclusion to companies using BPA in their products and packaging.

Health Canada, the country's government health agency, banned the import and sale of baby bottles containing polycarbonate plastic and dedicated C\$1.7 million over three years to study health effects of the chemical.<sup>24</sup>

In the United States, the U.S. National Toxicology Program, part of the Department of Health and Human Services, found it "has *some concern* for effects on the brain, behavior, and prostate gland in fetuses, infants, and children at current human exposures to bisphenol A."<sup>25</sup> In March 2009, a bill was introduced in Congress that would establish a federal ban on the chemical in all food and beverage containers.<sup>26</sup>

In the absence of federal regulation of the chemical in the United States, some states, including California, Washington, and Minnesota, and some cities, including San Francisco, have proposed legislation to ban BPA in certain food and beverage packaging products.<sup>27</sup> Most recently, the Suffolk County Legislature in New York voted to ban BPA in baby bottles.<sup>28</sup>

### Consumers Lead Companies to Look for Alternatives

Environmental and public health advocates have organized campaigns to eliminate the most worrisome exposures to BPA and a growing number of public officials are taking up their cause. Given the current scientific evidence of BPA's impact on health and increasing concern from both consumers and policymakers, the chemical will continue to be a growing risk to companies within the packaged food industry.

Companies that move toward BPA-free packaging are being recognized as putting their consumers' health first, while other companies refusing to phase out BPA may find themselves punished in the marketplace. For example, as concern over BPA's safety rose, major retailers including Wal-Mart and Toys "R" Us followed Whole Foods Market's lead and announced that they, too, would stop selling baby bottles made with BPA.<sup>29</sup> In March 2009, the six largest manufacturers of baby bottles announced they will phase out BPA from all bottles sold in the U.S.<sup>30</sup>

## Alternatives to BPA

Because BPA is used in numerous applications, identifying a single alternative that can replace BPA in all instances has many challenges. Numerous alternatives have been identified and substituted.

Alternatives to BPA exist for clear, hard plastic bottles and have been widely substituted. These include:

- Polyamide: Polyamide is used instead of BPA in hard plastic bottles. For example, Born Free sells BPA-free baby bottles using this honey-colored plastic.<sup>31</sup>
- Tritan copolyester: In 2008, Nalgene began using BPA-free Tritan copolyester in its hard plastic sports bottles.<sup>32</sup>

The most widespread application of BPA in food packaging is in can linings and identifying viable substitutions poses more of a challenge. Some alternatives have been identified, but all appear to have limited applicability or incur incremental costs. Examples of alternative can linings currently in use include:

- Polyester coatings: Polyester coatings are used instead of BPA in can linings. In the 1990's, Japanese can manufacturers voluntarily changed the formulation of can linings to a polyester coating and used BPA only when needed as an undercoating adhesive. This greatly reduced leaching of BPA into food and beverages sold in cans.<sup>33</sup>
- Baked-on resins: Natural oils and resins. In the U.S., Eden Foods uses a BPA-free can to pack all of its products except for tomatoes. The cans have a lining made from natural oils and resins.<sup>34</sup>

Currently no viable alternative has been identified for use in packaging of highly acidic foods such as tomatoes.

Green Century and As You Sow are advocating that packaged food companies take swift action to protect consumer health by substituting BPA-free alternatives for all food- and water-contact polycarbonate plastics and by increasing investments in research into and utilization of BPA-free alternatives for can linings.

# The Packaged Food Industry is Starting to Move – but Companies Need to Do More

## Company Responses to Shareholder Concerns

Each of the companies that responded to the survey conducted in order to create the scorecard indicated to the authors that it uses BPA in its food packaging. The companies do so in the face of scientific evidence linking BPA to heart disease, diabetes and cancer, and public policy trends which could lead to banning the chemical in some products.

Companies were evaluated on their 1) efforts to find and implement alternatives to BPA, 2) plans to phase out BPA in products for which alternatives exist, and 3) transparency on the issue.

Green Century, As You Sow, and members of the Investor Environmental Health Network sent letters to 20 public packaged food companies. Fourteen companies responded and are scored in the chart below. The non-responders are listed separately at the bottom — each with a score of 'F.'

No single company that responded to the letters stands out as a clear leader in addressing the risks of BPA. None of the companies presented clear plans for the phasing out of BPA from all applications for which alternatives exist.

The three top scoring companies, Hain Celestial, Heinz, and Nestlé, are all involved in the research and testing of alternatives to BPA and all presented limited plans to phase out the chemical in some applications. Heinz is the only company surveyed currently using an alternative to BPA in some of its can linings.

Company	Grade	Total Score	Alternatives		Total	Phase Out		Total	Transparency
			Exploring Alternatives	Using Alternatives		Plans to Phase Out	Time Frame		Disclosure
Hain Celestial	C	2.00	B+	F	D	C	B	C+	B
Heinz	C-	1.91	B+	C+	B-	B-	F	D	B+
Nestlé	D+	1.26	B	F	D	B	F	D	B
Kellogg	D	0.90	B+	F	D	D	F	F	B
Conagra	D-	0.69	B	F	D-	F	F	F	B+
General Mills	D-	0.62	B-	F	D-	F	F	F	B
PepsiCo	D-	0.62	B-	F	D-	F	F	F	B
Campbell	F	0.54	C	F	D-	F	F	F	B
Coca-Cola	F	0.50	C-	F	F	F	F	F	B
McCormick & Company	F	0.46	D+	F	F	F	F	F	B
Kraft	F	0.37	C-	F	F	F	F	F	C-
Hershey	F	0.20	F	F	F	F	F	F	C
J. M. Smucker	F	0.10	F	F	F	F	F	F	D
Del Monte	F	0.10	F	F	F	F	F	F	D
Chiquita	F	0							F
Dean Foods	F	0							F
Hormel	F	0							F
Sara Lee	F	0							F
SYSCO	F	0							F
Unilever	F	0							F

Description of scores:

- Hain Celestial is involved in evaluating and testing alternatives to BPA. The company has found alternatives that can be used for foods with low acidity and believes it can begin to transition to BPA-free packaging for some of its products in the first half of 2009. Score: C
- Heinz has eliminated BPA from its baby food can lacquers and has initiated a project to remove BPA from baby food jar closures sold in the United Kingdom. The company has also been involved in research to identify can linings with lower migration properties. The company hopes to remove epoxy lacquer from its other food cans but fails to identify any timeframe. Score: C-
- Nestlé uses BPA in both polycarbonate and metal packaging. The company has initiated several projects to explore alternatives and claims it will have identified a substitute for some applications by the end of 2009. However, the company fails to present a clear commitment to then implement this substitute in its packaging. Score: D+
- Kellogg uses BPA in the liner of the cans for one product line. Its Packaging Technology group has identified and is exploring an alternate material. The company does not include a timeline for switching to the new material. Score: D
- ConAgra, General Mills and PepsiCo indicate that they are making some effort to identify alternatives but gave no details on these efforts and do not have a commitment to phasing out any BPA from their packaging. Score: D-
- Widespread awareness of risks from BPA exposure is reflected in nearly all of the companies stating that they are monitoring this issue or exploring alternatives to BPA. Those with the lowest scores either failed to indicate that they were making any effort in this area besides monitoring the industry (Del Monte, Hershey and J.M. Smucker), or made only passing reference to their efforts to identify alternatives (Campbell Soup, Coca-Cola, Kraft and McCormick). Each of these companies received an overall grade of F.
- Chiquita, Dean Foods, Hormel, Sara Lee, SYSCO, and Unilever did not respond to the letters before the authors' deadline. Each of these companies received an overall grade of F.

## Recommendations

Green Century and As You Sow recommend that companies increase their investments in seeking and implementing alternatives to BPA and transition to alternatives with clear timeframes for individual products and product lines.

The authors advocate that companies:

- Substitute currently approved alternatives for all appropriate products
- Continue to invest in exploring, testing, and approving alternatives to BPA for additional products and acidity levels
- Set clear timeframes for phasing out BPA from individual products and product lines where feasible alternatives exist
- Give purchasing preference to suppliers providing non-BPA products



# Appendices

## Companies Successfully Transitioning Out of BPA

While scientific and regulatory uncertainty exists, many companies are taking proactive measures to address consumer concerns regarding BPA. The following three cases illustrate that some companies have moved faster than the regulatory agencies in responding to both scientific data and consumer concerns. These first movers on removing BPA from products are able to meet consumer demand for BPA free products, avoid the reputational and health risks implicit in the use of BPA, and position themselves as responsible companies if and when the regulatory environment becomes more constrained. Moreover, the examples below indicate that viable alternatives are available for both polycarbonate plastic and can linings of the majority of products.

*Note: None of the companies discussed below are graded in our scorecard. Our scorecard survey was sent to 20 leading publicly-traded packaged food companies. Whole Foods is a retailer and not a packaged food company. Eden Foods is privately owned. Nalgene is an outdoor products manufacturer.*

### **Whole Foods Market, Inc.**

Already aware of the issue and working with experts to assess the safety of its products, in 2006 Whole Foods Market made a public commitment to stop selling polycarbonate baby bottles and children's cups after speaking with Green Century and other socially responsible investors. Whole Foods, the U.S.'s leading retailer of natural and organic food, was the first retailer to offer Born Free brand BPA-free baby bottles in the country.<sup>35</sup>

Two years later, in the spring of 2008, consumer concerns over BPA in products—particularly those used by babies and children—increased significantly.<sup>36</sup> Having been a leader in offering BPA-free baby products, Whole Foods was able to tout its credentials as one of the leading providers of healthy foods in clean packaging. As concern rose, major retailers including Wal-Mart and Toys “R” Us announced that they, too, would stop selling baby bottles made with BPA.<sup>37</sup> In March 2009, the six largest manufacturers of baby bottles announced that they will phase out BPA from all bottles sold in the U.S.<sup>38</sup>

### **Eden Foods**

Since 1999, Eden Foods has sold all of its products (except tomatoes) in cans free of BPA. “As soon as we learned of concerns related to can linings using BPA, we began requesting an alternative from our supplier,” said Sue Becker, Director of Marketing for natural food company Eden Foods. The BPA-free cans do cost fourteen percent more but, according to Eden, the central concern is what companies value.<sup>39</sup> “Alternatives exist, so companies must decide whether their primary concern is pure, safe food, or the bottom line. At Eden, we know using BPA-free cans is the right thing to do and our consumers are willing to pay a few cents more for a clean can and healthy product,” explains Becker.

The company would like to see others within the packaged food industry follow their lead. “Currently, our cans are custom made and because we are a relatively small, family-owned company, we do not order in significant volume. If more companies were to demand BPA-free cans, higher volumes would cause price benefits,” continued Becker. As the scorecard illustrates, the company should be commended for this proactive decision, because while alternatives exist for most canned products, all other food packaging companies surveyed use BPA in their cans.

### **Nalgene**

In response to consumer concerns about BPA, outdoor products manufacturer Nalgene announced in 2008 that it was voluntarily phasing out polycarbonate water bottles containing the chemical.<sup>40</sup> The company continually investigates new materials for its product line and introduced bottles made of Tritan copolyester instead of polycarbonate.

The company has received very positive feedback in response to its proactive move on the issue. “Although we still believe in the safety of polycarbonate based on the weight of scientific evidence that exists, many of our core consumers and distributors are very concerned about BPA in products,” said Eric Hansen, Senior Business Manager for Nalgene. “Because we listened to our customers and were able to rapidly respond to these concerns, the market recognized that we were ahead of the curve on this issue and we were able to maintain our industry leading position.”

The Nalgene example illustrates that companies that are well positioned to act quickly and respond to consumer concern are better able to maintain strong industry positions. Nalgene made its move as producers of competing products were also introducing new BPA-free products or experiencing sharp sales upswings. By having anticipated a need to change and introducing its own BPA-free bottle, Nalgene was able to answer these competitive challenges.<sup>41</sup>

The above stories clearly show that some companies are forging ahead to advance solutions. More work needs to be done to develop BPA-free products and packaging, but the companies highlighted above have taken the first steps in this process. As the scientific evidence builds and consumer concern increases, companies pushing to identify and substitute feasible alternatives stand to be rewarded in the marketplace.

## Grading Methodology

Each company that responded to our letters reported that it used BPA in its food packaging. Green Century and As You Sow therefore evaluated companies on five indicators in three areas: alternatives to BPA, phasing out BPA, and transparency.

In the opinion of the authors, the most significant step a company can take to eliminate the risks associated with BPA usage is to phase out the chemical. The authors strongly believe that companies should urgently replace BPA with feasible alternatives. A timeline for phase-out is understood by the authors as a clear commitment to eliminating the chemical from products. Thus, disclosure on plans to phase-out BPA and a timeline to do so constituted the highest-weighted category, constituting 50% of a company's total score.

Demonstrable efforts to identify and use alternatives to BPA are essential to replacing the chemical in the future, and a company's efforts in this category are weighted accordingly as 40% of a company's total score.

Disclosure of information to investors and consumers is a keystone of responsible business practices and was also included in scoring the companies. Disclosure constitutes 10% of a company's total score.

The weighting system used in scoring is presented in the table at right.

<b>Transparency</b>	<b>10%</b>
1 Disclosure	100%
<b>Alternatives to BPA</b>	<b>40%</b>
2 Explored alternatives to BPA for its packaging needs	30%
3 Using alternatives to BPA in packaging	70%
<b>Phasing Out BPA</b>	<b>50%</b>
4 Plans to phase out BPA in packaging	40%
5 Time frame	60%

Companies were scored solely based on their responses to the letters sent by Green Century, As You Sow, and the Investor Environmental Health Network. Publicly available information such as websites and press releases were not used for purposes of this evaluation.

## Scorecard Background

In 2006, in the wake of increasing scientific consensus on the potential health risks posed by BPA, Green Century sent letters to 15 packaged food companies requesting information on the companies' use of the chemical. In 2008 and early 2009, Green Century and As You Sow sent letters to the original 15 companies and 5 additional ones, for a total of 20 companies, in the packaged food industry regarding this significant health issue. This scorecard is based entirely on company responses to these letters.

### Questions sent to companies:

- Does the company sell any food products in packages containing bisphenol A?
- If it does, what are these products/product lines?
- Has the company explored alternatives to bisphenol A for its packaging needs?
- Does the company have plans to phase out the use of bisphenol A in product packaging? If so, what is the intended time frame for the phase out?
- Has the company issued any public statements on the use of bisphenol A in its product packaging, or made any announcements to the effect that its product packaging is free of bisphenol A?

### Companies contacted regarding BPA:

Company	Year Contacted Responded Yes/No	
	2006	2008/09
<b>Campbell Soup Company (CPB)</b>	NO	YES
<b>Chiquita Brands International (CQB)</b>	NO	NO
<b>The Coca-Cola Company (KO)</b>	YES	YES
<b>ConAgra (CAG)</b>	YES	YES
<b>Dean Foods Company (DF)</b>	NO	NO
<b>Del Monte (DLM)</b>	—	YES
<b>General Mills Incorporated (GIS)</b>	YES	YES
<b>The Hain Celestial Group (HAIN)</b>	NO	YES
<b>The Hershey Company (HSY)</b>	YES	YES
<b>Hormel (HRL)</b>	—	NO
<b>H.J. Heinz Company (HNZ)</b>	YES	YES
<b>Kellogg Company (K)</b>	NO	YES
<b>Kraft (KFT)</b>	NO	YES
<b>McCormick &amp; Company (MKC)</b>	NO	YES
<b>Nestlé USA (NESTLE SA)</b>	—	YES
<b>PepsiCo (PEP)</b>	YES	YES
<b>Sara Lee (SLE)</b>	—	NO
<b>The J.M. Smucker Company (SJM)</b>	YES	YES
<b>SYSCO Corporation (SYY)</b>	NO	NO
<b>Unilever PLC (UL)</b>	—	NO

# Notes

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