



Case Study: Johnson & Johnson

Managing Chemicals of Concern in Products and the Supply Chain

Johnson & Johnson¹ is the world's sixth largest pharmaceutical company and includes two other major units, a medical devices and diagnostic segment and a consumer segment. Founded in 1886, the corporation now includes 250 operating companies in 57 countries and employs 119,400 people worldwide. Johnson & Johnson operates on a decentralized management model. The company has a nine member executive committee to guide the corporation, but each subsidiary is managed independently. Johnson & Johnson's Environmental, Health and Safety group is based at its corporate headquarters in New Jersey, and provides guidance to all of its operating companies around the world. In 2007, the company had sales of \$61.1 billion. This included 41% in pharmaceuticals, 35% in medical devices and diagnostics, and 24% in consumer products, including baby care, skin care, oral care, wound care, women's health care, nutritional and over the counter pharmaceutical products. In 2007, Johnson & Johnson's research and development investment was \$7.68 billion.²

MANAGEMENT STRATEGIES TO IMPROVE ACCOUNTABILITY FOR MANAGING MATERIALS OF CONCERN

Johnson & Johnson first began setting environmental goals in 1990. These goals are reviewed every five years and provide a long term roadmap for the company. When developing these goals, Johnson & Johnson asks for stakeholders to provide input, including government representatives, environmental advocacy groups, other corporations, and academic leaders. The most recent set of goals, released in 2006, are called the Healthy Planet 2010 Goals. Goals have been set in the following categories: energy use-carbon dioxide reduction, water use, paper and packaging, waste reduction, product stewardship, environmental literacy, transparency, biodiversity, compliance and external manufacturing.

The Product Stewardship category defines a corporate wide objective to eliminate materials of concern. The stated goal is that all of Johnson & Johnson's operating companies will have a plan to improve their product and process

environmental profiles and eliminate high-priority materials. Business units are required to provide data annually on meeting all of the Healthy Planet 2010 Goals. Environmental performance information on Johnson & Johnson's web site indicates that 90% of operating companies have a plan and some have already removed hazardous substances from their products.³

The Healthy Planet 2010 Goal for the paper and packaging category is to eliminate polyvinyl chloride (PVC) in primary, secondary and tertiary packaging in the consumer segment by the end of 2007 and to eliminate PVC in secondary and tertiary packaging in the medical devices & diagnostics (MD&D) and pharmaceutical segments by the end of 2007. Primary packaging is the material used to contain the product itself. Secondary packaging is material outside the primary packaging that may be used to protect a product or group products together. Tertiary packaging includes materials used for transporting products, such as pallet loads that are packed into shipping containers. Environmental performance information on Johnson & Johnson's web site indicates that 84% of secondary and tertiary PVC packaging has been eliminated across the company.⁴

These long term goals are designed to continue to build on Johnson & Johnson's ongoing efforts to reduce their environmental impacts in terms of energy and water use, waste generation, improve sustainable sourcing of paper packaging, and to improve their take-back programs for electronics equipment. Johnson & Johnson has taken many actions to reduce greenhouse gas emissions from operating companies and in 2007 was the 2nd largest corporate user of on-site photovoltaic solar energy in the US.⁵

Johnson & Johnson participates in the Product Sustainability Roundtable (PSRT), a group of approximately 15 corporations that are actively working to improve the sustainability of their products. This group meets twice a year to share information and work together on projects to benchmark and identify best practices for creating sustainable products.



IDENTIFYING, PRIORITIZING AND EVALUATING MATERIALS OF CONCERN

Johnson & Johnson maintains a list of regulated chemicals. In addition, the company works to anticipate chemicals that are not currently regulated but may be regulated in the future. The corporation has created an “emerging issues process”, headed by an environmental toxicologist who is part of the worldwide corporate Environmental Health and Safety group and has the responsibility to evaluate new reports on chemicals. From this review process, the company has created a “Watch List” of chemicals that have been identified as being of concern by non-government organizations (NGOs) or by a cutting edge government agency. In some cases, the company may commission a subcommittee to study a chemical in more depth. Each segment (pharmaceutical, medical devices and diagnostics and consumer) reviews this large “Watch List” and from this list identifies a smaller list of chemicals that are in their products that may be of concern.

DESIGN TOOLS FOR EVALUATING CHEMICALS OF CONCERN AND DESIGNING GREENER PRODUCTS

Johnson & Johnson has developed several tools to assist product designers in eliminating chemicals and materials of concern. The first tool is a “Design for Environment” software tool. Designers can input a chemical and see whether it is heavily or lightly regulated. There is a color-coded scheme which indicates the regulatory level. Red indicates the chemical is banned by a government agency somewhere in the world; black means highly regulated or on the “Watch List”; grey indicates the chemical is less regulated; yellow indicates minimal regulation; and, green indicates the chemical is not regulated. The software tool was developed using established lists of hazardous chemicals from the US EPA, the State of California, the European Union and other countries. According to Johnson & Johnson’s 2007 sustainability report, its operating companies review all new products, processes and packaging for environmental impacts using this internal tool (or an equivalent method approved by the corporate product stewardship group). The goal is to evaluate the product lifecycle and to identify and reduce impacts from raw material selection, use and disposal.⁶

In addition, the consumer segment of Johnson & Johnson convened an Ingredients Issue Task Force that has developed a rating system for greener materials. This group has reviewed every ingredient in Johnson & Johnson’s consumer products and has used resources such as the US EPA’s PBT profiler and other tools to identify chemical hazards. Potential exposure issues are also considered, for example, whether the product is designed for adults or children. This tool is used for product reformulation.

In 2009, the corporation will be rolling out a scorecard for green products. The development of this scorecard is partially in response to Johnson & Johnson’s largest customer, Wal-Mart, which has asked suppliers to create more sustainable products. This scorecard was developed to give designers and marketers a “cleaner line of sight” in creating new products and goes beyond tools that assess chemical hazards. A product receives points along five dimensions. Seven points are needed to be identified as a “greener” product. The dimensions include: materials/ingredients, energy, waste, water, and packaging. This process includes a high level life cycle assessment to identify the areas of greatest environmental impact. This scorecard is not currently part of the Healthy Planet 2010 Goals, but future iterations may include a goal that each business unit bring a certain number of “greener” products to market.

TRACKING MATERIALS OF CONCERN AND COMMUNICATION WITH THE SUPPLY CHAIN

Johnson & Johnson has set standards for responsible external manufacturing. These standards state that suppliers are to “implement programs to ensure products do not contain restricted or banned materials.”⁷ There is no centralized process for these programs. Rather, each operating company determines procedures and processes to meet this requirement, including the development of materials declarations forms and communication with suppliers about eliminating materials of concern. One of the biggest challenges in working with suppliers is dealing with “negative” product declarations that turn out not to be negative, e.g., when a product is tested and it is found that it contains a restricted material, such as a heavy metal, that is not allowed under the RoHS Directive.

Johnson & Johnson’s decentralized organization creates challenges in sharing information and tracking progress about eliminating of materials of concern. One way the corporation is addressing this issue is to create councils of business units that meet to share information. For example, the medical devices and diagnostics segment has created a Product Stewardship Council. Another group is the Enterprise-wide Council that includes representatives from all three of Johnson & Johnson’s segments.

JOHNSON & JOHNSON’S GREEN CHEMISTRY INITIATIVES

Johnson & Johnson’s pharmaceutical segment participates in the Pharmaceutical Green Chemistry Roundtable and is investing in green chemistry approaches. Because of the high costs of drug development, an investment in a green chemistry approach generally does not occur until a new drug has been approved by the US FDA and is ready to go into large-scale production.

Johnson & Johnson entered the US EPA’s Presidential Green Chemistry Challenge Award Program in 2008 for its



work to scale up a pharmaceutical ingredient called darunavir, used in Prezista, a new protease inhibitor. The goal of the project was to reduce health, safety and environmental impacts in manufacturing and to reduce costs. With this approach, solvent usage was reduced, hydrogen gas formation was eliminated, and methylene chloride was replaced with a more benign solvent. This increased the yield of the drug by 40% and reduced manufacturing costs by 81%. With this improved process, in 2006, the company eliminated 96 tons of methylene chloride, reduced hydrogen gas by 4800 cubic meters and reduced raw materials and hazardous waste by 46 tons.⁸

LESSONS LEARNED

- **Setting ambitious goals can provide a compass for an organization.** Johnson & Johnson's Healthy Planet 2010 goal that all operating companies have a plan to improve their product and process environmental profiles and eliminate high priority chemicals is a useful way to encourage improvements and track progress in a highly decentralized organization.
- **Green design tools are important in implementing these goals.** Johnson & Johnson has developed a number of valuable tools to help in designing greener products including a Design for Environment tool and a rating system for greener ingredients.
- **A scorecard to measure greener products is an additional means of clarifying and implementing these broad goals.** Johnson & Johnson has developed a scorecard for greener products with 5 dimensions: materials/ingredients, energy, waste, water, and packaging.
- **Participation in the Product Sustainability Roundtable is a valuable opportunity for information exchange.** The company's active participation in Product Sustainability Roundtable, a cross-sector initiative, has been a valuable way to share information on improving product sustainability.

ENDNOTES

- 1 For this research, we interviewed Dr. Al Iannuzzi, Jr., Executive Director, Worldwide Environmental Health and Safety, Johnson & Johnson.
- 2 Johnson & Johnson Factbook 2008. See: <http://www.jnj.com/wps/wcm/connect/86089c004affa2c4baaaba10588a2d62/2008-factbook.pdf?MOD=AJPERES>
- 3 See: <http://www.jnj.com/connect/caring/environment-protection/environment-performance/?contentIDR=26141c0047e9ff9b9c3cdf3e4cc71393&useDefaultText=0&useDefaultDesc=0>
- 4 See: <http://www.jnj.com/connect/caring/environment-protection/environment-performance/?contentIDR=26141c0047e9ff9b9c3cdf3e4cc71393&useDefaultText=0&useDefaultDesc=0>
- 5 Johnson & Johnson Factbook 2008. Page 10.
- 6 Johnson & Johnson 2007 Sustainability Report. Page 32. See: <http://www.jnj.com/wps/wcm/connect/b92d59804ae70ee5bc98fc0f0a50cff8/2007-sustainability-report.pdf?MOD=AJPERES>
- 7 Johnson & Johnson Standards for Responsible External Manufacturing. See: <http://www.jnj.com/wps/wcm/connect/900341004af97dff765bf10588a2d62/standards-for-responsible-external-manufacturing.pdf?MOD=AJPERES>
- 8 The Presidential Green Chemistry Challenge Awards Program: Summary of 2008 Award Entries and Recipients. See: http://www.epa.gov/gcc/pubs/docs/award_entries_and_recipients2008.pdf

This document is one in a series of five case studies prepared as part of a project assessing strategies for improving management of materials of concern for United Technologies Corporation. For more information or to download the other case studies, visit www.chemicalspolicy.org.

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The Lowell Center for Sustainable Production at the University of Massachusetts Lowell fosters innovative solutions toward a more sustainable world by developing, studying, and promoting environmentally sound systems of production, healthy work environments, and economically viable work organizations. The Chemicals Policy and Science Initiative (CPSI) at the Lowell Center is one of the most prominent academic chemicals policy efforts in the US. Through research, conferences and trainings, CPSI engages diverse constituencies in the discussion of chemicals management issues to encourage more sustainable chemicals policies.