Sensitech Sustainability

Building a Sustainable Cold Chain

The global cold chain is not only becoming more robust and secure, but also increasingly green. A combination of formal corporate responsibility programs and stricter regulations has accelerated the adoption of environmentally sustainable packaging and supply chain practices.

Sensitech Inc., a part of UTC Building & Industrial Systems, a unit of United Technologies Corp., believes that cold chain monitoring should play a leading role in creating a sustainable cold chain. Since 1990, Sensitech has pioneered the practice of recovering and redeploying dataloggers, substantially reducing waste. More recently, Sensitech has continued to improve upon its past practices and implemented powerful new programs that enhance our environmental stewardship.

THESE PROGRAMS ARE FOCUSED ON FOUR KEY STRATEGIES:

1   Reducing raw materials
2   Recycling where possible
3   Disposing responsibly
4   Managing suppliers to appropriate standards

These efforts have allowed both Sensitech and its customers to lower their environmental impact, supporting long-term sustainability and profitability.

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Reducing Raw Materials

An effort to reduce energy and waste begins early in the product development life cycle. Sensitech conducts rigorous and formal reviews at each stage of the product development process to minimize the environmental footprint of new cold chain solutions. The design of an electronic datalogger is closely scrutinized, with an emphasis on reducing or eliminating everything from silicone seals to screws and gaskets when possible. For example, a recent simplified redesign eliminated 13 individual components from the TempTale® USB and TempTale® USB Multi-Alarm devices without impacting quality or performance. To put this in perspective, the redesign will eliminate almost 20 million individual components annually from manufacturing and, subsequently, the recycling and waste-disposal processes. Additional design optimization has led to a decrease of almost 5,000 pounds (2,267 kilograms) of silicone and reduced our wire consumption by more than a half-million feet (152,400 meters) annually. Lastly, a redesigned Ryan® strip-chart recorder reduced materials by 20 percent and its production line footprint by a similar percentage, freeing up factory space for additional recycling functions.

Sensitech also helps customers "right size" their packaging for environmental sustainability. Too much packaging can lead to excess weight, freight and fuel inefficiency. Too little packaging can result in product damage and waste. Having respect for the environment means using the right amount and type of packaging, which can only be determined through accurate measurement and the use of high-quality analytics.

Recycling Where Possible

Sensitech's Green Solutions Recycling Program promotes the return of its time/temperature data collection instruments for recycling. We encourage all customers to return every format of digital and analog time/temperature data recorders for proper recycling. Products accepted include the entire family of TempTale® dataloggers, Ryan® strip-chart recorders, as well as our electronic indicator products including: TagAlert®, FreezeAlert™, ThermoAlert™ and VaxAlert™. While customers are responsible for shipping the recovered product back to Sensitech, we handle the entire recycling process once the product is received.

In any given month, Sensitech recycles 99 percent of the devices returned. The remaining 1 percent of devices is returned damaged and non-recyclable; these are deconstructed and disposed of in a responsible manner, in compliance with industry standards. Sensitech's cargo security division, FreightWatch International, redeploys more than 90 percent of its portable, battery-powered GPS tracking devices, eliminating more than 3 tons (2,721 kilograms) of electronic waste over the past two years.

Across its electronic datalogger product line, Sensitech reclaims the recaptured lithium batteries and components in the circuit board assemblies for secondary markets. Composed of new and re-ground acrylonitrile butadiene styrene (ABS) thermoplastic, Ryan® strip-chart recorders are 100 percent recyclable.

For all Sensitech products, the company has engaged multiple manufacturing sites, and works to stock inventory in local proximity to end users, thereby improving logistics efficiencies and reducing our overall environmental footprint. Specifically, Sensitech has implemented a regionalized manufacturing and fulfillment network in four strategic locations around the globe. Over the past two years, we have decreased our order transit time for shipments by 50 percent. As a result, our customers have benefited from a more streamlined supply chain and an improved overall order fulfillment cycle time.

Disposing Responsibly

Sensitech makes every effort to fully conform with the Waste Electrical and Electronic Equipment Directive (WEEE) compliance program for Europe, in which the company takes ownership of its product from "cradle to grave." Sensitech also aims to fully comply with the Restriction of Hazardous Substances Directive (RoHS), which bans the use of certain hazardous substances (such as lead paint). In addition, the company seeks to comply with all sustainability laws and practices specific to the countries in which we do business.

Sensitech contracts Veolia Environmental Services, one of the largest environmental solutions companies in the world, to help ensure that the final scrapping of products is done in an environmentally sustainable manner. For the 32 months ending in August 2013, Veolia estimated that its partnership with Sensitech led to the recycling of 99,718 pounds (45,231 kilograms) of electronic waste and 14,565 pounds (6,606 kilograms) of lithium and lithium-ion batteries. This ongoing program is expected to continue to reduce waste material from entering the general waste stream over the coming years.

Managing Suppliers to Appropriate Standards

As a part of UTC Building & Industrial Systems, a unit of United Technologies Corp., Sensitech's quality system is grounded in UTC's operating system known as ACE, or Achieving Competitive Excellence. ACE is a systemic, employee-facing operating tenet focused on driving continuous improvement to help ensure world-class quality in our products and processes. ACE has three elements: culture, tools and competency. The daily interaction of each element is what makes it an operating system. Results focus on excellent quality, on-time delivery, highly engaged employees working in a safe environment and best-in-class financial returns.

ACE is supported by a suite of well-established tools, and a commitment of total employee engagement to increase operating efficiency, reduce waste, and improve customer satisfaction. ACE tools and processes are made available to Sensitech's suppliers worldwide, and provide a platform upon which they can implement a proven system of continuous improvement that meets UTC's operational standards. In addition to integrating continuous improvement programs with our suppliers, we qualify and repeatedly audit our suppliers with a focus toward overall quality, code of conduct, ethical standards, and environment, health and safety standards that protect our environment, facilities, people and products.

Lastly, Sensitech strives to comply with the Conflict Minerals provision (Section 1502) of the Dodd-Frank Wall Street Reform and Consumer Protection Act. This law was enacted, in part, to help ensure companies were not inadvertently sourcing "conflict minerals" or components thereof from the Democratic Republic of the Congo or adjoining countries. Our supplier approval process includes country-of-origin inquiry, supply chain due diligence and risk assessment, and any mitigation actions that may be necessary.

UTC's leadership in this area has been instrumental in supporting Sensitech. UTC became a charter participant in the Organization for Economic Corporation and Development (OECD) pilot program on "Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High Risk Areas." Additionally, UTC joined the extractives working group of the Electronics Industry Citizenship Coalition (EICC) and the Global eSustainability Initiative (GeSI), which, among other things, supports the responsible sourcing of minerals through the development of a Conflict-Free Smelter (CFS) program.

Corporate Leadership

UTC is a diversified company that provides a broad range of high-technology products and services to the global aerospace and building systems industries. Our commercial businesses include UTC Building & Industrial Systems, the world's leading provider of building technologies, including elevators, escalators, fire-safety, security, building automation, heating, ventilation, air conditioning and refrigeration systems and services. Our aerospace businesses include Sikorsky aircraft and the UTC Propulsion & Aerospace Systems, which includes Pratt & Whitney aircraft engines and UTC Aerospace Systems aerospace products. The company also operates a central research organization that pursues technologies for improving the performance, energy efficiency and cost of UTC products and processes.

United Technologies uses research and development resources to advance energy efficiency, ozone protection and low global warming technologies in all of its products. Sensitech is a part of UTC Building & Industrial Systems, which takes an approach to sustainability rooted by three beliefs:

- Green products must start at a green company.
- Global dialogue can rebalance the built environment with the natural environment.
- Green building will accelerate with education.

UTC Building & Industrial Systems and Sensitech structure their investments, global outreach and customer approach in ways consistent with these beliefs. In 2011, our UTC Electronic Controls plant became the first electronics manufacturing facility to earn the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED®) Gold certification under the LEED for Existing Building rating system. That same year, Carrier's Monterrey, Mexico, commercial plant was the first industrial facility in the global heating, ventilation and air-conditioning industry to be LEED Gold certified. Our commitment to green building also extends to our offices. Carrier's Beijing offices were awarded LEED Gold in 2009 and its Shanghai offices were awarded LEED Silver in 2010. Today, UTC Building & Industrial Systems has six LEED factories and three LEED offices.

Sustainability goals throughout UTC address not only factory operations, but building design, product design and materials, and critical suppliers. Sensitech's own corporate office in Beverly, Massachusetts, is an Energy Star Certified building. UTC businesses around the world measure success with the same set of financial, operational, ethical, environment and safety metrics.

The company is on track to meet its 2015 metrics and goals, which include the following percentage reductions from 2006 baseline figures:

- Greenhouse and non-greenhouse gas emissions—decrease 27 percent and 68 percent, respectively
- Water consumption—decrease 40 percent
- Total industrial process waste—decrease 45 percent
- Non-recycled industrial process waste—decrease 54 percent
- A host of Environment, Health and Safety (EH&S) and Supplier EH&S expectations

Sensitech takes a holistic view of our responsibility toward global environmental stewardship. As part of UTC Building & Industrial Systems, Sensitech is uniquely positioned to leverage the power, experience and expertise of our parent company in driving overall corporate goals and performance associated with improving the world in which we live and preserving the environment for future generations.

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