

Advancing Green Chemistry Education

The GC3 education group has been working on two tasks during the past year: supporting and advancing a position statement on green chemistry in higher education, and curriculum work for a green chemistry and safer alternatives training for business professionals.

Position statement on green chemistry in higher education

The GC3 education group created a position statement on green chemistry in higher education to support and advance the adoption of green chemistry and engineering principles in academia. The position statement has been signed by 19 GC3 companies, along with 11 GC3 partner organizations. We continue to seek signers for the position statement and are working with Beyond Benign through the Green Chemistry Commitment program to provide support for higher education institutions that are implementing green chemistry in to their programs.

The goals of the position statement are to create a statement that can be supported by product manufacturers, and retailers supporting the need for:

- The establishment of green chemistry education programs at the university level
- Graduates of institutions with green chemistry education programs being preferentially treated in the market place, all other aspects of education being consistent and equal

The position statement broadly supports sustainability in higher education, with a focus on green chemistry and green engineering principles. The statement specifically mentions the need for these principles, and other important knowledge and skills, to be incorporated in to science and engineering disciplines. It also supports the incorporation of many of the concepts and principles in green chemistry and sustainability to be woven in to non-science disciplines. The statement supports continuing education and training within companies, to foster the adoption of current knowledge and skills for existing workers and professionals. Finally, the position statement sets forth a series of recommendations and commitments from the signing companies.

Green chemistry and safer alternatives training

The GC3 education group is continuing to work on a green chemistry and safer alternatives training that can be offered to GC3 companies. The group has outlined a tiered training program that begins with high level topics (Tier 1) that can be offered as trainings through a webinar series. Tier 2 trainings will be developed over the coming months and are envisioned to bring together multiple job functions in order to enhance communication of green chemistry

and safer alternatives internally within a company, and externally along a supply chain. By better understanding how each job function plays a role towards creating sustainable products and processes, companies can be better prepared to solve the many challenges they are faced with today. The trainings will be developed in partnership with GC3 companies and will be centered around case study models that demonstrate green chemistry in practice. The goal of the training will be to target the intersection between job functions to allow for enhanced communications in order to advance green chemistry and safer alternatives implementation within a company, and externally along a supply chain. The GC3 education group is currently seeking members for the curriculum development team.

For more information on the project, contact Amy Cannon, Amy_Cannon@beyondbenign.org.

Business and Academic Partnerships for Safer Chemicals

A GC3 project group was formed in 2011 to initiate a project designed to develop and pilot a model for companies and universities to collaboratively evaluate safer alternatives to toxic chemicals. The aim was to develop a collaborative model that will support decision-making for GC3 companies and their supply chain partners. To be successful, the model needed to yield better and more cost-effective results than those that companies can achieve on their own, through pooling of knowledge and costs for evaluations, as well as facilitating conversations within supply chains that can lead to better overall outcomes.

This model is being developed through a pilot project, focused on identifying and evaluating alternatives to known toxic phthalate plasticizers in wire & cable for electronic applications. The original workplan called for an assessment of the relative hazard/safety of the alternatives, as well as evaluations of technical performance and cost.

The Plasticizer Pilot Project

The following companies, government agencies and NGOs met on monthly calls to provide direction and input on the project: BASF, Dow Chemical, Hallstar, Teknor Apex, Dell, EMC, HP, Schneider Electric, PolyOne, Staples, Washington State Dept. of Ecology, Clean Production Action, and Pacific Northwest Pollution Prevention Resource Center. The companies involved are all important players in the electronic product value chain: plasticizer chemical manufactures/suppliers, plastic compounders, brands and a retailer.

The project is now close to completion. Nine plasticizers, selected by the workgroup, were evaluated by ToxServices using Clean Production Action's (CPA) GreenScreen™ Method. Project group members reviewed the Draft GreenScreen™ assessments and provided additional data and comments. ToxServices incorporated the data and addressed comments, as appropriate, in revisions to the GreenScreens. The draft assessments and all comments received were posted on a password-protected webpage for the group to access.

Four of the nine plasticizer GreenScreen assessments have been verified (i.e., subjected to rigorous peer review) through a protocol developed by CPA.

In lieu of actual technical performance and cost evaluations, the project group decided to compile a set of links to technical information provided by plasticizer manufacturers. The links can be found on a GC3 [webpage](#) created for the project.

The project group has succeeded in demonstrating that collaborative assessments can be done. The group faced and overcame numerous challenges and learned many valuable lessons. Several protocols were developed, such as a process to document and discuss dissenting views on the chemical hazard assessments and how to handle trade secret information. The constructive dialogue within our supply chain group created robust, usable results and appears to have yielded more data than might have otherwise been available to an individual company.

Finally, the project has resulted in robust, third party chemical hazard assessments for nine alternative plasticizers for wire and cable. These plasticizers are of significant interest to suppliers, chemical users, and other stakeholders.

A final report on the project is forthcoming.

An article on the project was published in GreenBiz.com and a more detailed description of the project will be published in May, 2013, in a Royal Society of Chemistry book on [Chemical Alternatives Assessment](#).

The collaborative model developed may at some point in the future be deployed by the GC3 to conduct another project on a different class of chemical and application.

For more information on the project, contact Monica Becker, monica@monicabecker.com.

Engaging Retailers in the Adoption of Safer Products

The Retailer project group engages proactive retailers and other stakeholders in a dialogue about the challenges and solutions to sourcing and selling safer products. This group has developed a number of deliverables over the past few years, including: a report outlining guidelines for creating a product chemicals management system for retailers; and the *Retailer Portal* – an online database providing information to retailers on tools to evaluate chemicals or chemical-containing products for their potential human health and environmental impacts.

The Retailer project group had two goals for the year – to educate retailers through a webinar series and to plan a second National Summit for Retailers, to be held in conjunction with the 8th Annual GC3 Roundtable.

Educational Program for Retailers

An educational webinar series for retailers and their suppliers was offered to introduce tools that are available to assist retailers in identifying safer chemicals and products. Two webinars were held in 2012.

The first webinar, held in September 2012, was entitled *The Federal Trade Commission's Green Guides: What Retailers need to know*. Laura Koss, Senior Attorney at the Federal Trade Commission (FTC), discussed the FTC Guides for the Use of Environmental Marketing Claims, also known as the "Green Guides." She described the purpose and content of the Green Guides and the proposed revisions in response to public comments. This webinar helped retailers and consumer product manufacturers understand how the Green Guides can be used to navigate the increasingly complex world of marketing green and sustainable products.

The second webinar, held in December 2012, was entitled *The Guide to Safer Chemicals: How Retailers can improve Chemicals Management*. The Guide to Safer Chemicals is designed to help companies benchmark their progress against the BizNGO Principles for Safer Chemicals. These principles include: Know and disclose chemicals in products; Assess and avoid hazards; Seek continuous improvement; Support public policies for safer chemicals. Mark Rossi, co-chair of the BizNGO Working Group discussed how the Guide can be used by retailers to improve management of chemicals in their products. Roger McFadden, VP and Senior Scientist at Staples, discussed how his company is using the BizNGO Principles and Guide to Safer Chemicals to help product designers and suppliers make an orderly transition to safer chemicals, materials and products.

Second National Summit for Retailers

The Retailer project group met via conference call beginning in January to plan the agenda for the second National Summit for Retailers, which was held in NYC on May 7. The Summit was designed to be informative and interactive. The agenda included sessions on: Drivers for Safer Chemicals and Products in the Retail Sector and Key Leverage Points for Change; Educating Consumers and Building Demand for Safer Products; Addressing Supply Chain Challenges to Encourage the Manufacture and Sale of Safer Products; and, New Tools to Assist Retailers in the Transition to Safer Chemicals and Products.

Plans for the coming year were discussed at the Summit and will be solidified by the workgroup in June and July.

For more information on the project, contact Sally Edwards, Sally_Edwards@uml.edu.

Facilitating Chemical Data Flow Along Supply Chains

Many companies in the GC3 are spending significant resources gathering chemical data from their supply chain for regulatory compliance, green product design and certification programs, and chemical disclosure initiatives. The aim of this project group is to advance the efforts of these companies. This workgroup has developed a number of deliverables in previous years, including: in-depth case studies of how companies meet the challenges of gathering chemical data information from their supply chains; a guidance document for suppliers on meeting customers' needs for chemical data; and an evaluation of the benefits and methods of standardizing chemical data collection systems in business supply chains.

The Confidential Business Information (CBI) Project

This year, the workgroup is focused on assessing how best to optimize B2B chemical information transactions that involve CBI concerns. Many requests by customers in supply chains can be met by their suppliers without difficulty. But the scope of some of these business-to-business (B2B) information requests can raise concerns about compromising confidential business information (CBI).

During an initial discussion of CBI issues with Mark Greenwood (Ropes & Gray), the project group identified several factors that strongly influence the B2B flow of chemical data that involves potentially sensitive or confidential business information: Market power -- information tends to flow best when both parties bring something of value to the table; clear communication of reason for, and perceived legitimacy of, request for information; types of information requested (e.g., stronger pushback for requests involving production processes, trace impurities, supply chain information, etc.); and degree of trust between parties to the transaction (which may be particularly difficult in some international transactions).

At the outset, the project group developed a matrix to illuminate the various contexts in which CBI issues could arise in B2B chemical information transactions. By connecting the types of potentially sensitive information that might be requested with the various reasons for those requests, we created a roadmap for the project group to explore mechanisms, either currently in use or still needed, for protecting CBI while facilitating information transfers in these different contexts.

The project group then explored current approaches and issues for handling CBI information through a series of four webinars and discussions.

Zach Freeze (Walmart) discussed how Walmart uses WERCs to identify significant information to meet regulatory requirements. Walmart's suppliers provide chemical ingredient information for their products to The WERCs under a confidential disclosure agreement (CDA). Walmart does not see the ingredient information; the WERCs alerts Walmart to potential regulatory concerns related to ingredients in those products.

Amanda Kaminsky (The Durst Organization) and Tom Lent (Healthy Building Network) discussed the role of Health Product Declarations (HPDs) in providing greater transparency and availability of chemical information, and the difficulty of attempting to use direct CDAs to obtain such information for managing all the materials in a complex construction project. The project group explored a variety of ways in which HPDs can allow hazard disclosure without intellectual property (IP)/CBI disclosure – e.g., potential for providing hazard disclosure rather than full disclosure and CAS number, development of approach for using HPD with 3rd-party certification.

Herman Miller uses Cradle-to-Cradle (C2C) certification for its products, and MBDC provides the C2C assessments. Jay Bolus (MBDC) and Denise Van Valkenburg (Herman Miller) discussed how Herman Miller's suppliers provided an overview of how these relationships work, both with suppliers who provide chemical information data (under CDAs) directly to Herman Miller and those who provide data only to MBDC, which provides their assessments to Herman Miller.

For the last webinar, Martin Wolf (Seventh Generation) and Cora Leibig (Segetis) discussed the balance of needed CBI to protect IP in product innovation, and how best to balance that with legitimate concerns for providing transparency on ingredients to customers.

We will discuss the project and our current findings with the project group at the GC3 Roundtable and jointly develop a plan for next steps.

For more information on the project, contact Bob Kerr, rkerr@purestrategies.com or Monica Becker monica@monicabecker.com.