

These comments were submitted by Rich Liroff, Ph.D., in response to a August 30, 2010 e-mail from Acting Director Maziar Movassaghi to the GRSP about the UC Santa Barbara chemical alternatives assessment report, including specific questions for the GRSP discussion.

Q1. Does the UCSB report capture the current state of affairs? Are there any key issues that we should include in the UCSB report?

Answer: I think the UCSB report does a fine job of capturing the current state of affairs of alternatives assessment methods. That said, I wish to call DTSC's attention to the ChemSec/Clean Production Action report, Greening Consumer Electronics-Moving Away From Bromine and Chlorine, available here:  
<http://www.cleanproduction.org/library/GreeningConsumerElectronics.pdf>

This report contains a series of case studies of Apple and other companies that have gone bromine- and chlorine-free. The case studies do not report in neat tabular form the exact comparisons made among alternative materials and designs, but they do an excellent job of describing in a broad summary fashion the process by which alternatives were developed and analyzed. A key take-away lesson from these case studies is the close collaboration among companies that sought to move to safer chemicals and designs and their suppliers from whom innovations were needed. The studies underscore the need for a clear commitment to change, a reluctance to accept the status quo, and acceptance of the dynamism and possible disruptiveness of innovation. These lessons have ramifications for the structure of DTSC's assessment regulations, underscoring the need for transparency and robust outside review, as a counterweight to any predisposition on the part of assessors to follow an analytical path that may have the tendency to support the chemical status quo.

Q2. What should be factors for consideration in making sure a compilation of CAA case studies is robust in the breadth and type of information covered? For example, should we consider product types (formulated, assembled, etc.)? Should we consider private vs. public CAA processes? Are there specific approaches/tools that we should consider? How should the compilation be organized? Are there any specific examples of failures that we should include?

Answer: Now that the methods of cradle-to-cradle are no longer proprietary, DTSC might solicit public disclosure of some of the cradle-to-cradle certifications that have already been done across a broad sector of industries. This would, of course, require cooperation by the participating companies. A similar approach might be made to those companies that have begun to implement Clean Production Action's Green Screen, if cases can be found where companies believe they will not be unduly disclosing proprietary intellectual property. Case studies of successful cases are preferable to those of failures. Some failures, so-called "regrettable substitutions", are widely-recognized, and simply underscore the need to cast the analytical net sufficiently broadly

to reduce the chances of making such mistakes. With respect to private CAA analyses, you might want to consult with SC Johnson & Son regarding their Greenlist chemical review process. SCJ makes Greenlist available royalty-free via a third party administrator, Five Winds International. SCJ and Five Winds could be queried regarding willingness to generate alternatives analysis studies based on the Greenlist process. See: [http://www.csrwire.com/press\\_releases/22870-SC-Johnson-Signs-Greenlist-Licensing-Agreement-with-Five-Winds-International](http://www.csrwire.com/press_releases/22870-SC-Johnson-Signs-Greenlist-Licensing-Agreement-with-Five-Winds-International)

Q3. Who are specific individuals that we should contact to provide examples and participate in the CAA study compilation.

Answer: Should DTSC wish to pursue any of the suggestions above, I would be pleased to provide names of potential contacts.

Q4. How should continuous improvement be factored into AA process?

Answer: This query has multiple threads best pursued in a group brainstorm. Rather than attempt to pursue them here, I'll access an archived copy of the September 9 meeting and as appropriate respond in a subsequent e-mail to my panel colleagues' ideas.

Best wishes for a fruitful meeting.

Richard Liroff