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November 4, 2009

Michael O'Docharty
Safer Alternative Comments
Department of Toxic Substances Control
P.O. Box 806
Sacramento, CA 95814

RE: Department of Toxic Substances Control's Green Chemistry Straw Proposal

IPC – Association Connecting Electronics Industries® appreciates the opportunity to comment on the Department of Toxic Substances Control's (DTSC) green chemistry draft straw proposal (hereafter referred to as straw proposal). IPC is a strong advocate of environmental regulations that provide an environmental and economic benefit and protect human health. IPC is seriously concerned that the straw proposal will fail to improve the health and safety of California's citizens because the proposed scope is unwieldy and un-implementable. IPC believes that in order for green chemistry to be a successful program the scope of covered products must be significantly narrower and focused on those products and chemicals to which the public are most commonly exposed. A targeted, prioritized approach will allow industry and DTSC to effectively use available resources. Should DTSC wish to expand the scope of covered products and chemicals, a phased-in approach would ensure that all products and chemicals of concern are eventually covered in the regulation. IPC is also concerned that the proposed one year time frame for alternatives assessments is impractical for companies to comply with and DTSC to enforce. The citizens of California, DTSC and industry would all be better served by a more manageable approach to a green chemistry regulation.

I. About the IPC

IPC, a global trade association, represents all facets of the electronic interconnection industry, including design, printed board manufacturing and electronics assembly. Printed boards and electronic assemblies are used in a variety of electronic devices that include computers, cell phones, pacemakers, and sophisticated missile defense systems. IPC has over 2,700 member companies, including over 250 member companies located in California. As a member-driven organization and leading source for industry standards, training, market research and public

policy advocacy, IPC supports programs to meet the needs of an estimated $1.7 trillion global electronics industry.

IPC is heavily involved in a number of voluntary environmental initiatives including several of EPA's Design for the Environment partnership projects, the development of the Electronic Product Environmental Assessment Tool (EPEAT) standard[1], and the development of a green chemistry standard through the American Chemical Society and National Standards Foundation.

II. DTSC Should Adhere to the Original Plan for a Green Chemistry Regulation

IPC strongly encourages DTSC to adhere to its original science-based, lifecycle approach to evaluating chemicals under a green chemistry regulation. DTSC initially envisioned a regulation that would move California toward a cradle-to-cradle economy, which focuses on a product's lifecycle and attempts to ensure minimal waste or pollutants are produced at any stage of a product's life. DTSC's straw proposal directly undermines this goal by proposing a list of chemicals to ban from products sold in California. Electronics manufacturers use certain chemicals of concern because of their unique energy efficiency, safety or performance characteristics when no viable or environmentally-preferable substitutes exist. Banning chemicals without full consideration of the full environment, social and economic impacts often results in unintended environmental consequences. For example, review of the U.S. Environmental Protection Agency (EPA) Lead-Free Solder project[2] illuminates the environmental trade-offs inherent in chemical substitutions. The study evaluated the environmental impacts of tin-lead solder versus lead-free alternative solders. According to the study, the increased energy use associated with the higher operating temperatures required for manufacturing lead-free soldered electronics was projected to cause higher air pollution, acid rain, stream eutrophication, and global warming impacts than tin-lead soldered electronics. Listing chemicals to be banned without conducting thorough, comprehensive alternatives assessments will inevitably lead to inadvertent negative environmental impacts.

III. DTSC Green Chemistry Should Complement Existing Efforts

IPC appreciates the intentions of California's green chemistry regulation. However, the straw proposal is overambitious and un-implementable. Due to California's limited resources, development, implementation and enforcement of such an aggressive regulation is highly unlikely. DTSC might consider developing a regulation that takes advantage of work that is currently being done elsewhere. In Europe, the Registration, Evaluation and Authorization of Chemicals (REACH) regulation[3] regulates all chemicals in commerce. Europe has devoted a

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[1] http://www.epeat.net/

[2] U.S. Environmental Protection Agency. August 2007. *Solders in Electronics: A Life Cycle Assessment.* Available at http://epa.gov/dfe/pubs/solder/lca/index.htm.

[3] Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European

significant amount of resources and an entire agency, the European Chemicals Agency (ECHA), toward developing and implementing REACH. ECHA is exclusively dedicated to evaluating chemicals, identifying risks and finding viable alternatives to chemicals of concern identified under REACH. Under REACH, an enormous amount of data and testing will be done on the use of chemicals. This data will include inherent hazard characteristics, exposure scenarios, and how much of the chemical is used annually. DTSC should examine how they can utilize this data in their quest to promote green chemistry in California.

IV. A Narrow Product Scope is Vital for Feasibility

IPC believes DTSC should initially limit the scope of the regulation to the nine product categories identified in the first section of the straw proposal. These nine product categories include products commonly used by consumers. The marketplace will be severely disrupted if DTSC attempts to regulate all products sold in California at one time. Some manufacturers may choose to stop selling a product in California all together because they simply cannot comply with such a far-reaching regulation. Other manufacturers may reformulate their products in order to comply which could affect the performance of the product. Additionally, compliance with these regulations will likely result in increased prices to California consumers. A regulation that is focused on specific product categories will allow DTSC to use available resources more efficiently and implement a manageable regulation. As this program matures DTSC may choose to add additional product categories.

V. Prioritizing Chemicals of Concern is Essential for an Effective Regulation

IPC believes that DTSC has taken on an enormous, unmanageable task by proposing to regulate hundreds of chemicals at once. Obtaining information about chemicals in products is not a simple task. When the European Union released the Restriction of Hazardous Substances (ROHS) Directive[4] that restricts six chemicals in electronics products, it took the electronics industry several years to determine whether those six chemicals were in their products because the electronics supply chain is extremely complex. Due to confidentiality issues in the supply chain, an electronics manufacturer will typically know what is not in their product; gathering information on additional chemicals while require time and effort to gather that information.

DTSC needs to prioritize the chemicals of concern in order to have a manageable, effective regulation. Prioritizing the chemicals of concern and implementing a phased-in approach will give industry adequate time to determine whether their product contains a chemical(s) of concern and get a better understanding of what chemicals are in their products. If DTSC attempts to

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Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC, and 2000/21/EC.

[4] Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on restriction of the use of certain hazardous substances in electrical and electronic equipment http://www.rohs.gov.uk/

regulate the hundreds of chemicals identified in the straw proposal all at once, the agency will not be able to enforce the regulation. DTSC will be inundated by the thousands of alternatives assessments for each use of each of the hundreds of regulated chemicals. By addressing hundreds of chemicals of concern at once, the extremely hazardous chemicals will be lost in the shuffle and may not be adequately addressed. Using the prioritized list of chemicals of concern, DTSC can phase-in additional chemicals at an orderly, manageable pace, resulting in an efficient and effective green chemistry regulation.

There are regulations in effect that DTSC could use as a guide to evaluate and prioritize the chemicals of concern identified in the straw proposal. The REACH regulation and Canada's Chemical Management Plan[5] are just two examples of chemicals regulations that have used prioritization to implement a manageable and enforceable chemicals regulation. DTSC may wish to look to Europe and Canada's plans when developing their own method for prioritizing chemicals.

VI. Alternatives Assessment Criteria are Unrealistic and Burdensome

DTSC's proposed one year time frame to conduct an alternatives assessment is unrealistic. For example, the EPA's Design for the Environment (DfE) Flame Retardant in Printed Circuit Boards Partnership[6] has been working for three years to evaluate alternatives for certain flame retardants found in printed circuit boards. When evaluating alternatives, drop-in replacements are rare, but instead often require consideration of the entire product, a process that often takes several years. DTSC should give industry a minimum of three years to develop suitable, viable alternatives for the chemicals of concern.

DTSC should provide guidance on what should be included in an alternatives assessment to ensure that the desired information is produced. DTSC should strongly consider forming and participating in partnerships that include all willing and affected stakeholders. Partnerships have the ability to bring the best resources and expertise together so that the alternatives assessment will provide valuable information that industry and DTSC can use.

VII. Protection of Confidential Business Information is Critical

DTSC should be mindful of the need to protect confidential business information (CBI) before requiring product ingredient disclosures on a public website. Many companies are appropriately concerned with CBI being readily available. It is common for companies to withhold certain information about what is contained in their products because that information is proprietary. DTSC needs to ensure that CBI is protected.

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[5] http://www.chemicalsubstanceschimiques.gc.ca/en/
[6] http://www.epa.gov/dfe/pubs/projects/pcb/index.htm

VIII. Conclusion

IPC is a strong advocate for scientifically-based environmental regulations that improve environmental conditions, protect human health, and stimulate the economy. It is essential for DTSC to scale down the scope of the green chemistry straw proposal in order to implement a feasible regulation. If DTSC attempts to take on too much at one time, the entire program will fail. DTSC, industry and citizens of California would be better served by an incremental program that implements a phased-in approach to chemicals regulations. By taking one step at a time DTSC will be better able to enforce the regulation, industry will be better equipped to comply with the regulation, and the public can rest assured that they are protected from harmful chemicals.

IPC thanks DTSC for the opportunity to comment and encourages the agency to take our suggestions into strong consideration.

Sincerely,

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Manager, Environmental Programs

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November 4, 2009

Maziar Movassaghi
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Dear Director Movassaghi:

Thank you for the opportunity to comment on the Straw Proposal for Safer Alternatives Regulation dated 10/1/09 that was discussed at the Green Ribbon Science Panel (GRSP) meeting held on October 14, 2009.

I commend you and your staff for your work on the straw proposal and for getting input from diverse stakeholders on this important effort. Promulgation of an effective safer alternatives regulation is critical to protecting public health and the environment, and can serve as a model for other states. It is a logical next step in California's leadership in the area of toxics, since it expands on existing regulations that warn of toxic substances that can cause chronic health damage and regulations that control or prevent the use of substances that contribute to environmental pollution.

Although I am a member of the GRSP, I am commenting as an interested scientist who conducted toxicological evaluations of chemicals and evaluated safer alternatives to toxic chemicals during my tenure as a Research Scientist and Chief of the Hazard Evaluation System and Information Service (HESIS) in the California Department of Public Health prior to my retirement in 2007. My comments have not been shared beforehand with other GRSP members except for specific comments I made during the public portion of the GRSP meeting on October 14th.

Extend the timeline for developing safer alternative regulations

Given the complexity and importance of this pioneering effort, and the shortened state work week due to mandatory furloughs, extending the timeline for developing the draft regulation seems both reasonable and necessary. An extended timeline would: (1) give DTSC staff adequate time to work more closely with the GRSP to collect and summarize the panel's input and to communicate how that input is being considered; (2) allow staff to summarize the input received from all stakeholders and to identify key points of agreement or disagreement with the straw proposal so that they are easy to identify without reading through individual comments and GRSP meeting transcripts; (3) allow the hazard trait information that OEHHA is developing to be integrated into the draft regulation; (4) allow time for the clearinghouse to be developed and tested; (5) allow staff time to report back on other related toxics reduction efforts in the state such CARB's and SCAQMD's consumer product regulations, the CDPH Safe Cosmetics Program, and the development of safer alternatives in DTSC's and EPA Region 9's Pollution Prevention

Programs, and how the safer alternatives regulations will be harmonized with these efforts; and (6) allow time for a pilot test of the key elements of the straw proposal.

Work with OEHHA to identify and prioritize, based on established and transparent criteria, a focused number of chemicals of concern in consumer products

The product-based approach, multiple authoritative lists, and the list of designated chemicals presented in sections 6xxxx.1 and 6xxxx.2 as a mechanism to identify chemicals of concern in consumer products, is too extensive and unfocused, the identification criteria are not transparent, and there is no evidence that the information in has been prioritized. For successful implementation of the regulation, and to be able to evaluate its effectiveness, the focus should be on chemicals instead of products, and the list should be narrowed and prioritized using established criteria. OEHHA scientists should be involved to the greatest extent possible given the emphasis on chronic toxicants, and based on their role in identifying hazard traits and on their toxicological expertise and experience. The draft list of chemicals of concern should be presented to the GRSP, to other state agencies, and to stakeholders for review and comment.

In addition to the identification and prioritization criteria specified in Health and Safety Code Section 25252, other factors to be considered in developing criteria (some of which are in the current proposal) could include: (1) chronic toxicants identified by authoritative bodies whose identification process meets specific scientific and other criteria; (2) chemicals that are persistent, bioaccumulative, VOC-emitting, and ozone-depleting; (3) chemicals in products for which safer alternatives have been identified and are already in use in California (e.g., auto repair consumer products and consumer product paint strippers); (4) chemicals found in cord blood and other biomonitoring studies; (5) chronic toxicants in consumer products like adhesives, glues, and cleaning products that are used by workers; (6) terpene- and glycol ether-containing cleaning products that have been shown (in a CARB-sponsored study) to generate harmful levels of formaldehyde and ultrafine particles when they combine with indoor ozone; and (7) consumer products/categories that are known to contain carcinogens and other chronic toxicants as indicated by a search of the U.S. Department of Health and Human Services Household Products Database (http://hpd.nlm.nih.gov/) or by others such as the Environmental Working Group (www.ewg.org).

For example, the Household Products Database lists approximately 483 consumer products that contain quartz or crystalline silica, a known lung cancer hazard. The majority of the products are classified as home maintenance products and approximately 30 percent are in powder form, indicating a high potential for inhalation exposure. The concentration of silica exceeds 50 percent in 24 products and is 10 percent or higher in 80 products. A cleanser, classified as a product used inside the home, contains 70 to 80 percent quartz and is in powder form. Of interest, although there are many possible explanations, a search of the Household products database for most of the designated chemicals of concern in the current straw proposal produced few, if any, products. The criteria developed and used by OEHHA and DTSC to identify the draft list of chemicals

of concern should be presented to the GRSP, other state agencies, and to stakeholders for review and comment.

Ensure that the regulations are harmonized with the mandates/charges of other state programs and do not conflict other state and federal regulations related to toxic substances.

The relationship of the safer alternative regulations to existing state regulatory authorities and program mandates related to toxic substances and consumer products is not clear. Written explanations would help to avoid confusion and could help to maximize the public health and environmental protections of the new regulations. For example, cosmetics are a consumer product category identified under 6xxxx.1 in the straw proposal. However, it is not clear if or how DTSC will coordinate with CDPH or use the information collected by CDPH under the California Safe Cosmetics Act. It also is not clear if cosmetics manufacturers' requirements under the safer alternatives regulations will be harmonized with existing requirements to the extent possible. The relationship, if any, of the requirements in the straw proposal to consumer product regulations that have been developed or are under development by CARB should be explained.

Products designed for use in K-12 schools, which includes arts and crafts products, are also identified as a consumer product category to which the safer alternatives regulation will apply. Under California Education Code Section 32064 schools are prohibited from purchasing any product that contains toxic or carcinogenic substances for use in grades K-6. These products can be used in grades 7-12 if they are labeled with the hazardous ingredients, potential health effects, and instructions for safe use. Section 32066 of the Education Code requires OEHHA to develop a list of art and crafts materials "which cannot be purchased or ordered" for use in kindergarten and grades one through six. To avoid potential conflicts, and to complement and extend ongoing work in this area, it will be important for DTSC to clarify the relationship of the safer alternatives regulation to the existing Education Code requirements and to OEHHA's mandate under the Education Code.

Regulatory requirements of the FDA for cosmetic products and of the CSPC for toys and other consumer products could be a source of potential confusion and/or conflict based on the more stringent requirements in the straw proposal. It would help to develop written explanations of how the new regulations will or will not affect existing federal requirements, and to communicate this information to stakeholders during development of the safer alternative regulations. For example, cosmetics are not subject to pre-market approval by the FDA with the exception of color additives. Only seven chemicals, including chloroform, methylene chloride, and vinyl chloride are banned or are severely restricted (based on concentration) for use in cosmetic products for their potential adverse health effects. Cosmetic firms are responsible for substantiating the safety of their products and ingredients before marketing. FDA's decision that the presence of lead in lipstick, reported by the Campaign for Safe Cosmetics in 2007, are not a safety concern based on the levels found during testing (www.fda.gov/cosmetics/default.htm), would appear to conflict with the requirements of the straw proposal which does not identify

concentration limits for chemicals of concern in cosmetic products. Decisions by the Cosmetics Industry Review Panel that many chronic toxicants such as parabens and other chemicals of concern identified in the straw proposal are safe at the concentration levels found in cosmetics, also may be a source of conflict and/or confusion. It is important for stakeholders to know how or if the new safer alternative regulations will affect existing federal regulatory requirements regarding toxic substances in consumer products.

Limit the hazard evaluation process required for existing and new chemicals to ensure that chemicals of concern are identified in a timely manner.
The focus of the hazard evaluations should be on chronic toxicity including carcinogenicity, reproductive and developmental toxicity, and respiratory sensitization, and on ecological toxicity, including persistence and bioaccumulation—which is the major focus of the identification and prioritization process for chemicals of concern. The hazard evaluation component of the regulation should assist and guide manufacturers and importers in identifying chemicals of concern in their products. It should be as straightforward as possible to ensure that manufacturers, especially those from small and medium-sized companies with limited scientific resources, can conduct the evaluations in an efficient and cost-effective manner, and to ensure that the evaluation results are meaningful.

Based on information on in the EU classification, labeling, and packaging of substances and mixtures regulation, evaluations of product chemicals for acute toxicity, specific organ toxicity –single exposure, and serious eye damage currently required in the straw proposal can be time-consuming, and could delay manufacturers' evaluations of other products that may pose high risks of chronic health damage. Including acute toxicity and other non-chronic toxicity health endpoints as hazard categories also means that alternatives to chemicals of concern will have to be assessed for these endpoints. As a result, a chemical that causes short-term, reversible health effects may not be an acceptable safer alternative to a carcinogen, reproductive toxicant, or other chemical that causes long-term, irreversible health damage. Non-chronic health hazards are not consistent with the basis for identifying chemicals that are high priority health concerns for which safer alternatives are needed. DTSC should consider eliminating these hazard categories.

Revision of the hazard evaluation requirements in the straw proposal seems appropriate since the EU regulation (the basis for the hazard criteria and categories in the straw proposal) and the safer alternatives regulation have different purposes or goals. The goal of the EU regulation is to ensure that manufacturers, prior to marketing, identify, classify, and communicate the hazards of consumer products along with precautionary statements to consumers via product labels. The primary purpose is hazard communication and protecting consumers' health and safety through safe use of the products. Information will also be provided to consumers through the Internet and a telephone service. Requiring manufacturers to replace toxic chemicals with safer alternatives is not the purpose. Manufacturers also are not required to generate new toxicological or eco-toxicological data. The goal of the safer alternatives regulation is to require manufacturers to identify and classify chemicals of concern that can harm health and the

environment, and to replace specified priority chemicals with safer alternatives prior to marketing.

It is also important to recognize other important differences between the EU regulation and the safer alternatives regulation. The EU regulation, unlike the safer alternatives regulation, is harmonized with other EU regulatory efforts on toxic substances such as REACH, directives on cosmetic products, workplace hazard communication, etc. There is also extensive and specific guidance provided in the EU regulation to assist manufacturers in classifying hazards in products. This information, which appears essential for classifying hazards, is not included are referenced in the safer alternatives straw proposal, but should be included as an appendix.

Adoption of a GHS-based system analogous to the EU regulation for identifying, classifying, and labeling consumer products appears to be more appropriate for a federal agency like the CSPC than DTSC, since it may impact interstate commerce and other federal agencies such as the Department of Transportation (DOT) and OSHA. The DOT has incorporated the GHS into its labeling system, and OSHA has recently published a proposal to revise the Hazard Communication Standard based on the GHS. The revised OSHA Hazard Communication Standard would require manufacturers to conduct comprehensive hazard evaluations on workplace products using hazard criteria analogous to those in the EU regulation. In addition to labels, manufacturers must communicate hazards to workers and employers via safety data sheets.

Clarify the basis for prioritizing chemicals of concern in 6xxxx.8 and revise it so that priorities are based on the potential for harming health and / or the environment
The purpose of prioritizing chemicals of concern as outlined in this section is unclear. If a focused and prioritized list of chemicals of concern is developed initially as recommended earlier, the purpose of prioritizing the chemicals again, based on release into the environment and identification in biomonitoring studies seems unnecessary and limiting. These factors should be among the criteria used in the initial identification and prioritization of the chemicals of concern. Presumably, all of the chemicals will be of concern in terms of protecting health and the environment and should be considered for replacement with safer alternatives.

Consistent with the information in Section 6xxxx.13 (b) (1), Hazard Categorization Comparison, it would be more relevant to prioritize the chemicals of concern based on their potential to harm health and/or the environment. The presence of a chemical of concern in a product does not necessarily mean that it will cause harm. The potential to harm health would depend on several factors including the type of hazard (cancer, reproductive damage, respiratory sensitization), the concentration of the chemical in the product, and the potential for exposure (physical state of the chemical(s), the intended use of the product, frequency of use, whether use is outdoors or indoors, etc.). For example, the concentration of chemicals that potentially could cause harm for non-threshold hazards such as carcinogens and respiratory sensitizers, and for endocrine disruptors would be lower than the concentration of chemicals for threshold hazards such as reproductive and developmental toxicants. The physical state of the chemical of concern

would impact exposure potential. However, depending on the hazard the same chemical may have an opposite impact on environmental contamination. If the chemical poses a hazard via inhalation, for example, and the product is a solid, there would be minimal potential for exposure and potential adverse health effects. In contrast, the potential to harm the environment via disposal may be significant if the chemical is persistent or if it bioaccumulates. The regulation would have to include mandatory reporting of ingredient concentrations (the safety data sheets for many consumer products do not include this information) in the targeted consumer products, and guidance on how to prioritize products, especially mixtures that contain chemicals of concern in various hazard categories. The extensive classification guidance in the EU regulation for chronic toxicants that includes trigger concentrations based on physical states for various hazard categories could be used as a model for developing the guidance for prioritizing chemicals of concern.

Simplify the Alternatives Assessment to ensure that safer alternatives to chemicals of concern can be identified in a timelier manner.

The primary focus of the alternatives assessment should be to identify, as efficiently as possible, safer alternatives to chemicals in consumer products that pose risks of chronic health damage and environmental pollution, and to ensure that the replacement chemicals are not "regrettable substitutions". Also key, is acceptability of the product in terms of function and cost-effectiveness. While a comprehensive assessment as outlined in the proposal may be desirable, the time and resources required to perform the analysis, especially for small and medium sized manufacturing facilities, may severely limit the number of products/chemicals of concern and alternatives that can be assessed.

I recommend that DTSC review for possible use as a model, the successful alternative assessments that have been conducted under EPA Region 9, DTSC, CARB, and SCAQMD pollution prevention grants by the Institute for Research and Technical Assistance (IRTA) (www.irta.us) and by others. Using a streamlined safer alternatives assessment process, IRTA has identified safer alternatives for chemicals of concern in consumer product cleanup and paint thinning solvents, in paint strippers, in automotive aerosol cleaners and degreasers, and in many other products used in a variety of industrial applications. The alternatives are assessed for safety with regard to health and the environment, are tested to ensure that they are effective, and are analyzed for cost effectiveness. The availability of efficacious and cost-effective safer alternatives has led to regulations by SCAQMD and CARB banning the use of chemicals of concern that can pollute the environment and cause chronic health damage.

Include a State oversight and enforcement role to ensure effectiveness of the regulation and to evaluate its impact

It will be virtually impossible to determine if the regulation is effective if there is no monitoring or oversight of the process to determine regulatory compliance, and if there is no enforcement or penalties for noncompliance. Consumers will not have confidence that their products are safer, even if they are marketed as such, and the companies who

comply with the regulation will have a business disadvantage compared to companies who choose not to comply. Given the technical complexity of regulation, the major components (identification of chemicals of concern and replacement of the chemicals with safer alternatives) will require monitoring or oversight by the state, and active enforcement to ensure that the intent of the legislation, protection of human health and the environment are realized. Consideration should be given to reducing the scope of the regulation to ensure that there is effective oversight and enforcement if resources, or lack thereof, is an issue.

The importance of oversight and enforcement to the successful implementation of the EU regulation on the classification, labeling, and packaging of substances and mixtures which is the basis for the hazard evaluation component of the safer alternatives regulation is underscored by the following information taken from the regulation:

Member states should appoint the competent authority or competent authorities responsible …for the enforcement of the obligations set out in this Regulation. Member states should put in place effective monitoring and control measures in order to ensure compliance with this Regulation.

Regular reports by the Member States and the Agency on the operation of this Regulation should be an indispensable means of monitoring the implementation of chemicals legislation as well as trends in this field. Conclusions drawn from findings in the reports should be useful and practical tools for reviewing the Regulation and, where necessary, for formulating proposals for amendment.

In order to ensure transparency, impartiality and consistency in the level of enforcement activities by Member States, it is necessary for Member States to set up an appropriate framework with a view to imposing effective, proportionate and dissuasive penalties for non-compliance with this Regulation, as non-compliance can result in damage to human health and the environment.

Conduct a pilot study to identify and address potential barriers to implementing the regulation

A pilot study could provide useful information on: (1) the feasibility of targeting specified products as described in the current version of the proposal; (2) the types of chemical ingredients that are contained in consumer products that would be covered under the regulation; (3) the availability of products of the same type that contain safer alternatives to chemicals of concern; (4) the number of ingredients in a applicable product that would require a hazard evaluation and an alternatives assessment; (5) the types of consumer products that contain chemicals of concern such as carcinogens, reproductive and developmental toxicants; (6) the extent to which ingredients are listed as proprietary; (7) the availability of information on chemical concentrations in targeted products; and other information related to the feasibility of implementing and enforcing the regulation.

Although there are many ways to design a pilot study, I recommend using the U.S. Department of Health and Human Services Household Products Database (http://hpd.nlm.nih.gov/) to get initial information. I have used the database to get information on most of the above questions. The CARB 2006 Consumer and Commerical Products Survey can be used to identify California-specific companies in the Household Products Database. Some of the California companies manufacture personal care, auto, and home maintenance products that would be covered under the safer alternative regulation. The Household Products database can provide information on the chemicals contained in the products and other useful information.

Ban the use of chemicals of concern in consumer products for which safer alternatives have been developed and are already in use in California

The availability safe substitutes in consumer products that have been found to be effective and are in use in California for specified uses indicate that chemicals of concern such as carcinogens and reproductive and developmental toxicants in products marketed for the same uses should be banned. For example, the availability of water-based and other safer substitutes for automotive cleaners, consumer product cleanup solvents and paint thinners, and consumer product paint strippers that have been tested and are currently in use indicate that chemicals of concern in products marketed for the same uses can be banned. Such a ban would be consistent with the CARB ban on the use of the carcinogenic solvents methylene chloride, trichloroethylene, and perchloroethylene in aerosol automotive cleaners.

Please let me know if you have questions or if you want to discuss any of my comments further.

Sincerely,

Julia Quint, Ph.D.

cc: Jeff Wong, DTSC
Peggy Harris, DTSC
Rick Brausch, DTSC
Don Owen, DTSC
Sara Hoover, OEHHA
Bill Carroll, GRSP
Ken Geiser, GRSP
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KOCH INDUSTRIES INC

Maziar Movassaghi, Acting Director
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Re: Straw Proposal for Safer Alternative Regulations (October 1, 2009)
Submitted via hand delivery and electronic mail to: green.chemistry@dtsc.ca.gov

Dear Director Movassaghi:

We wish to thank DTSC for meeting with us on September 2, 2009. In addition to the topics discussed during that meeting, Koch Industries, Inc. (KII), on behalf of itself and its affiliate companies, wishes to provide DTSC with the following comments and suggestions regarding DTSC's Straw Proposal for Safer Alternative Regulations dated October 1, 2009 ("Straw Proposal"). These comments and suggestions focus on the areas of most significant concern to KII with the Straw Proposal. Additionally, you will find the comments are largely in line with the concerns presented by the Green Chemistry Alliance. KII has been an active member of and supports the efforts of the Green Chemistry Alliance. Per the request of DTSC, we have also attached a red-lined version of the Straw Proposal indicating the areas where we have questions and suggesting language for the Department's consideration as it revises the Straw Proposal. While this redline of the Straw Proposal is intended to highlight key areas of concern, it is not an indication of KII's support for the Straw Proposal as originally prepared or as amended; nor should it be considered an exhaustive review of all of the KII points of concern. The five broad areas of concern include:

- Applicable scope and several definitions need to be revised including a definition of de minimis criteria in order to focus resources and avoid confusion in the marketplace,
- Need to expand upon the hazard-only criteria, as they are inappropriate as the sole determinant of a "chemical of concern" for chemical and/or product evaluation and restriction,
- Further definition is needed of the steps within an alternatives assessment and recommendations made for the environmental impact review using Life Cycle Assessment (LCA) tools,

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- A robust regulatory response actions section needs to be developed in order to create a level playing field and criteria must be specified that acknowledge that a prohibition on the use of chemicals is not the only appropriate response action, and
- Existing data should first be used to populate the Toxic Information Clearinghouse to avoid duplication of existing programs and inconsistent data being entered by manufacturers.

KII believes that a workable system can and should be developed. To do so, KII suggests the following five features, which we view as essential to an implementable system that promotes innovation and protects the human health and environment.

First: The initial list of chemicals of concern (CoC) and the consumer products subject to alternatives analysis must be limited and, as required by the statute, prioritized by the Department. KII agrees with the Department's proposed hybrid approach of narrowing the list of consumer products and narrowing the potential list of CoC. Using this approach, an initial list of priority chemicals and priority classes of consumer products should be determined by the Department and included in the proposed regulation. The list of priority chemicals should be developed after a scientific evaluation process using the Section 6xxxx.2(b), list of lists, as a list of chemicals for consideration.

Second: De minimis criteria for these chemicals in consumer products must be specified as set out below. The initial evaluation for risk-based human health exposures using these de minimis criteria will ensure that the DTSC and company resources that are dedicated to the Alternatives Assessment are focused on those consumer products of highest concern.

Third: The Straw Proposal and ultimate regulation must include a simplified evaluation process and specific criteria by which a comparative alternatives evaluation can be carried out. The Alternatives Assessment process proposed in the Straw Proposal is too onerous to conduct if there is no potential harm to human health or the environment, nor is it necessary. We suggest a process below to address these issues. In addition, KII suggests the submission of a work plan by the manufacturers outlining the intended methodology and time line to address issues of transparency and workability.

Fourth: The Department must take a more active role in any regulatory response action selection and ensure proper scientific and risk assessment justification for

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any mandatory prohibition on CoC. Regulatory response actions, when implemented, should be proportionate, should apply to all similar products at the same time, and should be implemented by regulation.

Fifth: The Department and the Office should establish a process to link to or share information with existing chemical databases to eliminate duplicative databases when developing the Toxic Information Clearinghouse. KII has suggested a process to include the existing information, identify data gaps and work cooperatively with manufacturers to obtain needed information.

The discussion below provides further explanation of our concerns and suggestions for a path forward. KII's proposed path forward is designed to be functional, implementable, robust and innovative. We welcome the opportunity to work with DTSC to develop a Green Chemistry Alternatives Assessment model that will work in California.

1. **An Initial List of Priority Chemicals and Priority Classes of Consumer Products Should Be Determined by the Department and Included in the Proposed Regulation**

The thousands of chemicals currently comprehended by the Straw Proposal and the automatic addition of any chemicals thereafter added by any of the 29 separate lists and multiple out-of -state and foreign jurisdictions with authorization over these lists is not workable. Neither is the inclusion of all products that conceivably fall under the definition of consumer product and contain any CoC. Using the hybrid approach already under consideration by the Department, an initial list of priority chemicals and priority classes of consumer products should be determined by the Department (not the manufacturer) and included in the proposed regulation. This requires two separate steps—the development of the priority list of CoC and the specification of priority consumer products that will be evaluated for these CoC.

Priority List of Chemicals of Concern. DTSC is required by the statute to develop a process to identify and prioritize those chemicals or chemical ingredients that may be considered as being CoC. See Section 25252(a). We suggest that the Department consider and use the list of chemicals and list of lists included in Section 6xxxx.2(a) -(b) as a list of chemicals for consideration, in addition to these lists public input could be a part of DTSC's process to develop the chemicals for consideration. Public comments, including suggestions for additional chemicals for consideration, could be included in DTSC's process for developing the list of chemicals for consideration.

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From the list of chemicals for consideration, DTSC then would review each chemical using a scientific evaluation process to produce a limited and prioritized candidate list, from which the list of CoC will be created. The scientific review would evaluate chemical studies and information, during this review DTSC should consider the weight of evidence as a guiding factor. The initial screening of a chemical will determine if it is generally recognized as exhibiting one or more of the following characteristics: carcinogenic, mutagenic, developmentally and reproductively harmful, and/or persistent, bioaccumulative and toxic (CMR & PBT). KII believes that the most straightforward path to implementation is to use hazard traits analysis to initially classify chemicals for consideration to be considered for the candidate list after public input from which the prioritized listing of CoC would then be developed after scientific review. Pursuant to Section 25252(a), the Department would then look at the list of chemicals for consideration to evaluate the volume of the chemical in commerce in California, the potential for exposure to the chemical in a consumer product and potential effects on sensitive subpopulations to develop the initial list of priority CoC that would be set out in the proposed regulation. See, H&S Code §25252(a)(1-3). As with the initial list of priority consumer products under Section 6xxx.1(b), additions to the initial priority list of CoC can be added in future regulation if and as necessary.

Priority List of Consumer Products. The list of covered consumer products should be focused and clearly defined. For this reason, Sections 6xxxx.1(a)(9) – (a)(11) should be deleted. In the attached redline, KII has suggested clarifications to a few of the proposed consumer product categories to assist with the definition of these products. As indicated in Section 6xxxx.1(b), additional categories of priority consumer products can be added in the future if and as necessary.

2. De Minimis Criteria Should be Evaluated Before the Presence of a Chemical of Concern in a Priority Consumer Product Triggers an Alternatives Analysis.

To develop a Safer Alternatives Program for California that is both protective of human health and the environment, as well as feasible to implement, the Straw Proposal and ultimate proposed regulation should screen out from the alternatives assessment process and any subsequent regulatory response action products that have inherently minimal and safe, or "de minimis," levels of CoC. An alternatives analysis of such products serves no public policy purpose. It would unnecessarily complicate the Safer Alternatives Program and substantially increase the costs of the program to manufacturers and consumers, without providing any added benefit to human health or the environment. Identifying substitutes for chemicals in specific consumer products that by definition do not pose

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human or environmental exposure risk is at best a diversion of public and private resources; at worst it may lead to the adoption of response actions that would be misleading and confusing to consumers (labeling) or result in the adoption of a substitute whose effects are no better (and perhaps worse) than the chemical under consideration. As such, the Straw Proposal is inconsistent with the intent and regulatory direction provided in the statute. See purpose introduction to HB 1879 and H&S Code §§25253(a)(1)-(2) and (b). HB 1879 clearly set forth the goals of reducing the level of hazard and limit exposure to CoC and evaluating critical exposure pathways related to consumer products.

Furthermore, we do not believe that chemical ingredients as the term has been defined in the Straw Proposal should be included unless the chemical ingredient has the potential to be present in the resulting consumer product at a level that exceeds the de minimis criteria. If a chemical ingredient is necessary for a manufacturing process to produce a consumer product that will function as intended and it is reacted or removed below de minimis levels and therefore imparts no hazard trait to the consumer product, it should not be considered to fall within the definition of a chemical ingredient or a CoC, and it should not be considered in the evaluation of the hazard of the consumer product. In the attached redline, we suggest a more focused definition of "chemical ingredient" to assist with the drafting of definitions needed in this Straw Proposal to ensure focus and clarity.

Consistent with the intent of the statute and direction provided in the statute, de minimis criteria for chemicals in products that is deemed safe and thus does not require the product to undergo an AA should be defined. See H&S Code §§25253(a)(1)-(2) and (b). The de minimis criteria should be defined as a concentration of a chemical of concern in a consumer product that is considered safe due to the absence of any deleterious effects at this (A) concentration in the product, (B) the lack of an applicable exposure pathway for the chemical in the product, or (C) the CoC in the product is below a specified dose as shown by an evaluation of the health and environmental impacts. Our proposal in the order of review is as follows:

A. Concentration in the Product – Defined as the concentration of a chemical of concern in a product above an identified level. As an initial proposal, we submit 0.1% by weight in the consumer product to match internationally established programs, and consistent with the mandate of Section 25252(b)(2).[1] The Global Harmonized System (GHS) of chemical classification and labeling, which is now being adopted on a worldwide basis, including in the United States under OSHA,

[1] UN GHS and EU REACH all include a 0.1% by weight de minimis concentration.

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provides recognized regulatory benchmarks for making this determination. This well established and accepted model should be considered by the Department for concentration thresholds, specifically category 1 and 2 for carcinogens, mutagens and reproductive toxicants (CMRs). As an example, under the GHS for CMRs the concentration of the chemical less than 0.1% by weight in the consumer product would be considered de minimis.

B. Exposure– If the concentration in the consumer product is above the de minimis concentration (0.1% by weight in the consumer product), then the consumer product should be evaluated for a relevant exposure pathway. The evaluation will determine whether there are relevant routes of exposure to the identified CoC's in the consumer product during the normal intended use of the product and end of life stage.

C. Health/Environmental Evaluation – If the concentration of a CoC in the consumer product is above the de minimis concentration and if the exposure analysis shows that there is a relevant pathway of exposure, then the potential health and environmental impacts needs to be determined. This will be done by evaluating the exposure level against relevant toxicological benchmarks. Examples of relevant toxicological benchmarks include US EPA's Reference Dose (RfD) or Reference Concentration (RfC), and Permissible Exposure Limits (PELs). Exposures below the benchmarks are not of toxicological or environmental concern and therefore would not trigger the need to subject the product to an alternatives evaluation.

Products that meet any one of the above de minimis criteria should be exempt from an Alternatives Assessment and from any subsequent regulatory response action. KII welcomes the opportunity to work with the Department to develop regulatory language defining these de minimis criteria. These proposed de minimis criteria are consistent with the intent of the statute and the direction given to DTSC to limit exposure and evaluate critical exposure pathways. See, H&S Code § 25253(a)(1), §25253(a)(2), and §25253(b). This initial evaluation will also serve to focus the significantly more resource intensive AA on those consumer products with potential for exposure to CoC above the de minimis criteria.

3. Hazard only criteria are inappropriate as the sole determinant of a "chemical of concern" for chemical and/or product evaluation and regulatory response.

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There are three elements that we believe should be incorporated into the "Hazard Categories" section of the Straw Proposal. These important elements should be considered in the regulatory proposal before setting out the hazard criteria suggested by the Straw Proposal. In short, in order to properly identify a hazard, the effect and the conditions necessary for the effect must first be identified. The following suggestions and examples are intended to assist DTSC in an understanding of our position.

- The ***level and exposure pathway*** necessary for a chemical to present a hazard must be identified and defined. Many chemicals are safe and even beneficial at certain levels of exposure but are harmful at other levels of exposure. If a chemical of concern is a reproductive toxin via ingestion, it presents a hazard of reproductive toxicity when ingested but not otherwise. As mentioned above, including a de minimis definition in the Straw Proposal prior to the AA will allow Department and industry resources to be focused on those consumer products and CoC of greatest concern. Examples:

    - Ethanol (ethyl alcohol) is a developmental toxin when ingested and, at certain concentrations, can be harmful to a fetus or breast fed baby. However, ethanol has a hygienic effect when used in a dermal application because it destroys bacteria and virus which is a benefit for persons who are ill or immune compromised.
    - Heavy metals such as zinc, copper, chromium, iron, and manganese are necessary for the human body to properly function, but they can cause harm at higher levels. Copper in certain concentrations is necessary for the human body, but copper is an aquatic toxin at higher concentrations.
    - Formaldehyde is present in wood and all bio based materials but it is not released at harmful levels from the wood.

  Labeling a substance as a human or environmental toxicant without specifying the relevant pathway (i.e. ingestion) or the exposure level at which it presents a hazard is scientifically incorrect and misleading.

- The ***period of time*** at which or over which a chemical presents an exposure hazard must be identified; for hazard is also temporal. A chemical may have an adverse impact on humans only at certain ages or as a result of repeated exposure over a given period of time. Examples:

    - If a chemical is harmful to children at certain stages in their development then it is a chemical of concern in products children encounter and which

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may cause exposure to the chemical of concern to children. The same chemical used in a business application should not be considered a chemical of concern in that application. Also, if the chemical of concern is contained in a product such that it will not result in exposure to children throughout the product life, then it is not a chemical of concern in either application.

- If constant exposure above a specified dose causes cancer after 70 years of such exposure, then that dose information is directly relevant to identifying the hazard. For example, California Prop 65 incorporates a "no significant risk level" and "no observable effect level" "safe harbor evaluation" to identify the safe use conditions of a product which do not warrant a warning.

In summary, a chemical of concern must be specified by its health effect, exposure pathway, relevant dose, relevant age, and relevant duration of exposure in order to define the hazard that requires evaluation for potential alternatives and, potentially, a regulatory response action when that chemical is used in a consumer product. Identifying a chemical as a chemical of concern in the absence of this additional specification is scientifically incorrect and misleading. We welcome the opportunity to work with the Department to identify ways that the Straw Proposal can incorporate these elements into Section 6xxxx.7 Hazard Categories.

4. Further Clarification of the Alternatives Assessment is Needed and Recommendations Made for Streamlining the Use of Life Cycle Assessment (LCA) Tools.

The Straw Proposal fails to establish criteria for meaningful evaluation of alternatives thus resulting in an unworkable framework. The AA process as proposed includes an onerous full life cycle assessment (LCA) requirement. As the department heard during the Green Ribbon Science Panel discussion on October 14th, LCA's are very costly and can take several years to complete even with the availability of dedicated resources/personnel, which many companies especially small "start-up" or "mom and pop" companies simply do not have and cannot afford. As currently written, the Straw Proposal would encompass every consumer product containing any amount of any CoC as well as those consumer products in which CoC may be used in upstream manufacturing processes even if they are not present in the finished consumer product. Requiring this type of comprehensive analysis for every consumer product falling within this broad definition is unnecessary in many cases and unworkable practically and economically. It is unworkable practically because the mandated process, including a life

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cycle impact analysis in Section 6xxx.16 of the Straw Proposal, is unclear. The process also treats as if it were one tool different methodologies that need separate attention, and it sets out an excessive and uncoordinated listing of indicators. Finally, the process lacks the information required for it to be implemented with comparable and consistent results. The process is also unworkable economically since the cost of even a single LCA is very expensive and it will translate into higher costs of consumer products in California. Given the time, resource, and cost implications, KII suggests that an initial screening process and an enhanced environmental impact review using LCA tools be included in the ultimate regulatory proposal.

A comparative Alternatives Assessment (AA) will be triggered once the de minimis criteria evaluation is completed and a priority consumer product containing a CoC above the de minimis criteria is identified. KII believes that a thorough, useful and fair AA is composed of three major components: (A) functional equivalence of an alternative chemical, (B) hazard screening and, (C) review of environmental indicators using streamlined LCA tools. These elements are consistent with the statutory direction in Section 252539(a)(2) to develop a process "that includes an evaluation of the availability of potential alternatives and potential hazards posed by those alternatives, as well as an evaluation of critical exposure pathways." Details concerning these three major components are provided below:

A. Functional Equivalence of an Alternative

To determine whether an alternative chemical is a "functional equivalent" in a priority consumer product for the CoC being evaluated, the manufacturer of the product must evaluate whether the alternative would result in:

a) Adverse impacts on product quality, performance or functionality.
b) Adverse socio-economic impacts - Increased cost to consumer, reduced availability to consumer, and increases in external costs to society.
c) Acceptance as defined by market or consumer confidence. A safer alternative that imparts a noxious odor, texture, or color to a product or otherwise makes the product undesirable to the customer would not be considered a functional equivalent.

If there is no available functional alternative, the existing product with the CoC will remain on the market, and, if the CoC is above de minimis criteria, it will be subject to regulatory responses (such as labeling, consumer notification, and/or use restrictions) as deemed necessary. We have provided specific suggestions

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regarding the identification of alternatives in Section 6xxxx.12 Identification of Potential Alternatives. These suggestions are intended to incorporate the "functional equivalent" aspect to the identification of alternatives.

B. Hazard and Environmental Impact Screening

Manufacturers would next evaluate the functional equivalent to determine whether the exposure potential of the alternative during the normal intended use of the consumer product would meet the de minimis criteria mentioned in 2, above. In addition, the hazard screening would take into account the factors we suggested in 3, above. A final environmental impact screening would occur before the AA environmental impact review. This environmental impact screening should be designed to limit the number of alternatives that require an environmental impact review based on whether the alternative changes the environmental impact of the consumer product. The screening will identify whether the priority consumer product and each of the potential alternatives, with the same function and functional unit, is limited to the change in CoC. If the only change is the CoC and all of the ecological and resource depletion elements remain the similar, then the environmental impact review of the AA will not be required. The AA process should be limited to those alternatives that provide the basis for identifying a functional alternative that would offer different performance in terms of potential human health or environmental impacts during use.

C. Enhanced Environmental Impact Review Using Life Cycle Assessment Tools

To make the alternatives assessment component of the Straw Proposal workable, two requirements must be met: 1) The number of cases reaching the environmental impact review or life cycle impact assessment step must be reduced, and 2) The review of environmental indicators using life cycle assessment tools must be significantly enhanced and, simultaneously, simplified in order to make it practical and capable of producing consistent and comparable in results. The screening step recommended in the "hazard screening" section above will accomplish the goal of limiting the number of cases reaching the environmental indicators evaluation. Below we suggest a process to consider and streamline the review of environmental indicators using widely accepted life cycle assessment tools.

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Due to the very different nature of risk-based human health approaches compared to LCA approaches, which largely focus on environmental impacts, we believe that in addition to the hazard screening discussed above, an enhanced review of environmental impacts using LCA tools should be incorporated into the AA.[2] Over the course of Green Chemistry discussions, the life cycle impact assessment envisioned by the Department has been described as simple and inexpensive. We agree that the environmental impact component of the AA must be streamlined if we are to have a workable regulatory program. For these reasons, we are not recommending an ISO 14040 version of LCA for this program.

We are concerned that the current life cycle impact assessment outlined in the Straw Proposal is not clearly and properly described for the reasons indicated above. It is not a workable process due to methodological incongruencies, lack of specific guidance, inapplicable indicators that are not implementable and that will not produce results that can be replicated or be meaningful for the purposes of the regulation. The hallmark of a scientifically valid and objective process is that it yields results that can be replicated. Absent this type of reproducibility, comparable and consistent results will not be achieved. The evaluation becomes subjective; and it will lead to an uneven playing field within the industry, and to disagreement and criticism in the NGO community. Section 25253(a)(2) directs the Department to incorporate "life cycle assessment tools that take into consideration" several indicators. Consequently, after due consideration, we are recommending a realistic, robust enhanced environmental impact review using life cycle assessment tools based on an acceptable LCA methodology. This review includes a limited but sufficient number of indicators to detect significant differences in ecological and resource depletion impacts amongst identified functionally equivalent alternatives. This approach is consistent with Section 25253 (a)(2), and it will provide clear guidance on a basic recognized methodology to ensure that it can produce comparable and consistent results.

This enhanced environmental review using life cycle assessment tools is designed to include the major environmental impact indicators in the ISO 14040 LCA methodology. This approach reflects the proper consideration of the listed items in Section 25253(a)(2) not already considered above and the results of that careful and reasoned consideration. It will allow for the use of reliable tools such as the

[2] It has been clearly stated by both E.U. and U.S. reviews that among the most important limitations of LCA is the inability to adequately integrate human health assessment, ecotoxicity, and worker safety elements to yield meaningful results. Please see, Apeldoorn Declaration (2004) available at: http://www.leidenuniv.nl/cml/ssp/projects/lcia-metals.html.

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Life Cycle Inventory (LCI) database information and Life Cycle Impact Assessment (LCIA) methods with clear and proper environmental mechanisms. The streamlined environmental impact review would focus on the major sustainability impact indicators in the ISO 14040 LCA methodology, capable of indicating significant differences among the alternatives. From the consideration of the listed items in 25253 (a)(2) we believe that the following are the key indicators that should be included in proposed regulation:

- Materials consumed
- Energy consumed
- End of Life including disposability and leachability

Using these indicators will allow manufacturers to refer to available reliable LCI database information and utilize acceptable LCIA methodology. For these indicators (and only these) we suggest that the well known LCIA approaches in the EU CML and the US EPA TRACI methods[3] would provide comparable results. KII will be happy to provide DTSC with additional information regarding these and other tools. As suggested in the Straw Proposal, the environmental impact review should focus on evaluating how the proposed CoC alternatives when used in the consumer product will change the analysis for each of the key indicators. This approach reduces the possibility of subjective scoring and provides both transparency and consistency in the evaluation. This proposed streamlined environmental indicator review approach is consistent with the statute and is robust enough to detect the differences amongst alternatives in environmental areas, which are not already covered by the hazard and exposure steps of the AA.[4] This environmental impact review can be completed in a relatively short time frame allowing the results to remain as relevant and current to the process as possible.

[3] Please see: Netherlands CML: http://cml.leiden.edu/research/industrialecology/researchprojects/finished/new-dutch-lca-guide.html. US EPA TRACI: http://www.epa.gov/nrmrl/std/sab/traci/.

[4] We note that water conservation and water quality impacts are not appropriate to consider at this time as there is a universal discussion about these topics and the expression of environmental and recourse impacts currently on-going through ISO Sub-committee 5, Life Cycle Assessment, new Work Group #8 Water. Also life cycle analysis of public health impacts and other issues associated with health impacts, is subject to debate and identification of solutions to specific methodological shortcomings – among them the lack of data exposure and concentration – is currently being evaluated by the International Life Science Institute and the Society for Environmental Toxicity and Chemistry, North America. At such time as an accepted method is developed it should be considered by DTSC for inclusion.

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Finally, in the attached redline, we separate the economic impacts from the environmental impact review. We suggest this separation since there is no one methodology that integrates them both in impact indicator results. The separation also allows for a focused review of important economic factors that would not be included in a traditional LCA model.

In order to accommodate the different timeframes that may be required to perform all three aspects of this suggested AA, we suggest manufacturers be required to submit a work plan. Having manufacturers submit a work plan to the Department outlining the manufacturer's proposed path forward will provide the DTSC with an early opportunity for input into manufacturer plans and identify additional criteria that should be included in the AA. This process will focus both manufacturer and Department resources on the consumer products and CoC of greatest concern and provide the most effective opportunity for identification of safer alternatives. KII has suggested language in the proposed redline to streamline the LCA and incorporate a process for submission of a work plan. The work plan will provide DTSC with an opportunity to review the methodology proposed by manufacturers and provide transparency of the proposed process to the public.

5. The Department Must Take a More Active Role in Any Regulatory Response Action Selection and Avoid a Mandatory Prohibition on All Chemicals of Concern.

The current Safer Alternatives Straw Proposal, Section 6xxx.20(c)(3), presumes that all covered consumer products containing any amount of any chemical of concern, or using any chemical of concern in an upstream manufacturing process, are inherently unsafe and require elimination from the product of all CoC. As was discussed and acknowledged by DTSC during the Green Ribbon Science Panel on October 14th and the Straw Proposal Workshop held on October 21st, such a broad brush approach is not based in sound science or economic reality. KII supports a regulatory process in which stakeholders can bring forward information necessary for DTSC to make a scientifically sound decision for all similar priority consumer products, and in which DTSC considers all regulatory response options from the list including in the statute based on proportionate criteria consistently applied.

Any chemical, including a chemical of concern, can be reacted away or removed below a de minimis level in the upstream manufacturing process, may be naturally occurring, already be present in recycled products at interminable but low/safe quantities, or safe to human health and the environment at certain levels included in a consumer product. Due

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to the extraordinary number of CoC comprehended by the Straw Proposal, there likely is not a consumer product on the market without at least one chemical of concern at some level (even a molecule would be enough under the current Straw Proposal). The Straw Proposal would require that *all* of these chemicals in *each* of these products not only undergo an AA but also eventually be eliminated from the product, even if the product is inherently safe. KII encourages the Department to consider feasibility, utility and cost before proposing such an automatic prohibition. Also, the Department should recognize that the use of certain CoC in certain consumer products may be necessary for safety reasons or impart valuable qualities to the product that is essential to its function.

To implement the statutory mandate in a workable, meaningful and responsible way, the following changes to the Straw Proposal are essential:

- Prohibiting the use of identified CoC should be an option if and when necessary to protect human health and the environment. It should not be the default regulatory response for all CoC in all consumer products. If such a prohibition is deemed necessary, it should be limited to the extent required to protect human health and the environment and it should be imposed by regulation and subject to an appeals process. This is a minimum regulatory due process requirement. It assures that any prohibition is subject to prior notice and public comment during which all relevant facts can be considered. It also assures that any such prohibition goes into effect for all manufacturers of a given product subject to the prohibition at the same time, which is essential for a level playing field.

- Innovation using chemicals is not inherently wrong. As DTSC reiterated during opening remarks to the Green Ribbon Science Panel and the Straw Proposal Workshop, innovation is one of the goals of Green Chemistry. Innovation can create products that protect human health or protect the environment. Further, many of the CoC listed are naturally occurring and many are present in recycled materials. Under the Straw Proposal, recycled content products also would essentially be banned in the 2-20 year timeframe increasing the need for land filling or otherwise disposing of such materials. This is contrary to one of the twelve principles of Green Chemistry, namely to prevent waste. The use of naturally occurring/bio-based materials, or renewable feed stocks (such as wood), to make consumer products would similarly be banned ultimately. Again, against one of the principles of Green Chemistry, to encourage the use of renewable feed stocks. These seem to be unintended and unnecessary consequences of the Safer Alternatives Program as outlined in the Straw Proposal and contrary to the principles upon which the statute was based. The current structure also provides a

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disincentive to find short term innovations to reduce the levels of CoC in products, since all products containing a chemical of concern at any amount would have to be eliminated eventually. To solve this potential unintended consequence, DTSC should propose the appropriate regulatory response from the statutory list of potential responses based on sound science and appropriate to the hazard and exposure potential as well as other factors. This should be accomplished through a regulatory process that allows all stakeholders to present information about the use and exposure potential associated with uses of the CoC under evaluation in priority consumer products.

- To be effective, the focus of the proposal must change. Instead of focusing on outright across the board chemical prohibitions, the Straw Proposal should encourage both short term and longer term reductions in the use of CoC and promote innovation through proportionate mechanisms such as public education, labeling, and through other market driven mechanisms recognized as part of the Green Chemistry program portfolio.

We have provided a revised regulatory response section 6xxxx.20 that calls on the Department to take a more active role in the selection of appropriate regulatory responses. Some of the criteria that are presented in the Straw Proposal may be useful to identify appropriate responses. However, KII does not support a regulation that places the responsibility on industry to select the appropriate regulatory response following the proposed subjective AA. We believe the language as currently drafted in the Straw Proposal is not consistent with the statutory directive providing DTSC with the discretion to select the appropriate regulatory response where a response is required after completion of the AA. See, H&S Code §25253(b). More significant, in practice, the language as drafted in the Straw Proposal can only lead to inconsistent and arbitrary selection of regulatory responses causing unfair competition and consumer confusion. Even if DTSC enhances the AA to provide consistent and comparable results, KII believes that the Department must take an active role in selecting the appropriate regulatory responses as we have proposed in the attached redline.

6. Hazard Category Data Disclosure from Every Manufacturer is Inappropriate for Population of the Toxic Information Clearinghouse

KII is concerned that the hazard category data disclosure requirement suggested in Section 6xxxx.7(a)(4) to populate the Toxic Information Clearinghouse (TIC) will create inconsistent data points, duplicate existing efforts, and unnecessarily increase the cost of testing and ask for the task to be done in an unreasonable amount of time. Section

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6xxxx.7(a)(4) does not distinguish de minimis chemicals from ingredients. Also, the language suggests that all chemicals must be disclosed without consideration for unintentionally added chemicals such as complex and highly variable natural materials, recycled material impurities, or other trace amounts of chemicals that may be found in products.

Failing to provide a standard for inclusion of chemicals in the TIC will make it difficult for a manufacturer to know what to enter when using natural materials that vary (such as wood), recycled materials that have variable contaminants (such as recycled paper), or other chemical reactions that may have trace amounts of chemicals. Hazard traits are defined as the effect and the conditions necessary for the effect. Therefore, requiring an evaluation of "all" chemicals without consideration of risk fails to focus the DTSC and OEHHA efforts on those chemicals for which information will be of greatest use to consumers. In addition, without a process or standards established for data submitted to the database, the entry of data by every manufacturer may lead to duplicative and potentially contradictory information being entered into the TIC. The TIC information will thereby be inconsistent and confusing to consumers which can lead to more suspicion and distrust of manufacturers and the Green Chemistry Initiative.

The one year timeframe is insufficient if testing is required to prove non-hazardous status because some hazard studies take several years to complete. The timeframe issue is further complicated because there does not appear to be a provision in the Straw Proposal for reliance on "generally recognized as safe" determinations.

Requiring every manufacturer to submit hazard data for every chemical in the consumer product evaluated will lead to a duplication of efforts already underway by Office of Environmental Health Hazard Assessment (OEHHA), US EPA under TSCA HPV challenge and the European Union under the REACH directive. KII suggests that DTSC develop a linkage or sharing mechanism that eliminates duplicative databases and the burden on maintaining them. DTSC is required to avoid duplication of these existing regulations and we suggest that a reasonable process can be identified to avoid that duplication. See, H&S Code §25257.1(c). We encourage OEHHA and DTSC to review information already available and that being developed in Europe before adding this additional burden to an already unworkable and demanding regulatory approach.

A proposed reasonable process begins after DTSC and OEHHA populate the TIC with existing data. Next, manufacturers would be able to register chemical use by entering the chemical name and CAS number in the TIC for chemicals in their products exceeding the de minimis criteria suggested above. These chemicals will be linked to the TIC database

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for existing TSCA and REACH data. Next, the DTSC and OEHHA should identify any data gaps and at that time determine an appropriate approach that provides consistent and accurate hazard categorization information. If additional characterization is needed, DTSC or OEHHA would then issue a data call to those manufacturers who have registered a chemical not included in the database. DTSC may consider requiring manufacturers to obtain the additional data as part of the suggested work plan. Another option available would be for DTSC and manufacturers to agree on a path forward to obtain the required hazard information or agree that the chemical is recognized as not having a hazard potential so no further testing would be required. We welcome the opportunity to work with DTSC to develop a reasonable approach to populating the TIC.

Conclusion

KII supports the adoption of Safer Alternatives Regulation that incorporates the following elements:

1. DTSC must develop a process to prioritize CoC. KII has suggested a process using the list of chemicals and list of lists as a starting point for evaluation by DTSC for development of a limited and prioritized list of CoC for regulation. The process includes identification of the chemicals for consideration, including public input, refining those chemicals to a smaller candidate list. As a final step, after scientific review, the candidate list would be prioritized into a list of CoC and included in regulation. DTSC should be responsible for evaluating and managing the process of identifying CoC, rather than shifting this responsibility to manufacturers who likely will be unable to consistently apply the criteria across various types and groups of chemicals and potential effects. The scientific review conducted by the Department should be based on the statutory criteria and, in addition, limit the CoC list chemicals to those that display the characteristics of CMR or PBTs.

The priority consumer product categories should be redefined to avoid confusion and to focus the attention on those products with the greatest potential for impacts on sensitive subpopulations. Finally, the Department should incorporate de minimis criteria into the regulation to avoid requiring the expenditure of time, resources and attention to evaluation of alternatives for CoC's in consumer products that do not pose an exposure concern.

2. Before focusing on the hazard criteria, the effect and the conditions necessary for the effect must first be identified. The elements that must be evaluated for

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any chemical include the level, exposure pathway, and period of time. This screening process will also assist with the streamlining of the Alternatives Assessment.

3. Simplify the Alternatives Assessment process by a) properly screening before the impact assessment step and b) streamlining and enhancing the environmental impact review using LCA tools. The enhanced environmental impact review will focus on those areas of key concern for the consumer product being evaluated with proper guidance to achieve consistent and comparable results.

4. In order to create a level playing field in the marketplace, regulatory response selection and evaluation should involve the Department and proceed by regulation. Prohibition of a COC in a consumer product should be limited to those circumstances where it is necessary to protect human health and the environment.

5. DTSC and OEHHA should first populate the TIC with existing data before asking manufacturers to assist with data entry. KII has proposed a process that offers and efficient process for developing the data for the TIC that avoids duplication and inconsistent data entry by manufacturers.

Again, it was a pleasure to meet with DTSC in September and we thank you for the opportunity to comment on this important Straw Proposal. KII's goal in working with the Department is to help shape regulations that respect and encourage innovation, focus resources, ensure the availability of consumer products in California, and develop a process that produces consistent decisions and outcomes. We would be happy to meet with you to discuss specific examples of how the Straw Proposal would impact our business. As DTSC continues to work on the Straw Proposal, KII encourages the preparation and publication of an evaluation of the cost and feasibility of implementing the proposed program. We look forward to our further discussions.

Sincerely,

//original signed by//

Sheryl Corrigan
Compliance and Ethics
Koch Industries Inc.

Enclosure: Redline of Straw Proposal for Safer Alternatives

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November 9, 2009

Acting Director Maziar Movassaghi
Department of Toxics Substances Control
1001 I Street
P.O. Box 806
Sacramento, CA 95812-0806

RE: Concerns with Straw Proposal for Safer Alternatives Regulation (October 1, 2009)

Dear Director Movassaghi:

On behalf of Learning Resources, I would like to convey our serious concerns with the Safer Alternatives Regulation Straw Proposal as currently drafted (this input is being provided consistent with the Green Chemistry Alliance's [GCA] comment extension deadline of November 9th). Although Learning Resources understands the Straw Proposal is not a formal regulation at this time, the program described would have sweeping ramifications on virtually all industry sectors that manufacture or sell a consumer product in California and does not reflect the intent of the enacting legislation under AB 1879 (Feuer, 2008).

We are a manufacturer and distributor of toys and children's educational products and have been under considerable duress with the many sweeping regulatory changes in our industry over the past two years. The requirements that are being specified for this proposal would cripple our entire industry and add a huge financial burden that would ultimately add little or no value to the marketplace. We are already testing our products to ASTM F-963 and EN-71 which has multiple provisions for hazardous substances. If the toy industry finds the need to add additional banned substances there are current regulations that can be updated to account for these changes without detailing every material used to make every product in the industry.

Under the framework laid out in the current proposal, manufacturers and importers of consumer products for sale in California would be required to identify whether their product contains a "chemical of concern" and, if so, would require a costly and onerous alternatives assessment process. If a consumer product manufacturer/importer could not identify or chose not to implement a safer alternative, the consumer product containing the chemical of concern would be banned in 2-20 years. Furthermore, if the manufacturer/importer chose to implement a safer alternative that, while incrementally better than the identified chemical of concern, has other specified hazard traits it too would be subjected to a ban in 2-20 years. The current Straw Proposal contains no consideration of potential or severity of exposure; rather, it would place roughly 10,000 chemicals on the path for eventual phase-out.

Learning Resources is highly concerned the scope of the current proposal is overly broad and fails to focus on the greatest risks to human health and the environment. As drafted the proposal would result in an infinite number of chemicals and products being impacted and subject to a costly and onerous alternative assessment. Furthermore, it is not clear how we, as manufacturers, could establish compliance given the number of chemicals included in the proposal, with the potential outcome of having to defend our good faith efforts at compliance in the courts.

Learning Resources strongly believes, any action by the Department should be scientifically based and narrow in the scope of chemicals addressed; otherwise, it will surely collapse under its own weight. Furthermore, California's business community cannot afford to implement the current approach as laid out in the current Straw Proposal.

For these reasons, Learning Resources urges the Department to start over in their development of the Safer Alternatives Regulation and look to establish a workable solution. If you have any questions regarding Learning Resources position on the current Straw Proposal, please contact me at (847) 990-3347. Thank you!

Sincerely,

//original signed by//

Larry Lynn
Quality and Compliance Manager
Learning Resources
847-990-3347

L'ORÉAL
USA

November 9, 2009

Acting Director Maziar Movassaghi
Department of Toxics Substances Control
1001 I Street
P.O. Box 806
Sacramento, CA 95812-0806

RE: Straw Proposal for Safer Alternatives Regulation (October 1, 2009)

Dear Director Movassaghi:

On behalf of L'Oréal USA, I would like to communicate our concerns with the Safer Alternatives Regulation Straw Proposal as currently drafted. Although we understand that the Straw Proposal is not a regulation, as described the program would have a significant adverse effect on many industry sectors that manufacture or sell a consumer product in California and we believe the proposal does not reflect the intent of the enacting legislation under AB 1879 (Feuer, 2008).

L'Oréal USA is the US subsidiary of the L'Oréal Group, the largest beauty care company in the world. With annual U.S. sales of more than $4.6 billion and over 8,700 U.S. employees, the company has offices, research and development, distribution and manufacturing facilities across the country. L'Oréal USA develops and manufactures some of the most admired beauty brands in the world including: L'Oréal Paris, Garnier, Maybelline New York, SoftSheen·Carson, Lancôme, Giorgio Armani, shu uemura, Yves Saint Laurent Beauté, Viktor & Rolf, Diesel, Cacharel, Kiehl's Since 1851, Ralph Lauren, Biotherm, L'Oréal Professionnel, Kérastase, Redken 5th Avenue NYC, Matrix, Logics, Mizani, Pureology, Vichy, La Roche-Posay, Sanoflore, Dermablend, and SkinCeuticals.

Through the activities which are outlined in L'Oréal's Sustainability Report, our company demonstrates its commitment to operating a sustainable and eco-friendly business. L'Oréal is firmly committed to achieving the broad goals of the California Safer Alternatives Regulation. We believe, however, that a "one size fits all" approach of the current Straw Proposal will impair the state's ability to achieve these goals. We are concerned that the proposal as drafted treats all chemical "hazards" as identical with no mechanism for prioritizing among them and is overly restrictive and unachievable.

Our specific concerns with the current proposal also include:

- The scope of the proposal should include only those ingredients in consumer products that are 1) intentionally added and 2) above a di minimus level defined for each substance based on use and exposure. Limiting the scope of ingredients in these categories would allow for "risk-based" priority setting and rational compliance strategies.
- The sources for determining chemicals of concern as proposed draw from 29 lists and does not include a process for challenging the he list source or its contents. While the process defined in California Proposition 65 has some limitations, it does offer the opportunity for stakeholder participation in the priority-setting process and should be considered in this legislation.
- The hazard data required for each chemical of concern does not adequately take into account exposure and the amount of data required. In addition, the timing to produce it is unachievable.
- The prioritization for alternative substance assessments should provide equal weight to exposure and hazard, again allowing for a "risk-based" analysis. Further guidance is needed to evaluate the alternative substance against the original substance of concern if they both have hazard components.
- Information dissemination requirements are redundant as cosmetic product manufacturers are already required by FDA to provide ingredient labeling on each product.

L'Oréal USA supports the Green Chemistry Alliance's (GCA) proposal that was provided to the Department on June 24, 2009. The GCA proposal provides the Department an opportunity to implement Green Chemistry in an efficient, cost-effective and impactful manner by 1) prioritizing chemicals for review, 2) evaluating how those chemicals are used in consumer products, 3) assessing whether they pose a potential risk to public health, 4) examining potential alternatives and 5) instituting regulatory action if necessary.

If the Department fails to implement an approach that is scientifically based and which narrows the overall scope, the legislation will not serve the public and it will burden the state of California and industry alike.

For these reasons, we respectfully request that the Department reconsider the proposal put forth by the GCA for the California Safer Alternatives Regulation.

Sincerely,

//original signed by//

Laura Hastings
Vice President Central Research, R&D
L'Oréal, USA Products, Inc.

Cc: Linda Adams, Secretary of CalEPA
Patty Zwarts, CalEPA

Cindy Tuck, CalEPA
John Moffatt, Office of the Governor
Victoria Bradshaw, Office of the Governor
The Honorable Sam Blakeslee, Assembly Republican Leader
The Honorable Mike Feuer, Member of the Assembly
The Honorable Joe Simitian, Member of the Senate

MATTEL, INC.
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November 9, 2009

Acting Director Maziar Movassaghi
Department of Toxics Substances Control
1001 I Street
P.O. Box 806
Sacramento, CA 95812-0806

RE: Straw Proposal for Safer Alternatives Regulation (October 1, 2009)

Dear Director Movassaghi:

Mattel, Inc. is the worldwide leader in the design, manufacture and marketing of toys and family products. Our premier brands, including Fisher-Price®, Barbie®, Hot Wheels®, Tyco® R/C, and American Girl® have delivered innovative toys that inspire and spark children's imaginations around the world. Ensuring safety and producing high-quality toys is crucial to the long-standing trust Mattel and Fisher-Price have built with parents for more than 75 years. With worldwide headquarters in El Segundo, and over 2,500 employees in California, we are obviously very interested in public policy matters that impact our industry, our employees, and millions of consumers across the state.

Since its founding in 1945, Mattel has been at the forefront of ensuring the safety of the children using our products. Mattel has a long history of industry leadership, pioneering innovations that have improved the safety of our toys to the highest possible standards and helping establish rigorous new industry-wide standards. Today, our toys and packaging are designed and manufactured to meet or exceed the requirements of regulatory agencies around the world, such as the U.S. Consumer Product Safety Commission, Health Canada and their counterparts in Europe.

On behalf of Mattel Inc, I would like to convey our concerns regarding the Safer Alternatives Regulation Straw Proposal, as currently drafted (this input is being provided consistent with the Green Chemistry Alliance's [GCA] comment extension deadline of November 9th). Although Mattel understands the Straw Proposal is not a formal regulation at this time, and we appreciate the complexity of the task, we feel the program described does not reflect the intent of the enacting legislation under AB 1879 (Feuer, 2008).

Mattel is concerned that the scope of the current proposal is overly broad and fails to focus on chemicals that present the greatest risk to human health and the environment due to reasonable expectation of exposure.

The straw proposal erroneously focuses on prioritizing consumer products for analysis, rather than prioritizing chemicals of concern, as directed in the statute. The statute specifically directs the Department to prioritize *chemicals*, not products.

Furthermore, the over-reaching requirements of the straw proposal would result in an infinite number of chemicals being subject to costly and onerous alternative assessment.

Mattel is working closely with our industry association, TIA, and supports the GCA's approach laid out in their regulatory proposal that was provided to the Department on June 24, 2009. The GCA proposal provides the Department an opportunity to implement Green Chemistry in an efficient, cost-effective and impactful manner by prioritizing chemicals for review and assessing whether there is reasonable expectation of exposure to such chemicals in consumer products manufactured or sold in California that results in harm to human health.

Mattel urges the Department to reevaluate the currently proposed Safer Alternatives Regulation. We look forward to continuing to be a part of the dialogue on this important issue in the months to come. If you or members of your staff have any questions, please feel free to contact me at Corinne.Murat@Mattel.com or (310) 252-6628.

Sincerely,

//original signed by//

Corinne Murat
Director, Government Affairs
Mattel, Inc.

Cc: Linda Adams, Secretary of CalEPA
Patty Zwarts, CalEPA
Cindy Tuck, CalEPA
John Moffatt, Office of the Governor
Victoria Bradshaw, Office of the Governor
The Honorable Sam Blakeslee, Assembly Republican Leader
The Honorable Mike Feuer, Member of the Assembly
The Honorable Joe Simitian, Member of the Senate

November 9, 2009

Acting Director Maziar Movassaghi
Department of Toxics Substances Control
1001 I Street
P.O. Box 806
Sacramento, CA 95812-0806

RE: Straw Proposal for Safer Alternatives Regulation (October 1, 2009)

Dear Director Movassaghi:

The National Aerosol Association (NAA) appreciates the opportunity to comment on the Safer Alternatives Straw Proposal as currently drafted. NAA represents marketers, manufacturers and suppliers in the US aerosol industry. NAA's goal is to preserve our member's ability to provide efficacious aerosol products for the consumer. Our understanding is that the Straw Proposal is not a formal regulation at this time, however we have serious concerns on the ramifications of this program on our members and that this program does not reflect the intent of the legislation under AB 1879.

The current draft proposal would require manufacturers of consumer products to identify whether their products contain a "chemical of concern" and if so, would require a lengthy, burdensome and costly alternative assessment process. If a safer alternative is not available or a manufacturer chooses not to implement a safer alternative than the consumer product would be banned in 2 - 20 years regardless of the risk of exposure. Currently, the draft has close to 10,000 chemicals of concern which are subject to this phase-out.

NAA is concerned that the scope of the current proposal is overly broad and fails to focus on chemicals that present the greatest risk to human health and the environment. The focus of this proposal needs to be narrowed, starting with reducing the four different pathways into the process:

1. 11 consumer product categories that are not well defined;
2. 16 designated "chemicals of concern;"
3. Chemicals identified by 29 different state, federal and international sources; and
4. 13 hazard criteria.

It is not clear how our members could be compliant given the significant amount of work evaluating the lists against our products, then performing the assessments. This would be in addition to the difficulty in trying to monitor the changes to the chemical lists and hazard data.

NAA supports the Green Chemistry Alliance (GCA) approach laid out in their regulatory proposal that was provided to the Department on June 24, 2009. The GCA proposal provides the Department an opportunity to implement Green Chemistry in an efficient, cost-effective and impactful manner by first prioritizing chemicals for review, evaluating how those chemicals are used in consumer products, assessing whether they pose a potential risk to public health, examining potential alternatives and instituting a regulatory action if necessary.

In summary, the current proposal as written is overly broad, very costly and extremely burdensome for the manufacturer. The National Aerosol Association urges the Department to consider these comments and we look forward to working with the Department on a workable solution. Any questions regarding our comments please contact our consultant Doug Raymond at 440-474-4999 or by e-mail to djraymond@reg-resources.com.

Sincerely,

Doug Raymond
NAA Consultant

Cc: Linda Adams, Secretary of CalEPA
Patty Zwarts, CalEPA
Cindy Tuck, CalEPA
John Moffatt, Office of the Governor
Victoria Bradshaw, Office of the Governor
The Honorable Sam Blakeslee, Assembly Republican Leader
The Honorable Mike Feuer, Member of the Assembly
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Laurie Nelson, Randlett Nelson Madden