Green Ribbon Science Panel

Report-Out of Subcommittee #2

Product Identification and Prioritization

(Teleconferences held: April 11 and 19, 2011)

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NOTE: In general, the notes set forth in this report-out are presented in the sequence of the subcommittee's discussions rather than strictly by topic. Repeated comments that applied to multiple topics are generally only presented once in these notes.

Question #2A. HOW SHOULD PRODUCTS BE IDENTIFIED / CLASSIFIED?

Product Identification/Classification Comments:

- Develop a simple process that considers the chemical and the product – do not separate the product and chemical prioritization processes.

- Use other information and resources outside of DTSC to develop a body of evidence to include products and chemicals of concern - either through a petition process or through consultation. This will save time and resources.

- Putting product categories in regulations may be too inflexible and constraining.

- For DTSC to obtain information and have the tools to identify priority chemicals and products with limited resources the following is suggested:
  1. Petition – outside stakeholders bring to DTSC information to take action
  2. Consultation – DTSC consults with other agencies/stakeholders to take action
  3. Own initiation – DTSC generates data and information to take action

  [Steps 1-3 would be take place in parallel.]

4. Create “bins” among the chemicals/products prioritized
    a. Problem now – there is a linkage to harm (e.g., water) – need quick action, e.g, solicit from stakeholders and other agencies
    b. Identify those that can be worked on later - target survey or questions for next round and gather information for next round of products that will be addressed in an implementation plan that is publicly vetted.
5. Priorities for bins
    - Link product to harm – to human health and environment
        - Measure link to harm with known chemicals of concern; e.g., the Clean Water Act’s 303d list (priority pollutants); PAHs affect herrings;
    - Chemical/product weight of evidence
    - Current harm and ongoing harm
    - Major source of exposure to chemical - incidences of significant exposure
        a. Externalized costs - cost to government, health care, to the system of keeping the product on the market
        b. Availability of cost effective alternatives– if none available, set in motion reductions of the chemical in the products; e.g., phase in reduced VOC content
        c. Exposure – indicators of exposure
            1) Volume of chemical;
            2) Biomonitoring data;
            3) showing up in ecosystem;
            4) If the chemical shows up in biomonitoring or ecosystem - should volume be a consideration?

- 3 Levels of Priority Products
    1. Priority 1 Products
        1. Product contains a priority chemical
        2. Priority chemical is intentionally added
        3. Priority chemical detected in drinking water, surface water, cord blood, or breast milk
        4. Product is intended or likely applied directly to human body
        5. Product is intended or likely to be used or marketed to sensitive populations
        6. There are readily available safer alternatives that are functionally equivalent to the current product
    2. Priority 2 Products
        1. Same as #1 and #2 for Priority 1 Products
        2. In addition to #3 in Priority 1 Products – detected in indoor air, indoor dust, or banned from MSW disposal
        3. In addition to # 4 in Priority 1 Products – application as a spray/aerosol in the air, hard surface where there is likelihood of run off to enter waterways
        4. Product is intended for use or likely to be used or marketed in California
    3. Priority 3 Products
        a. Same as #1 and #2 for Priority 1 Products
        b. Product is marketed in California

- Regulations should be broad and flexible and DTSC should devise an implementation plan that undergoes public comment like CARB to identify which products that will be looked at in the next several years. The priority setting should be addressed in regulations.
- The chemical and product identification and prioritization are an iterative process.

i) Exposure Potential

a. Products containing ingredients that:
i. show up in biomonitoring studies
ii. are priority pollutants in surface water
iii. show up in indoor air and dust
iv. show up in drinking water
v. are banned from MSW disposal
vi. other

Exposure Comments:

- High volume is a surrogate for exposure.
  1. High volume more to pollute and affect consumers vs. low volume
- Obtain data from poison control centers on products of concern for information on exposure.
- Obtain data from CPSC on products listed that are recalled voluntarily or mandatorily (note: some recalls are associated with exposure)
- Base exposure potential on scientific information and list sources of information; resource agencies, public health providers, etc.
- Exposure is linked to frequency of use or volume, which needs to be clarified (e.g., sales, sold monthly to a household)
- Exposure should consider the chemical concentrations found in solid waste, wastewater and evaluate its impact to drinking water.
- Biomonitoring shows that exposure is occurring, although the source may not be linked to a product.
- There is a need to determine a life cycle assessment for chemicals to determine how and what is the source of chemicals that are found in biomonitoring, dust, air, flora and fauna in order to tie products back to the chemicals.
- Priority 1 products - products with PBTs and CMRs

b. Mode of application
i. direct to the body
ii. spray or aerosol
iii. hard surface (likely to run off or enter sewer)
iv. other

Mode of Application Comments:

- Understanding product use is important to understand the route of exposure; e.g., where does the product touch humans and environment
- To assess how the product touches people; review the product label and how it is used

c. Products used by or marketed to sensitive populations
i. children
ii. women of childbearing age
iii. other

Sensitive Population Comments:

- If sensitive population is affected, high volume may not be a factor so important
- Priority 2 products– products that target and / or expose sensitive subpopulations

d. High volume products
i. Personal care
ii. Household cleaners
iii. Frequent use
iv. other

High Volume Comments:

- To determine and get a sense of high volume products consider:
  1. Sales volume
  2. Intended use
  3. Ingredients
  4. Proportion of chemical in product
  5. Sales trend
- Using total volume and chemical composition may be a mistake in regulatory language. For example, low total volume but known environmental problem
- Set up the regulatory framework so that DTSC doesn't have to do the science
- Consider qualitative evaluation of volume and use rather than quantitatively.
- Clarify volume; e.g., ounces of cleaner, sales, dollars, bought, use, etc.
- High volume product considerations
  1. sales to consumers
  2. classification of consumer product – aerosol, vaporized, gives off toxic fumes –
  3. short term or long term exposure during use
  4. degradation of the chemical in the product (shelf life?)

- Volume in commerce should not be a consideration if it is shown to be the cause of harm; volume in this case could be used as a secondary tool
- Priority 2 products – products with high concentrations of Priority Chemical and have highest frequency of use
- Priority 3 – products with the highest volume of production and highest concentration of Priority Chemical

(ii) Functional use (e.g. solvents, flame retardants)

Functional Use Comments:

- Consider products that are sold in relatively pure forms due to higher concentration of chemical in the product, e.g., acetone, bleach, MEK
- Consider the chemical usage in the product to determine when do an AA
- Consider the availability of alternatives and the functional uses of the chemical in the product
- Product categories already "leaking" chemicals into the environment; e.g., copper in brake pads.

Other Comments:

- Determine health and use trends of chemical in the short and long term to narrow the list of chemicals
- Do some consultation now and put list of products in regulation now. List general principles in regulations and allow for change/growth and other factors to the regulations at a later time.
- One prioritization factor should include the cost of doing "nothing".

Question #2B. **WHAT CRITERIA/PROCESS SHOULD BE USED TO INCLUDE AND PRIORITIZE PRODUCTS ON THE LIST?**

Prioritization Comments:

- 5 Step Process

  Step 1. The product contains a COC/PC/hazardous substance – include biomonitoring data.

  a. Define hazardous substances as defined by authoritative bodies where there is no dispute that these are COCs/PCs (estimate 3,000 chemicals).
  b. The chemicals and the chemicals in the products may be narrowed by the product usage; e.g., sold in high volume and close proximity to user; products are liquid, powder, aerosols
     1) an iterative process with products
     2) Aerosols, over powder, vp factor, exposure to children/subpopulations
     3) volume is important, large occupational exposures. There may be chemicals of concern of particular concern in CA

Step 2. How is the product used and how much of the product is in California (functional part).
Step 3. Consider any sensitive populations (e.g., children, elderly) that are being exposed to the product and/or affected (refers back to product usage).
Step 4. The volume of products (which may be difficult to obtain)
Step 5. The availability of a safer alternative consumer product

c. The availability of alternatives would make the product rise to the highest priority and require immediate action

- Priority Products List - initial approach to a complete solution - see attached powerpoint document
- Product "Paths" – see Product Paths document for product identification and prioritization system.
- Prioritization should be based on narrative criteria that are equally weighted rather than on a sequential or quantitative process. This approach will ensure that DTSC can capture a mix of product/chemical combinations that cover a broad range of pollution problems and not exclude fixes to important, targeted problems (e.g., chemical toilet additives that are harmful in campground septic systems).

(i)	What exposure potential factors should be used to prioritize products? (e.g. percent composition, total volume in production, frequency of use, how used, who uses, other)

Exposure Potential Factor Comments:

- Some chemicals in products will fail total volume factor, so it's a cross of use/volume/ exposure; e.g, copper is used mostly in water and a small fraction in brake pads, but it is the copper from brake pads that is polluting the water.
- Chemicals that show up in drinking water, biomonitoring, etc., are high priority.
- Direct contact to children or women of child bearing age, or other sensitive subpopulations should rise to the top of the priority list.
- Formulated products and assembled products have different chemical exposures and should be identified and prioritized differently.
- Volume approaches – need to consider toxicity of chemical/chemical in the product.
- Toxicity and likelihood of exposure is part of prioritization process
- Prioritization by volume seems too vague; however, physical volume could be used.
- Frequency of product usage is useful; e.g., daily vs. once a year; units per day or equivalents per day.
- Identification/Prioritization Scheme
  1. Focus on the exposure point of the product/chemical contamination
     a. Drinking water
        1) Contamination by chemicals through disposal and/or landfill
        2) Contamination by pollutant in the air or dust
     b. Solid waste and waste water
     c. Use existing and available data sources
        1) Biomonitoring data
        2) RoHS

        3) REACH/ECHA
        4) TSCA
        5) Etc.
2. Identify/determine if the chemical in the product has short or long term effect on public health (including sensitive subpopulations) and environment
    a. Determine the level of chemical contaminant (known/published suspect level)
    b. Establish trend of effect by the chemical products on public health and environment
3. Prioritize the high volume products by
    a. Product disposal
        1) Landfill – soil contamination/leaching into water source
        2) Incineration – air emissions, including by-products of incineration
    b. Require manufacturer extended producer responsibility
        1) Recycling end or life product
        2) Responsible disposal at the product's end of life
4. Availability of safer alternative chemical ingredient
    a. Provide technical assistance for alternatives
    b. Apply Section 25253 HSC (AB 1879)
    c. Apply table of standards from CARB consumer product program

5. Ranking this type of system may include for example, the following:

	Criteria	**Score**	**Recommendation**	**Comments**
Product volume	> 1000 lbs, gal/month =5 < 1000 lbs, gal =1	5		
Use frequency	Every day = 5 Monthly = 1	1		
Chemical listed by	RoHS, TSCA, REACH = 5 Not listed but suspected = 3 Not listed =1	3	Consider finding an alternative chemical	
Toxicity[2]	Oral = 5 Dermal = 4 Respiratory = 3	3		May cause long term health problem
		12/20	B[1]	

[1] A = Require to remove from the product and replace with alternative chemical(s)
B = Recommend removal from product
C = No action required

[2] Toxicity may be simpler or more complex than shown in this example

(ii) In assessing a product's threat of adverse impact associated with each identified exposure potential factor:

a. Should there be a threshold established for each factor --- if so, how should the thresholds be determined?

Establishing a Threshold for Each Factor Comments:

- De minimis thresholds should be acceptable in a product except when de minimis levels would cause adverse effects

b. Should the prioritization evaluation be based on the product's individual threat of adverse impact, or the product's contribution to cumulative adverse impacts? If the latter, how should this be evaluated?

Individual/Cumulative Adverse Impact Comments:

- To deal with cumulative exposure DTSC needs to consider exposure factors, frequency, and percent chemical composition
- The cumulative adverse impact might be better handled in chemical identification and prioritization process.
- The regulations should be written so that other types of cumulative exposure is not precluded, e.g, ten different ingredients in one product vs. one ingredient in ten products

c. Should a ranking formula be used to apply the identified prioritization factors? If so do we weight different factors?

Ranking Formula Comments:

- Against numerical ranking and thresholds; methodology varies.
- A numerical system may not consider important information and if the system is used to drive decision making, may miss something important.
- Include economic cost as a factor in a ranking formula.
- The system should be simple, clear and flexible. High, medium, low, or like the numerical examples in attachments.
- While ranking products in categories of high, medium, or low is a good direction, there may be some complicated questions to determine the ranking, e.g., how to rate toxicity.
- More weight should be place on toxicity, persistence, and bioaccumulation, use and exposure to sensitive subpopulations and if safer alternatives available.
- Using numerical ranking and thresholds has drawbacks especially when experts can't agree among themselves.
- If a numerical formula is used make decisions based on the product score with orders of magnitudes.

- If a ranking system is not placed in regulations; DTSC will use expert judgment and may be influenced by non-scientific factors
- Numerical systems provide a “scientific” method and shield the decision maker from outside influences.
- Use exposure potential criteria and pick one from each category; e.g., chemical in drinking water + direct body contact + children/women bearing age + direct contact to body = personal care products
- DTSC should focus on the high priority products now, and then consider the ranking within those high priority products. The level of specificity in regulations should allow for the ranking/priority system, but the actual products that DTSC will focus on should be in an implementation plan that is subject to public comment.
- There should be care to not use the ranking system to set DTSC priorities, the ranking system is one piece of information to set DTSC’s priorities to act on products.
- Ranking is a valid process to make decisions, but with boundary conditions, e.g., ranking shampoos.

(iii) Other ideas?

Other Idea Comments:

- Prioritize categories of products using the “low hanging fruit” approach.
- Choose product categories that are laggards rather than “low hanging fruit” that is already voluntarily being done
- To prioritize products:
  1. Identify the COC in the product that is in a biomonitoring program
  2. Require the manufacturer with the COC to report to DTSC with sales volume and uses in California.
  3. The highest volume and highest concentration of chemicals in products rises to a higher priority; those with safest alternatives rise to highest priority
- Product volume using sales dollars is not useful.
- Expenditure surveys exist, but there is uncertainty in how are they are used since the data is focused on dollars rather than quantity of product. Consider developing a method to extrapolate this data into product quantity and use orders of magnitude to compensate for uncertainty to make decisions
- A chemical of concern rises to a higher priority if it is found in drinking water, biomonitoring data, surface water, etc
- There should be some type of prioritization based upon population potentially exposed. For example, a chemical of concern may be used in fairly high volume but may be limited to industrial use where human exposure (in terms of numbers) is very low. In cases like this protective equipment use may also substantially reduce risk.

Question #2C. SIZE AND CHANGES TO THE PRODUCT LISTS?

(i) Do we list specific "products" and explain how additional ones get added or do we just set up a process? If so, what are these and/or how should they be determined?

List "Products" or Set a Process Comments:

- Develop a two track process - one for products that are known problems for "fast" action; second track for process to identify and prioritize products for future work.
- Establish the process with general criteria and establish the implementation plan for action on products through public process. DTSC does not have the information to determine which product categories to put into the regulations.
- If the regulations identify product categories, there may be an omission of other product with chemical sources that are of concern
- List products/product categories based on ingredient and product prioritization scheme and develop a process to add more (2 track approach)

(ii) Do we initially create a short list and then a time-line for adding the next category to send "signals" to the market?

Product Timeline Comments:

- Choose product category(ies) as a start/pilot, but do not preclude other products.
- There is a California precedent to choose product categories, i.e., CARB consumer product program....saying that there is precedent to use product categories- doesn't mean to do all at once,
- Set up timeline for regulatory action on products to allow manufacturers to adjust formulations voluntarily.
- List product/product categories and create a process using a phased approach to allow businesses time to respond and transition to safer alternatives

(iii) Other ideas?

Attachment 1 --- Two Product Paths Approach

Attachment 2 --- Products List Initial to Complete Solution

Report-Out for Subcommittee #2
Product Identification and Prioritization

Attachment 1 --- Two Product Paths Approach

This note proposes that California will need two Paths to effectively implement AB 1879. The goal of these two *paths* is to establish a *process* for identifying, prioritizing, and taking action on chemicals and products of concern:

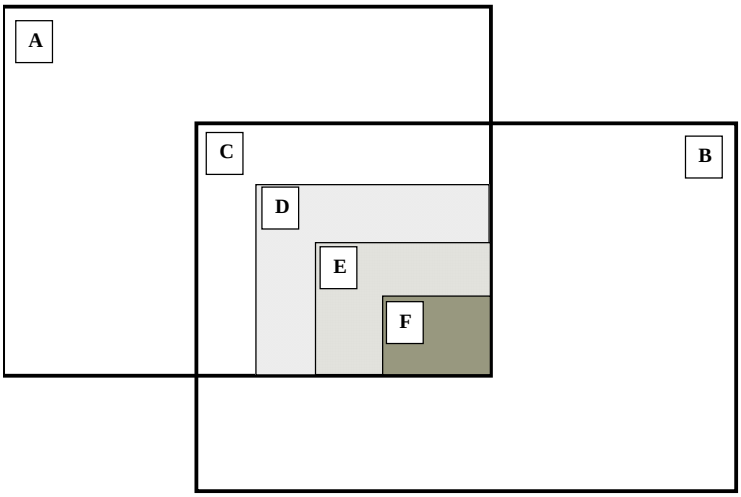
- Path 1
  - This Path is to catalog, prioritize and take action on products and pollutants for which there is sufficient information today and which pose a recognized health or environmental threat.
  - The highest priority products in Path 1 would be those for which safer alternatives exist. Copper-containing brake pads are a good example of products for high priority action under Path 1.

- Path 2
  - This Path is to identify, prioritize and take action on products for which there is poor hazard and exposure information; for example, we don't know if the product is sold in California, we don't know the identity of ingredients in the product, and if we did know, we do not have a system for classifying those ingredients and products into risk classes. Most products on the market fall into this Path 2.

The note focuses on Path 2. Other Subgroup 2 members have proposed elements of Path 1. These recommendations are not comprehensive, but they provide a means of getting started, based on the best available information that companies could readily provide. This information should be requested by DTSC as a *proactive* action by companies selling products in California; that is, it would not be manageable for DTSC to make individual contact with companies selling products in California as a means of gathering basic information.

Path 2 is illustrated in Figure 1. Boxes A through F are described below.

Figure 1. Schematic of (A) chemicals in commerce, (B) products in commerce, (C) products of concern, which contain chemicals of concern, (D) products of concern sold in California, (E) priority products sold in California, (F) high priority products sold in California.



Box A

Title: Chemicals in commerce.

This square represents the TSCA inventory of 82,000 chemicals that are registered for commerce in the U.S. Of these, 8,282 are produced or imported at 10,000 pounds or more per year, and 2,943 are produced or imported at more than one million pounds per year (See Table 1). Some of these chemicals are present in finished products, some are used only in industrial processes.

Key Problem: Due to the TSCA Data Gap, DTSC does not have information on the hazardous properties, use profiles, or exposure potential of most chemicals in the TSCA inventory.

Recommendation:

- To start, designate the substances listed in Table 2 as "California Chemicals of Concern." This list of substances will be cataloged in a searchable database known as the Berkeley Public Library of Materials (Plum) beginning in the summer 2011. This database will consist of about 3,000 chemicals.
- Defer to OEHHA in identifying the most important chemical substances within these lists.
- In subsequent steps, DTSC should defer to OEHHA's hazard traits database (developed under SB 509) to more comprehensively identify both new and existing chemicals of concern.

Table 1. Distribution of chemicals produced or imported in the U.S. in 2001, as reported under the 2002 TSCA Inventory Update Rule.*

	Distribution of chemicals produced or imported in the U.S.		
	U.S. production & import range, lbs	Number of chemicals in the production range	Percentage of chemicals in the production range
Non-HPV	10K to 500K	4,670	56%
	>500K to 1M	669	8%
	>1M to 10M	1,548	19%
	>10M to 50M	577	7%
HPV	>50M to 100M	153	2%
	>100M to 500M	273	3%
	>500M to 1B	77	9%
	>1B	315	4%
	Total pounds reported	15,208,921,689,779	
	Total HPV pounds	15,207,877,185,511	
	HPV as percent of total	99.99%	

* Chemicals produced or imported at less than 10,000 pounds per year are not subject to reporting under the Inventory Update Rule except under certain conditions, such as an order under Section 5(e). HPV chemicals constitute about 35% of the *number* of chemicals produced or imported at 10,000 pounds or more per year, but over 99% by *volume*, according to Inventory Update Rule reporting data.

Table 2. Potential list of "Chemicals of Concern Known to California"

- US NIOSH Carcinogen List
- US NTP 11th Report on Carcinogens
- International Agency for Research on Cancer (IARC) Monographs - carcinogen classifications
- US EPA Integrated Risk Information System (IRIS) - carcinogen classifications
- California Proposition 65 List: Chemicals known to the state to cause cancer or reproductive toxicity
- European Commission Endocrine Disruptor Database
- Canada (CEPA) Domestic Substances List (Priority chemicals)
- ECHA Candidate List of Substances of Very High Concern for Authorisation under REACH
- US EPA PBT Chemical Program: Priority PBTs
- US EPA Toxic Release Inventory PBT Chemical List
- Washington State PBT List
- OSPAR Chemicals for Priority Action
- OSPAR Chemicals of Possible Concern
- UNEP Stockholm Convention on Persistent Organic Pollutants
- EC Joint Rearch Centre PBT List
- Grandjean & Landrigan, list of neurotoxins from "Developmental neurotoxicity of industrial chemicals"
- US NTP CERHR - neuro/developmental toxicant evaluations
- CDC Fourth National Report on Human Exposure to Chemicals (2009)
- Annex VI to Regulation (EC) No 1272/2008 - EU implementation of GHS Classifications
- Japan NITE GHS Classifications
- Canada (CEPA) Schedule 1 Toxic Substances List
- REACH Annex XVII: Restricted substances
- REACH Annex XIV: List of substances subject to authorisation
- Oregon Priority Persistent Pollutant List
- US EPA National Waste Minimization Program Priority Chemicals
- AOEC Exposure Code List - asthmagens
- International Chemical Secretariat SIN List 1.1, v 2.0 coming soon
- European Trade Union Confederation Priority List v 2.1

Box B

Title: Products in commerce.

This box represents the millions of products on the market in the U.S.

Box C

Title: Products of concern, which contain "California Chemicals of Concern." These are products sold in the U.S. but not necessarily sold in California. DTSC would not gather information on these.

Box D

Title: Products of concern sold in California. These are products that contain "California Chemicals of Concern" in x% and are sold in California.

Key Problem: DTSC does not currently have access to this information. Without this information, it is not possible to effectively implement AB 1879.

Recommendation:

- To start, require that companies that sell products in California that contain *x*% of "California Chemicals of Concern" report electronically to DTSC the following information:
    - Identity of the product by brand name
    - The identity and proportion of "California Chemical(s) of Concern" in the product
    - The number of units of product(s) intended for sale in California
    - The intended use(s) of the product(s)
    - The expected end-of-life disposition of the product

Box E

Title: Priority products sold in California

Key Problem: DTSC does not currently have a means of identifying "priority products" sold in California. The information gather under Box D would provide that information. DTSC could then take then identify and rank "priority products" using the kinds of criteria here:

Recommendation:

- The definition of "priority products" should include one or more of the following, for example:
    - Products that contain >x% California Chemicals of Concern, in combination or as a single substance
    - Products that contain >x% California Chemicals of Concern and are sold at >y pounds per year in California
    - Products that contain >x% California Chemicals of Concern that have been "designated" under California's Biomonitoring Program
    - Formulated products that contain >x% California Chemicals of Concern and are intended to be dispersed from the container as an aerosol
    - Products for which there is information to suggest that California Chemicals of Concern would likely come in contact with infants, children, or women of childbearing age.

DTSC should develop the criteria for designating "priority products" in consultation with OEHHA, other Boards, Departments, and Offices, and the GRSP. DTSC should address Confidential Business Information (CBI) issues by making some information inaccessible to the public. DTSC should place as much information into the public domain as possible. This process is similar to that of the Swedish Product Registry, which has been gathering this kind of information for several decades.

Box F

Title: "High priority products" sold in California

Key Problem: DTSC does not presently have a means of identifying "high priority products" sold in California. The information gathered under Box D would be necessary to take this step, but additional steps would be needed to determine whether or not safer alternatives exist.

Recommendation:

- The definition of "high priority products" should consist of "priority products" for which safer alternatives are reasonably available.
- The "high priority" classification might also include products that pose an imminent public or environmental health threat, regardless of the availability of safer alternatives. It might be necessary for DTSC to designate products as "high priority" in order to motivate investment in the alternative.
- These are products for which DTSC should take immediate action. The alternatives should be subject to the same reporting requirements as all products sold in California.

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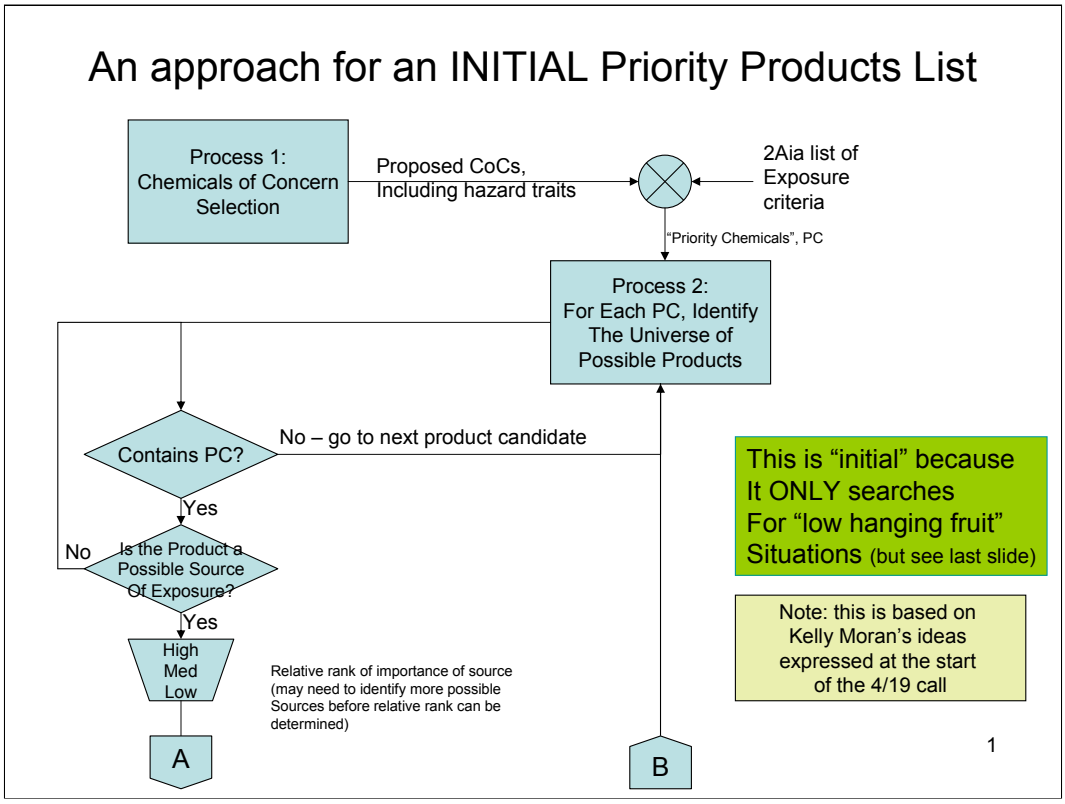
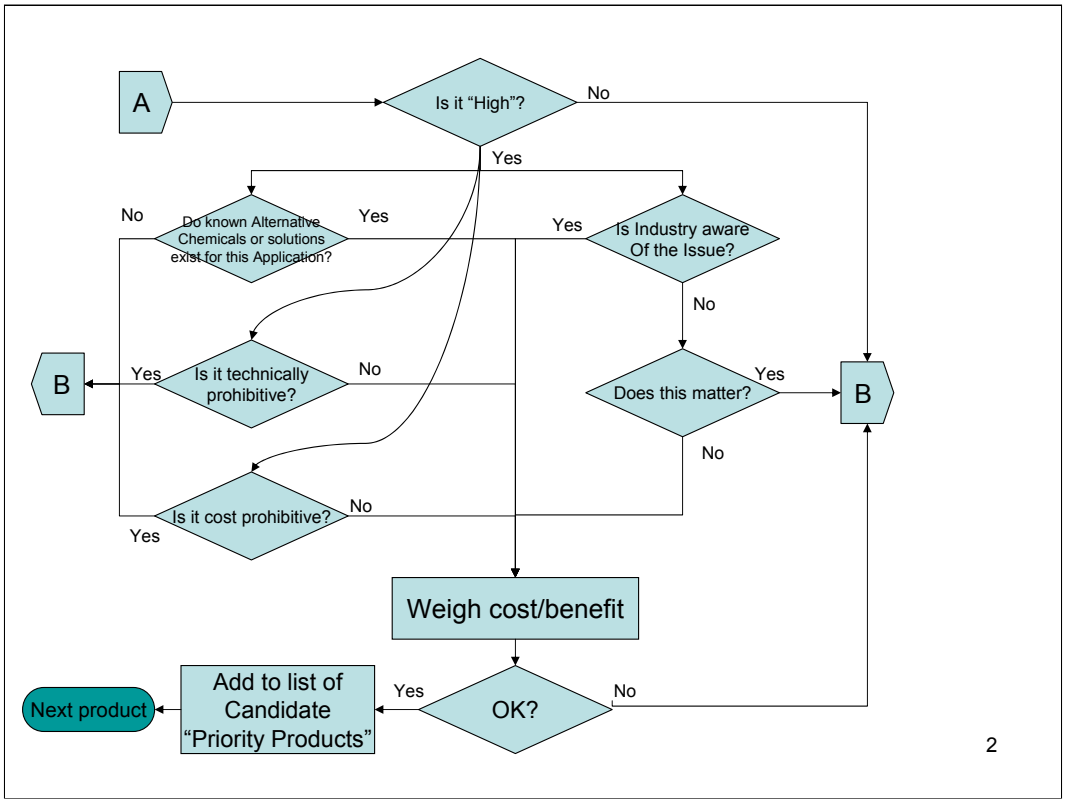
Report-Out for Subcommittee #2
Product Identification and Prioritization

Attachment 2

Products List Initial to Complete Solution



1. Start with a list of Chemicals of Concern (determining this is outside the scope of the subgroup)
2. Those are passed through the 2Aia list (I think this should be expanded to include metabolytes and breakdown products of the CoCs). What come out are the Priority Chemicals (PC) DTSC should target the consumer product sources of, if any.
3. Once a PC is identified, the product classes that could contain that chemical are identified.
4. Each product class is assessed for whether it could be the source of the pollution as identified in the 2Aia list
5. Product classes that are not sources are excluded
6. Product classes that could be a source are passed through. These sources are then ranked as to their degree of contribution to the pollution.
7. <A> Next page



8. If the product class is a "high" contributor it proceeds to the next stage. If not, it is shelved for the time being.
9. Four questions are asked, somewhat simultaneously, at that stage:
    - Are there known alternative chemicals or other design solutions that could result in the PC being removed?
    - Are potential alternatives technically prohibitive?
    - Are potential alternatives financially prohibitive?
    - Is this an industry-wide issue and, if so, are they aware of it and are they taking action?
10. If there are alternatives available that are technically and financially feasible, it may be helpful if – for an industry-wide problem – the industry is aware of it. That's not always going to be critical to moving forward but it might help to "grease the skids", so to speak, by reducing the impact to individual manufacturers of technical and cost issues. Spreading the research around and working on a common solution, if it doesn't violate collusion laws, is a good way to drive this (for manufacturers that would rather work that way than on their own).
11. Once that determination is made, we have a good candidate for an Alternatives Assessment (AA) requirement. The last step is to weigh the cost/benefit.
12. If it passes the cost/benefit test, then it gets added to the list of products/product classes to be prioritized for AA.
13. Go on to the next product or product class/chemical combination.
14. Once all products/product classes have been prioritized, see slide 4 for the prioritization methodology.

Notes

- Determining how significant a source of pollution a product is may require industry and use information
- Not all of the items on page 2 may be done simultaneously, based on situation
- Industry Awareness of either the issue or availability of alternatives may or may not matter depending on severity of the pollution, and solution cost/time.
- Industry will be the likely source of assessing technical viability of a solution
  - And cost viability

Where to use AHP or Other Rating/Ranking Methods?

- Candidate "Priority Products" Prioritization Process
  - Compare the following criteria for each identified product/product class

Cost to industry, CA Gov't ($)	Time to Solution	Benefit to CA ($)	Industry Support
Extent of Pollution	Severity of Pollution	Cost to healthcare or ecosystem ($)	Etc.

Getting to a Complete Solution

- Once “High” sources of pollution are dealt with, go to “Med” then “Low” (see step 8)
  - This is the “Pareto Principle”
- Where alternatives don’t yet exist, require manufacturer to develop alternatives. Then run this process once the alternative is developed.
- Technical or Cost prohibitive: industry challenge
- Eventually open up 2Aia and (methodically/slowly) broaden it to go beyond known exposure towards pure hazard