

Appendix 6 Criteria Suggested for Selecting Priority Chemicals - Surveys, Workshops and Email

1. Toxicity-related criteria <i>A. Severity of the effect</i>	Affiliation of Person Suggesting	Source of input
Chemicals selected should be ranked on toxicity and only those known to have the greatest toxicity should be selected.	Government	Survey
Chemicals known to be toxic in animals?	Government	Survey
The more toxic, the higher the priority.	Government	Survey
Chemicals causing serious illness or cancer	University/Academic	Survey
Toxicity - chemicals with suspected negative health impact	Other (please specify)	Survey
The chemicals that do the most damage with the least exposure.	NGO/CBO	Survey
Chemicals suspected as problematic due to similarity to other chemicals	NGO/CBO	Survey
The seriousness of the adverse health effect	Government	Survey
New data or from other studies about toxicity in chemicals	Individual	Survey
Priority to chemicals that show toxicity in animals at low doses.	Government	Survey
Degree of toxicity/potential for harm to health	Not provided	Survey
Any chemicals proven toxic in other parts of the world, as many other countries have better regulation than the US, and whose governments are not held in as firm a grip of the big chem lobby	Individual	Survey
Chemicals considered toxic in scientific studies	Individual	Survey
Toxicity based on independent, unbiased, peer-reviewed criteria.	NGO/CBO	Survey
Less consideration needed for chemical that have been studied a lot and have been determined to be relatively harmless.	University/Academic	Survey
Difference of toxicity levels for adults and children	Individual	Survey
Toxicological criteria	Government	Survey
Will more toxic chemicals be higher priority for the program?	Not provided	Workshop/Teleconference
Consider adopting some of CDC's criteria: (2) seriousness of health effects known or suspected to result from exposure	Business	Submitted via email
When more scientific data is available about adverse health effects	Not provided	Workshop/Teleconference
More is known about metals than other groups so they should be high priority chemicals	Not provided	Workshop/Teleconference
Are the chemicals known to be hazardous?	Individual	Survey
If there is sufficient scientific and epidemiological evidence to warrant investigation, the State should give that chemical priority.	Business	Survey
<i>1.B Type of harm caused by chemical</i>		
Environmental toxicity	NGO/CBO	Survey
Those on the market not tested for important health outcomes (endocrine disruptors, neurodevelopmental toxicants, etc.)	NGO/CBO	Survey
Those causing damage resulting in multiple chemical sensitivities.	Individual	Survey
Chemicals for which data suggest there is substantial potential for harm, including those that cause cancer, endocrine disruption, neurological damage, and other types of systemic harm of concern.	Other (please specify)	Survey
It should monitor chemicals that have multi-generational effects.	Not provided	Survey
Relationship to cancers	Not provided	Survey
Study chemicals that the human body may metabolize into other chemical compounds of concern	Business	Survey
Illness Reports from Drs. First Report of Injury and those that have a high correlation for harm, lead or those associated with cancer.	Not provided	Survey
Focus should be on chemicals that have the potential to cause developmental effects or neurotoxicity	NGO/CBO	Survey
Toxicity to plants and animals as well as humans	Individual	Survey
Chemicals on the Prop. 65 list	Not provided	Survey
Chemicals that specifically affect endocrine and immune system.	Government	Survey
New publications and established research associating certain classes of chemical with human disease.	Government	Survey
Health outcomes associated with chemicals	Government	Survey

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<i>1.B Type of harm caused by chemical (cont'd)</i>	Affiliation of Person Suggesting	Source of input
Should be based on the prevalence of existing diseases and their causal environmental factors	Government	Survey
Consider chemical health effects, w following priority: carcinogens, hormone-mimickers, endocrine disruptors, reproductive toxins	NGO/CBO	Survey
Consider the chemical's toxicity and risks to humans and wildlife	Individual	Survey
Develop protocol that compares health endpoints (i.e., reproductiv vs cancer vs endocrine disruptors) and decide the more important. Repro/dev may be more in need of research than for carcinogens.	Government	Survey
Endocrine disruption	Government	Survey
Known or suspected health effects, such as endocrine disruption.	University/Academic	Survey
Relative impact of chemicals on disease prevalence	Government	Survey
Chemicals for which there is currently very little research and data available, especially re: effect on human health and neurotoxicity	Individual	Survey
Volatility and studies from other states showing genetic damage by such chemicals as Chlorothalonil (shown to damage pristine wilderness areas miles from application sites).	NGO/CBO	Survey
Carcinogenicity	Government	Survey
Chemicals that effect child nervous system or reproductive dev.	NGO/CBO	Survey
There is the Prop 65 list.	Not provided	Workshop/Teleconference
Review studies on childhood cancer for chemical associations.	Not provided	Workshop/Teleconference
Chemicals causing epigenetic effects – effects on DNA structure or expression that can be passed on to the next generation?	Not provided	Workshop/Teleconference
Chems that cause allergic and asthmatic reactions, e.g., fragrances	Individual	Survey
Chemicals based on the timing of exposure in addition to toxicity (e.g., endocrine disruptors during development).	Not provided	Workshop/Teleconference
Chemicals that cause cancer are the most important.	Not provided	Workshop/Teleconference
Environmental impact on wildlife/plants	Business	Survey
<i>1.C Potential for cumulative effects</i>		
Combinations of chemicals are worse than the sums of individual chemicals, even if no existing exposure standards are exceeded	Individual	Survey
Cumulative impacts of multiple contaminants, low dose exposures	NGO/CBO	Survey
Additive relationships of chemicals when put together.	Government	Survey
Cumulative effects of combination of chemicals, or "body burden" and effects, e.g., ADHD, increased diseases risk, degenerative, and the adverse effect on longevity. Effects on our whole ecosystem.	Other (please specify)	Survey
Chemicals that may have synergistic or cumulative impacts	NGO/CBO	Survey
Risk of severe toxic effects, and commonly combined chemicals that, together, create additional adverse risks.	Business	Survey
Cumulative "load" doesn't necessarily mean that combinations are studied. Exposure doesn't happen as in a laboratory - in isolation - but in combinations. How do certain combinations amplify impact?	Individual	Survey
Chemicals that when combined cause issues.	Business	Survey
Combination contamination should be the order of all chemical investigations.	Individual	Survey
Interaction between chemicals. Example cumulative liver toxicity.	Not provided	Survey
Mixtures of chemical exposures	University/Academic	Survey
<i>1. D Toxicity and exposure considered together</i>		
By both volume in commerce & structural propensity to cause harm	University/Academic	Survey
Chemicals already known to have health consequences and widely distributed should be measured.	Government	Survey
Degree of toxicity relative to use. If a very low amount is highly toxic, and the chemical is widely used, that would be high priority.	Individual	Survey

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<i>1.D Toxicity and exposure considered together (cont'd)</i>	Affiliation of Person Suggesting	Source of input
Compare the toxicity to known exposure levels	NGO/CBO	Survey
POPs and other chemicals that are known to be toxic and used in manufacturing and/or possibly emitted from end products	NGO/CBO	Survey
Whether the chemical potentially could cause adverse effects to public health at likely levels of exposure.	Business	Survey
Balance toxicity with exposure or occurrence to identify chemicals where intake has a toxic effect.	Government	Survey
Study of existing chemicals that have not been studied for HH impacts before being released into use and those that need additional study immediately such as endocrine disruptors	Individual	Survey
Likelihood of expected amount measured to cause a health problem.	Not provided	Survey
Select chemicals for which we have information about whether, and at what level, they are hazardous in the body. Otherwise, we will just have a bunch of data that we don't know what to do with.	Government	Survey
Adverse effects reporting, amt/frequency/contact of daily exposure	Other (please specify)	Survey
Whether or not there is an immediate threat to health via a chemical.	Government	Survey
Carcinogenic chemicals in legal substances to which people are widely exposed (e.g. diesel exhaust, secondhand cigarette smoke)	Other (please specify)	Survey
They should balance toxicity and level of use.	Individual	Survey
Chemicals with biggest health impact on the greatest no. of people	Not provided	Workshop/Teleconference
Emphasize potential risk to human health	Business	Submitted via email
Consider adopting some of CDC's criteria: (3) exposure to levels of chemicals of known/potential health significance	Business	Email
Whether there is data that will enable scientists to compare measured levels to health effects levels.	Not provided	Survey
Evidence-based studies identifying significant risk from exposure	Government	Survey
2. Exposure-related Criteria		
<i>A. Extent of exposure</i>		
Naturally occurring, yet widespread contaminants, such as Arsenic.	Government	Survey
Percentage of 24-hr day someone is inhaling the substance. E.g., mattress or pajama flame retardants would be 8+ hrs at close contact; cardboard partitions at a particle board desk with flame retardant monitor for 8 hrs.	Business	Survey
Chemicals used widely throughout CA.	Government	Survey
The number of people who are exposed.	NGO/CBO	Survey
Balance monitoring some regulated chemicals being measured by CDC (e.g., PBDEs) with others not being monitored but that have the potential to be widespread in the population	NGO/CBO	Survey
Ubiquitous chemicals aren't studied that have been in use 'forever' - for example paraffin wax, pool chlorine, OTC cold remedies	University/Academic	Survey
Widespread exposure isn't a good criterion because exposures differ in different places. For example, SF people aren't exposed to some things people are in the Central Valley.	Not provided	Workshop/Teleconference
Use data is important to see what's out there.	Not provided	Workshop/Teleconference
Higher exposure likelihood	Not provided	Workshop/Teleconference
Chemical unique or w/ California specific exposures/activities	Other (please specify)	Survey
Focus on CA-specific chemicals		Workshop/Teleconference
Chemicals used more commonly in California than in other areas.	Government	Survey
Consider chemicals that don't persist or bioaccumulate, but we are continually exposed to them, e.g., bisphenol A.	Not provided	Workshop/Teleconference
Have widespread potential exposure	Business	Submitted via email
Consider adopting some of the criteria employed by CDC: (1) potential for exposure is changing or persisting	Business	Submitted via email
Increasing use	Government	Survey

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<i>2.B Persistence</i>	Affiliation of Person Suggesting	Source of input
Persistent chemicals that may have synergistic or cumulative impacts	NGO/CBO	Survey
How a chemical persists in the environment- in other words, is it mobile or is it bound. What is the exposure to population	Government	Survey
Some persistent chemicals are known to contaminate groundwater, e.g., EDB, DBCP, arsenic.	Not provided	Workshop/Teleconference
Should we think about chemicals with recent bans differently from chemicals that are historically banned?	Not provided	Workshop/Teleconference
Don't exclude chemicals based on how long ago they were banned, e.g, lead is still significant. Also, chemicals banned in the US, like DDT, are still coming in from other parts of the world.	Not provided	Workshop/Teleconference
Please don't ignore banned chemicals. Have a policy focus. Prioritize by ubiquitous chemicals or big 'bad' chemicals.	Not provided	Workshop/Teleconference
Even banned chemicals still have hot spots and new identification of exposure pathways for old chemicals, e.g., PCBs in flooring.	Not provided	Workshop/Teleconference
Chemicals that the FDA has ok'd but are now know to presenting a danger to humans, The effects of drugs in the water table, both from use and discarding. As many chemical the food process are using in foods that the true bio effects are unknown.	Individual	Survey
<i>2.C Specific locations or sources of exposure</i>		
Chemicals entering our drinking water, storm water, ground water, soils, or toxic when entering our skin or when they are aerolized.	Other (please specify)	Survey
Personal life style (i.e. alcohol usage), organic chemicals created by the body vs. inorganic chemicals	Individual	Survey
Naturally occurring (not added by humans) carcinogens, mutagens and teratogens present in fruits, nuts, vegetable and herbs.	Tribal	Survey
1) Unregulated compounds in drinking water, e.g., pharmaceuticals (particularly endocrine-disruptors - ethinyl estradiol, thyroid hormone replacement), sunscreen ingredients 2) Nanomaterials in commercial products	University/Academic	Survey
Chemicals in vaccines and in our food	NGO/CBO	Survey
Common household products and garden chemicals that people may be exposed to daily. I would like diesel output regulated as it is carcinogenic and many drive diesel vehicles here in Northern CA.	Individual	Survey
Chemicals that are used in indoor spaces (homes, workplaces, etc.) such as cleaning agents, deodorizers, pesticides, etc.	Individual	Survey
Indoor air quality is a key issue having to do with the "pea soup" that pervades a building. i.e., photocopiers, plastic wiring in new electronic equipment, new carpeting (glue, etc), paints, varnishes, window cleaners, hygiene products (aftershave, etc.) , bathroom deodorizers, building products (vinyl wall covering, particle board, plastics of all sorts)	Other (please specify)	Survey
Impacts on sensitive environmental factors such as water and air quality	NGO/CBO	Survey
Studying chemicals that are in food and consumer products	Government	Survey
Frequently used consumer products or services, i.e., bottled water, milk, fruits & vegts, dry cleaning, new mattresses, clothes chems	University/Academic	Survey
Bioterrorism	Government	Survey
Multiple exposure pathways should rank higher.	Government	Survey
The media by which the chemical is encountered. For instance, air pollutant and drinking water pollutants are widely spread.	Individual	Survey
Leachate potential of chemicals.	Government	Survey
Proximity to residential areas	Individual	Survey
Chemicals in food, personal care, cleaning and other products that people encounter daily (housing and construction, furniture, etc.)	Individual	Survey

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<i>2.C Specific locations or sources of exposure (cont'd)</i>	Affiliation of Person Suggesting	Source of input
Chemicals for preserving and coloring e.g., foods, cosmetics, soaps and lotions AND the harmful chemicals of laundry products.	Individual	Survey
Chemicals grandfathered in by TSCA - although I think many of those may get prioritized by some of the other issues mentioned.	Government	Survey
Recent findings of increasing concentrations in soil or other environmental media	Not provided	Workshop/Teleconference
Herbicide effects on bio-chain e.g. insects and birds. Chemicals entering water system. Hormone and antibiotic concentrations in water systems. Effects of airborne chemicals/paints, solvents, propellants, emissions etc.	Other (please specify)	Survey
<i>2.D Population at risk – with a chronic illness or condition</i>		
People with severe chemical sensitivities, often diagnosed as MCS. Many are on disability and absolutely must avoid many chemicals.	NGO/CBO	Survey
Most vulnerable populations, e.g., medically compromised	NGO/CBO	Survey
Impacts on immuno-compromised populations	NGO/CBO	Survey
Those who "suffer" from Multi-Chemical-Sensitivity (MCS). Compare National Average and CA resident percentage rates	Not provided	Survey
<i>2.E Population at risk – due to intrinsic characteristics, such as age or genetic factors (e.g., race)</i>		
Fetus and infant exposures with adverse effects as adolescents or adults (vs. effects in fetus, child or pregnant woman)	Government	Survey
Consider most vulnerable populations, e.g., elderly, children	NGO/CBO	Survey
Race	NGO/CBO	Survey
Consider the disproportionate amounts of people of color that are exposed to different types toxics, therefore providing a better view as to how to prevent others from the same type of exposure.	NGO/CBO	Survey
The CA population involves immigrants from other areas outside the state so some sensitivity to this should be acknowledged when considering priorities	University/Academic	Survey
Most vulnerable populations	Government	Survey
Fetuses and women are an important, vulnerable population. Please prioritize pregnant women and children.	Not provided	Workshop/Teleconference
Consider especially pregnant women and children, and generational effects of chemicals.	Not provided	Workshop/Teleconference
Impact on pregnant women and children.	Not provided	Workshop/Teleconference
During fetal development, mothers often don't know they are pregnant during the first trimester.	Not provided	Workshop/Teleconference
Chemicals which affect children.	Other	Submitted via email
Focus on generating statistically valid sample of individuals representative of California's demographic groups	Business	Submitted via email
<i>2.F Population at risk – due to location or particular exposures faced</i>		
Wide spectrum of chemicals affecting high impact / long term communities - heavy, high risk pollutants such as emitted by Quemetco / RSR Industries used automotive battery recycling plant located in the City of Industry. Comparison with State averages and effectiveness of remediation programs will be valuable.	Not provided	Survey
Old folks who worked in safe offices and live in nice places with clean air and water do not need much monitoring. Those living where water has As, ride in old school buses, work near diesel engines, farms that use pesticides, dry cleaners need testing.	Individual	Survey
Most vulnerable populations, e.g., fenceline residents	NGO/CBO	Survey
Health disparities stemming from unfair exposure of poor and minority populations to environmental contaminants.	Government	Survey
Consider, in particular, the pesticide levels in the bodies of farmworkers and farmworker family members.	Individual	Survey

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2.F Population at risk – due to location or particular exposures faced (cont'd)	Affiliation of Person Suggesting	Source of input
Checkmate LBAM-F and OLR-F ingredients, send everyone a survey, house to house, and you will see we have been affected. When we could leave the area (ocean) and get well in 15 minutes, and then return to spots in Monterey and become ill, you know it's NOT the flu. Is just ONE example. When the birds disappeared for several weeks, we had proof. Please investigate and send flyers to every household.	Individual	Survey
Chemicals more likely to be prevalent in low income communities	NGO/CBO	Survey
Low income communities that may be at higher risk of contacting these chemicals and have no knowledge of them.		Survey
The inability of those exposed to avoid exposure because they have no other means of livelihood, such as farm workers.	NGO/CBO	Survey
Those located close to factories	NGO/CBO	Survey
Because low-income people and certain ethnic groups are frequently forgotten in scientific studies, California should make certain to include these people in its study. For instance, many farmworkers are low-income Mexicans or Mexican-Americans living in rural areas of California. They come into contact with pesticides as workers and as residents of communities near agricultural lands. The biomonitoring study must not forget these people.	NGO/CBO	Survey
Chemicals that the farmworker population is exposed to.	Government	Survey
OEHHA put out a report on workplace risks with CalOSHA.	Not provided	Workshop/Teleconference
3. Laboratory-related Criteria		
<i>A. Type of biomarkers available, e.g. biomarkers of effect</i>		
Consider chemicals with known markers (i.e. cholinesterases for pesticides, carboxyhemoglobin for methylene chloride)	Government	Survey
Chemicals that might act as surrogates or markers for a class	Government	Survey
Availability of biomarkers of exposure to other compounds.	Other (please specify)	Survey
<i>3.B Type of media sampled, such as blood, urine, etc.</i>		
Use umbilical cord blood as a biomonitor instead of human milk.	Government	Survey
The presence of chemicals in umbilical cord blood.	NGO/CBO	Survey
Use cord blood samples.	Not provided	Workshop/Teleconference
<i>3.C Method availability, accuracy and sensitivity</i>		
Chemicals that can be measured with some precision vs. ones in the ppb or ppt ranges	Business	Survey
Specificity and sensitivity of chemical tests	Government	Survey
Ability of the California lab or satellite lab to detect a chemical.	Government	Survey
Consider collecting biospecimens to test phthalates while cosmetics workers are actually working rather than getting the sample later.	Not provided	Public participation session
Reliably measured	Business	Submitted via email
Not highly variable based on time of day	Business	Submitted via email
Not easily cross-contaminated	Business	Submitted via email
As secondary consideration only, use other CDC criteria: 4) The existence of an analytic method that can measure the chemical or its metabolite in blood or urine with adequate accuracy, precision, sensitivity, specificity and speed.	Business	Submitted via email
Ability of contract lab to analyze chemical	Other (please specify)	Survey
The ability to measure accurately both the environment and the effect on the body	Other (please specify)	Survey
<i>3.D Cost</i>		
Cost of analysis	Other (please specify)	Survey
The cost of an analysis.	Government	Survey
Do NOT use CDC criteria 5) the incremental analytical cost.	Business	Submitted via email

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4. Other Criteria		
<i>A. Results allow for intervention or to assess effectiveness</i>		
Chemicals studied by gov'ts & universities, where biomonitoring data might have application for health interventions and policies.	Government	Survey
Chemicals for which regulation will set precedent for more widespread regulation (e.g. chemical class, associated occupation)	NGO/CBO	Survey
Safety in terms of testing and applicability to humans in the present time.	Government	Survey
Check on existing California regulations-how effective are our standards?	Other (please specify)	Survey
Do NOT use CDC criteria 6) Assessing the efficacy of public health actions to reduce exposure to a chemical.	Business	Submitted via email
Can the chemical release be controlled? Antibiotics for example?	Individual	Survey
Chemicals necessary for regulatory compliance verification, particularly where the necessary test can be asked for if it does not exist ala AB 889.	NGO/CBO	Survey
Chemicals for which action by the state has potential to affect real change.	Government	Survey
Is the chemical already banned?	Other (please specify)	Survey
Prioritize chemicals that are in use, that can be regulated now.	Not provided	Workshop/Teleconference
Those with impact, e.g., show up in lawsuits (worker disabilities, etc.)?	Not provided	Workshop/Teleconference
Determine if environmental laws are working	Not provided	Workshop/Teleconference
Be solutions-oriented, also look at the limitations of the laws.	Not provided	Workshop/Teleconference
A legislative/regulatory policy potential for some chemicals	Not provided	Workshop/Teleconference
Demonstrated public health issue (e.g., assess second hand smoke, lead)	Business	Email
<i>4.B Chemicals that have safe alternatives</i>		
Ones with equally effective, safer alternatives (Precautionary Principle).	Business	Survey
Whether manufacturers can use a less-hazardous or persistent chemical when designing the product (i.e., green chemistry)	Government	Survey
Follow the EU's lead: establish the precautionary principle here in CA. Also discuss ways to place the onus for environmental damage on manufacturers to encourage research on non-toxic substitutes.	Individual	Survey
<i>4.C Emerging chemicals</i>		
Those emerging chemicals	NGO/CBO	Survey
Chemicals that are emerging as new problems	Not provided	Workshop/Teleconference
New, emerging chemicals	Not provided	Workshop/Teleconference
Chemicals of concern emerging from research.	Not provided	Workshop/Teleconference
How are we looking at up and coming chemicals?	Not provided	Workshop/Teleconference
<i>4.D Measured by national program (CDC list)</i>		
Chemicals the federal government is already testing (to compare)	Government	Survey
Focus on exposures that are specific to CA, not on what CDC does.	Not provided	Workshop/Teleconference
Chemicals on CDC list	Business	Email
Extend CDC list instead of duplicating it.	University/Academic	Email
<i>4.E Risk communication issues</i>		
Availability of sufficient information to place biomonitoring data for specific substances into the context of human health risk.	Business	Email
How to explain levels when there is no standard as to what is "normal"	Government	Survey
Whether or not the results will be meaningful to the people.	Government	Survey
<i>4.F Other concerns</i>		
Economic factors	Individual	Survey
Do the risks outweigh the benefit to society	University/Academic	Survey
Chemicals profitable to industry that they have incentive to push	University/Academic	Survey
Specific public concerns	Government	Survey
If the SGP determines other priorities - we need to support them.	Government	Survey
From reports of people who call in due to concerns	NGO/CBO	Survey
Public opinion/concern about specific substances	Government	Survey
Develop criteria for removal of substances from the program.	Business	Email
Develop clear selection criteria, based in science. Transparent process.	Business	Email