

California's Green Chemistry Initiative

The following summarizes the Green Chemistry Initiative's overarching primary elements, recommended options, regulations and other initiatives.

ELEMENTS—Supply Side	RECOMMENDED OPTIONS
<p>1.) Instilling green chemistry into education.</p>	<p>Option # 1: Train K-12 science educators. Develop a program to train K-12 science education teachers in the concepts of green chemistry.</p> <p>Option # 2: Develop K-12 green chemistry teaching materials. Expand California's science education materials programs to include training and laboratory materials for conveying concepts in green chemistry to K-12 classrooms suited to each grade level.</p> <p>Option # 3: Develop green chemistry interdisciplinary education courses. Develop programs to introduce interdisciplinary green chemistry into the general education curriculum for undergraduates in California colleges and universities.</p> <p>Option # 4: Integrate green chemistry into higher education chemistry and chemical engineering curricula. Reformulate conventional graduate and undergraduate chemistry and chemical engineering curricula in California colleges and universities to emphasize green chemistry and to include aspects of toxicology, health related issues, ecology, environmental science and environmental law.</p> <p>Option # 5: Develop fellowships and internships in green chemistry. Develop a program to support graduate education fellowships and both undergraduate and graduate internships focused on green chemistry research and application.</p> <p>Option # 6: Promote green chemistry in business school education. Commission the development of practical teaching cases in green chemistry that can be incorporated into the curricula of business schools through the university systems in California.</p> <p>Option # 7: Support new faculty positions in green chemistry. Encourage and financially support the hiring of faculty qualified in green chemistry throughout the state's colleges and universities.</p> <p>Option # 8: Introduce green chemistry into vocational and workforce development training programs. Support and fund a green chemistry program for vocational schools and other workforce development programs.</p>
<p>2.) Supporting research and innovation in green chemistry and engineering.</p>	<p>Option # 9: Implement a process to identify all on-going efforts in green chemistry science and technology in California, and use that to determine critical gaps in green chemistry research and technology.</p>

	<p>Option # 10: Support green chemistry research and developmental efforts in California.</p> <p>Option # 11: Promote, encourage, and facilitate the development of industry-university partnerships.</p> <p>Option # 12: Strengthen the green chemistry infrastructure.</p>
<p>3.) Building green chemistry capacity through development of tools, methodologies and strategies for developing greener chemicals.</p>	<p>Option # 13: Implement managements system approaches for California chemical manufacturers.</p> <p>Option # 14: Promote green chemistry by industry associations.</p> <p>Option # 15: Promote value chain communications.</p> <p>Option # 16: Awards programs and competitions—establish green chemistry innovation awards, governor’s green chemistry award, and/or green chemistry business plan competition.</p> <p>Option # 17: Establish a “California Chemistry Research Challenge”.</p> <p>Option # 18: Develop a green chemistry web portal.</p> <p>Option # 19: Add green chemistry to state technical assistance programs.</p>
<p>4.) Providing incentives to industry and recognition of its efforts.</p>	<p>Option # 20: Advance the science of alternatives assessment.</p> <p>Option # 21: Establish one or more independent non-profit institutes to identify, develop, and test safer alternatives.</p>
<p>ELEMENTS—Demand Side</p>	
<p>1.) Identifying and prioritizing chemicals or chemical uses of concern.</p>	<p>Option # 22: Adopt a policy to identify chemicals of concern, including, as appropriate, associated processes and approaches, and develop specific criteria for this purpose.</p> <p>Option # 23: Develop a comprehensive “map” of the flow of chemicals in California.</p> <p>Option # 24: Help advance the science of toxicology.</p> <p>Option # 25: Target chemical uses of concern based on hazard, exposure and risk.</p>
<p>2.) Developing, improving and effectively employing regulations.</p>	<p>Option # 26: Require chemical manufacturers and importers in California to provide specific information about the hazards and uses of their products.</p>

<p>Regulatory Action: CA AB 1879 requires the Dept of Toxic Substances Control to adopt regulations establishing a process by which chemical or chemical ingredients in products may be identified and prioritized for consideration as being chemicals of concern, a related adoption procedure, a process to determine how best to limit exposure or reduce the level of hazard posed by chemicals of concern. Relates to labeling requirements, exposure, green chemistry challenge grants, and chemical use restrictions. Requires a related panel.</p> <p>Regulatory Action: CA SB 509 requires the Dept of Toxic Substances Control to establish a Toxics Information Clearinghouse, making more chemical risk information available to the public. This requires that the Clearinghouse list hazards and toxicological endpoint data.</p>	<p>Option # 27: Require companies to provide chemical information to Cal/EPA that they submit to authorities.</p> <p>Option # 28: Require product manufacturers and importers in California to disclose chemical ingredients.</p> <p>Option # 29: Require chemical makers and users to systematically identify and consider safer alternatives.</p> <p>Option # 30: Authorize Cal/EPA to phase out hazardous chemicals.</p> <p>Option # 31: Phase out chlorinated solvents.</p> <p>Option # 32: Require all air quality management districts to adopt SCAQMD regulations on cleaning products.</p>
<p>3.) Developing incentives to boost demand for green chemistry.</p>	<p>Option # 33: Provide retailers with access to guides for selecting greener alternatives to toxic products, via a retailer clearinghouse.</p> <p>Option # 34: Develop a “green scorecard” for chemical products that lets both producers and consumers know which products truly are greener than others.</p> <p>Option # 35: Screen chemical product formulations for safety, health and environmental preferability, based on full ingredient disclosure by the producer to the screener.</p> <p>Option # 36: Incorporate green chemistry criteria into state procurement processes.</p> <p>Option # 37: Provide marketing exposure for green chemistry products and processes.</p> <p>Option # 38: Create a web-based marketplace for greener chemicals and products.</p>