Resolution 17-1
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Washington, DC

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All Members Call

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Arlington, Virginia

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Savannah, Georgia

As certified by
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Executive Director

ADVANCING SAFER CHEMICAL PRODUCTS AND PROCESSES

WHEREAS, U.S. industry is a leader in the growing domestic and global markets for high performing chemicals and processes through sustainable and green chemistry; and

WHEREAS, the chemical industry supports more than 25 percent of the gross domestic product of the United States[1]; and

WHEREAS, breakthrough technologies in sustainable and green chemistry can transform how industry thinks about performance, function, and synthesis to create new materials with better performance; and

WHEREAS, sustainable and green chemistry programs are based on principles that consider all lifecycle stages, including manufacturing, use, recycling, and disposal when evaluating the environmental impact of products; and

WHEREAS, alternatives assessment is a process for identifying, comparing, and selecting, or initiating development of safer alternatives to chemicals of concern (including those in materials, processes, or technologies) on the basis of their hazards, exposure potential, performance, and economic viability; and

WHEREAS, sustainable and green chemistry innovators have been developing alternatives that struggle to compete when lifecycle costs are not considered or economies of scale in supply and production have not yet been achieved; and

WHEREAS, a safer alternative to an intentionally-added chemical may include a chemical substitute, a functional design approach that can eliminate the need for any chemical addition, or an entirely new technology; or may mean eliminating the chemical if it is not providing a necessary function; and

[1] Chemical Sector Profile, U.S. Cybersecurity & Infrastructure Security Agency, March 2022.

WHEREAS, the growing field of alternatives assessment and safer chemicals development that includes work by industry, states, nongovernmental organizations, tribal communities, and other countries is helping to promote informed substitution; and

WHEREAS, leading and well-respected companies and organizations have publicly endorsed continuous improvement and innovation in chemicals management practices; and

WHEREAS, use of sustainable and green chemistry principles and alternatives assessments hold promise as ways to reduce the use of hazardous substances, to promote sustainable economic development, innovation, and to support the growth of high-value jobs.

NOW, THEREFORE, BE IT RESOLVED THAT THE ENVIRONMENTAL COUNCIL OF THE STATES (ECOS):

Encourages policymakers to collaborate with and support organized consortiums and, as needed, establish new consortiums at the state and federal levels to help make sustainable and green chemistry a priority and to create greater market demand for innovative chemistry, processes, and products;

Encourages the U.S. EPA and other federal agencies to establish a Center of Excellence for Chemical Alternatives Assessment to promote chemical safety, human and ecosystem health, and economic competiveness and innovation by advancing alternatives assessment methods, practices, and professional capacity;

Encourages collaboration with industry groups to lower barriers to the adoption and scaling of more sustainable solutions and to create a stronger demand for safer alternatives;

Continues to support U.S. EPA's Toxics Release Inventory (TRI) Program to track pollution prevention, reduce chemical waste generation, and the use of green chemistry and green engineering practices; U.S. EPA's programs to provide consumers and businesses with a trusted source to identify safe products for use; and ongoing chemical safety research and tool development at U.S. EPA and other federal agencies;

Recognizes the 12 Principles of Green Chemistry as developed by Paul Anastas and John Warner[2], as well as recognizes the ECOSChem definition and criteria of sustainable chemistry[3]; and

Encourages the implementation of increased federal, state, and private sector funding and technical assistance support for alternatives assessments, and sustainable and green chemistry innovations that satisfy the following principles:

> **REDUCE HAZARD:** Reduce hazard to human health and the environment by replacing a chemical of concern with a less hazardous alternative. Reduce risk associated with a product or process if the exposure potential remains the same or lower. Consider reformulation or redesign to avoid use of the chemical of concern altogether.
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> **MINIMIZE EXPOSURE:** Assess use patterns and exposure pathways to limit exposure from alternatives that may also present risks, with consideration for exposure to disproportionately impacted communities.

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[2] Anastas, P.T.; Warner, J.C. Green Chemistry: Theory and Practice, Oxford University Press: New York, 1998.
[3] Definition and Criteria for Sustainable Chemistry, Expert Committee on Sustainable Chemistry (ECOSChem), December 2022.

USE BEST AVAILABLE INFORMATION: Obtain access to and use information that distinguishes between possible choices. Before selecting preferred options, characterize the product and process sufficiently to avoid choosing alternatives that may result in unintended adverse consequences.

PROMOTE DISCLOSURE AND TRANSPARENCY: Through regulatory and voluntary mechanisms**,** facilitate disclosure across the supply chain regarding key chemical and technical information. Engage stakeholders throughout the assessment process to promote transparency regarding alternatives assessment methodologies employed, data used to characterize alternatives, assumptions made, and decision-making rules applied.

RESOLVE TRADE-OFFS: Use information about the product's lifecycle to better understand potential benefits, impacts, and mitigation options associated with different alternatives. When potential alternatives do not provide a clearly preferable solution, consider organizational goals and values to determine appropriate weighting of decision criteria and identify acceptable trade-offs.

CHOOSE SAFER ALTERNATIVES: Choose safer alternatives that eliminate or substitute potentially hazardous chemicals. Other key factors to consider are whether the substitutes are commercially available, technically and economically feasible, and satisfy the performance requirements of the process/product. Collaborate with supply chain partners to drive innovation in the development and adoption of safer substitutes through application of sustainable and green chemistry principles. Review new information to ensure that the option selected remains a safer choice.