



# **Green Chemistry: An Introduction**

**Office of Prevention, Pesticides, and  
Toxic Substances**

**U.S. Environmental Protection Agency**

**Sustainable Futures Conference**



# What is Green Chemistry?

***Green Chemistry is the design of chemical products and processes that reduce or eliminate the use or generation of hazardous substances.***

## The 12 Principles of Green Chemistry:

- Prevent waste
- Design safer chemical products
- Design less hazardous syntheses
- Use renewable feedstocks
- Use catalysts, not stoichiometric reagents
- Avoid chemical derivatization
- Maximize atom economy
- Use safer solvents and reaction conditions
- Increase energy efficiency
- Design chemical products to degrade after use
- Analyze in real time to prevent pollution
- Minimize the potential for accidents



# Presidential Green Chemistry Challenge



**Research**



**Awards**



**The Challenge encourages green chemistry through recognition and grants.**



# Examples of Challenge Winners





# Where can I get more information?

- **Folders with program information**
- **<http://www.epa.gov/greenchemistry>**
- **Richard Engler at:**  
**[engler.richard@epa.gov](mailto:engler.richard@epa.gov) or**  
**202-564-8740**
- **Mailing list**

**Please check web site for Challenge  
Nomination deadlines**