

Washington State Efforts to Reduce Toxic Threats



Alex Stone

Washington Dept. of Ecology

**Protecting Workers from Hazardous
Chemicals through Training**

26 February 2015

Contents

- Why do we care about toxic chemicals?
- What is Washington State doing in this area?
- What can I do?

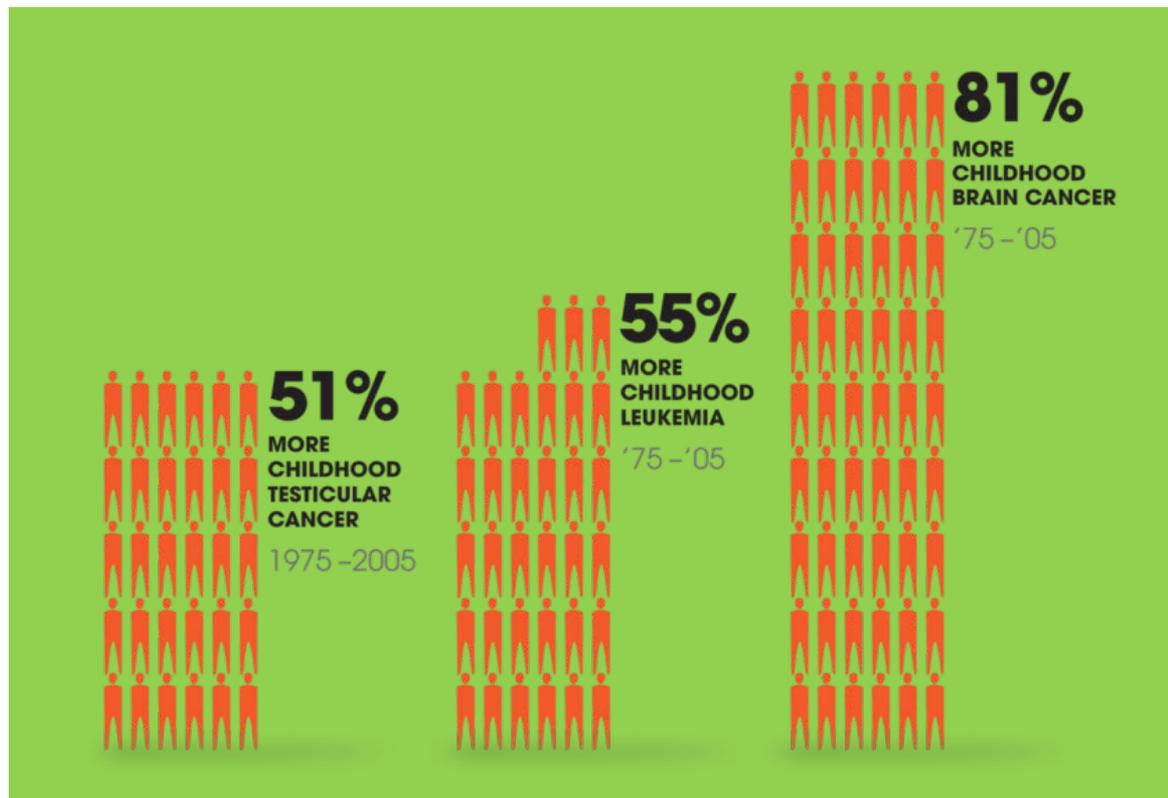


Why we Care About Toxic Chemicals.....



Pres. Obama's Cancer Panel (2010)

The true burden of environmentally induced cancer has been grossly underestimated. With nearly 80,000 chemicals on the market in the United States, many of which are used by millions of Americans in their daily lives and are understudied and largely unregulated, exposure to environmental carcinogens is widespread.



Breast Cancer



- Only 10 percent of breast cancers can be attributed to genetic mutations.
- Compelling scientific evidence points to some of 100,000 synthetic chemicals in use today as contributing to development of breast cancer, either by altering hormone function or gene expression.

Additional Concerns

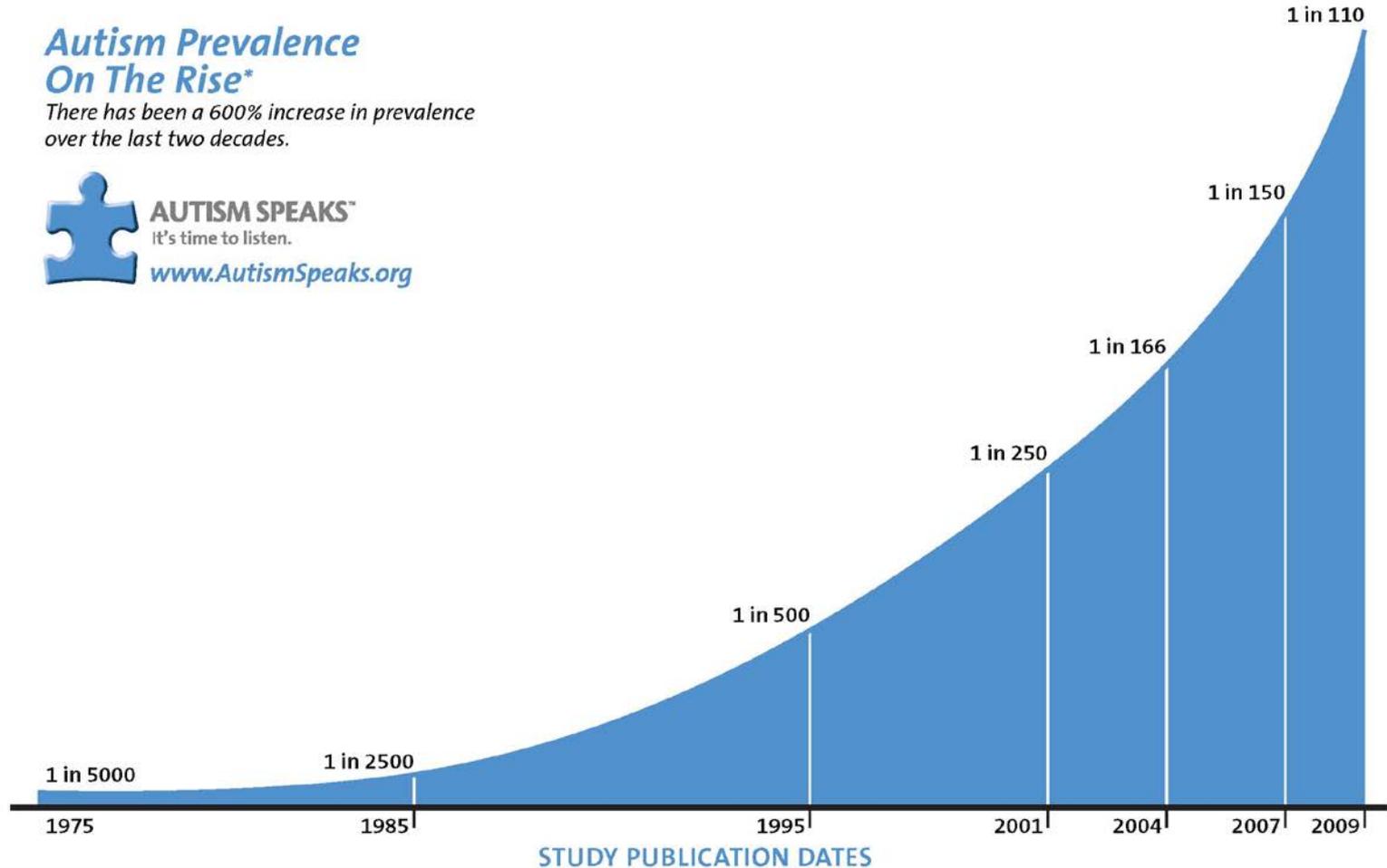
Autism Prevalence On The Rise*

There has been a 600% increase in prevalence
over the last two decades.



AUTISM SPEAKS™
It's time to listen.

www.AutismSpeaks.org

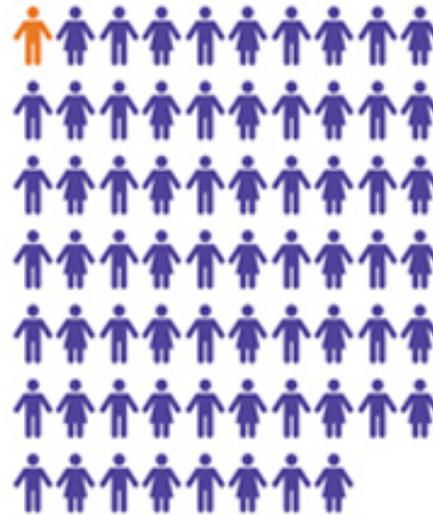


*Recent research has indicated that changes in diagnostic practices may account for at least 25% of the increase in prevalence over time, however much of the increase is still unaccounted for and may be influenced by environmental factors.

Autism Concerns (cont.)

2014 data
from the
Centers for
Disease
Control and
Prevention

NUMBER OF CHILDREN
IDENTIFIED WITH ASD



1 in **68**



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

PROTECT YOUR CHILDREN Against Disease-Carrying Insects.



TRIMZ DDT
CHILDREN'S ROOM
WALLPAPER and Ceiling
Paper

KILLS FLIES, MOSQUITOS, ANT
... as well as moths, bedbugs, silverfish and oth household pests after contact!

MEDICAL SCIENCE KNOWS many common insects bre in filth, live in filth and carry disease. Science also re ognizes the dangers that are present when these diseas carrying insects invade the home. Actual tests ha proved that one fly can carry as many as 8,000,000 ba teria! Imagine the health hazard—especially to ch dren—from flies seriously suspected of transmitting su diseases as scarlet fever, measles, typhoid, diarrhea . even dread polio! Some types of mosquitos carry mala and yellow fever. And any mosquito bite is painful a easily infected when scratched.

NON-HAZARDOUS to children or adults, to pets or cloth *Certified* to be absolutely safe for home use. Tested a commended by *Parents' Magazine*.

GUARANTEED effective against disease-carrying inse for 1 year. Actual tests have proven the insect-killi properties still effective after 2 years of use.

NO SPRAYS! NO LIQUIDS! NO POWDERS! So convenie so safe because the DDT is fixed to the paper. It ca rub off!

BEAUTIFUL! "Jack and Jill" or "Disney Favorites"—g new patterns that protect as they beautify a child's roo **DDT CEILING PAPERS, TOO!** Extra protection for your ch dren's room—for every other room in the house. Cho of two tints.

TESTED AND
COMMENDED
by
**PARENTS'
MAGAZINE**
CONSUMER
SERVICE
BUREAU

READY-PASTED! Just Dip in Water and Hang!

Anyone can put Trimz Wallpaper up without help or previous experience. Millions have done it—proved it's quick, clean, easy! Nothing to get ready—no tools, paste or muss. Just cut strips to fit, dip in water and hang. It's dry in 20 minutes! Guaranteed to stick—guaranteed to please or money back. And so **INEXPENSIVE!** You can protect your child for \$8 to \$12—depending on size of room.

Trimz DDT Children's Room Wallpaper, Trimz DDT Cedar Closet Wallpaper now available at Department, Chain, Hardware, Paint, and Wallpaper stores everywhere.

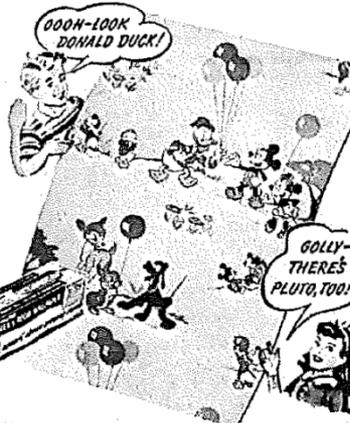
Many beautiful new patterns also available in regular Trimz Ready-Pasted Wallpaper at \$1.98, \$2.49, \$2.99 per box.



Just Dip in Water and Apply

TRIMZ READY-PASTED
WALLPAPER

Another Product of TRIMZ CO., INC., Division of UNITED WALLPAPER



Why important?

Non-hazardous to children or adults, to pets or cloth. **Certified** to be absolutely safe for home use. Tested and recommended by *Parents' Magazine*.

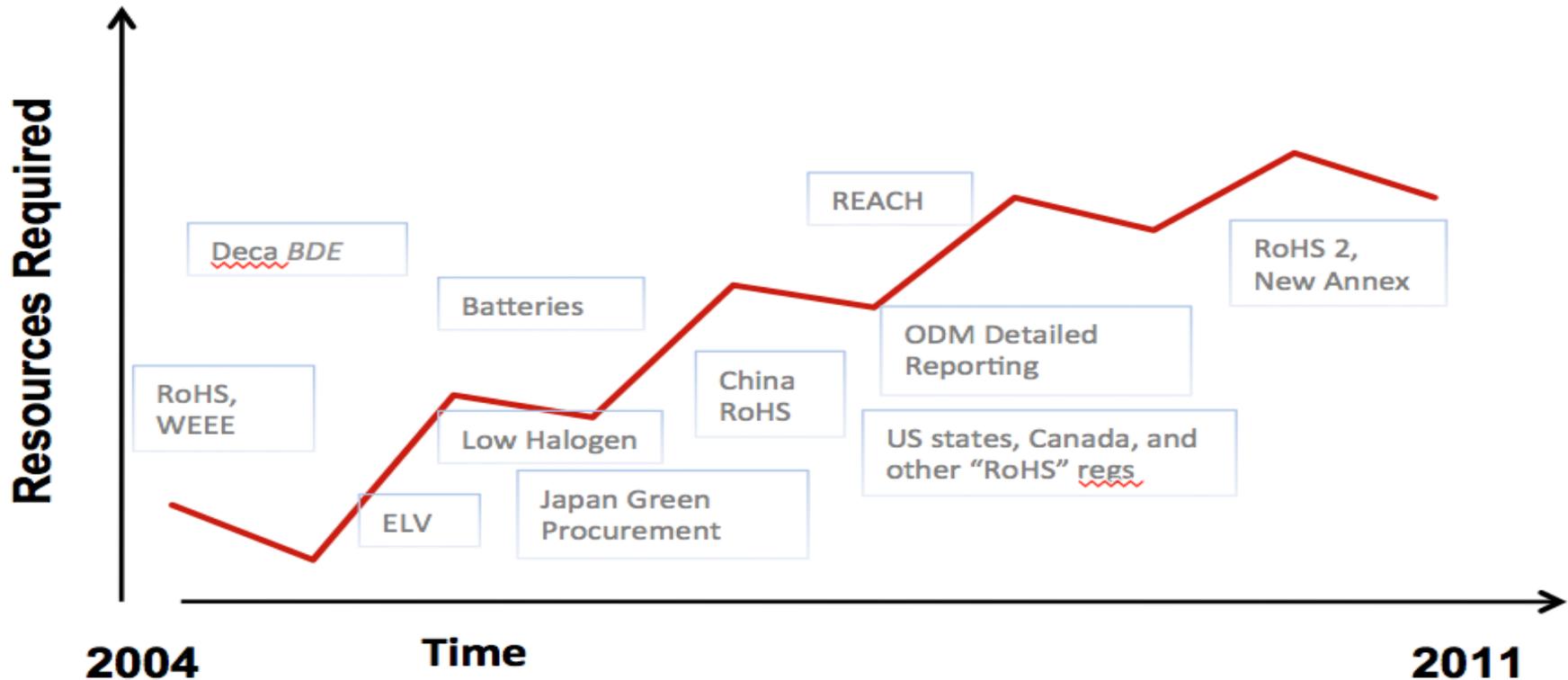
DDT Ceiling papers, too! Extra protection for your children's room—for every other room in the house.

Why we Care About Toxic Chemicals

1. Rising public awareness of health impacts
 - Presence of chemicals in consumer products
 - Presence in their neighborhood and how it affects their quality of life
 - Risk to worker health and safety
2. Regulations
 - Increasing environmental regulation globally
3. Impacts to businesses
 - Increased costs and risk
 - Impact to brand image and equity



Chemical regulation



- Increasing number of environmental regulations
- Increasing number of chemicals covered in each regulation
- Difficult and costly to remove materials as regulations expand.

Global Chemical Production

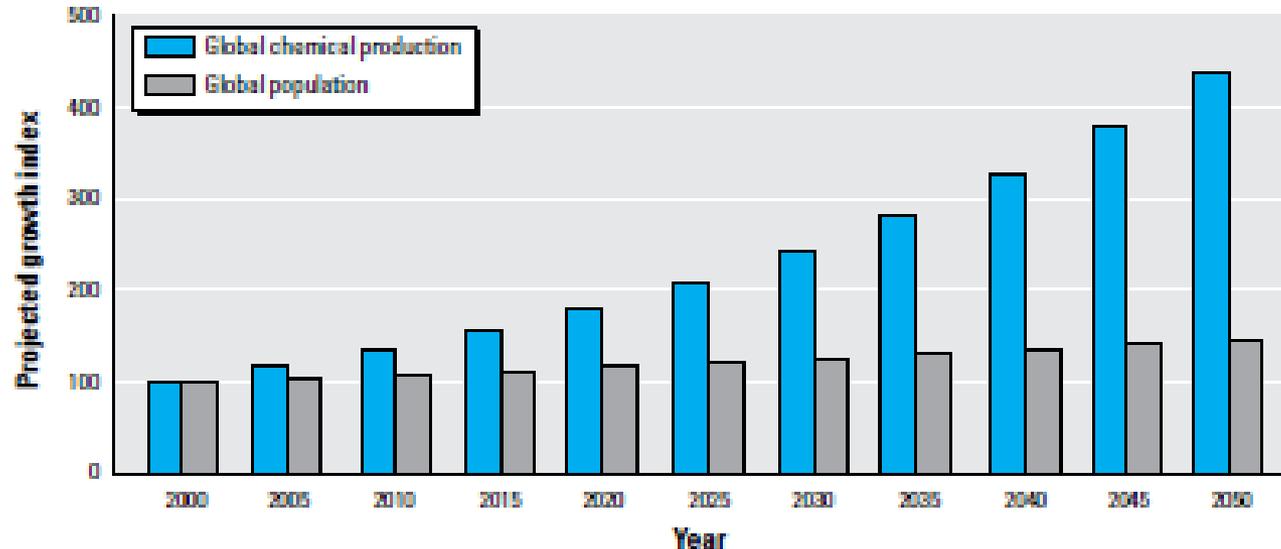


Figure 2. Global chemical production is projected to grow at a rate of 3% per year, rapidly outpacing the rate of global population growth, estimated at 0.77% per year. On this trajectory, chemical production will double by 2024, indexed to 2000 (American Chemistry Council 2003; OECD 2001; United Nations 2004).

Wilson and Schwarzman, 2009, Environ Health Perspectives:, Volume 117:1202-1209

- Increasing at a faster rate than population

Are the materials and products we produce and use safe?



What is the Risk?

$$\text{Risk} \approx f(\text{Hazard} \times \text{Exposure})$$

Hazard



Physical- (examples -Flammable, Reactive, Corrosive)

 **SOME Concern**
for adverse effects

 **MINIMAL Concern**
for adverse effects

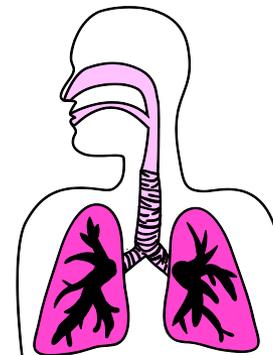
 **NEGLIGIBLE Concern**
for adverse effects

**Toxicological-
(examples- Carcinogen, Teratogen,
Endocrine disruptor)**

Exposure



**Dermal
(skin)**



**Inhalation
(respiratory tract)**

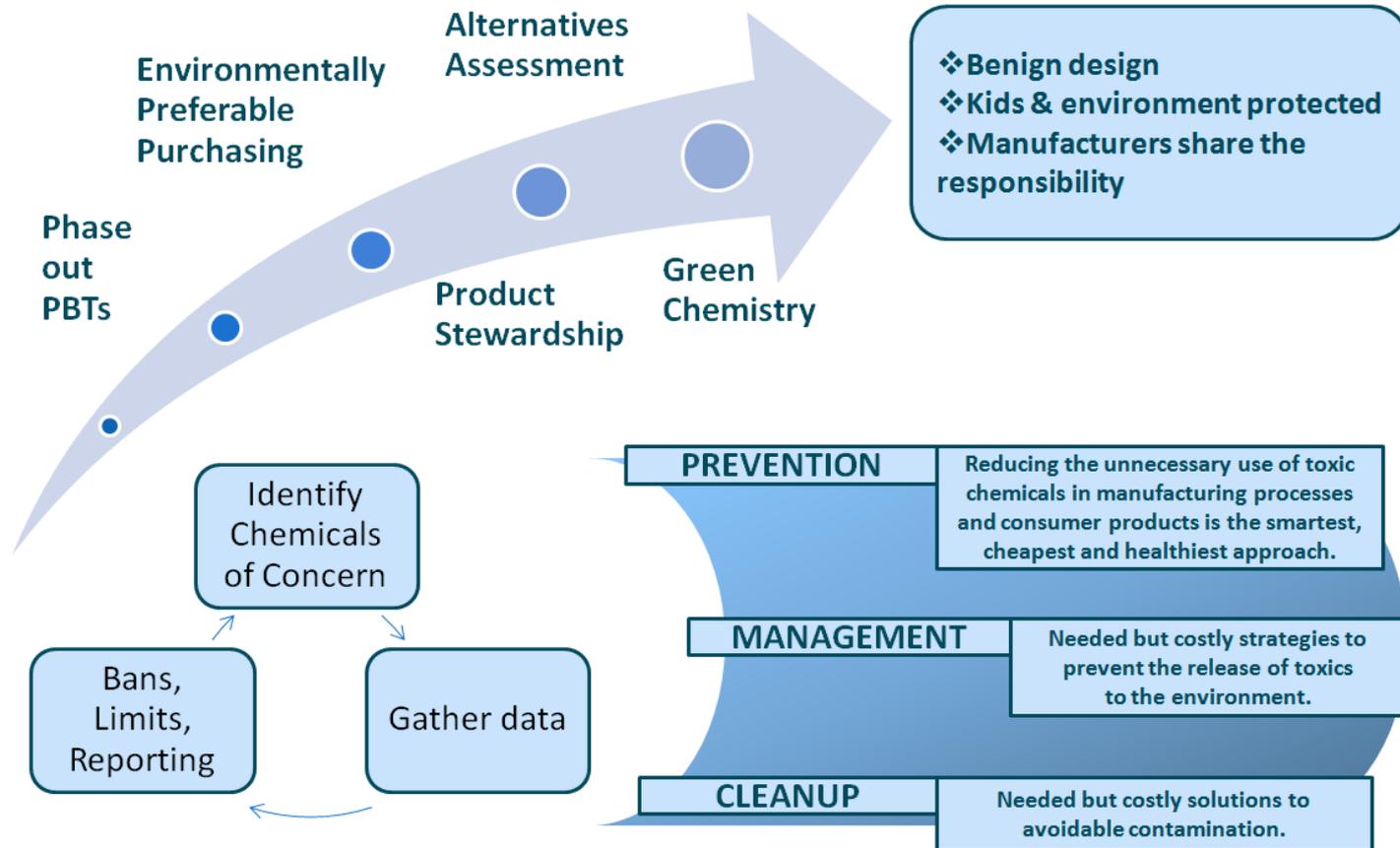


**Ingestion
(stomach or
digestive tract)**

What is Washington State doing.....



WA Toxics Reduction Strategy



Averting toxic exposures and avoiding future costs is the smartest, cheapest, and healthiest approach.

Ecology's Efforts

>>> Bans

PBDEs, including deca-BDE
in certain products

Bisphenol A in children's
bottles/cups, sports bottles

Copper in brake pads, boat
paint

Toxics in packaging

Lead in wheel weights

Coal tar sealants

>>> Data Collection

Children's Safe Product Act
reporting rule

Product testing

Brake pad law

>>> Stakeholder Processes

Chemical Action Plans for
Persistent, Bioaccumulative
Toxics

Alternatives assessment
guidance

Green Chemistry Center

Children's Safe Products Act

- Requires reporting on Chemicals of High Concern to Children (CHCCs) in children's products
- Transparency
- List of 66 chemicals or chemical groups
 - Flame retardants (Deca-BDE, HBCD, chlorinated phosphates, etc.)
 - BPA
 - 8 Phthalates and phthalic anhydride
 - Metals
 - Volatile organics
- Data submitted available on line:
<http://www.ecy.wa.gov/programs/swfa/cspa/search.html>

Product Testing

- Funding provided by Legislature to institute product sampling program
- Assuring compliance with Washington State bans and reporting requirements.
- Tested a wide range of products.
- Constantly sampling more.
- Testing results available on line:
<https://fortress.wa.gov/ecy/ptdbpublicreporting/>

Regrettable Substitution

- Prevent replacing toxic chemical with one of equal, or even higher, toxicity.
- Swap the devil you know for the devil you don't!



Regrettable Substitution Example

- Chlorinated solvents
 - California banned use of many chlorinated solvents
 - Manufacturers replaced chlorinated solvents in products (automotive break cleaners) with hexane
 - Employees started having neurological problems
 - 1960's hexane identified as neurotoxic
 - Replaced with n-propyl bromide
 - N-propyl bromide identified as neurotoxic



Alternatives Assessment

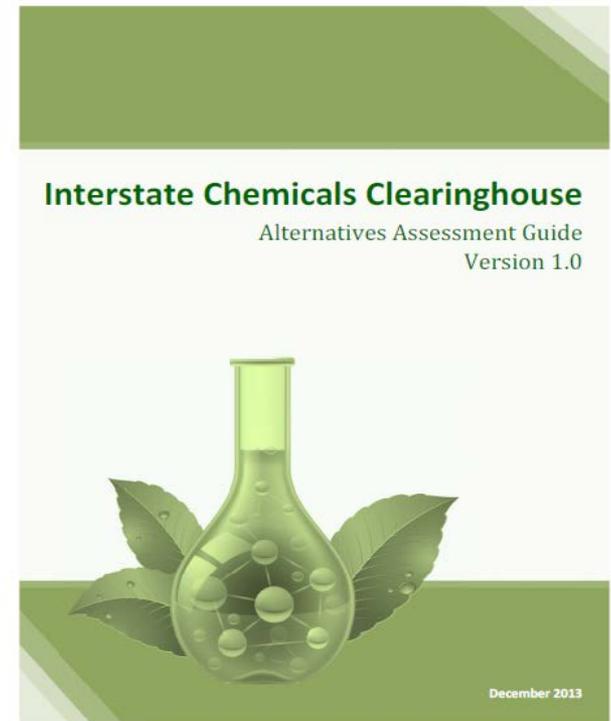
Alternatives assessment (AA): Process for identifying and comparing potential chemical & non-chemical alternatives that can be used as substitutes to replace chemicals or technologies of high concern.

AA Guidance addresses these issues from product perspective although other uses are possible.



IC2 AA Guide Development

- Eight IC2 member states (CA, CT, MA, MI, MN, NY, OR, WA) worked together for over two years
- Conducted extensive and detailed stakeholder process
- Guide released Jan. 8th, 2014



Alternatives Assessment

Several organizations are working on or recently completed AA guidance.

- National Academy of Sciences released an AA framework report on October 8th, 2014.
- California DTSC working on AA guidance for compliance with their Safer Product legislation.
- International Electronics Manufacturing Initiative working on guidance for electronics industry.

Green Chemistry

“The design of chemical products and processes that reduce or eliminate the use and generation of hazardous substances”

- Obtained EPA seed funding to create Green Chemistry center here in Northwest



**Northwest
Green Chemistry**

*Anastas, P.T.; Warner, J.C., Green Chemistry: Theory and Practice, Oxford University Press, 1998.

The book cover features a dark background with a blurred image of laboratory glassware, including a round-bottom flask and beakers. A small, glowing globe is positioned in the upper right corner of the cover.

**GREEN
CHEMISTRY**

THEORY AND PRACTICE

Paul T. Anastas
John C. Warner

WA Governor's Toxics Reduction Package

- Elements of Governor's proposed toxics reduction effort are outlined in July 9, 2014 clean water policy brief
- Updating the water quality rule alone does not get at major sources of toxic chemicals
- Legislative policy proposal
 - WA Dept. of Ecology (Ecology) authority to require alternatives assessments and phase out chemicals by rule
- Toxics reduction work under existing authority
 - Support policy proposal, increase local source control efforts, partner with local governments and business

How can you get involved?



What can I do?

- Stay informed
 - Participate in support activities (several groups pursuing development & implementation of Green Chemistry & Alternatives Assessment)
- Ask questions about chemical use
 - Can I do this job without using any chemicals?
 - Do I need to use this chemical?
 - Are there safer alternatives?

What can I do?

- Request chemical data from manufacturers
 - When someone makes a claim about ‘safe’ or ‘green’, ask for proof!
 - What toxicity data is available on this chemical? (Companies have to provide data if sold in EU)
 - Make data a requirement for chemical purchase or use.
- Learn more about alternatives assessment
 - Attend training
 - Evaluate hazards of chemicals you are using

Alex Stone

Washington State Department of Ecology

Alex.Stone@ecy.wa.gov; (360) 407-6758

Questions?

Comments?

