



12TH CANADIAN POLLUTION PREVENTION ROUNDTABLE

June 10-12, 2008
Edmonton, Alberta

Crowne Plaza- Chateau Lacombe





**“The End of the Age of Innocence – U.S.
Chemicals Policy”**

Ken Zarker

National Pollution Prevention Roundtable (U.S.A.)



NATIONAL
POLLUTION PREVENTION ROUNDTABLE

***The End of the Age of Innocence:
U.S. Chemicals Policy***

***States leadership on sustainable
chemicals management***

Ken Zarker, Co-chair

P2 Policy and Integration Committee

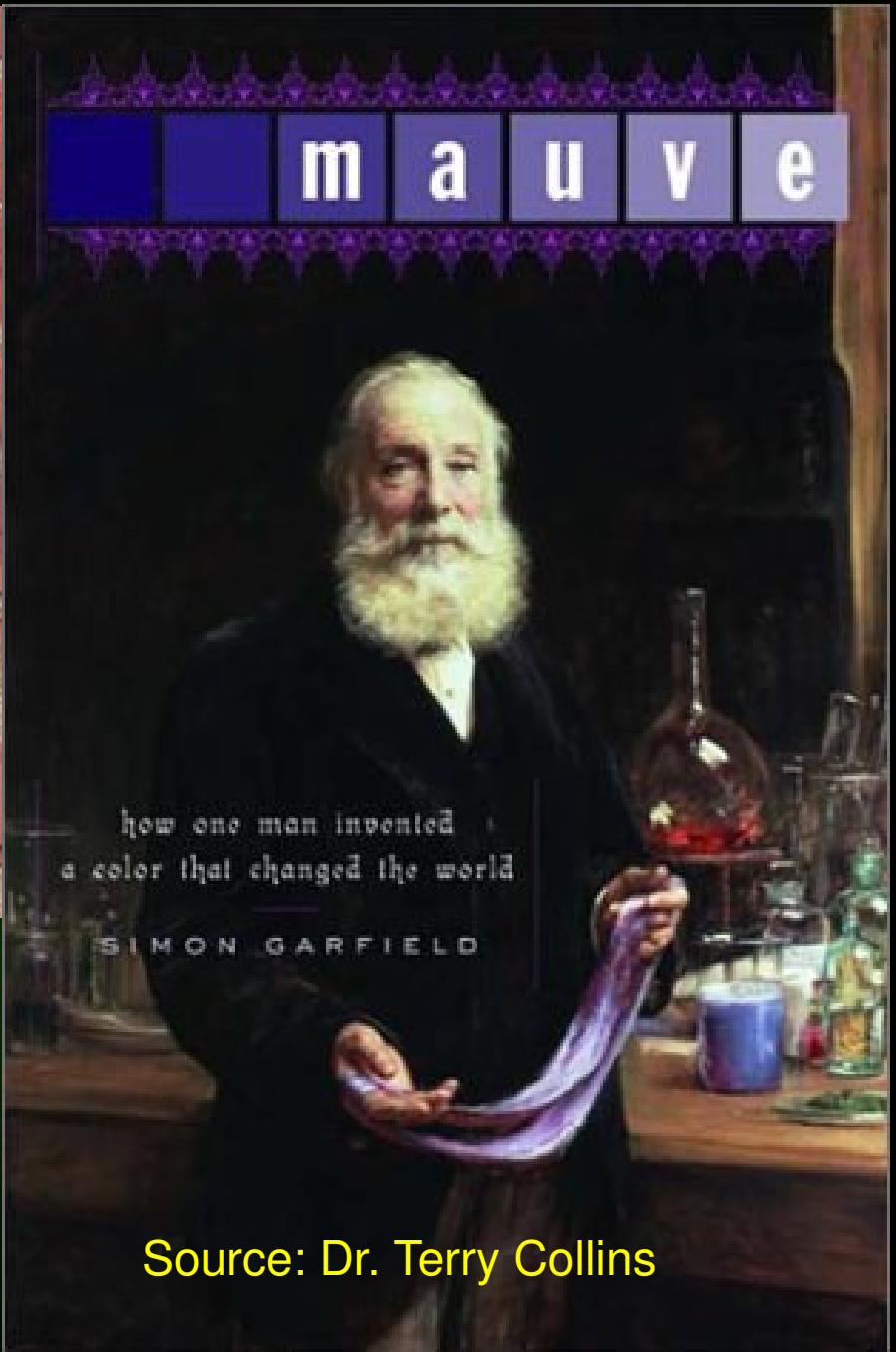
2008 Canadian Pollution Prevention Roundtable

June 11, 2008

Edmonton, Alberta

Sir William
Henry PERKIN, F.R.S.
discovered the first aniline dyestuff,
March 1856,
• while working in his home laboratory •
on this site and went on to
found science-based industry.
1838-1907
STEPNEY HISTORICAL TRUST

ca. 80,000
chemicals in
commerce



Source: Dr. Terry Collins

- Total daily California sales of chemical products alone: 644 million pounds (2,700 tankers)
- Total daily U.S. chemical production and importation: 42 billion pounds (623,000 tankers)



Source: TSCA IUR and CA Air Resources Board

287 synthetic chemicals & pollutants detected in umbilical cord blood

BodyBurden The Pollution in Newborns

A benchmark investigation of industrial chemicals, pollutants, and pesticides in human umbilical cord blood

JANE HOULIHAN
TIMOTHY KROPP, PH.D.
RICHARD WILES
SIÂN GRAY
CHRIS CAMPBELL

 ENVIRONMENTAL WORKING GROUP

JULY 14, 2005

Chemicals and pollutants detected in human umbilical cord blood

- Mercury (Hg)** - tested for 1, found 1

 Polluted from coal-fired power plants, mercury-containing products, and certain industrial processes. Accumulates in babies. Harms brain development and function.
- Polycyclic aromatic hydrocarbons (PAHs)** - tested for 18, found 9

 Pollutants from burning gasoline and garbage. Linked to cancer. Accumulates in food chain.
- Polybrominated dibenzodioxins and furans (PBDD/F)** - tested for 12, found 7

 Contaminants in brominated flame retardants. Pollutants and byproducts from plastic production and incineration. Accumulate in food chain. Toxic to developing endocrine (hormone) system.
- Perfluorinated chemicals (PFCs)** - tested for 12, found 9

 Active ingredients or breakdown products of Teflon, Scotchgard, fabric and carpet protectors, food wrap coatings. Global contaminants. Accumulate in the environment and the food chain. Linked to cancer, birth defects, and more.
- Polychlorinated dibenzodioxins and furans (PCDD/F)** - tested for 17, found 11

 Pollutants, by-products of PVC production, industrial bleaching, and incineration. Cause cancer in animals. Persist for decades in the environment. Very toxic to developing endocrine (hormone) system.
- Organochlorine pesticides (OCs)** - tested for 28, found 26

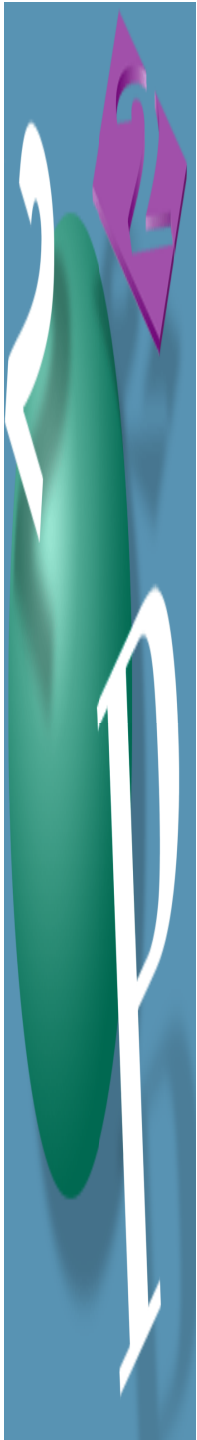
 DDT, dieldrin and other pesticides. Largely banned in the U.S. Persist for decades in the environment. Accumulate up the food chain, to men. Cause cancer and numerous reproductive effects.
- Polybrominated diphenyl ethers (PBDEs)** - tested for 44, found 32

 Flame retardant in furniture foam, computers, and televisions. Accumulates in the food chain and human tissue. Adversely affect brain development and the thyroid.
- Polychlorinated Naphthalenes (PCNs)** - tested for 70, found 50

 Wood preservatives, varnishes, machine lubricating oils, waste incineration. Common PCB contaminants. Contaminates the food chain. Cause liver and kidney damage.
- Polychlorinated biphenyls (PCBs)** - tested for 289, found 147

 Industrial insulators and lubricants. Banned in the U.S. in 1976. Persist for decades in the environment. Accumulate up the food chain, to men. Cause cancer and nervous system problems.

Screen Chemical analysis of 70 umbilical cord blood samples were conducted by ARS Analytical Services (2 pages, GC) and Rute Research Lab. (61 ml page, HPLC).



Third National Report on Human Exposure to Environmental Chemicals

2005



Executive Summary





Why is our concern for kids increasing?

- High rates of developmentally related diseases
 - Children 6–17 years of age: learning disabilities (11.5%), ADHD (8.8%), behavioral problems (6.3%)
 - Preschoolers: speech problems (5.8%), developmental delay (3.2%)
 - One in 200 children with autism
 - 41% of parents had concerns about learning difficulties and 36% about depression or anxiety
- Costs in US estimated at \$81.5 - 167 billion/yr
 - Estimate attributed to environment - \$4.6 to 18.4 billion/yr

Ref: Blanchard et al. Pediatrics 2006;117;1202-1212 (National Survey of Children's Health)

Ref: Muir and Zegarac. EHP December 2001.

Ref: Landrigan et al. EHP July 2002.



Transformational Change

We cannot wait 70 years to deal with the endocrine disruptors as we did with lead, and we can't afford to deal with them one by one — they are simply too hazardous!

*Dr. Terry Collins
Carnegie-Mellon University*

Emerging States Chemicals Policy Framework



- Ban toxic chemicals (flame retardants/phthalates)
- Move away from “chemical by chemical” approach.
- Proactive to address global chemicals policy.
- Collaboration & focus on high priority chemicals.
- Safer Chemical Alternatives.
- Green Chemistry Innovation & Economic Opportunity

The Pillars of REACH

European
Chemicals Agency (ECHA)



Industry (responsibility for chemicals safety)

Authorities



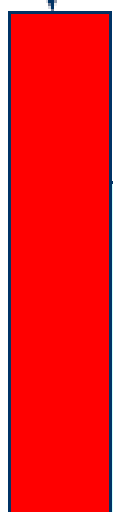
Seattle, April 7, 2008

6



Registration Timeline

Pre-registration



Registration

> 1000 t/y
CMRs (>1 t)
Very aquatic toxic
(> 100 t)

100 -
1000 t/y

1- 100 t/y

1 June 2008/
1 December 2008

2010

2013

2018

13

Seattle, April 7, 2008



Latest guidance documents

- RIP 3.1: Preparing the registration dossier (Only Representative) - final, **update published Feb. 08**
- RIP 3.2: Preparing the CSR - final, adoption March 08
- RIP 3.3: Information requirements – final, adoption March 08
- RIP 3.4: Guidance on data sharing – final, published Sep. 07
- RIP 3.5: Guidance for downstream users – final, published Jan. 08
- RIP 3.6: Guidance on C&L under GHS (to be finalized by March 09)
- RIP 3.7: Guidance on applications for authorization (adoption June 08)
- RIP 3.8: Requirements for articles - final, **awaiting publication**
- RIP 3.9: Guidance on socio-eco. analysis – final, adoption June 08
- RIP 3.10: Guidance on checking substance ID – final, June 07

ECHA website



http://reach.jrc.it/guidance_en.htm

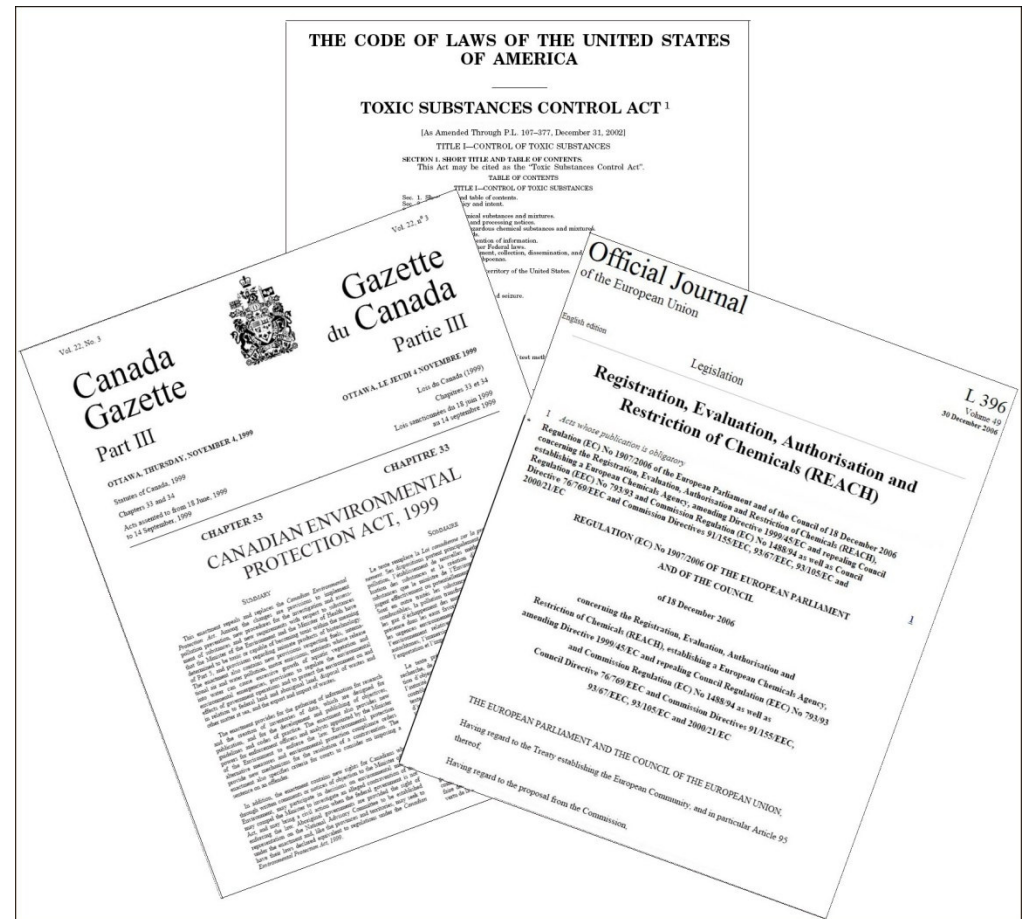
Not That Innocent

A COMPARATIVE ANALYSIS OF CANADIAN, EUROPEAN UNION AND UNITED STATES POLICIES ON INDUSTRIAL CHEMICALS

RICHARD A. DENISON, PH.D.
Environmental Defense USA, in cooperation with Pollution Probe

April 2007

Report available at www.environmentaldefense.org/chempolicyreport





Toxic Substance Control Act

- “Chemical of concern” = “unreasonable risk”
- Burden on government to evaluate:
 - health & environmental effects and exposure,
 - benefits of the chemical,
 - the availability of substitutes, and
 - economic costs, benefits of regulation
- Must also show that:
 - proposed control is least onerous
 - no other statute could address the concern



TSCA

- No statutory and few regulatory criteria; usually presented as general guidelines to be applied on case-by-case basis
- Little transparency or clarity as to how USEPA decides which chemicals are of concern or when risk assessment/management is needed
- 5 existing chemicals regulated in 30 yrs



Canadian Environmental Protection Act (CEPA)

Two key distinctions from TSCA:

- Determining whether a chemical is CEPA-toxic, and hence requires regulatory or other risk management action, is separate from determining how risk should be managed.
- CEPA-toxic encompasses the potential to cause adverse effects or constitute a danger, as well as actually doing so.

CEPA

Core conceptual criterion is “CEPA-toxic”:

- “A substance is toxic if it is entering or may enter the environment in a quantity or concentration or under conditions that:
 - (a) have or may have an immediate or long-term harmful effect on the environment or its biological diversity;
 - (b) constitute or may constitute a danger to the environment on which life depends; or
 - (c) constitute or may constitute a danger in Canada to human life or health.”



CEPA

- DSL* Categorization applied to 23,000 existing unassessed chemicals
 - Specific criteria for:
 - Persistence
 - Bioaccumulation
 - Inherent toxicity (iT_{human} and iT_{eco})
 - Exposure potential
 - 4,300 chemicals found to meet criteria
- * DSL = Domestic Substances List (counterpart to TSCA Inventory)



Key structural constraints in US chemicals policy

Information development:

- Limited tracking of chemicals in commerce
- Upfront data not required for new chemicals
- High hurdle to require chemical testing
- Reliance on “old” toxicology

Information sharing:

- Overly broad allowances for CBI claims
- Few requirements to make information public



Key structural constraints in US chemicals policy

Acting on Information:

- Virtually no criteria to identify chemicals warranting further action; case-by-case
- No mandate to assess existing chemicals
- Only a single, time- and data-constrained assessment opportunity for new chemicals
- Near-impossible hurdle to regulate existing chemicals

What does state chemicals policy reform look like?



Pollution is waste, and waste leads to shortages tomorrow...

Dr. Joseph Ling



History of state level chemicals policy

- Hazard Communication/right to know
- Pollution Prevention
- State level restrictions
- Packaging/labeling
- Overarching strategies
- Local, State and regional
 - Great Lakes
 - New England Governors



States and localities contemplating chemicals policy reforms

- ME, MI, CA, WA, MA, NY, OR as well as local – San Francisco, Seattle, etc.
- Policy initiatives differ by state
 - Pollution Prevention/Toxics Use Reduction
 - 40 states have enacted some form of pollution prevention legislation
 - Multiple Chemicals
 - PBT strategies (including state and localities, WA, OR), ME Executive Order promoting safe chemicals in consumer products and services
 - Proposed—MA Safe Alternatives Bill, NY executive order on PBTs



States and localities contemplating chemicals policy reforms

- Single Chemical Restrictions
 - PBDEs—13 enacted, 12 proposed
 - Lead (in products)—4 enacted, 10 proposed
 - Phthalates/BPA ("toxic toys")—1 enacted (San Francisco), 9 proposed (IL, CA, NY, MA, OR, MD, ME, MN, MI)
 - Mercury (in products)—many



State level chemicals initiatives

- Regulation of Product Categories
 - Safe Cosmetics
 - Safe Cleaning Products
 - Toxics in Packaging
- Biomonitoring/Environmental Health Tracking, Surveillance
- Data Collection/Right-to-Know
 - CA Proposition 65,
 - HPV chemical data collection (CA AB 578),
 - Prioritization



State level chemicals initiatives

- Alternatives Assessment
- Green Chemistry/Design for Environment
- Product Stewardship
 - Electronic Waste Recycling
- Environmentally Preferable Purchasing/Procurement
- Precautionary Principle
 - Enacted—San Francisco (city decisions only)



New Policy Initiatives – ME & WA

- Prioritize chemicals of concern with initial list
- Reporting by manufacturers of priority chemicals in children's products
- Authority to prohibit products containing chemicals of high concern with focus on safer alternatives (alternatives assessment assumptions)



New Policy Initiatives – ME and WA

- Prioritize chemicals of concern with initial list
- Reporting by manufacturers of priority chemicals in children's products
- Authority to prohibit products containing chemicals of high concern with focus on safer alternatives (alternatives assessment assumptions)
- Authorization to join Interstate Clearinghouse
- Establishment of Stakeholder Board

“I do not believe that addressing this type of concern in the legislature on a chemical by chemical, product by product basis is the best or most effective way to make chemical policy in California.”

Governor Schwarzenegger’s Signing Statement for Assembly Bill 1108 (phthalates).

Cal/EPA Green Chemistry Initiative:

<http://www.calepa.ca.gov/>

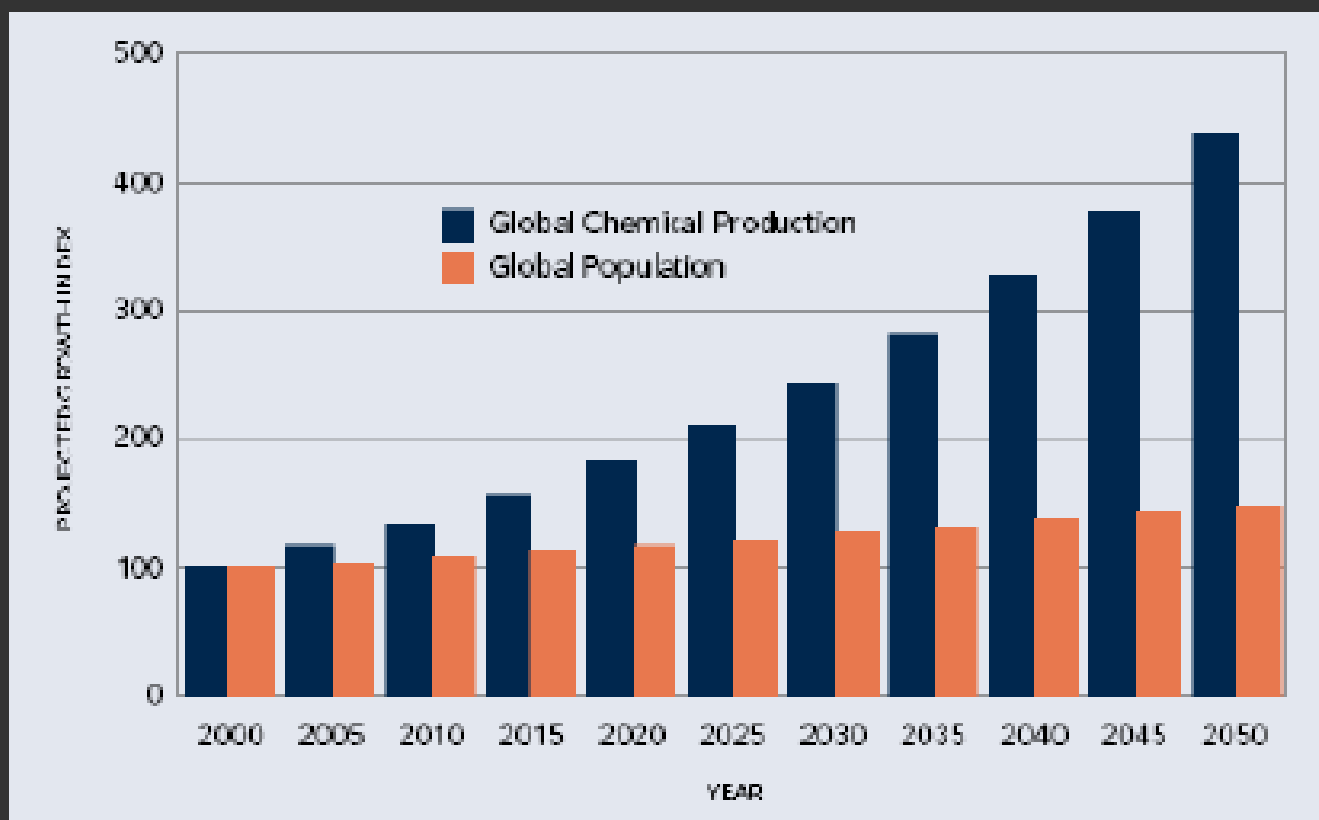


Closing the Data Gap

Increased Transparency:

Producers will generate, disclose & distribute hazard information for downstream users, consumers, and public agencies.

Global chemical production: 3% growth per year Doubling every 25 years





What's the news about REACH?

- ***“No data, no market”:***
 - Addresses “grandfathered” legacy chemicals.
 - Requires registration and specific data as condition to enter or remain on the market.
- ***Burden shifting to industry:***
 - develop risk information,
 - assess it for indication of significant risk, and
 - determine risk mgmt needs and adequacy.

Government plays an oversight role.



What's the news about REACH?

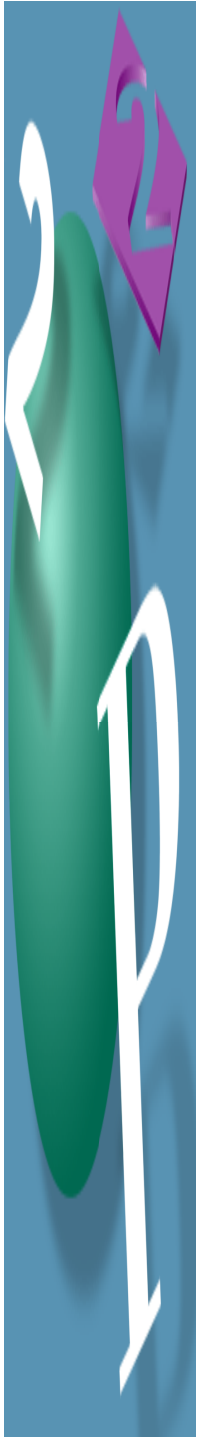
- ***Information flow in chemical supply chains:***
REACH compels two-way flow
 - suppliers > customers: info about risks of their chemicals and needed risk mgmt.
 - downstream users > suppliers: use info
- ***Authorization for use of substances of very high concern (SVHCs):***
 - Applicant bears burden to show: risks are “adequately controlled” OR benefits outweigh risks and no alternatives exist.



What are States thinking about?

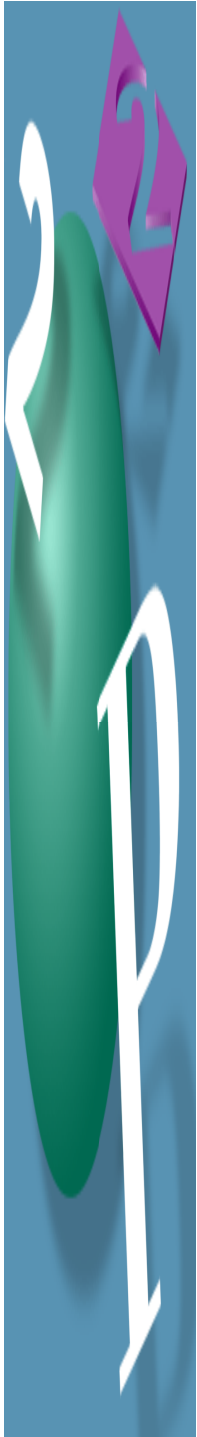
- What categories of toxicity information are needed to assess chemicals of concern?
- What information will be publicly available, when, and for which chemicals, as a result of REACH?
- What additional categories of information could be obtained through government to government agreements?

How can states best organize & collaborate on data?



Interstate Chemicals Clearinghouse (IC2) Conceptual Model (Geiser, Tickner, & Rossi)

- Collaborate on chemicals of concern.
- Forum for states implementation, including policy reform.
- Data base of chemical profiles (hazard and exposure data on individual chemicals).



Interstate Chemicals Clearinghouse (IC2) Conceptual Model (Geiser, Tickner, & Rossi)

- Information on high hazard chemicals.
- Information on products and/or product groups that contain high hazard chemicals.
- Clearinghouse for alternatives assessments and a database of safer substitutes for chemicals of concern.


eChemPortal: the Global Portal to Information on Chemical Substances



eChemPortal

www.oecd.org/ehs/echemportal/

- Public access to information on properties and effects of chemicals prepared for international, national and regional chemical review programs:
 - Physical chemical properties
 - Environmental fate and behaviour
 - Ecotoxicity
 - Toxicity



Participating Databases at Start-up of the First Phase of eChemPortal



European Chemical Substances Information System (ESIS)

- Maintained by the European Commission
- ESIS is an IT system which provides information on chemicals related to:
 - EINECS (European Inventory of Existing Commercial Substances)
 - ELINCS (European List of Notified Chemical Substances)
 - List of EU HPVs (High Production Volume chemicals) and LPVs (Low Production Volume chemicals) including the EU Producers & Importers
 - IUCLID chemical datasets for ca. 2,500 HPVs (data on toxicity, ecotoxicity and classification and labeling)
 - EU Priority substance risk assessment reports
 - Classification and Labeling



High Production Volume Information System (HPVIS)

- Maintained by the United States Environmental Protection Agency (USEPA)
- Released in Spring, 2006
- Public access to technical health and environmental effects data on chemicals and categories of chemicals voluntarily submitted through the USEPA HPV Challenge Program
- Users search for robust summary information, test plans, and new data on HPV chemicals as they are developed.



Chemical Safety Information from Intergovernmental Organizations (INCHEM)

- Maintained by the International Programme for Chemical Safety (IPCS) in collaboration with the Canadian Centre for Occupational Health and Safety (CCOHS)
- Public access to thousands of searchable full-text documents on chemical risks and the sound management of chemicals



Chemical Risk Information Platform (CHRIP)

- Maintained by National Institute of Technology and Evaluation (NITE), Japan
- Information on Biodegradation and Bioconcentration, test conditions, and conclusions
- Chemicals assessed under the Chemical Substances Control Law (Japan)
- Access to other related information, e.g. phys-chem properties, aquatic toxicity, mammalian toxicity.



OECD High Production Volume (HPV) Database

- Maintained by the OECD Secretariat in collaboration with OECD member countries
- Provides information on the status of all HPV chemicals within the process of investigation in the OECD HPV Chemicals Programme
- Provides access to published OECD Initial Assessment Reports and Screening Information Data Sets (SIDS)



To be added in 2008: REACH-IT dissemination site

- Data submitted under REACH (Registration, Evaluation and Authorisation of Chemicals) – the new EU policy on chemicals
- Maintained by the European Chemicals Agency



The Global Portal to Information on Chemical Substances



Home
 General Information on
 the Portal
 Participating Databases
 Roles and
 Responsibilities
 Extension of the Portal
 What's new
 Contact Us
 Disclaimer

Home

Home

eChemPortal offers free public access to information on properties of chemicals:

- Physical chemical properties
- Environmental Fate and Behaviour
- Ecotoxicity
- Toxicity

eChemPortal allows for simultaneous search of multiple databases and provides clearly described sources and quality of data. eChemPortal gives access to data submitted to government chemical review programmes at national, regional, and international levels.

Users can search [multiple sources of information](#) simultaneously using a chemical substance name or [CAS Registry Number](#) and obtain direct links to the retrieved data within each site. For an efficient use of the search engine, [tips and tricks](#) are provided under General Information on the Portal.

To ensure the portal meets your needs, we ask that you take a few minutes to complete a [web survey](#) to provide your opinions on how best to improve the site.

by CAS Number:

or

by Chemical Name:

in

Search in:



Example: 108-88-3 or 108883. Do not search on partial CAS Numbers.

To search for partial names use an asterisk (*). Example - use gluta* to find Glutamic acid. Use *chloro* to find dichlorobenzene.

Select one or all participating databases.

To access data for a specific substance, search "by CAS number" is recommended. Chemical names, synonyms and trade names often can be the same for different substances with different CAS numbers.

[Information on participating databases](#)

[Go to top](#)

[Home](#)
[General Information on the Portal](#)
[Participating Databases](#)
[Roles and Responsibilities](#)
[Extension of the Portal](#)
[What's new](#)
[Contact Us](#)
[Disclaimer](#)

by CAS Number:

or

by Chemical Name:

in

Search in:

[Home](#) > [Find Document links](#)[Formaldehyde CAS 50-00-0](#)**Found: 6**

Click on the name of the database to access data.

CHRIP	Description of database
ESIS	Description of database
INCHEM	Description of database
OECD HPV	Description of database
SIDS IUCLID	Description of database
SIDS UNEP	Description of database

[Go to top](#)

Contact Information

**Ken Zarker, P2 Section Manager
Hazardous Waste and Toxics Reduction
Washington State Department of Ecology
P.O. Box 47600
Olympia, Washington 98501-7600**

Ph: 360-407-6724

Em: kzar461@ecy.wa.gov