Taking Pollution Out of Production

Why we need to do it and how we can put people back to work to get it done

Charlotte Brody, Associate Director for Health Initiatives
BlueGreen Alliance

Putting Breast Cancer Out of Work

Why we need to do it and how we can put people back to work to get it done

When workers are protected so is the environment

3

Safer, healthier, better protected workers help create safer and healthier products

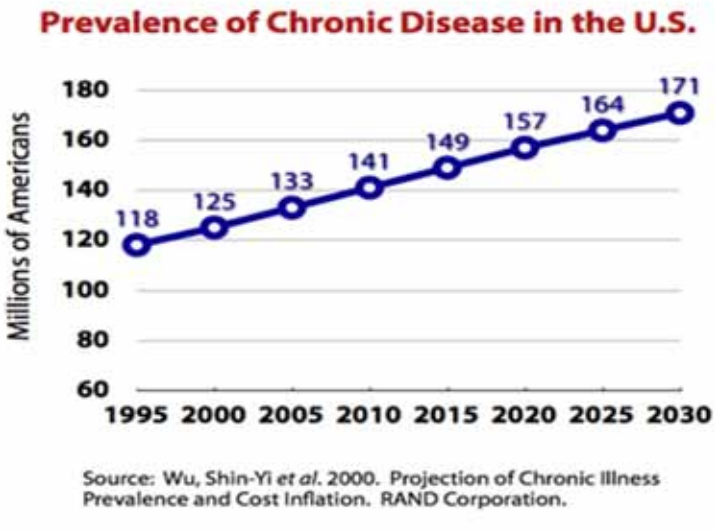
4

The right to know is fundamental 5

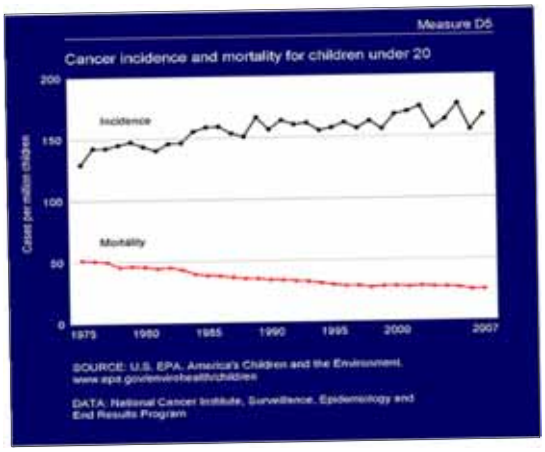
6

Taking Pollution Out of Production

Why we need to do this: We're getting sicker and part of the reason is chemicals

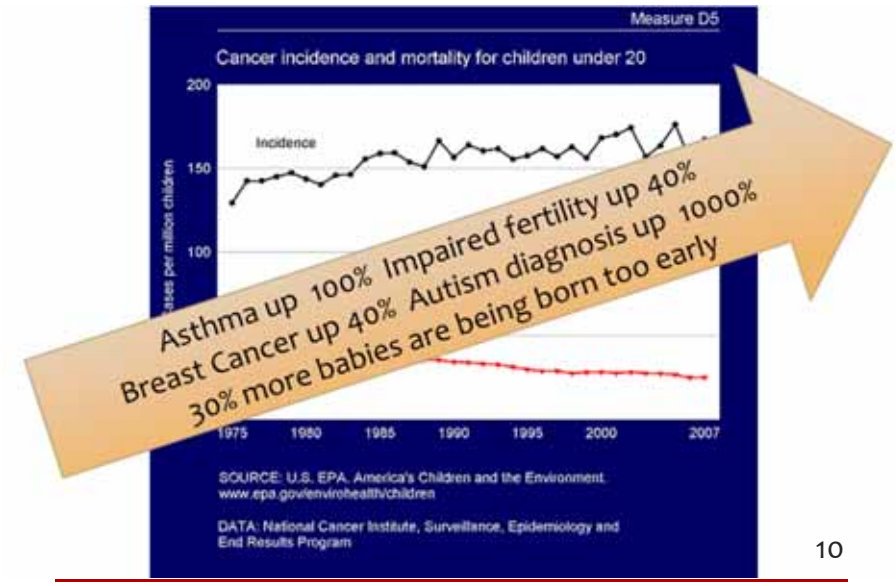


8



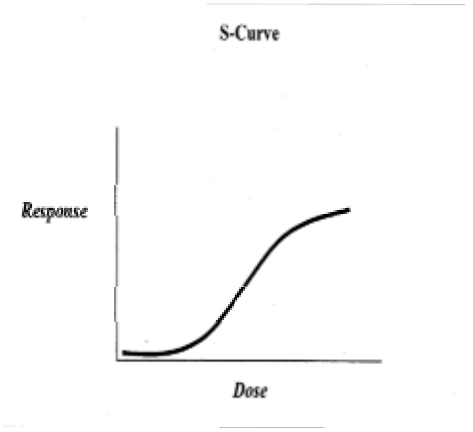
More children are *getting* cancer but fewer children are *dying* from cancer

Cancer Incidence and Mortality in Children



10

The dose makes the poison



11

Why do we think this has anything to do with chemicals? Because wildlife is getting sick too

DBCP: Infertility

In the California workers who produced it and the Nicaraguan farmworkers who used it

Jury Awards Millions to Farmers Sterilized by Pesticides

By Brandon Keim November 06, 2007 | 11:02:12 AM Categories: Agriculture, Health

A California jury yesterday awarded $3.3 million to six Nicaraguan farm workers sterilized by pesticides made by Dow Chemical and used at Dole's banana plantations.

The plaintiffs alleged that Dow and Amvac, another chemical company, hid information about the dangers of dibromo chloropropane, or DBCP: high exposures left lab animals organ-damaged, sterile and prone to birth defects. The Occupational Health and Safety Administration sets DBCP's occupational exposure limit at one part per billion per workday; during the 1970's and 1980's, the plaintiffs reportedly inhaled DBCP vapors and wore clothing soaked by water dropping from DBCP-treated trees.

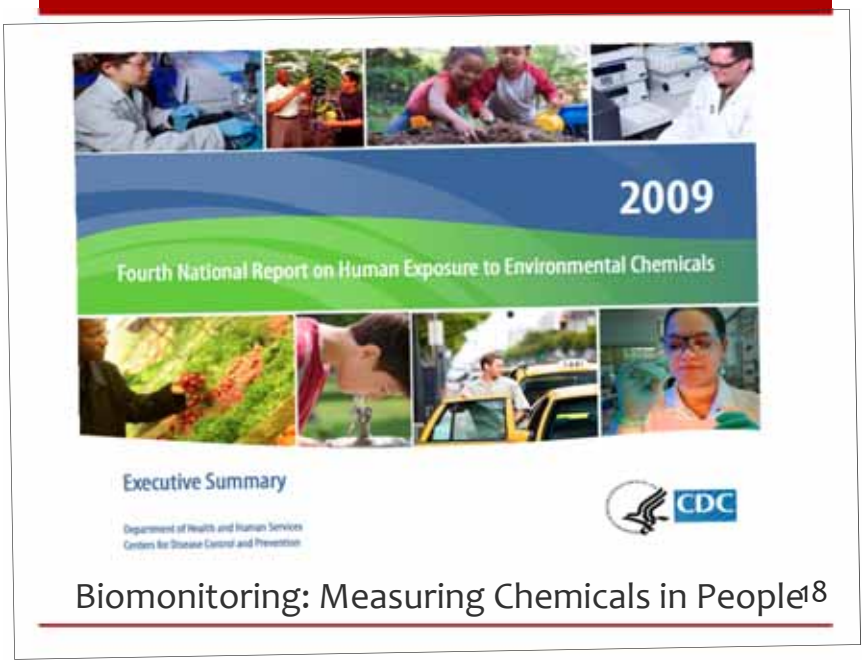
Hodgkin's Disease, non Hodgkin's lymphoma, Prostate Cancer, Chronic B-cell Leukemia, Respiratory Cancers, Type 2 Diabetes, Ischemic Heart Disease, Parkinson's Disease

15

Breast Cancer and DDT

16

Why Timing Can Matter More than Dose 17

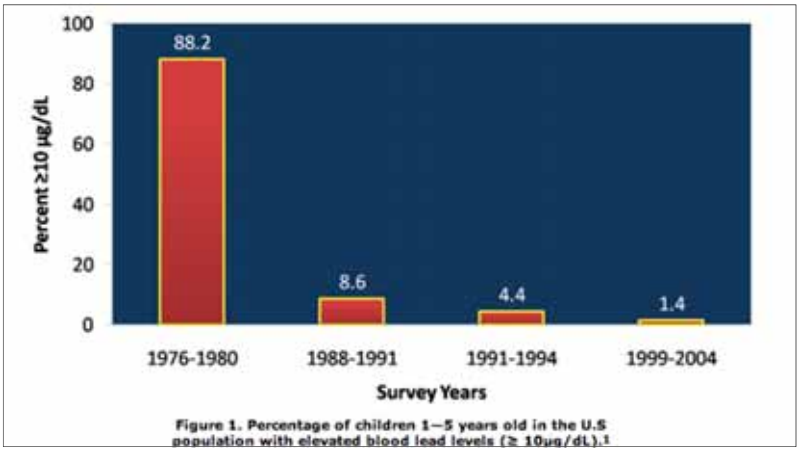


Biomonitoring: Measuring Chemicals in People 18

CDC reports that Bisphenol A (BPA) is in more than 90% of the American people

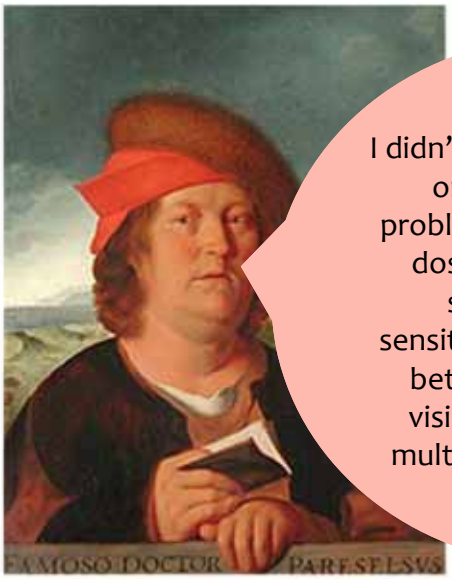
and Perchlorate is in all of us

19



From the CDC's 2009 Fourth National Report on Human Exposure to Environmental Chemicals

20



I didn't know that the dose is only one part of the problem: there are also low dose effects, mixtures, synergies, timing, sensitivities and long delays between exposure and visible effects including multigenerational effects

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Taking Pollution Out of Production

New science should mean new laws and policies

But if Congress won't act, we need to do it ourselves

Our occupational safety and health and chemical management laws lost in the 1970s

23

Current OSHA Penalties	Are Too Low
Average serious OSHA violation	$ 965
Average penalty for violating COBRA health insurance law	$ 33,917
Maximum penalty for a serious OSHA violation	$ 7,000
Maximum penalty for violating the South Pacific Tuna Act	$ 350,000

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The Toxic Substances Control Act (TSCA)

80,000 different chemicals have been produced and used since TSCA became law in 1976.

62,000 of these chemicals were grandfathered in when TSCA became law with no requirement that they be tested and shown to be safe.

In the **36** years that TSCA has been the federal law on chemicals, EPA has required testing on just **200** chemicals.

When EPA was prevented from using TSCA to restrict asbestos **21** years ago, it gave up trying.

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The New York Times February 22, 2011

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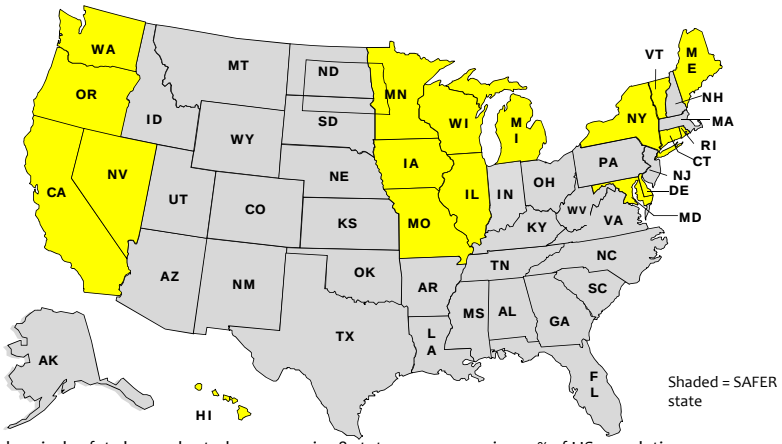
Left, Robert Caplin For The New York Times; Dave Williams/Wichita Eagle, via Associated Press

David H. Koch, left, and Charles G. Koch have long used their wallets to promote fiscal conservatism and combat regulation.

Toxics Legislation Passed 2003 – 2011



- 81 chemical safety laws adopted 2003-2011 in 18 states encompassing 41% of US population
  - * Eleven Republican and Seventeen Democratic Governors signed bills
  - * Bills passed with support from over 3/4 of Republican legislators (76%), and nearly all Democrats (99%)

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BizNGO Guiding Principles for Chemicals Policy

Endorsers include …

- Brooks Sports
- Catholic Healthcare West
- Construction Specialties, Inc.
- Health Care Without Harm
- Hewlett-Packard Company
- Hospira, Inc.
- Kaiser Permanente
- Method
- Novation
- Perkins+Will
- Practice Greenhealth
- Premier, Inc.
- Seventh Generation
- Staples, Inc.
- Whole Foods Market, Inc.

1. Know and disclose product chemistry
2. Assess and avoid hazards
3. Commit to continuous improvement
4. Support public policies and industry standards

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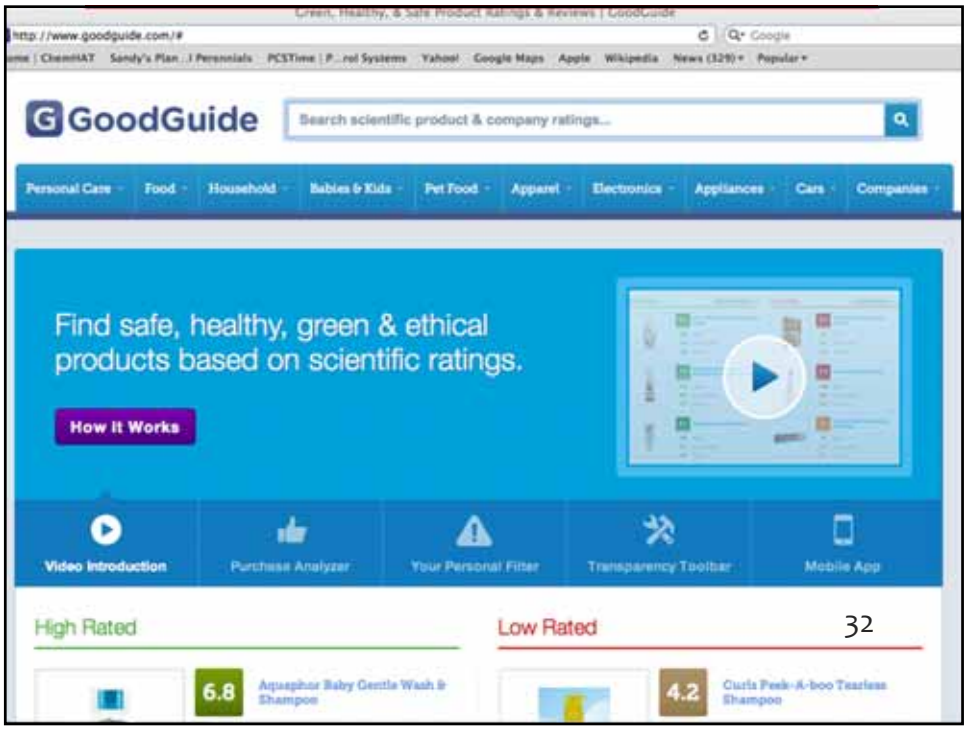
BizNGO

30


EWG's Skin Deep® Cosmetics Database
Want a free Cosmetics Guide?
Just make a $5 donation today to EWG!
Donate now!
Home Sun Makeup Skin Care Hair Eye Care Nails Fragrance Babies & Moms Oral Care Men's FAQ
EWG's Skin Deep® Cosmetics Database
Search more than 69,000 products...
GO
Essential Tips and Facts
1 Top tips for safer products
2 Frequently asked questions (FAQs)
3 What's new in Skin Deep®?
4 Myths on cosmetic safety
5 User's guide to Skin Deep®
Hair Care / Hair-loss Treatment
product
Product type(s)
Score
Data: Fair
Data: Limited

31


GoodGuide
Search scientific product & company ratings...
Personal Care Food Household Babies & Kids Pet Food Apparel Electronics Appliances Cars Companies
Find safe, healthy, green & ethical products based on scientific ratings.
How it Works
Video Introduction
Purchase Analyzer
Your Personal Filter
Transparency Toolbar
Mobile App
High Rated
Low Rated
6.8
Aquaphor Baby Gentle Wash & Shampoo
4.2
Curls Peek-A-boo Tearless Shampoo

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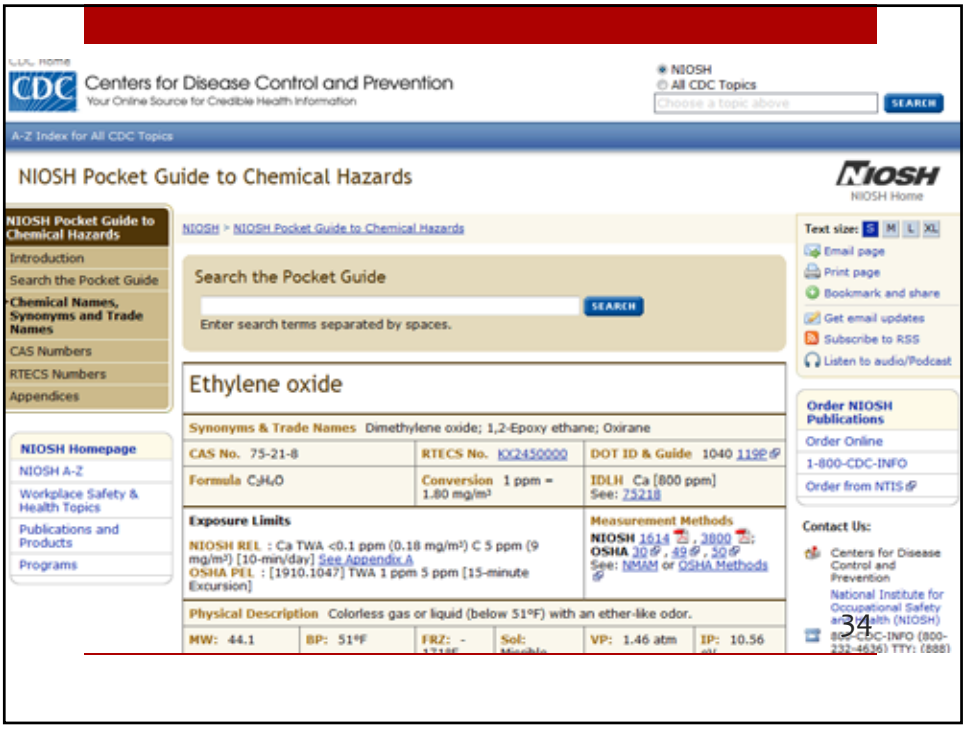
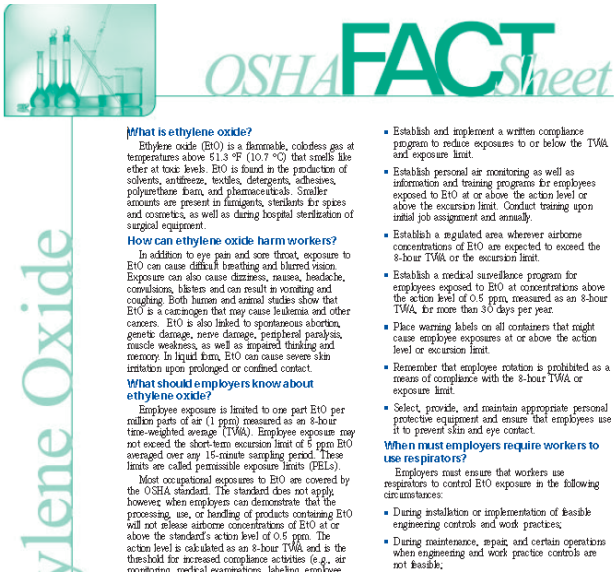
Taking Pollution Out of Production

ChemHAT

How it Got Here: How do workers find chemical information?





OSHA FACT Sheet

ylene Oxide

What is ethylene oxide?

Ethylene oxide (EtO) is a flammable, colorless gas at temperatures above 51.3 °F (10.7 °C) that smells like ether at toxic levels. EtO is found in the production of solvents, antifreeze, textiles, detergents, adhesives, polyurethane foam, and pharmaceuticals. Smaller amounts are present in fumigants, sterilants for spices and cosmetics, as well as during hospital sterilization of surgical equipment.

How can ethylene oxide harm workers?

In addition to eye pain and sore throat, exposure to EtO can cause difficult breathing and blurred vision. Exposure can also cause dizziness, nausea, headache, convulsions, blisters and can result in vomiting and coughing. Both human and animal studies show that EtO is a carcinogen that may cause leukemia and other cancers. EtO is also linked to spontaneous abortion, genetic damage, nerve damage, peripheral paralysis, muscle weakness, as well as impaired thinking and memory. In liquid form, EtO can cause severe skin irritation upon prolonged or confined contact.

What should employers know about ethylene oxide?

Employee exposure is limited to one part EtO per million parts of air (1 ppm) measured as an 8-hour time-weighted average (TWA). Employee exposure may not exceed the short-term excursion limit of 5 ppm EtO averaged over any 15-minute sampling period. These limits are called permissible exposure limits (PELs).

Most occupational exposures to EtO are covered by the OSHA standard. The standard does not apply, however, when employers can demonstrate that the processing, use, or handling of products containing EtO will not release airborne concentrations of EtO at or above the standard's action level of 0.5 ppm. The action level is calculated as an 8-hour TWA and is the threshold for increased compliance activities (e.g., air monitoring, medical examinations, labeling, employee

- Establish and implement a written compliance program to reduce exposures to or below the TWA and exposure limit.
- Establish personal air monitoring as well as information and training programs for employees exposed to EtO at or above the action level or above the excursion limit. Conduct training upon initial job assignment and annually.
- Establish a regulated area wherever airborne concentrations of EtO are expected to exceed the 8-hour TWA or the excursion limit.
- Establish a medical surveillance program for employees exposed to EtO at concentrations above the action level of 0.5 ppm, measured as an 8-hour TWA, for more than 30 days per year.
- Place warning labels on all containers that might cause employee exposures at or above the action level or excursion limit.
- Remember that employee rotation is prohibited as a means of compliance with the 8-hour TWA or exposure limit.
- Select, provide, and maintain appropriate personal protective equipment and ensure that employees use it to prevent skin and eye contact.

When must employers require workers to use respirators?

Employers must ensure that workers use respirators to control EtO exposure in the following circumstances:

- During installation or implementation of feasible engineering controls and work practices;
- During maintenance, repair, and certain operations when engineering and work practice controls are not feasible;

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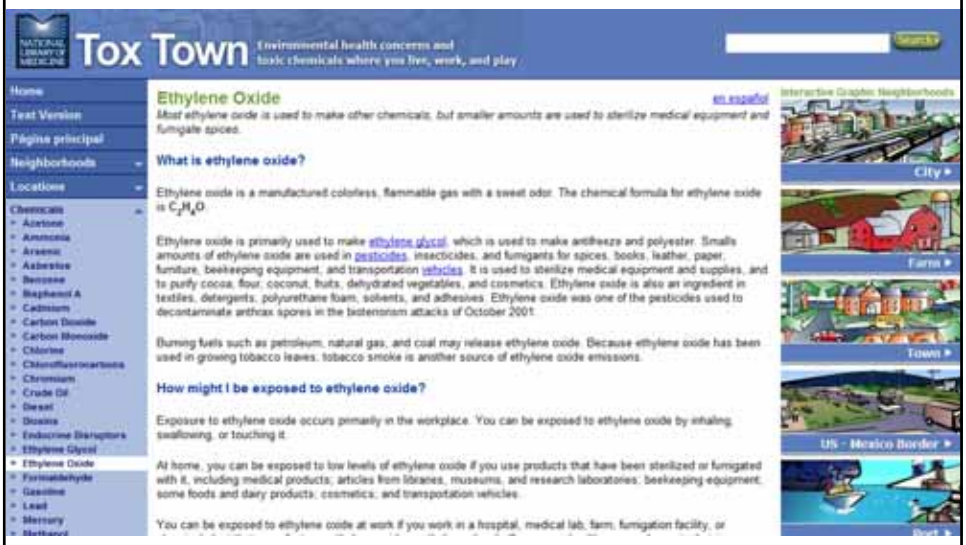
http://hazmap.nlm.nih.gov/cgi-bin/hazmap_generic?tbl=TblAgents&id=21



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http://toxtown.nlm.nih.gov/text_version/chemicals.php?id=71

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Your health and safety committee has decided to convince your company to switch from using a dangerous chemical to a safer alternative.

What information would you need to help you get your employer switch to a safer chemical?

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BETA
Chemical Hazard and Alternatives Toolbox
Home / Search
About ChemHAT
Safer Chemicals
For Workers
Who made ChemHAT?
ChemHAT is a team effort.
The team started with the partnership of IUE-CWA, the Industrial Division of the Communications Workers of America and the BlueGreen Alliance (BGA). The website and smart phone app you're using started on a phone call between Lauren Asplen, the Assistant to the President of IUE-CWA and Charlotte Brody, BlueGreen Alliance's Associate Director for Health Initiatives.
A group of IUE-CWA rank and file members then came together in Dayton, Ohio to review existing chemical databases and to discuss how to make it easier for workers and the general public to find up to date information on the harm that chemicals can cause.
After that initial design workshop, members of the United Steelworkers, United Auto Workers and other members of the Communications Workers of America and a group of worker trainers brought together by the NIEHS Worker Education and Training Program added their input on how ChemHAT could be most useful in making their workplaces safer and healthier. Many thanks to those unions, NIEHS WETP and the Tony Mazzocchi Center for giving us the time and space to have those important conversations. Special thanks go to Anna Fendley of the USW's Safety, Health and Environment department for her leadership and for her contributions to the design and content of ChemHAT. District 9 of the Communications Workers of America also must be thanked for hosting a series of Dangerous Chemicals and Safer Alternatives workshops that greatly informed how ChemHAT will work. CWA District 9 Area Director Libby Sayre and the District's
Why ChemHAT?
How to Use ChemHAT
Is ChemHAT Comprehensive?
Vocabulary
Data Sources
Who Made ChemHAT?

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Chemical Hazard and Alternatives Toolbox
Home / Search
About ChemHAT
Safer Chemicals
For Workers
Enter Chemical name or CAS #
GO
ChemHAT.org Designed for workers by workers
A JOINT PROJECT OF
IUE-CWA
BLUEGREEN ALLIANCE
WITH THE SUPPORT OF
USW
Pharos
TONY MAZZOCCHI CENTER
CWA DISTRICT 9

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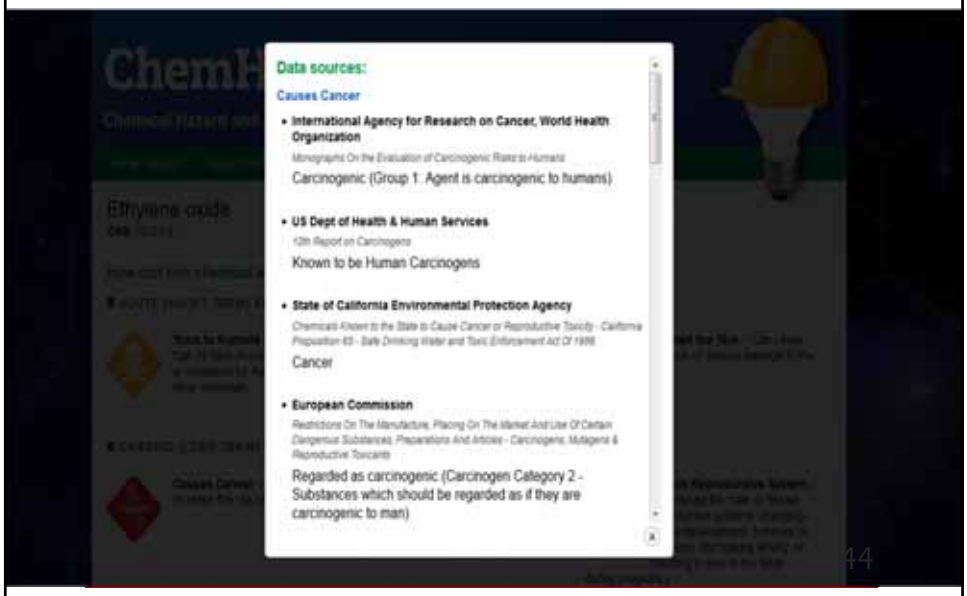
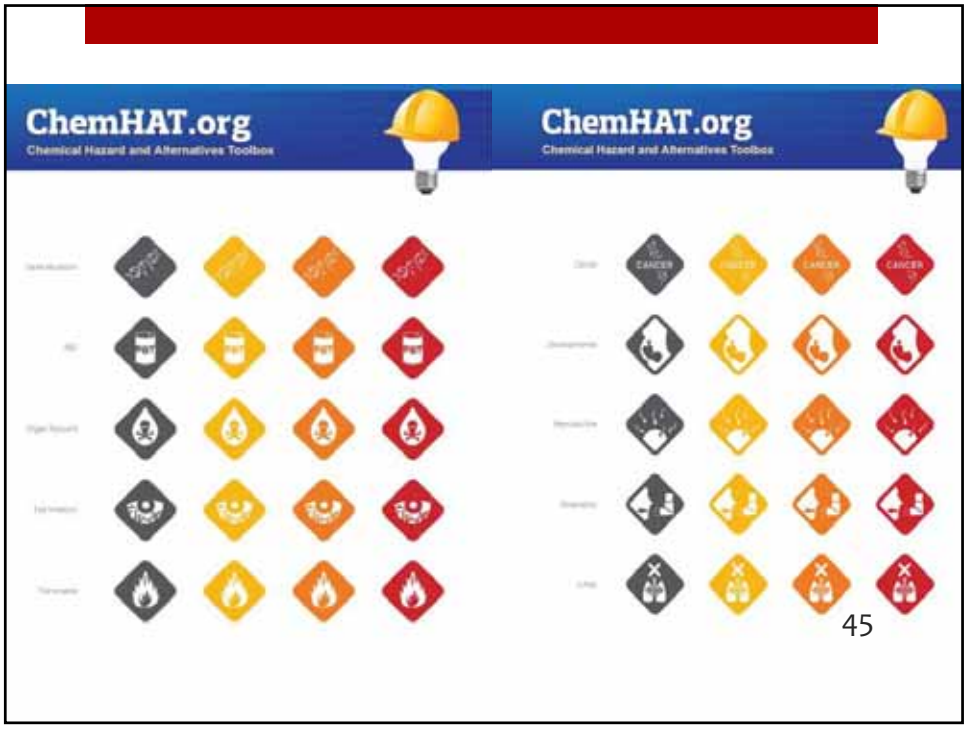
ChemHAT.org
BETA
Chemical Hazard and Alternatives Toolbox
Home / Search
About ChemHAT
Safer Chemicals
For Workers
Ethylene oxide
CAS: 75-21-8
How can this chemical affect my health?
ACUTE (SHORT TERM) EFFECTS
How do we know
Toxic to Humans & Animals – Can be fatal on contact, ingestion or inhalation for humans and other mammals.
Irritates the Eyes – Can cause irritation or serious damage to the eye.
Irritates the Skin – Can cause irritation or serious damage to the skin.
CHRONIC (LONG TERM) EFFECTS
How do we know
Causes Cancer – Can cause or increase the risk of cancer.
Birth Defects – Can cause harm to the developing child including birth defects, low birth weight and biological or behavioral problems that appear as the child grows.
Affects Reproductive System – Can disrupt the male or female reproductive systems, changing sexual development, behavior or functions, decreasing fertility, or resulting in loss of the fetus during pregnancy.


Data sources:
Causes Cancer
• International Agency for Research on Cancer, World Health Organization
Monographs On the Evaluation of Carcinogenic Risks to Humans
Carcinogenic (Group 1: Agent is carcinogenic to humans)
• US Dept of Health & Human Services
12th Report on Carcinogens
Known to be Human Carcinogens
• State of California Environmental Protection Agency
Chemicals Known to the State to Cause Cancer or Reproductive Toxicity - California Proposition 65 - Safe Drinking Water and Toxic Enforcement Act Of 1986
Cancer
• European Commission
Restrictions On The Manufacture, Placing On The Market And Use Of Certain Dangerous Substances, Preparations And Articles - Carcinogens, Mutagens & Reproductive Toxicants
Regarded as carcinogenic (Carcinogen Category 2 - Substances which should be regarded as if they are carcinogenic to man)



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HCS Pictograms and Hazards

Health Hazard	Flame	Exclamation Mark
• Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity	• Flammables • Pyrophorics • Self-Heating • Emits Flammable Gas • Self-Reactives • Organic Peroxides	• Irritant (skin and eye) • Skin Sensitizer • Acute Toxicity • Narcotic Effects • Respiratory Tract Irritant • Hazardous to Ozone Layer (Non-Mandatory)
Gas Cylinder	**Corrosion**	**Exploding Bomb**
• Gases Under Pressure	• Skin Corrosion/Burns • Eye Damage • Corrosive to Metals	• Explosives • Self-Reactives • Organic Peroxides
Flame Over Circle	**Environment** (Non-Mandatory)	**Skull and Crossbones**
• Oxidizers	• Aquatic Toxicity	• Acute Toxicity (fatal or toxic)

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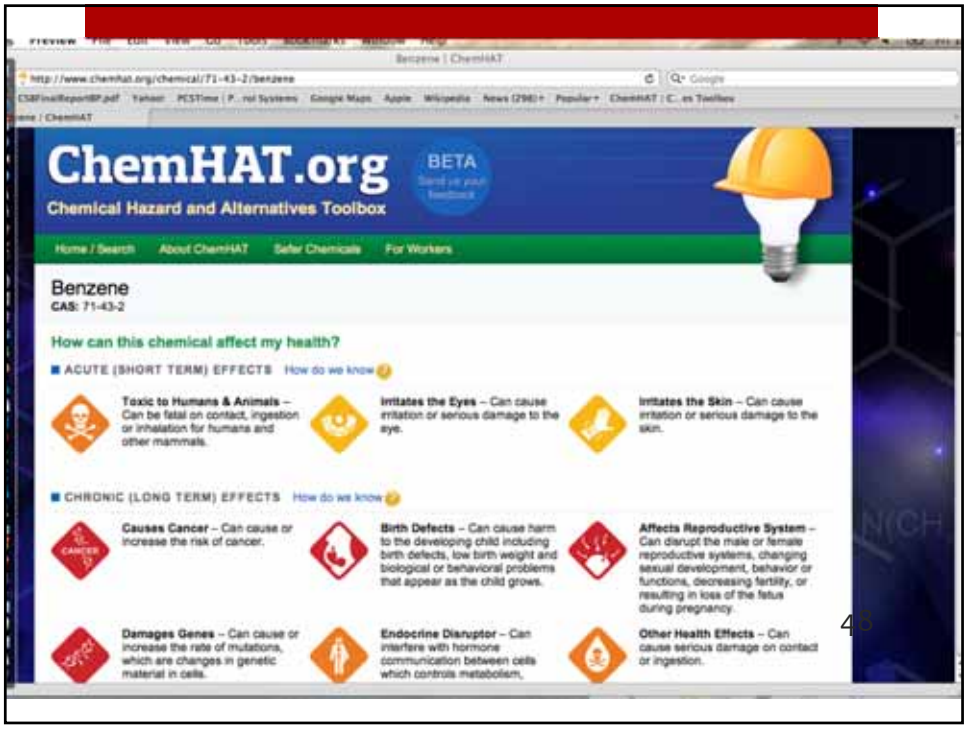
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Safer Chemicals
For Workers
Benzene
CAS: 71-43-2
How can this chemical affect my health?
ACUTE (SHORT TERM) EFFECTS
How do we know
Toxic to Humans & Animals – Can be fatal on contact, ingestion or inhalation for humans and other mammals.
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Birth Defects – Can cause harm to the developing child including birth defects, low birth weight and biological or behavioral problems that appear as the child grows.
Affects Reproductive System – Can disrupt the male or female reproductive systems, changing sexual development, behavior or functions, decreasing fertility, or resulting in loss of the fetus during pregnancy.
Damages Genes – Can cause or increase the rate of mutations, which are changes in genetic material in cells.
Endocrine Disruptor – Can interfere with hormone communication between cells which controls metabolism.
Other Health Effects – Can cause serious damage on contact or ingestion.

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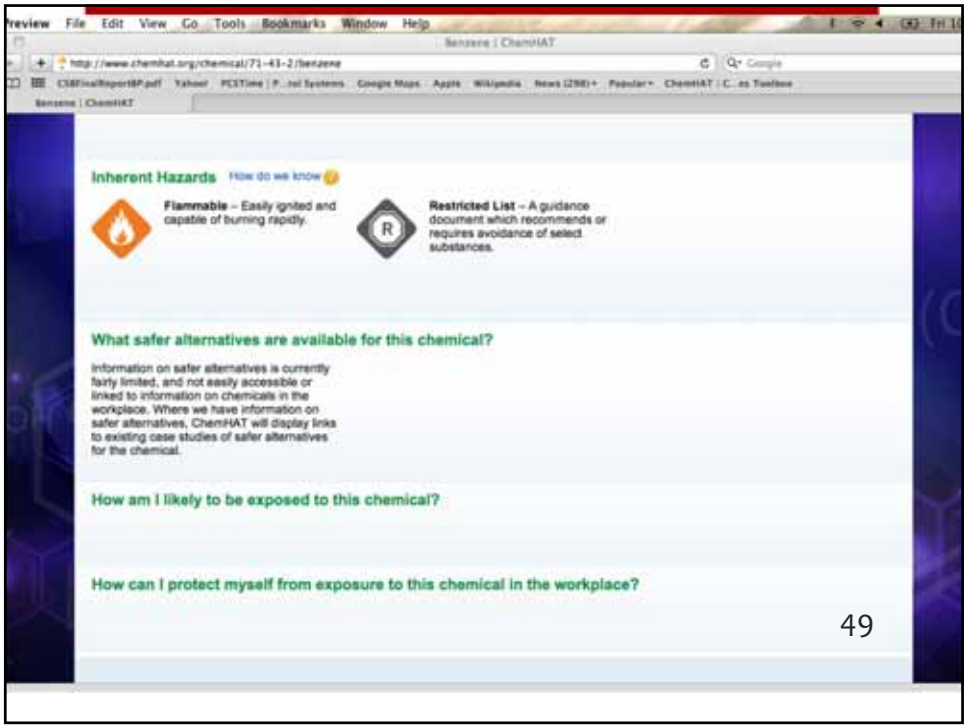
Inherent Hazards
How do we know
Flammable – Easily ignited and capable of burning rapidly.
Restricted List – A guidance document which recommends or requires avoidance of select substances.
What safer alternatives are available for this chemical?
Information on safer alternatives is currently fairly limited, and not easily accessible or linked to information on chemicals in the workplace. Where we have information on safer alternatives, ChemHAT will display links to existing case studies of safer alternatives for the chemical.
How am I likely to be exposed to this chemical?
How can I protect myself from exposure to this chemical in the workplace?
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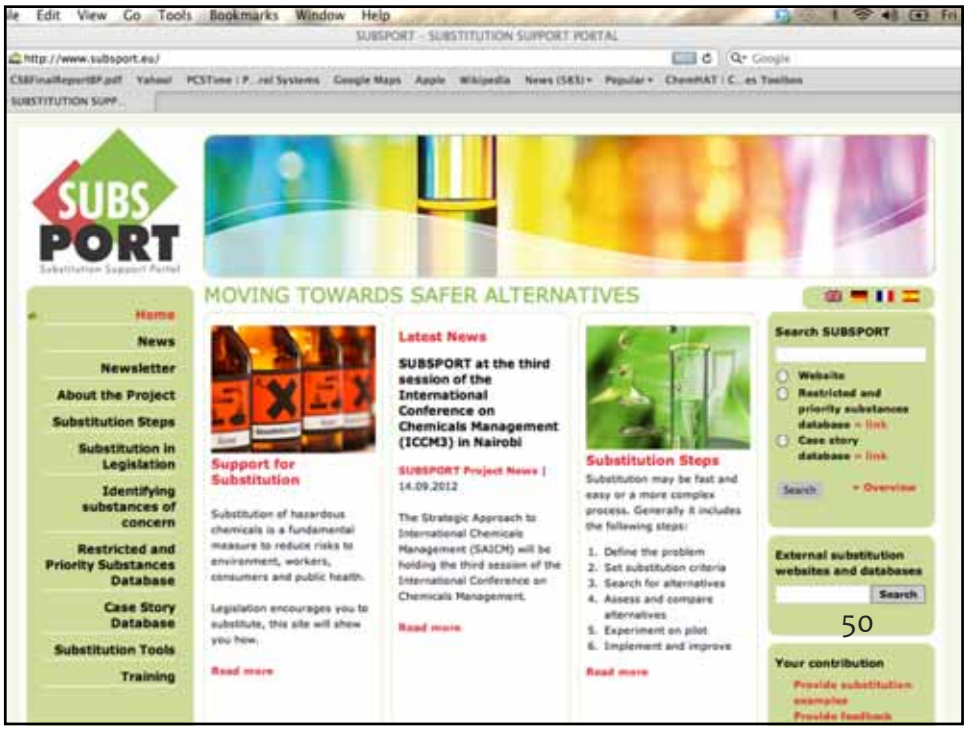
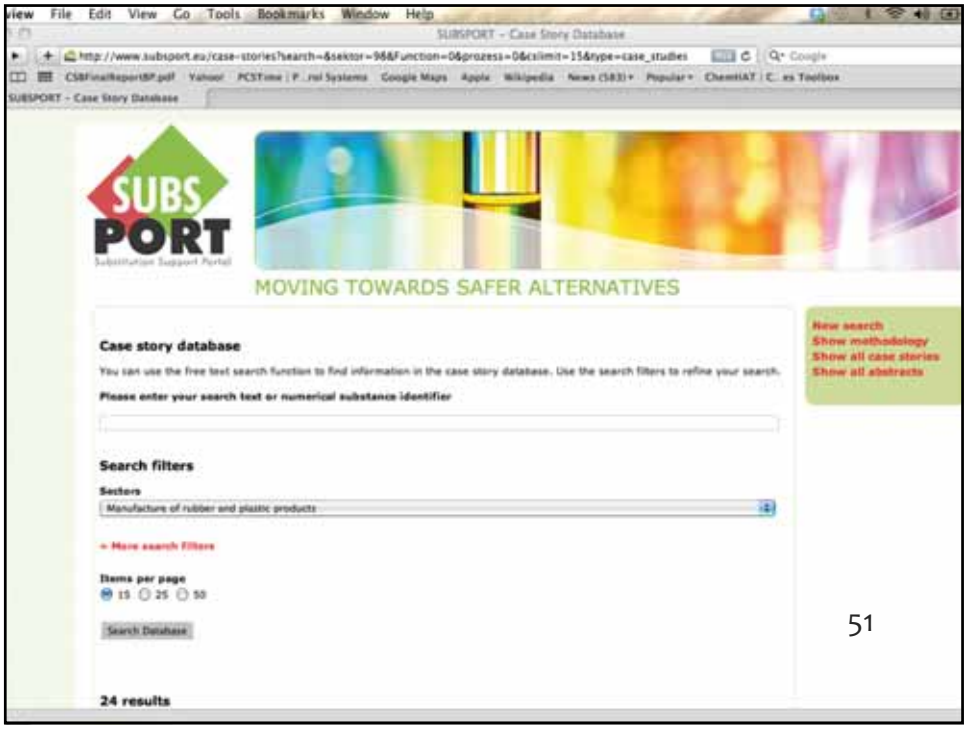

SUBSPORT – SUBSTITUTION SUPPORT PORTAL
http://www.subsport.eu/
SUBS PORT
MOVING TOWARDS SAFER ALTERNATIVES
Home
News
Newsletter
About the Project
Substitution Steps
Substitution in Legislation
Identifying substances of concern
Restricted and Priority Substances Database
Case Story Database
Substitution Tools
Training
Support for Substitution
Substitution of hazardous chemicals is a fundamental measure to reduce risks to environment, workers, consumers and public health.
Legislation encourages you to substitute, this site will show you how.
Read more
Latest News
SUBSPORT at the third session of the International Conference on Chemicals Management (ICCM3) in Nairobi
SUBSPORT Project News | 14.09.2012
The Strategic Approach to International Chemicals Management (SAICM) will be holding the third session of the International Conference on Chemicals Management.
Read more
Substitution Steps
Substitution may be fast and easy or a more complex process. Generally it includes the following steps:
1. Define the problem
2. Set substitution criteria
3. Search for alternatives
4. Assess and compare alternatives
5. Experiment on pilot
6. Implement and improve
Read more
Search SUBSPORT
Website
Restricted and priority substances database
Case story database
Search
Overview
External substitution websites and databases
Search
50
Your contribution


SUBSPORT - Case Story Database
SUBS PORT
MOVING TOWARDS SAFER ALTERNATIVES
Case story database
You can use the free text search function to find information in the case story database. Use the search filters to refine your search.
Please enter your search text or numerical substance identifier
Search filters
Sectors
Manufacture of rubber and plastic products
» More search filters
Items per page
15 25 50
Search Database
24 results
New search
Show methodology
Show all case stories
Show all abstracts

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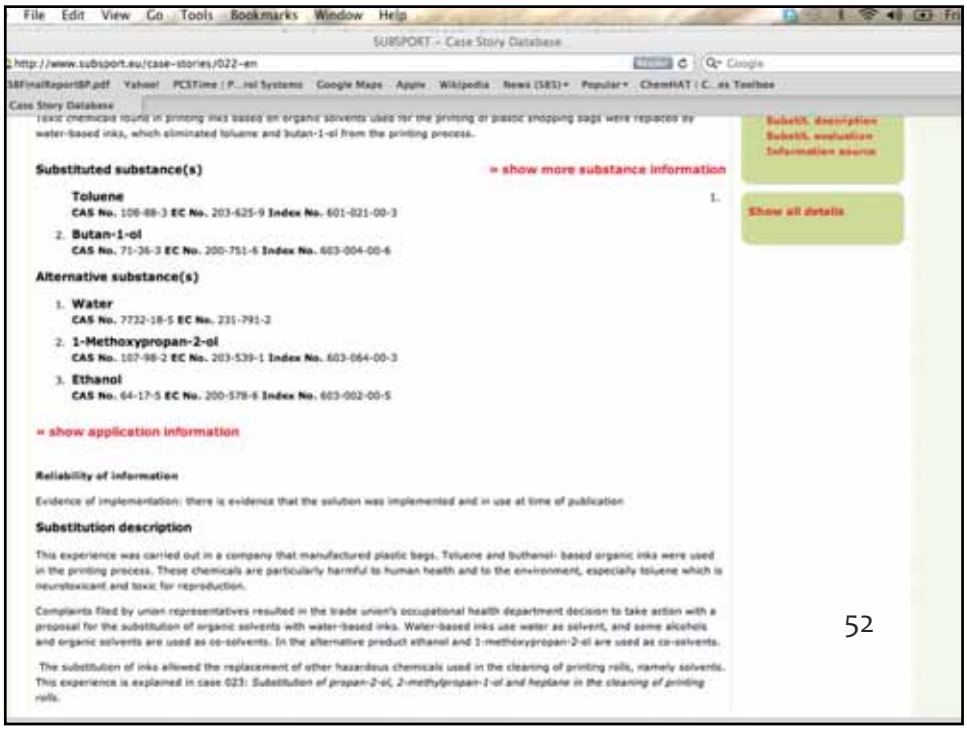
SUBSPORT - Case Story Database
Substituted substance(s)
» show more substance information
Toluene
CAS No. 108-88-3 EC No. 203-625-9 Index No. 601-021-00-3
Butan-1-ol
CAS No. 71-36-3 EC No. 200-751-6 Index No. 603-004-00-6
Alternative substance(s)
Water
CAS No. 7732-18-5 EC No. 231-791-2
1-Methoxypropan-2-ol
CAS No. 107-98-2 EC No. 203-539-1 Index No. 603-064-00-3
Ethanol
CAS No. 64-17-5 EC No. 200-578-6 Index No. 603-002-00-5
» show application information
Reliability of information
Evidence of implementation: there is evidence that the solution was implemented and in use at time of publication
Substitution description
This experience was carried out in a company that manufactured plastic bags. Toluene and buthanol- based organic inks were used in the printing process. These chemicals are particularly harmful to human health and to the environment, especially toluene which is neurotoxicant and toxic for reproduction.
Complaints filed by union representatives resulted in the trade union's occupational health department decision to take action with a proposal for the substitution of organic solvents with water-based inks. Water-based inks use water as solvent, and some alcohols and organic solvents are used as co-solvents. In the alternative product ethanol and 1-methoxypropan-2-ol are used as co-solvents.
The substitution of inks allowed the replacement of other hazardous chemicals used in the cleaning of printing rolls, namely solvents. This experience is explained in case 023: Substitution of propan-2-ol, 2-methylpropan-1-ol and heptane in the cleaning of printing rolls.
Show all details

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istas
risctox 100,000 substances
Home
Carcinogens and mutagens
Reproductive toxicants
Endocrine disruptors
Neurotoxicants
Pesticides
Allergens REACH
PBT and vPvB substances
Aquatic toxicity
Chemicals harmful to the atmosphere
Persistent Organic Pollutants (POP)
Occupational diseases
Volatile organic compounds (VOCs)
RISCTOX: a comprehensive database on toxic and hazardous substances.
RISCTOX is a database of hazardous substances developed to provide clear, organized and concise information about health and environmental risks caused by chemicals contained in products generally used or handled by companies.
start
RISCTOX database provides information on over 100,000 chemical agents in files which include data on:
Classification of the substance according to Regulation 1272/2008 (CLP)
Specific health risks
Specific environmental risks
Environmental and health-related regulations
Search criteria include the name of the substance or some of its identification numbers (CAS, EC; EINECS / ELINCS, Index No). Different lists of risks or regulations available can also be used as search standards.
RISCTOX also provides policy advisory and links to related regulations. Access this information by clicking on the help icon on the left corner of each list of substances. These files also contain information on the sources used to develop the lists.
RISCTOX includes accessible and systematic public information on health and environmental risks.

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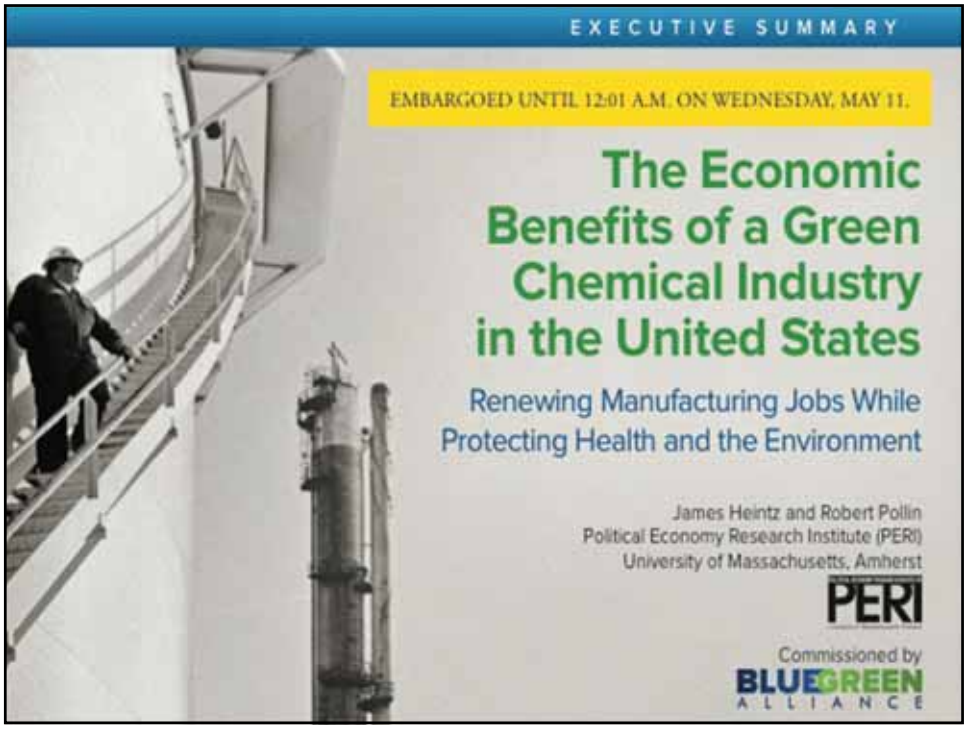
RISCTOX: Toxic and hazardous substances database
substance identification
Chemical name: benzene
Identification numbers: CAS: 71-43-2
EC EINECS: 200-753-7
Uses: cleaner, degreaser, solvent
International Chemical Safety Card (ICSC) 0015
More information
Substance included in the ISTAS 's blacklist
CLASSIFICATION AND LABELLING (67/548/EEC)
CLASSIFICATION AND LABELLING (Regulation 1272/2008)
Pictograms and signal words
H phrases
H225: Highly flammable liquid and vapour
H350: May cause cancer
H340: May cause genetic defects
H372 **: Causes damage to organs through prolonged or repeated exposure
H304: May be fatal if swallowed and enters airways
H319: Causes serious eye irritation
H315: Causes skin irritation
Notes
Flammable gases
Respiratory sensitisation
Acute toxicity (oral, dermal, inhalation

54



- The chemical industry is an important part of U.S. manufacturing, contributing $273 billion to GDP ($390 billion if we include the plastics sector).
- But employment in the chemical industry has been declining sharply over the past few decades, despite the fact that the value of production has been growing 4% per year.

The U.S. Chemical Industry Today

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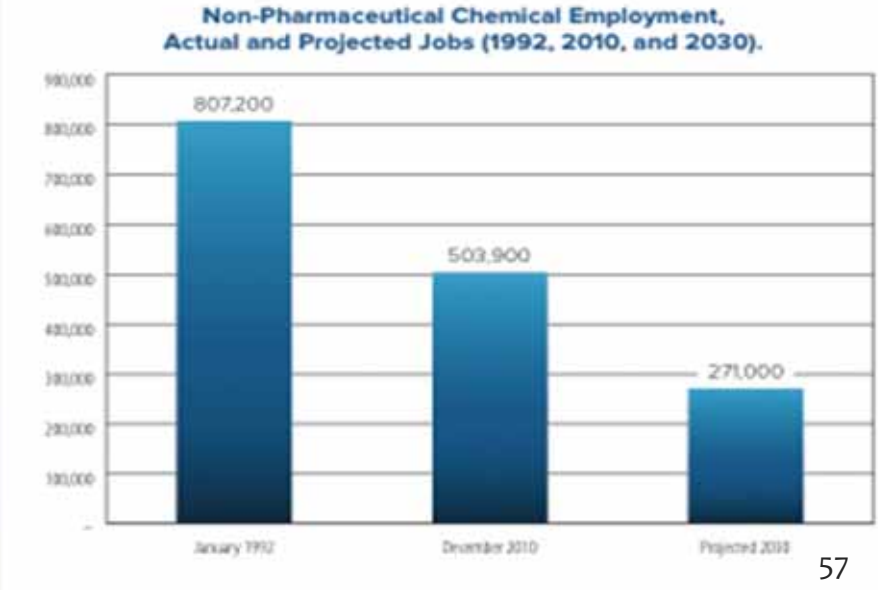
Non-Pharmaceutical Chemical Employment,
Actual and Projected Jobs (1992, 2010, and 2030).
807,200
503,900
271,000
January 1992
December 2010
Projected 2030
Source: U.S. Bureau of Labor Statistics. For 2030 projections, see full report.

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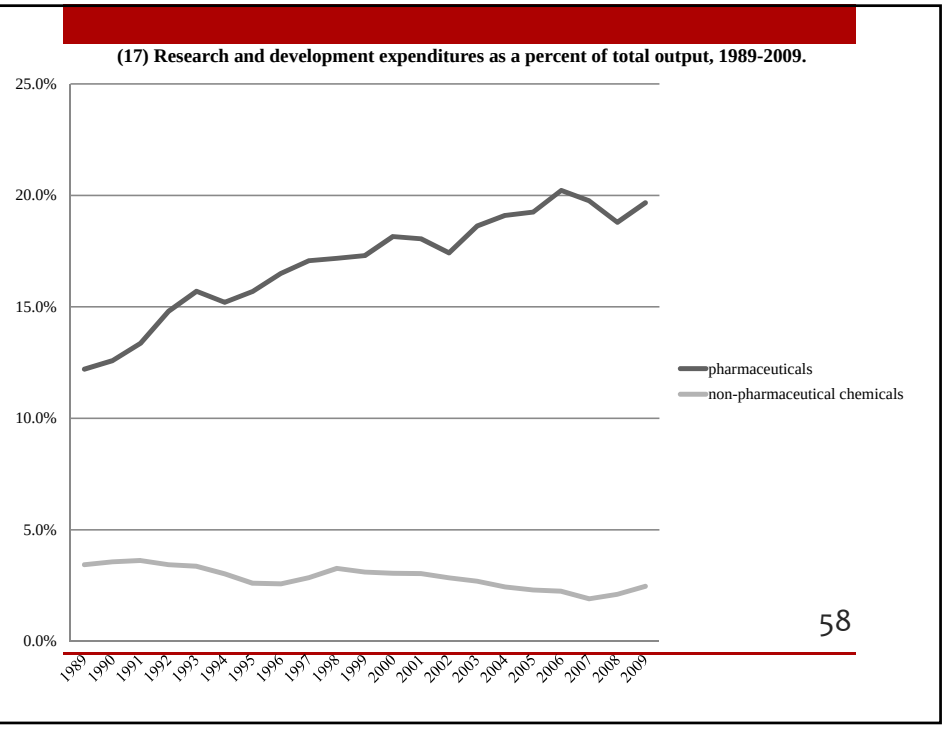
(17) Research and development expenditures as a percent of total output, 1989-2009.
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
pharmaceuticals
non-pharmaceutical chemicals

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- Lowering handling, storage, and disposal costs
- Ensuring access to global markets
- Reducing waste by using inputs more efficiently
- Moving away from fossil fuel based inputs
- Meeting consumer demands for safer products
- Protecting shareholder value

Greener Chemistry & Regulatory Reform Supports Competitiveness 59

	Decaffeinate coffee with benzene  In 1970s benzene replaced with dichloromethane 	Decaffeinate coffee with water or carbon dioxide 
	Manufacture IV bags and tubes using polyvinyl choride and DEHP 	Switch production to lighter, stronger polypropylene plastic that do not contain chemicals of concern and does not need a moisture overwrap
	Produce glass for electronics using arsenic to remove air bubbles 	Maintain liquid glass at higher temperature for longer periods

What product needs to be redesigned to make your life less toxic?

61

What product needs to be redesigned to lower your breast cancer risk?

62

63

1. The extent of the breast cancer epidemic
   - breast cancer as an early warning of the increase in chronic disease
2. The significance of the Brophy, Keith et al work
3. How science had changed from the dose makes the poison
   - different kinds of doses, not one dose
   - importance of timing
   - small exposures matter when those exposures are endocrine disruptors
   - the lessons from biomonitoring
4. The politics of focusing on cure not cause
5. What do we do?
   - do it yourself chemical policy reform
   - identifying the chemicals of concern and moving to safer materials

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Thank you.

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