



The Massachusetts Toxics Use Reduction Act

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Overview

- The Basics: How TURA works
- TURA Results
- Accomplishments of Massachusetts businesses and communities
- Lessons Learned
- Your questions

Massachusetts Toxics Use Reduction Act (TURA)

- Helps Massachusetts companies and communities:
 - *Reduce the use of toxic chemicals* while promoting competitive advantage of Massachusetts businesses.

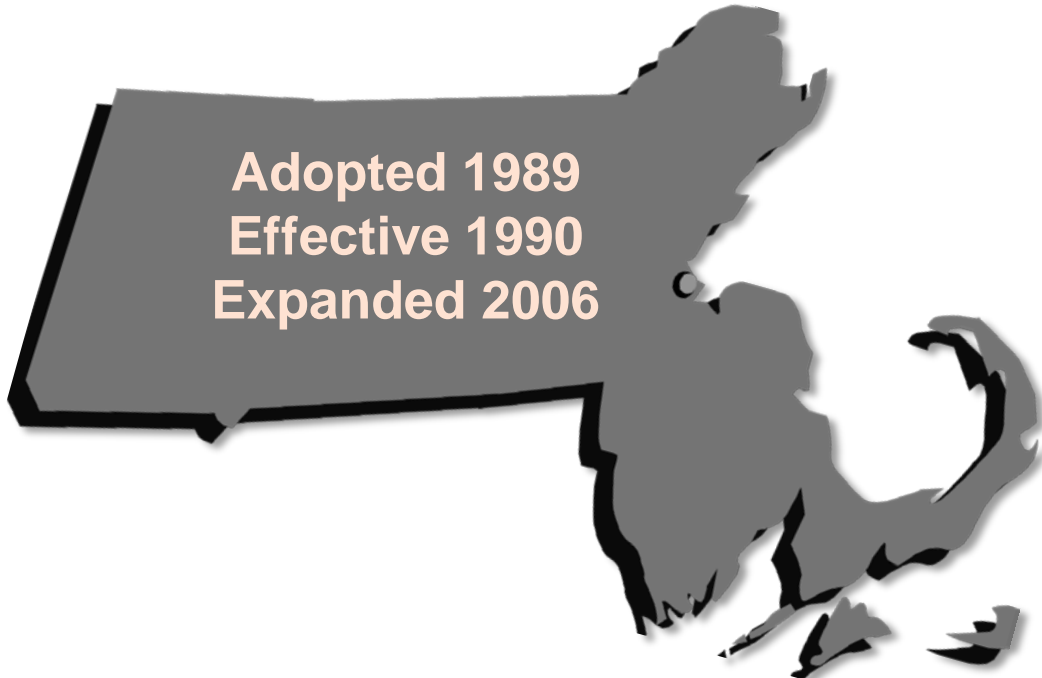


Toxics Use Reduction Act



- **Companies must:**

- **Report** toxics use
- **Pay** fees
- **Plan** toxics reduction

A grey silhouette map of the state of Massachusetts, including its islands, is positioned to the right of the text. The text is overlaid on the map.

Adopted 1989
Effective 1990
Expanded 2006

- **2006 Amendments:**

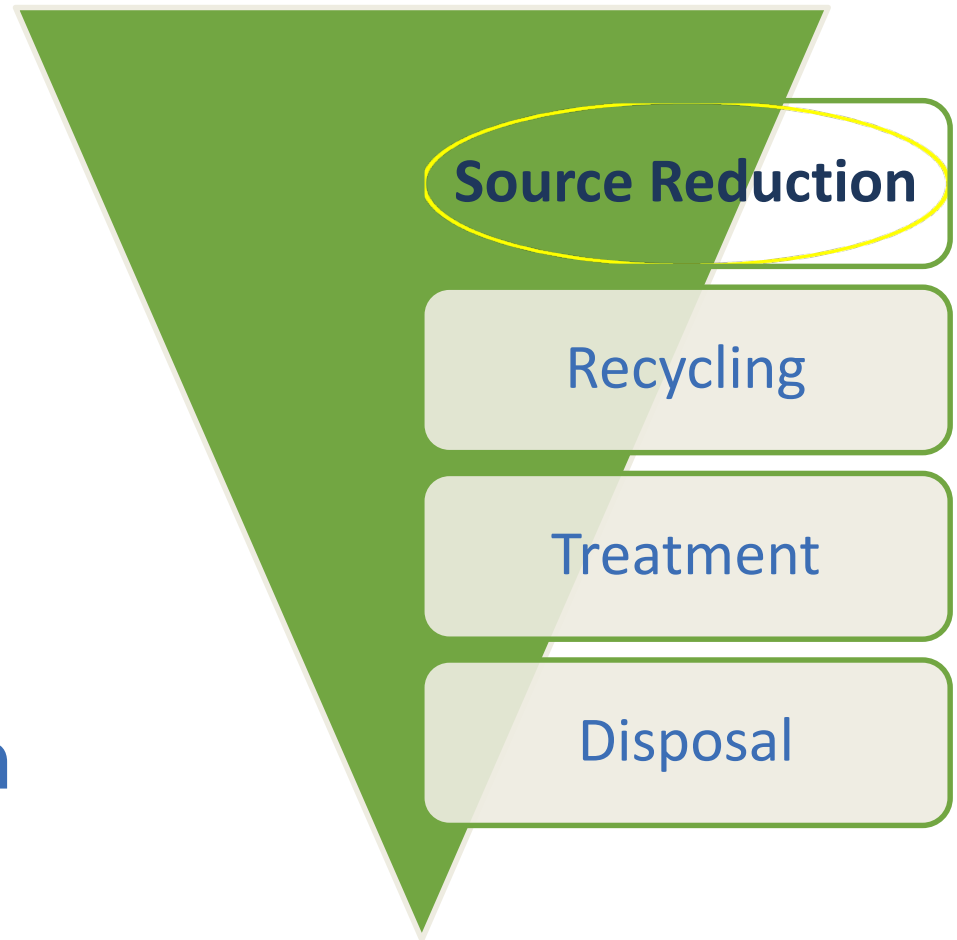
- Designation of **higher** and **lower hazard substances**
- **Resource Conservation Planning** – energy, water, materials
- Integrates **Environmental Management Systems** into TUR

TUR Reporting

- Annual reports on amounts used, wasted, shipped in product, released onsite, or shipped offsite as pollution
- Affects \approx 500 companies employing 10 or more FTEs that also use above threshold amounts of one or more of \approx 1000 TURA listed chemicals
- Makes companies aware of quantities they use and waste

Core principles of Toxics Use Reduction

- Reduce toxics at the Source
- Look for opportunities to eliminate or reduce hazard
- Primary prevention of disease



TURA Structure: Implementing Agencies



Massachusetts Department of Environmental Protection (MassDEP): planner certification, filings, enforcement, data analysis



Massachusetts Office of Technical Assistance and Technology (OTA): On-site, confidential technical assistance



Massachusetts Toxics Use Reduction Institute (TURI): Training, Grants, Research, Alternatives Assessment, Policy Analysis, Technical Support, Laboratory, Library

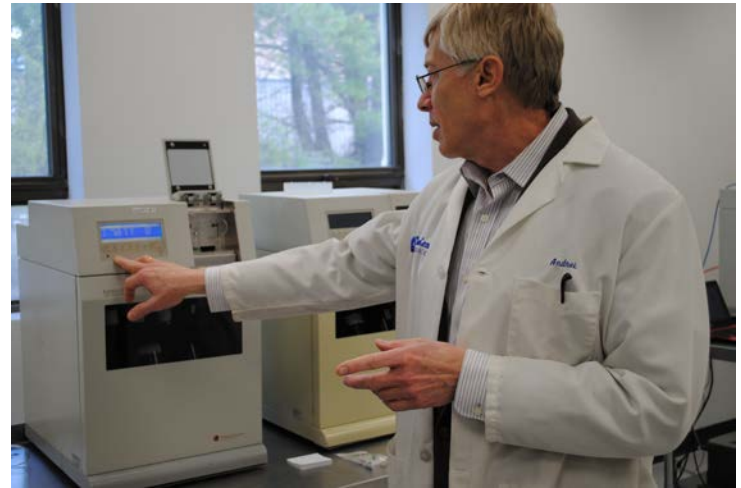
Office of Technical Assistance

- The Office of Technical Assistance (OTA)
 - Non-regulatory agency within EOEEA
 - Provides confidential, onsite technical and compliance assistance to manufacturers, businesses, and institutions
 - All OTA services are available free of charge to any Massachusetts toxics user



Toxics Use Reduction Institute

- Education & training
- Grants
 - Large & small businesses
 - Municipalities, regional governments & community organizations
 - University research on safer alternatives
- Demonstration sites
- Laboratory & library services
- Supply chain work groups
- Policy analysis



Boards and Councils

- TURA Science Advisory Board considers petitions to list/delist substances on the TURA list and make recommendations to the Institute accordingly.
- 2006 Amendments call for SAB to recommend higher and lower hazard substances as well

Boards and Councils

- The Advisory Committee to the TUR Administrative Council is comprised of fifteen stakeholders from business, labor, advocacy, and citizens.
- The Administrative Council oversees TURA policy and coordinates toxics prevention state-wide, and is responsible for determining the list of chemicals covered under the act and setting fees.

Data Show Program is Working:

- Reported data indicate that 93% of the 1341 facilities that have ever been subject to TURA have implemented TUR
- 76% of companies reported the intent to implement one or more TUR options found in 2014, the most recent planning cycle
- Facilities open in 1993 had reduced use 20%, waste 46% and releases to the environment 89% by 2013
- National Toxics Release Inventory Data show that MA companies implement TUR more frequently than companies in all except three other states

Progress

**First decade
1990-2000**

Use: 40%

Byproduct: 58%

Releases: 90%

Shipped in Product:
47%



**Is TURA Still working?
2000-2013**

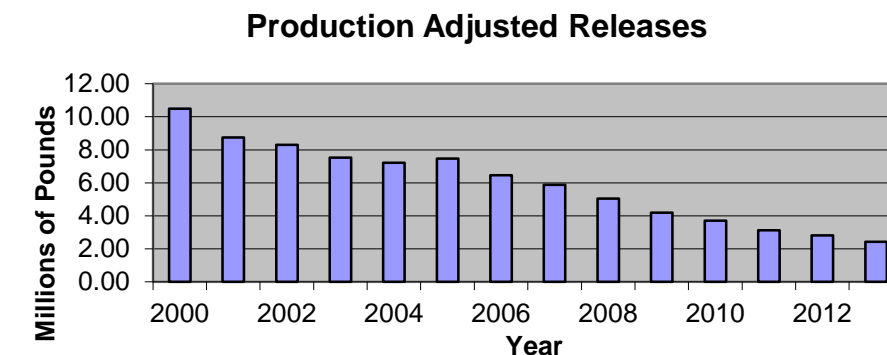
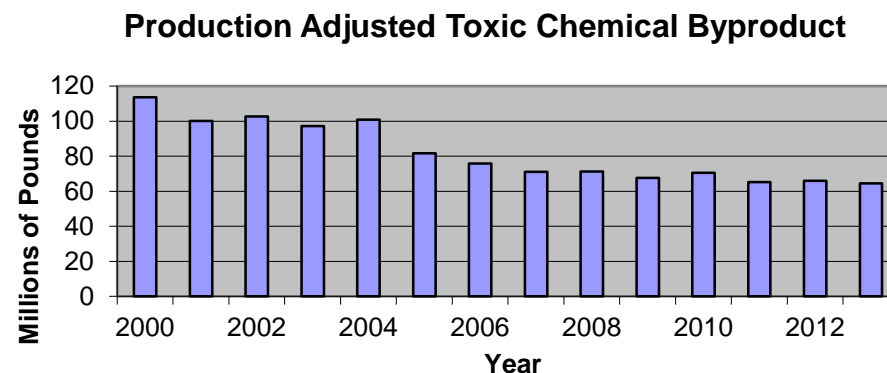
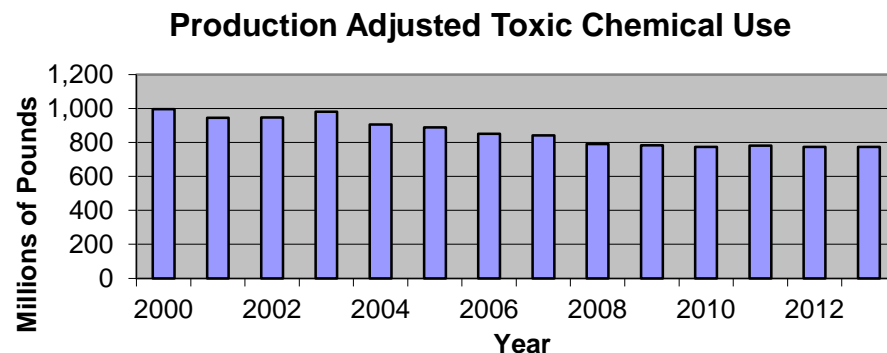
Use: 22%

Byproduct: 43%

Releases: 77%



TURA Progress 2000-2013



Higher Hazard Substance Filers

High Hazard Chemicals Number of Facilities Reporting 2006-2013				
Reporting Year	Cadmium	Cadmium Compounds	Trichloroethylene	Tetrachloroethylene
2006	0	1	11	4
2007	0	1	9	5
2008	5	7	27	5
2009	4	8	23	24
2010	4	8	16	18
2011	4	6	17	17
2012	5	5	14	15
2013	5	6	15	17
NOTE: Bolded numbers indicate the first year that these chemicals were designated as an HHS and the reporting threshold lowered				

Contributions of Smaller Filers (first reporting year)

- Trichloroethylene 117,380 lbs
(22%)
- Cadmium 29,429 lbs
(100%)
- Cadmium compounds 14,625 lbs
(8%)
- Perchloroethylene 73,770 lbs
(39%)

HHS Progress

(since first reporting year)

- Trichloroethylene 67% reduction
- Cadmium 30% reduction
- Cadmium Compounds 26% increase
- Perchloroethylene 40% reduction

Lessons Learned from HHS Designation

- Small quantity filers combined have significant toxics use
- HHS Designation encourages filers to reduce
- Solvents/otherwise used chemicals remain easier to substitute and reduce

N-Propyl Bromide (NPB)

- Staff observed its substitution for TCE/PCE
- Science Advisory Board reviewed data in 2009
- Added to TURA list in 2009
- Recommended as HHS in 2013

N-Propyl Bromide (NPB)

- First filing year 2010
- 3 filers
- Total Use = 39,159
- Total Releases = 25,961
- (17th highest under TURA)

Stainless Steel Coatings

- Reduced the use of xylene by 57 percent and eliminated the use of hexavalent chromium.
- Saved more than \$15,000 per year in reduced waste disposal costs.
- Reduced hazardous waste generation by 52 percent.
- Reduced energy costs by 20 to 25 percent and saved 14,500 pounds of CO2 emissions per year.



Independent Plating

- Reduced the use of toxic chemicals by more than 500,000 pounds, including:
 - Cyanide compounds by 95 percent
 - Hexavalent chromium compounds by 88 percent
 - Hydrofluoric acid by 100 percent
- Reduced the use of acids, bases and other reportable metal compounds.
- Made the switch from hexavalent chromium to trivalent chromium on several production lines, with assistance from a TURI incentive grant.



Analog Devices

- Reduced energy use by more than 16 million KWH per year through conservation initiatives.
- Reduced water consumption by nearly 90 million gallons per year through water use conservation projects.
- Reduced the use of sodium hydroxide and hydrochloric acid for resin regeneration in deionized water production processes.
- Newsweek magazine ranked Analog Devices as among the top 50 greenest companies in the United States in 2014.

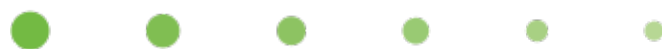


Chemgenes Corporation

- Reduced the use of chloroform by more than 55 percent and hexane by more than 35 percent.
- Improved manufacturing efficiency, saving \$215,000 in chemical purchases, regulatory fees and disposal costs.
- Reduced solid waste from 25,000 to 8,000 lbs. per year.
- Anticipates reducing the use of hexane and ethyl acetate by 27,000 lbs., or 70 percent annually, through the installation of a new solvent recovery and recycling system, purchased with help from a TURI incentive grant.



Massachusetts Toxics Use Reduction



CELEBRATING
25
YEARS

Toxics Use Reduction is a tool that we use continuously in our facility because we've found that the benefits are extensive – we are protecting worker health and the environment, improving efficiencies and saving money. Receiving the TURA 25th Leadership award validates our work and for that, we are very appreciative.

- Anuj Mohan, Chief Operating Officer, ChemGenes

Using the TURA Data Online



www.turadata.turi.org

**Enter your city or town or
search by chemical**



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