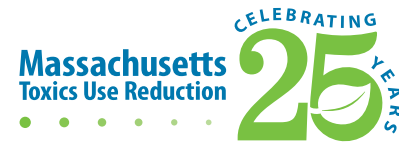


## About the Toxics Use Reduction Act Program

Twenty-five years ago, the Massachusetts legislature passed landmark legislation—the Toxics Use Reduction Act (TURA). The TURA Program is recognized nationally and internationally for successfully working with businesses to reduce the use of toxic chemicals while promoting competitiveness.

Under TURA, businesses conduct toxics use reduction planning, a process in which they examine opportunities for reducing the use of toxic chemicals. They choose opportunities that make good business sense.



Massachusetts companies continue to make progress in reducing toxic chemical use and waste.

**From 1990 to 2013, Massachusetts companies reduced toxic chemical use by 48 percent, waste by 77 percent and on-site releases by 91 percent.**

With updates to TURA adopted in 2006, companies have also conserved energy, materials and water.

The three agencies below provide training, grants, technical assistance and support to help companies reduce toxic chemical use and costs, improve health and safety and compete globally.



600 Suffolk Street  
Lowell, MA 01854  
978-934-3275  
www.turi.org

Provides education, training, and grants for Massachusetts industry and communities; sponsors research and demonstration sites on safer materials and technologies; provides policy analysis, laboratory services, research, and library services; and manages the TURA Science Advisory Board.



100 Cambridge St., Suite 900  
Boston, MA 02114  
617-626-1060  
www.mass.gov/eea/ota

A non-regulatory agency within the Executive Office of Energy and Environmental Affairs that provides free, confidential, on-site technical and compliance consultations to Massachusetts businesses and institutions.



One Winter Street  
Boston, MA 02108-4746  
617-292-5500  
www.mass.gov/eea/agencies/massdep/toxics/tur/

Certifies Toxics Use Reduction (TUR) Planners, receives and reviews toxics use reports submitted by companies, provides guidance, takes enforcement actions, and collects chemical use data and makes it available to the public.

Making  
Massachusetts  
a Safer Place  
to Live  
and Work.



**TURA 25th Anniversary Leaders  
Demonstrate Product Innovation,  
Quality and Safety**

Massachusetts Companies Reduce Toxic Chemical Use, Waste and Emissions



- Allston Collision Center
- Analog Devices, Inc.
- Brazilian Women's Group
- ChemGenes Corporation
- Columbia Manufacturing, Inc.
- Franklin Paint Company
- Independent Plating, Inc.
- Ophir Optics, LLC
- Shawmut Corporation
- Stainless Steel Coatings, Inc.
- Professional Wet Cleaning Workgroup
  - AB Cleaners
  - Ace Cleaners
  - Art's Cleaners
  - Best Neighborhood Cleaners
  - Faulkner's Cleansing
  - King & Queen Cleaners
  - KMK Cleaners
  - J&P Cleaners
  - Silver Hanger Cleaners

**M**assachusetts celebrates the 25th year of the Toxics Use Reduction Act (TURA), landmark legislation that is widely recognized for its success in reducing toxic chemical use while promoting competitiveness of Massachusetts businesses. The TURA 25th Anniversary Leaders are businesses and organizations that have made significant improvements to protect workers, communities and the environment.

### Improving the Triple Bottom Line

It is no small feat for companies to make changes to trusted and proven product formulations. One common theme of the TURA 25th Anniversary Leaders is that the toxics use reduction planning process had benefits beyond a safer work environment and reduced environmental impacts. For example, Franklin Paint's customers said that the new, safer formulation works better in their highway line striping equipment, saving them time and money.

*"Not only are our formulations safer and better for the environment, our customers tell us that the products work better. Our paint is less abrasive, making it easier to flow through the machines. Contractors tell us that they finish on time and on budget because they don't need to stop and clean or replace filters."*

Stephen Schultz  
Executive Vice President and Chief Financial Officer  
Franklin Paint Company

### Allston Collision Center Allston, MA

#### Small business goes green

- Third generation family-owned business uses water-based paints, reducing the need for solvents.
- Reduced emissions of volatile organic compounds (VOCs) by more than 1,200 lbs. annually.
- Recycles paint thinner for reuse, reducing waste and worker exposure to harmful chemicals.
- Recycles solvents, aluminum, sheet metal, plastic bumpers and batteries.



Tiffany Skogstrom of the Office of Technical Assistance, Paul Chaet and Elaine O'Neill, both of Allston Collision Center.

*"We have always been open to new and safer ways to do business. Going green is important to the environment, our kids and our neighborhood. I really believe it's the right thing to do."*

Elaine M. O'Neill, President



### Analog Devices, Inc. Wilmington, MA

#### Saving 90 million gallons of water, gaining recognition

- 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.

*"Our profitability increases with market advantage gained from customers with preference for socially-responsible companies. Our big brand electronic customers demand that we comply with environmental regulations, use safer substances, be transparent and promote energy-efficient operations and products. The TURA Program helped get us here."*

Elizabeth Tshudy, Environmental, Health and Safety Manager



Liz Harriman of TURI, Senator Bruce Tarr, Elizabeth Tshudy and Ira Moskowitz of Analog, and Lisa Wilk of Capaccio Environmental Engineering.

### ChemGenes Corporation Wilmington, MA

#### Solvent reduction increases cash flow

- 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.



Dr. Andrei Laikhter of ChemGenes Corporation demonstrates the process for constructing synthetic DNA and RNA.

*"Since we started working with the Office of Technical Assistance in 2005 and analyzing their recommendations to use solvents more efficiently, we've experienced benefits beyond what we had predicted. 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."*

Anuj Mohan  
Chief Operating Officer



## Columbia Manufacturing Inc. Westfield, MA

### Saving millions of dollars per year, expanding production

- Recovers and reuses 98 percent of the nickel and chromic acid plating chemistry from a modern, efficient plating line.
- Eliminated the use of 147,000 gallons per day of process water and no longer generates 130,000 gallons per day of wastewater from the new plating processes.
- Recovers all wastewater to use as deionized water in the rinse baths.
- Saving \$3 million in water and sewer fees, \$3.85 million in nickel purchases and \$800,000 in chromium purchases.



*“As a small business, it was a big risk for us to change our manufacturing line but I’m proud to say that with the guidance of the Office of Technical Assistance, we expanded and upgraded our plating line. We would not be in business today without the improvements we made to reduce water use, chemical use, hazardous waste and wastewater.”*

Ali Salehi  
Senior Vice President

## Franklin Paint Company Franklin, MA

### Reduced toxics, improved product quality

- Eliminated use of xylene and methanol.
- Reduced use of three other chemicals below reporting thresholds while increasing paint production.
- Reduced use of lead by more than 100,000 pounds, chromium compounds by 100,000 pounds, and toluene by 500,000 pounds.
- Customers report that products perform better.

*“In the early years of TURA, we went through the planning process, worked with the Office of Technical Assistance and we haven’t stopped this process of improvement. We do this work because it’s the right thing to do for our company, workers, the community and the environment.”*

Larry Boise  
President and CEO



Larry Boise of Franklin Paint Company gives a tour of Franklin’s paint manufacturing facility.

## Independent Plating Inc. Worcester, MA

### Protecting worker health, saving money by reducing toxics

- 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.



Charlie Flanagan of Independent Plating and Kenneth Bergeron, Legislative Aide to State Rep. James O’Day.

*“Constant improvement is embedded in our culture and it stems from the TURA planning process. When we first started reporting toxic chemical use and submitting plans to the state 25 years ago, we were fulfilling a requirement. But now, by using safer materials we are viewed as a leader by our customers and are protecting worker health and saving money in the process.”*

Charlie Flanagan,  
CEO and President

## Ophir Optics LLC North Andover, MA

### Employee culture of continuous improvement

- Reduced volatile organic compounds by 70 percent, saving \$15,000 per year.
- Reduced the quantity of hazardous waste shipped by two-thirds, saving \$60,000 annually in associated costs.
- Achieved \$1 million in efficiency improvements by implementing a standardized workflow in manufacturing.

*“We appreciate this award which reflects our employee culture of continuous improvement. We apply this to all parts of our business, from the substances we use, to our designs and to our manufacturing processes. We do this work because it’s good for the environment, our workers and our bottom line.”*

Tim Petter  
Director of Operations



Quality Supervisor Hilder Velez of Ophir Optics shows lens products.

## Shawmut Corporation West Bridgewater, MA

### Completely eliminated the use of TCE

- Saved approximately \$1 million per year by implementing better process controls in solvent-based adhesive lamination.
- Eliminated the use of trichloroethylene (TCE) in 2013, which resulted in an additional \$750,000 in annual savings.
- Saved 95 percent annually on hazardous waste disposal costs.



Rep. Michelle DuBois, JL Wyner and James Wyner both of Shawmut Corporation.

*“The Office of Technical Assistance worked alongside us to identify safer alternatives to TCE and provided guidance on the changing face of compliance here at Shawmut, including guiding our status change from a large quantity generator of hazardous waste to a very small quantity generator and assisting with our petition to eliminate our EPA Title V Operating Permit.”*

Kevin Souza  
Regulatory Compliance  
Manager



*Toxics Use Reduction is a pollution prevention approach that is successfully used by large and small companies and community organizations to improve health and safety and protect the environment.*

## Stainless Steel Coatings Lancaster, MA

### Stands out among suppliers, customers, community

- 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 CO<sub>2</sub> emissions per year.



Secretary Matthew Beaton of the Executive Office of Energy and Environmental Affairs, Rep. Harold Naughton, Senator Jamie Eldridge, President Micheal Faigen of Stainless Steel Coatings and Tillie Ryan, Chief of Staff for Senator Jennifer Flanagan.

*“Making environmental improvements, reducing toxics use and saving energy has saved us money, making us more competitive. But something more subtle is that we stand out among our suppliers, customers and community. We keep our small facility clean, our factory is low impact, our people enjoy working here and it all pays off.”*

Robert Audlee  
Vice President

## Professional Wet Cleaning Workgroup

### Eliminating a carcinogen from dry cleaning

- Massachusetts dry cleaners that have switched from using the solvent perchloroethylene (perc) to professional wet cleaning.
- Share best practices on the wet cleaning process and ideas to save money and attract customers.
- Role models for dry cleaners who are still using perc, a toxic chemical designated a probable human carcinogen by the International Agency for Research on Cancer.

#### Members

AB Cleaners, Westwood  
Ace Cleaners, North Andover  
Art's Cleaners, Westborough  
Best Neighborhood Cleaners, Medford  
Faulkner's Cleansing, Melrose  
King & Queen Cleaners, Milford  
KMK Cleaners, Walpole  
J&P Cleaners, Jamaica Plain  
Silver Hanger Cleaners, Bellingham



Joon Han of AB Cleaners demonstrates professional wet cleaning technologies, a safer replacement to dry cleaning machines that use perchloroethylene.

*“We made the switch to wet cleaning and are very happy with the results. There has been a huge improvement in the way the air smells and the clothes come out cleaner without any shrinkage or the feel of chemicals.”*

Joon Han  
Owner of AB Cleaners

## Brazilian Women's Group Vida Verde Cooperative, Brighton

### Green cleaning cooperative protects worker health

- Trained more than 1,000 Brazilian housecleaners across the state on how to make their own cleaning products using safer ingredients.
- Partnered with the Brazilian community media to communicate the health effects associated with prolonged exposure to toxic cleaning products.
- Reached thousands of Brazilians who work in the cleaning industry through radio broadcasts, helping cleaners avoid toxics such as ammonia, bleach, hydrofluoric acid and formaldehyde.



Heloisa Galvao and members of the Brazilian Women's Group, members of the TURI staff, Neighborhood Coordinator John Laadt of the City of Boston, and Coordinator Alex Pirie of Immigrant Service Providers Group/Health.

*“Working with traditional cleaning products in small spaces for eight hours a day is detrimental to health. TURI grants helped us conduct training and education sessions with Brazilian cleaners on the use of safer cleaners. The TURI Laboratory tested safer cleaning solutions so we were confident that the products would work as well as traditional cleaners.”*

Heloisa Galvao  
Executive Director



Steven Glassman of Analog Devices.

