

From the Mass TUR Act

There shall be a Science Advisory Board associated with the Institute consisting of eleven members appointed by the governor, three members shall be nominated by the secretary of the executive office of environmental affairs, three members shall be nominated by the director of the Institute, three members shall be nominated by the director of economic development, one member shall be nominated by the director of labor and workforce development and one member shall be nominated by the secretary of the executive office of health and human services. Four of the initial appointees shall serve for an initial term of one year, four of the initial appointees shall serve for an initial term of two years, and all other appointees shall serve for three year terms. Each member shall have appropriate academic or professional experience. The institute shall consult with the board on issues including, but not limited to, additions and deletions to the toxic or hazardous substance list established in section 9 and the designation of substances as higher hazard substances and lower hazard substances. The members of the board shall serve without compensation, except that they may be reimbursed for out-of-pocket expenses incurred in the course of performing their duties as board members.

H783, SD1188 - An Act for a Healthy Massachusetts; Safer Alternatives to Toxic Chemicals

SECTION 1. Title. This Act shall be known and may be cited as "An Act for a Healthy Massachusetts: Safer Alternatives to Toxic Chemicals."

SECTION 2. Legislative findings.

Whereas, Article 97 of the Constitution of Massachusetts provides that the people shall have the right to clean air and water; and

Whereas, scientific evidence increasingly links many chronic diseases with repeated and increased exposure to toxic substances. These diseases and disorders include: asthma, autism, birth defects, cancers, developmental disabilities, diabetes, endometriosis, infertility, Parkinson's disease, and others; and

Whereas, more than 80,000 synthetic chemicals have been produced for use in the U.S since World War II, yet very few have ever been adequately tested for their potential impact on our health. The substances have contaminated the air we breathe, the water and food we consume, everyday products, our homes, schools, workplaces—and therefore end up in our bodies; and

Whereas, the Massachusetts Zero Mercury Action Plan of the Executive Office of Environmental Affairs demonstrates how an action plan can protect public health from a toxic substance through a gradual program of phasing out a hazardous substance and implementing safer alternatives; and

Whereas the General Court finds that:

With regard to many other toxic substances, the current regulatory system has failed to protect health and environment due to fundamental flaws, namely that it places high burdens on government to act, primarily after the damage is done rather than by prevention through seeking the safest alternatives to toxics as they become available;

That the current regulatory system for toxic chemicals has particularly failed to protect vulnerable populations including the developing fetus and child; people who are vulnerable due to health conditions or genetic predispositions; and low-income communities or disadvantaged workers who are overburdened with greater exposure to these toxic substances;

That Massachusetts is already a leader on environmental health policy with regard to toxics as a result of the Toxics Use Reduction Act (TURA), which shows that there are many benefits to businesses and the economy from implementing safer alternatives for toxic chemicals; however that such act has failed to address the broader need to substantially reduce the use of harmful chemicals in products used in workplaces and homes even though safer alternatives are often available;

That the European Union and other countries have already adopted more restrictive policies regarding the use of toxic chemicals and more health protective requirements for products, and over 37% of Massachusetts trade is with the European Union's Member States, and;

That there are safer alternatives available for many of the toxic substances in use today that will allow businesses to be more competitive by reducing costs associated with health care costs, worker illnesses and turnover, materials handling and tracking, and by opening local, national and international markets to their products, and;

That investing in Massachusetts businesses to assist them in developing and instituting safer alternatives will make Massachusetts a global leader in

sustaining an innovative economy based on research, development and production of new materials, products and processes that strengthen our economy while protecting our health and environment;

Therefore, it is the policy of the Commonwealth to ensure the substitution in the use, manufacture, emission and distribution of each of the priority toxic substances, and in consumer products containing the substances, with the safest feasible alternatives and toward the achievement of that policy the Commonwealth hereby adopts an integrated chemicals strategy to achieve that goal:

- a) Designating an initial group of priority chemicals to be targeted for substitution as safer alternatives are found to be feasible;
- b) Assessing the uses of those priority chemicals through the Toxics Use Reduction Institute at the University of Massachusetts in Lowell to determine whether there are safer feasible alternatives available for those usage categories;
- c) Where there are uses of the chemicals for which there are no safer feasible alternatives found, instituting further research and development;
- d) Directing the Executive Office of Environmental Affairs to set priorities for business assistance and regulatory agency action based on a substance's potential health and environmental impacts, on the economic and technical ease of substitution and on the economic benefits of investment in alternatives;
- e) Giving flexibility to businesses to develop and implement their own measures to choose and implement safer alternatives
- f) Directing the department of environmental protection to serve as the implementing regulatory agency for safer feasible alternatives;
- g) Directing the office of technical assistance within the executive office of environmental affairs to coordinate technical assistance to businesses in developing safer alternatives and substituting priority toxics, building on existing capacities at the Toxics Use Reduction Institute and office of technical assistance;
- h) Assessing fees on toxic chemicals to raise funds to create a Business Transition Assistance Program, and to cover regulatory costs.

The chemicals strategy envisioned under this act is integrated with and builds upon the programs established under the Massachusetts Toxics Use Reduction Act.

SECTION 3. Chapter 21 I of the General Laws, as appearing in the 2004 Official Edition, is amended by striking section 5.

SECTION 4. Chapter 21I of the General Laws is hereby amended to insert the following new sections:

Section 24. Definitions for Safer Alternatives Program

For purposes of sections 24 through 37 of this chapter, the following words and phrases shall have the following meanings:

"Acceptability criteria" means the hazard criteria set forth in section 4 for evaluating the acceptability of toxic substance alternatives.

"Alternative" or "alternatives" mean activities, technologies, materials or methods of equivalent function, which can be substituted for the use of a particular chemical.

"Board" means the Safer Alternatives Oversight Board created by this chapter.

"Department" means the department of environmental protection.

"Distributor" means any person or legal entity which distributes products to

retail establishments on a wholesale basis, and also includes any legal entity which owns retail establishments and distributes such products to more than five retail establishments of its own within the Commonwealth. Distribution or sales include, but are not limited to, transactions conducted through sales outlets, catalogs or the internet, a product under its own brand or sales of a product by others under their own brand or label.

"Environment" means natural physical conditions and systems including land, air, water, minerals, flora, fauna, noise, and ecosystems.

"EOEA" means the executive office of environmental affairs.

"Feasible" means capable of being accomplished within a reasonable period of time with proven technologies.

"Further study alternative" means an alternative for which the institute lacks sufficient data to characterize it either as a "safer alternative" or an "unacceptable alternative."

"Impact on existing jobs" means need for employee retraining to do a different job in the same workplace, changes in job descriptions or tasks, changes in working conditions such as health and safety, or reduction in employee wages or hours occurring in the Commonwealth of Massachusetts.

"Institute" means the toxics use reduction institute at the University of Massachusetts Lowell.

"Job loss" means the loss of employment within the Commonwealth of Massachusetts.

"Just and fair transition" means reemployment assistance or vocational retraining or other support or arrangements sufficient to ensure that any employee displaced in the Commonwealth as a result of toxic substance substitution will be eligible for an available job with at least equivalent wages and benefits, skill level, and working conditions.

"Legal entity" means any firm, association, organization, partnership, business, trust, corporation, limited liability company, company, district, county, city, town, and the state, and any of the agencies and political subdivisions of those entities, joint action agencies, public authorities, and, to the extent permitted by federal law, the United States, or any of its agencies or political subdivisions.

"Manufacturer" means the producer of a product sold or manufactured in the Commonwealth.

"Material substitution" means the direct replacement of one substance for a priority toxic substance in a simple drop-in process, without otherwise changing the formula or process.

"Priority toxic substance" means any of the following substances:

- Lead
- Formaldehyde
- Trichloroethylene
- Perchloroethylene
- Dioxins and Furans
- Hexavalent chromium
- Organophosphate pesticides
- Polybrominated Diphenyl Ethers
- di-(2-ethylhexyl)phthalate (DEHP)
- 2,4, Dichlorophenoxyacetic acid (2,4, D)

Additional substances shall be designated as priority toxic substances pursuant to section 33 of this chapter.

"Proven technologies" means technologies in use by some users within similar

firms in a user sector within or outside of the Commonwealth.

"Qualitative basis" means identifying and estimating categories of releases and exposures, without undertaking extensive quantitative studies or analysis.

"Safer Alternatives Assessment Report" means the alternatives assessment completed for each priority toxic substance by the Toxics Use Reduction Institute.

"Safer alternative" means an option or options – including a change in chemical, material, product, process, function, system, or any other action -- whose adoption to replace a chemical currently in use would be most effective in reducing overall potential for harm to human health or the environment.

"Science Advisory Board" means the science advisory board created by section 6 of this chapter.

"Substitution" means the replacement or reduction of hazardous substances by selecting less hazardous or non-hazardous substances, or by changing production processes, product function or design.

"Toxic or hazardous substance," means any chemical substance in a gaseous, liquid or solid state which is identified on the toxic or hazardous substance list established pursuant to section 9 of this chapter, but which will not include any chemical substance when it is (1) present in process water or non-contact cooling water as drawn from the environment or from municipal sources, or present in air used either as compressed air or as part of combustion; (2) present in crude, lube or fuel oils or other petroleum materials being held for direct wholesale or retail sale; (3) present as a naturally occurring substance in fossil fuels, and in emissions or byproducts as a result of the combustion of fossil fuels.

"Unacceptable alternative," means an alternative which contains, or whose use would result in exposure of humans or wildlife to, a chemical of high concern or other chemical used in dangerous and dispersive ways.

"Usage" means the presence of a priority toxic substance in manufacturing, products or services delivered or conducted within the Commonwealth.

"Usage Category" means the general area of use of a substance – for example in dyes, cleaners, or surfactants, and where appropriate, may also include a focus on a particular business sector, such as the use of a substance in cleaners used in hospitals, or on a subgroup of users or sectors that are technically and logically related, such as the use of cleaners in buildings occupied by children.

"User sector" means a logical grouping of users of a priority toxic substance within the Commonwealth.

Section 25. Chemicals Categorization List

(A). Preliminary Chemicals Categorization List. No later than one year following the receipt of funding, the Institute shall publish a Preliminary Chemicals Categorization List for chemicals commonly used in Massachusetts industry and in products sold in Massachusetts. The institute will rely on the Science Advisory Board to categorize chemicals on Preliminary Chemicals Categorization List into one of four categories: chemicals of high concern, chemicals of concern, chemicals of unknown concern, and chemicals of low concern. In preparing this categorization the Science Advisory Board will rely on published government lists of chemical categorizations such as, but not limited to, the Canadian Domestic Substances List Categorization, the European Commission's list of substances of very high concern, Washington State's list of persistent, bioaccumulative and toxic chemicals, International Agency for Research on Cancer's list of carcinogens, the Oslo-Paris Convention for the Protection of the Marine Environment of the North East Atlantic list of chemicals for priority action. However, the chemicals of high

concern category must include those chemicals recognized as carcinogens, mutagens and reproductive toxins; chemicals recognized as persistent, bioaccumulative and toxic chemicals; chemicals recognized as very persistent and very bioaccumulative chemicals; endocrine disruptors; and other chemicals of equivalent concern. In addition, the chemicals of high concern category shall include each of the priority toxic substances.

(B) Refined Chemicals Categorization List. Following the publication of the Preliminary Chemicals Categorization list, the institute and the Science Advisory Board will continue to review scientific information in regards to chemical positions in the categories. At periodic points, but at least every 4 years, and within 4 years after publication of the Preliminary Chemicals Categorization List, the institute and the Science Advisory Board shall refine the list to incorporate new scientific information and data, and publish a refined version of the list.

Section 26. Safer Alternatives Assessment Reports.

(A) Within two years from the passage of this Act, the institute shall conduct and publish for each of the 10 priority toxic substances listed in section 24 a Safer Alternatives Assessment Report which evaluates the availability of safer alternatives to the priority toxic substances for categories of uses within the Commonwealth

For each Safer Alternatives Assessment Report the institute shall:

- a. Identify the uses and functions of the priority toxic substance and select a subset of uses and functions for further study based on uses in Massachusetts and other relevant factors; priority shall be given to uses of greatest volume or dispersion into indoor and outdoor environments;
- b. Identify whether alternatives are available for the selected uses and functions of the priority toxic substance.
- c. Identify whether any of the existing uses of the substance are of a trivial, clearly unnecessary nature;
- d. Use the Chemical Categorization List in Section 25 and other relevant factors to characterize feasible alternatives as one of the following mutually exclusive categories: unacceptable alternatives, further study alternatives, or safer alternatives. Pursuant to Section 21 of this chapter, "unacceptable alternative" means an alternative which contains, or whose use would result in exposure of humans or wildlife to, a chemical of high concern or other chemical used in dangerous and dispersive ways; "further study alternative" means an alternative for which the institute lacks sufficient data to characterize it either as a "safer alternative" or an "unacceptable alternative"; "Safer alternative" means an option or options – including a change in chemical, material, product, process, function, system, or any other action -- whose adoption to replace a chemical currently in use would be most effective in reducing overall potential for harm to human health or the environment.
- e. The institute shall evaluate the economic feasibility of and economic opportunities or costs associated with adopting and implementing any safer alternative. This assessment shall include a qualitative characterization of the economic impacts of substitution on the Massachusetts economy, including any impacts on the workforce or quality of work life, potential costs or benefits to existing business, and the extent of human exposure to the priority toxic substance that could be eliminated through substitution.
- f. Each assessment shall also identify uses of chemicals that do not currently have a feasible safer alternative available, and make recommendations for promoting research and development of such alternatives.

(B) The Institute shall work with the Science Advisory Board to develop criteria for determining what alternatives are unacceptable alternatives, further study alternatives, or safer alternatives for priority toxic substances.

(C) The Institute shall request comments and suggestions of affected businesses, affected workers, the Safer Alternatives Oversight Board and members of the public in developing each Safer Alternatives Assessment Report. The Institute shall convene seminars and public meetings, and solicit

comments through the internet and other means to inform the development of the Safer Alternatives Assessment Report for each priority toxic chemical.

(D) The Institute shall publish and make available to the EOE, the department and the general public the results of the Safer Alternatives Assessment Report for each priority toxic substance and compile a general list of alternatives deemed as unacceptable, further study, or safer for all of the priority toxic substances.

(E) In the event one of the priority toxic substances is a pesticide, resources at the University of Massachusetts Amherst, including the Cooperative Extension Service, will complete the agricultural uses portion of the safer alternatives assessment.

(F) As additional substances beyond the first 10 priority toxic substances are added to the list of priority toxic substances by the department, the institute shall complete a Safer Alternatives Assessment Report for each. In preparing additional Safer Alternatives Assessment Reports the institute should strive to complete a minimum of three such reports per year.

Section 27. Registry of Uses of Priority Toxic Substances.

(A) Notices. No later than 120 days following the effective date of this section, any person or legal entity that manufactures or distributes a product in the Commonwealth which the manufacturer or distributor knows or has reason to suspect to contain a priority toxic substance shall file a notice with the department identifying the product, the approximate number of units distributed in the Commonwealth, an estimate of the amount or concentration of the priority toxic substance contained in each unit, if known, purpose for including the priority toxic substance, the name and address of the manufacturer, and the name, address, and phone number of a contact person. The department shall prescribe a notification form for such notices to be filed, and a means of filing such notices electronically.

(B) Distribution of information. The notices shall be provided by the department to the institute for use in preparing its Safer Alternatives Assessment Reports, and shall be a public record under section 10 of chapter 66 of the General Laws. Public disclosure of confidential business information submitted to the department pursuant to this section shall be governed by the requirements of section 10 of chapter 66 of the general laws. Notwithstanding the requirements of the said act, the state may provide the copies of such information, and the department may compile or publish analyses or summaries of such information provided that the analyses or summaries do not identify any manufacturer or reveal any confidential information.

(C) Preemption. Any product containing a priority toxic substance for which federal law governs notice in a manner that preempts state authority shall be exempt from the requirements of this section.

(D) With the approval of the department, a manufacturer, distributor or trade group may supply the information required above for a product category rather than an individual product. The submitter shall update and revise the information in the notification whenever there is significant change in the information or when requested by the department. The department may promulgate regulations pursuant to chapter 30A of the general laws for the content and submission of the required notification.

Section 28. Innovative Business Leaders Program. The Executive Office of Environmental Affairs shall create a program to encourage rapid substitution of priority toxic substances, called the "Innovative Business Leaders Program". This program shall encourage users of priority toxic substances or chemicals of high concern to complete Substitution Plans prior to completion of Safer Alternatives Assessment Reports, as defined in Sections 24 and 26 of this chapter, or Chemical Action Plans, as defined in Section 29 of this chapter. Those entities participating in the Innovative Business Leaders Program shall submit the results of Substitution Plans to the department. This program may include:

- (a) priority targeted financial and technical assistance and support for research, information gathering, and implementation;
 - (b) reduced Toxics Use Reduction planning requirements for firms that file under the Toxics Use Reduction Act;
- EOEA will develop criteria for firms that participate in said program.

Section 29. State Chemical Action Plans.

(A) No later than 180 days after the institute issues a Safer Alternatives Assessment Report for a specific priority toxic substance, the EOE shall utilize the report to establish a Chemical Action Plan for that substance. The goal of the Chemical Action Plan shall be to coordinate state agency activities and to require users of priority toxic substances to act as expeditiously as possible to ensure substitution of the priority toxic substance with a safer alternative, while acting to minimize job loss and mitigate any other potential unintended negative impacts. In preparing the Chemical Action Plan, the EOE shall consider the potential impacts to human health and the environment of the continued use of the priority toxic substance.

(B) Each Chemical Action Plan shall set forth:

- 1) Timetables, schedules and deadlines for achieving substitution of priority toxic chemicals with safer alternatives,
- 2) Requirements for all legal entities using the priority toxic chemical in Massachusetts to create a Substitution Plan which demonstrates how that entity will substitute all uses of the chemical with safer alternatives. Firms required to prepare Toxics Use Reduction Plans shall include the Substitution Plan in their Toxics Use Reduction Plan.

A Substitution Plan shall include:

- a) identification of all uses of a priority toxic substances,
- b) identification of all alternatives considered and their cost and feasibility considerations,
- c) selection of preferred alternatives that will achieve the objectives and schedules set out in the relevant Chemical Action Plan,
- d) timetables, schedules and deadlines for implementing the preferred alternatives,
- e) metrics for measuring and assuring the full substitution of the priority toxic substance.

Each completed Substitution Plan must be certified by a Toxics Use Reduction Planner, as defined in Section 12 of Chapter 21I, as complete and reasonable and capable of meeting the objectives and schedules of the relevant Chemical Action Plan.

- 3) Priorities for state agency action based on the Safer Alternatives Assessment Report.
- 4) Specific tasks assigned to the department relative to regulation deadlines and enforcement regarding business and institutional use of toxic chemicals in facilities, and regarding regulation of consumer products containing the priority toxic chemicals.
- 5) A set of implementation measures based on the following criteria:
 - a) If the Safer Alternatives Assessment Report indicates that safer alternatives are feasible and of comparable cost, the department shall be required to set and enforce deadlines within one year for certifying substitution of safer alternatives as provided by sections 31 and 32 of this chapter.
 - b) If the Safer Alternatives Assessment Report finds that safer alternatives are feasible, but require extensive capital expenditure or training, EOE shall implement a business assistance or employee transition program, as set forth in Section 30 of this chapter. EOE shall set a timetable for completing substitutions as expeditiously as possible.
 - c) If the Safer Alternatives Assessment Report determines that safer alternatives are not feasible the Chemicals Action Plan shall designate research and development activities to be pursued, including a priority of encouraging and supporting research by private entities; and
- 6) Recommendations on opportunities and needs for investment in Massachusetts businesses and research and development institutions to

promote the implementation of safer alternatives to toxic chemicals that could bring the most benefit to the Massachusetts economy through safe jobs and economic growth.

(C) After the EOEa has established a Chemical Action Plan, all other state agencies shall take any required implementing actions as set forth in the Chemicals Action Plans and this chapter.

(D) In preparing each Chemical Action Plan, EOEa shall hold public hearings in each of the five regions of the state to receive feedback on the contents of the plan.

Section 30. Business and Employee Transitions Programs

(A) Business Transitions Assistance Program.

The Executive Office of Environmental Affairs shall oversee a Business Transitions Assistance Program (BTAP) facilitating business transitions to safer alternatives to toxic chemicals in the Commonwealth. In developing the program, the EOEa shall determine where business assistance and financial investment can be most effectively used to protect public health by focusing on application and promotion of safer alternatives.

The office of technical assistance shall provide technical assistance to businesses for developing and implementing safer alternatives consistent with sections six and seven of this chapter. The Business Transition Assistance Program shall be principally operated through private consortia, public-private partnerships, and state universities. The Business Transitions Assistance Program shall include:

1. programs to evaluate technologies, encourage university researchers to pursue projects, link researchers with industry partners, and attract funding and additional support through federal and private grant and financial assistance resources;
2. direct grants and loans to businesses for costs required to implement safer alternatives
3. technical support focused on individual companies or user sectors;
4. technical assistance in assessing safer alternatives and assistance with forming consortiums to assess and develop safer alternatives
5. research and development of safer alternatives, including demonstration projects;
6. market development programs, to create demand for safer alternatives;
7. conferences, seminars, and workshops focused on joint problem solving and evaluation of technology development opportunities for particular user sectors;
8. publications focused on particular user sectors.

The Business Transition Assistance Program shall be developed with assistance and collaboration with the department of labor and industries, department of economic development, the office of technical assistance of the executive office of environmental affairs, department of labor and workforce development, and other agencies.

(B) Employee Transitions. The department of labor and workforce development shall cooperate with the EOEa and the department in developing the employee transition assistance programs. These agencies shall jointly develop a plan to provide that in the event that substantial job losses are anticipated as a result of implementation, just and fair transition services shall ensure reemployment assistance or vocational retraining or other support or arrangements sufficient to ensure that any employee displaced in the Commonwealth as a result of toxic substance substitution will be eligible for an available job with at least equivalent wages and benefits, and working conditions.

In the event that any employee is terminated after the enactment of this law, through no fault of his own, as a result of the transition from priority toxics, and is otherwise eligible for unemployment benefits, he or she shall receive reemployment assistance benefits and health insurance benefits through the

department of labor and workforce development. Such benefits shall be in addition to any benefits any employee may receive pursuant to the provisions of an agreement resulting from collective bargaining. The just and fair transition services shall include a mechanism for utilizing funds in the Innovation for Safer Alternatives Fund established by MGL chapter 29 section 2DDD to cover any expenses generated as a result of this section and shall provide a mechanism for annual accounting of any funds disbursed pursuant to this section.

In the event there is projected to be significant job loss in the Commonwealth as a result of the shift to safer alternatives, the department shall establish requirements to ensure a just and fair transition of any affected workers. In the event there would be other substantial impacts on existing jobs, transition plans should also address these issues.

Section 31. Implementation – In-state Manufacturers and Users of Priority Toxic Substances.

(A) In conformance with the Chemical Action Plan, the department shall promulgate regulations to establish substitution deadlines and substitution planning requirements for business or institutional uses for each priority toxic substance. The regulations shall specify enforcement mechanisms. The department shall establish de minimis thresholds for substitution requirements that shall ensure that any significant business uses of priority toxic substances are covered by the substitution requirements, even if such businesses or institutions were not previously required to prepare toxics use reduction plans.

(B) No later than 90 days prior to any substitution deadline promulgated by the department, each regulated entity shall:

- 1) Have completed a substitution plan as defined in Section 29; and
- 2) File with the department a certification of compliance that a safer alternative as designated by a Safer Alternatives Assessment Report has been implemented, including identification of the name of the alternative, and documentation of employee participation consistent with this section; or
- 3) File an application with the department to use an alternative substance that has neither been designated by the institute as a safer alternative, nor designated unacceptable, documenting that the alternative does not involve chemicals of high concern, and documenting with toxicity and exposure data how the substance would comply with the safer alternatives criteria developed by the institute. In response to such request the department shall evaluate whether such alternative is acceptable; or
- 4) File with the department an application for a waiver of the substitution deadline, certifying that there is no safer alternative that is technically or economically feasible for their particular use of the substance. Such waiver applications shall include:
 - a) identification of all uses of a priority toxic substances,
 - b) identification of all alternatives considered and their cost and feasibility considerations,
 - c) the basis for finding that there is no feasible safer alternative
 - d) documentation of efforts to be taken to minimize the use of the priority toxic substance and human and environmental exposures to such substance until safer alternatives are found and implemented,
 - e) the steps the applicant will take to identify safer alternatives in the coming year.

The department shall reject or accept such waiver application within 60 days of receipt of an application, and may grant the waiver where the department finds there is a need for the use of the substance, there was no safer alternative, and the use of the product would not cause human exposure or environmental contamination. Waivers are time limited to one year, after which time a new waiver application must be submitted.

(C) All regulated entities evaluating the substitution of safer alternatives pursuant to a safer alternatives substitution deadline shall undertake measures to involve employees. At a minimum, each firm shall provide employees a thirty-day period to provide comments. The firm shall maintain documentation of its employee input and how it is utilized, shall solicit employee comments regarding the use of alternatives, allow for anonymous

employee comments, and ensure an analysis of the impact the substitution may have on all aspects of the quality of work life.

(D) The department and the institute shall cooperate in revising training requirements for toxics use reduction planners to ensure that the planners are prepared to assist in fulfilling the substitution planning requirements of this section. In addition, the department and institute may develop an additional curriculum to enable toxics use reduction planners to aid manufacturers and distributors in fulfilling the requirements of section 32 of this act.

Section 32. Implementation – Distributors and Out of State Manufacturers of Products Containing Priority Toxic Substances.

The department shall promulgate regulations for distributors and out of state manufacturers to implement the Chemical Action Plan for each priority toxic substance, including:

(A) Establishing deadlines for manufacturers and distributors of products containing priority toxic substances to implement the alternatives or otherwise remove the products from the market in the Commonwealth.

(B) A requirement that no later than the date of any substitution deadline promulgated by the department, each manufacturer or distributor of a product sold or distributed in the Commonwealth which they know or should know contains such substances shall:

1) File with the department a certification that a safer alternative as designated by a Safer Alternatives Assessment Report has been implemented, including identification of the name of the alternative; or

2) File an application with the department to use an alternative substance that has neither been designated by the institute as a safer alternative, nor designated unacceptable, documenting that the alternative does not involve chemicals of high concern, and documenting with toxicity and exposure data how the substance would comply with the safer alternatives criteria developed by the institute. In response to such request the department shall evaluate whether such alternative is acceptable; or

3) File with the department an application for a waiver of the substitution deadline, certifying that there is no safer alternative that is technically or economically feasible for the user's products. Such waiver application shall include:

- a) identification of all uses of a priority toxic substances,
- b) identification of all alternatives considered and their cost and feasibility considerations,
- c) the basis for finding that there is no feasible safer alternative
- d) documentation of efforts to be taken to minimize the use of the priority toxic substance and human and environmental exposures to such substance until safer alternatives are found and implemented,
- e) the steps the applicant will take to identify safer alternatives in the coming year.

The department shall reject or accept such waiver application within 60 days of receipt of an application, and may grant the waiver where the department finds there is a need for the use of the substance, there was no safer alternative, and the use of the product would not cause human exposure or environmental contamination. Waivers are time limited to one year, after which time a new waiver application must be submitted.

(C) The department shall publish a set of lists, for use by retailers and members of the public, of (1) all products that have been certified by manufacturers or distributors as containing only those chemicals identified in an Safer Alternatives Assessment Report as safer alternatives, (2) all products that are being sold under a valid waiver and (3) noncomplying products that are prohibited for sale in the Commonwealth.

(D) The requirements of this section shall apply to manufacturers and distributors that sell or distribute products to persons or legal entities in the

Commonwealth, regardless of whether such manufacturers or distributors are physically located in the Commonwealth.

Section 33. General requirements and authorities.

(A) Businesses and legal entities of any size may develop collaborative submissions to meet any of the certification or waiver application requirements of sections 30 and 31 of this chapter. The executive office of environmental affairs shall assist in facilitating the formation and collaboration of groups of businesses in fulfilling the filing and documentation requirements.

(B) Certifications pursuant to section 30 and 31 shall be by independent laboratories known to and approved by the department.

(C) The department shall have all of the powers and authorities necessary to prohibit or limit the use, sale or distribution of a product containing a priority toxic substance in the Commonwealth.

(D) A manufacturer or distributor shall have a duty to take back from retailers and consumers, and compensate them for the full price paid, for any products sold after the enactment of this act for which a regulation of the department requires substitution and for which no waiver has been obtained for continued distribution of the product.

Section 34. Safer Alternatives Oversight Board.

(A) Membership. The Safer Alternatives Oversight Board shall consist of sixteen members appointed no later than ninety days following the effective date of this section by the Secretary of the Executive Office of Environmental Affairs, one of whom shall be nominated by each of the following to represent the nominating organizations: the Massachusetts Public Health Association; the Massachusetts AFL-CIO; the Massachusetts Building Trades Council; Building Trades Employers Association; the Massachusetts Coalition on Occupational Safety and Health and the Western Massachusetts Coalition on Occupational Safety and Health, jointly; Clean Water Action; Associated Industries of Massachusetts; Massachusetts Nurses Association; ; the Environmental League of Massachusetts; Massachusetts Breast Cancer Coalition; Massachusetts Public Interest Research Group; IUE/CWA Local 201; Small Business Association; the Responsible Business Association, Boston University School of Public Health; and one of whom shall be appointed as an at large representative by the Secretary.

Any member shall be eligible for reappointment. In making initial appointments to said committee, the Secretary shall appoint two members for terms of one year, three members for terms of two years, three members for terms of three years, and six members for a term of four years. Upon the expiration of the term of any such member, his successor shall be appointed for a term of four years. Persons appointed to fill vacancies shall serve for the unexpired term of said vacancy.

(B) The chairman of the Board shall be elected by the members. A member of the Board may be removed by the Secretary, solely for neglect of duty or malfeasance in office. The Office of the Secretary of Environmental Affairs shall be responsible for the administrative operations of the Board.

(C) Duties of the Board. The Safer Alternatives Oversight Board will participate, from conceptualization and scoping through drafts and finalization, in the development of each of the institute's Safer Alternatives Assessment Reports, the development of each of EOE's Chemical Action Plans and the development of implementing policies and regulations by the department. The Board's duties include:

1. Reviewing and providing comments to the Institute during the preparation of each Safer Alternatives Assessment Report. The institute must seek comments and recommendations from the Board and incorporate these into each report.

2. Reviewing and providing comments to EOEa during the preparation of each Chemical Action Plan. EOEa must seek comments and recommendations from the Board and incorporate these into each plan.

3. Reviewing and making recommendations to EOEa on the performance of Chemical Action Plans. Every two years EOEa must present a review of performance on the implementation of each Chemical Action Plan to the Board and seek comment and recommendation.

4. Providing recommendations of additional priority toxic substances, including persistent bioaccumulative toxics, to the department.

(F) Technical Assistance Grants. For purposes of ensuring public involvement the department shall establish technical assistance grants to organizations of consumers and/or workers focused on the impact of changes in specific sectors. Such grants shall assist in meeting the following needs:

1) securing full information on technologies and their impacts on workers, consumers and the environment;

2) hiring independent technical support regarding technologies, processes, and work organization; and

3) paying for training programs to assist affected groups in analyzing the changes.

Section 35. Addition of Priority Toxic Substances.

Following the development of the Preliminary Chemical Classification List, the Safer Alternatives Oversight Board shall recommend the addition of other chemicals of high concern to the list of priority substances. Following receipt of the list of additional priority toxic substances from the Safer Alternatives Oversight Board the department shall expand the list of priority toxic substances to include these chemicals. In addition, the department shall at its own initiative or at the recommendation of the Science Advisory Board or the Toxics Use Reduction Institute add chemicals to the list of priority toxic substances including chemicals that are persistent, bioaccumulative and toxic; are other chemicals of high concern; or are chemicals of concern that are widely used within Massachusetts. One year after the institute has published the Refined Chemicals Classification List, the department shall add all chemicals of high concern which are used in Massachusetts to the list of priority toxic substances.

In addition, any group of ten residents of the Commonwealth may petition the department to add new substances to the list of priority toxic substances. Substances shall be added to the list by the department provided that they are found to merit high priority based on the criteria for high concern chemicals described in Section 25A of this chapter. Such a petition shall include the name and address of each petitioner, and a statement of the basis for believing that the named substance should be added to the list of priority toxic substances, and such other information or documentation as the petitioner chooses to include.

Section 36. Enforcement and Appeals

(A) Penalties for Noncompliance. Except as otherwise provided in paragraph B of this section, violations of sections 24 to 39 of this chapter by any person or legal entity, shall subject the violator to penalties of up to \$25,000 per day of violation. In addition, the department shall have the authority to exclude products from the state when a distributor or manufacturer has failed to comply with the provisions of this Act.

(B) Exemptions for end users of consumer products. End users of consumer products shall not be subject to enforcement action under paragraph (a) of this section.

(C) Petition for Appeal. No later than 60 days following the publication of a

final Chemical Action Plan by the EOE, any ten residents of the Commonwealth may file a petition of appeal of any provisions of the plan with the Secretary of Environmental Affairs. Such a petition may be filed if the petitioners assert that the plan mischaracterizes uses of the priority toxic substance; fails to include feasible alternatives, or mischaracterizes alternatives; fails to result in substitution of the safest available alternatives as expeditiously as possible; fails to adequately address job loss or impacts on existing jobs; or otherwise fails to meet the criteria of this act. A petition of appeal shall state the grounds of objection. The EOE shall have 60 days from the date of filing to reply with its determination to (a) deny the appeal, or (b) grant the appeal and revise the plan.

(D) Citizen enforcement.

1) The superior court shall have jurisdiction to enforce the requirements of this chapter in an action brought by any ten residents of the Commonwealth against:

(i) any manufacturer, user or distributor alleged to have been in violation of such requirements; or

(ii) an official of the Commonwealth when there is alleged a failure of that official to perform any act or duty under this chapter which is not discretionary with that official.

2) No action may be commenced under this section against any manufacturer, user or distributor alleged to have been in violation of the requirements of this chapter prior to twenty one days after the date on which the plaintiff gives notice of the alleged violation to the department and the alleged violator. No action may be commenced under this subsection against any manufacturer, user or distributor alleged to have been in violation of such requirements if the department has commenced and is diligently pursuing an administrative order or civil action to enforce the requirement concerned and to impose a civil penalty under this chapter with respect to the violation of such requirement. No action may be commenced under this subsection against an official of the Commonwealth prior to twenty-one days after the date on which the plaintiff gives notice to said official that the plaintiff will commence the action. Notice under this subsection shall be given in a manner as the department shall prescribe by regulation.

3) The court, in issuing any final order for civil penalties or injunctive relief in any action brought pursuant to this subsection, may award costs of litigation, including reasonable attorney and expert witness fees, to the prevailing or substantially prevailing party other than the Commonwealth who advances the purposes of this chapter.

(E) In an action for judicial review, or review of a departmental decision by an administrative law judge, the court shall overturn a decision of the department which is contrary to the Safer Alternatives Oversight Board's recommendations unless it finds based on clear and compelling evidence that the findings or recommendations of the Safer Alternatives Oversight Board were in error.

Nothing in this section shall restrict or expand any right that anyone may have under any other federal or state statute or common law to seek enforcement of any requirement or to seek any other relief.

Section 37. Scope of Law and Relationship to Existing Law

(A) Relationship to Federal Law. Nothing in this Act shall be construed to require actions which are preempted by federal law. No provision of this Act shall be construed to require the adoption of Occupational Safety and Health standards or the issuance of orders on any Occupational Safety and Health matter on which the federal Occupational Safety and Health Administration has established a standard.

(B) Relationship to Existing laws. Existing environmental, land use, public health and conservation laws and regulations of the Commonwealth shall be

interpreted and enforced consistent with this Act. Nothing in this Act shall be interpreted so as to contravene federal law, or the Constitutions of the Commonwealth or of the United States. Nothing in this act shall be construed to convey rights to discharge priority toxic chemicals into the environment, to cause potential harm to individuals or the environment, or to create a nuisance. Nothing in this Act shall be construed to limit the ability of local government to restrict or prohibit the use or discharge of toxic substances.

(C) Severability. The provisions of this Act shall be severable. In the event that any provision of this Act is invalidated by a court of competent jurisdiction, the remaining provisions shall remain in full force and effect.

SECTION 5. Fee on toxic substances.

The department of environmental protection shall revise its existing fee structure under the Toxics Use Reduction Act to encompass, in addition to current filers, the wholesale sellers or distributors of products or services to retail establishments in the Commonwealth where such products or services utilize or contain priority toxic substances, regardless of whether such wholesale sellers or distributors are located within or outside of the Commonwealth. Where retail establishments buy products directly from manufacturers, the fee shall be assessed on the manufacturer. The fee shall be set at a level sufficient to raise \$18 million per year. 75% of the fee shall be collected from larger distributors and 25% from smaller distributors, based on criteria the department shall establish. In addition the department shall establish a de minimis threshold for products, services and toxic substances below which no fee shall be assessed.

SECTION 6. Chapter 29 of the General Laws is amended by adding the following section:

Section 2DDD. There shall be established and set up upon the books of the commonwealth, a separate fund to be known as the Innovation for Safer Alternatives Fund. There shall be credited to such fund any amounts collected by the department as fees or penalties pursuant to chapter 21I; any appropriation, grant, gift, or other contribution explicitly made to such fund; and any interest earned on monies within the fund. Amounts credited to such fund shall be used, subject to appropriation, solely for the purposes of carrying out chapter 21I including the Act for a Healthy Massachusetts: Safe Alternatives to Toxic Chemicals. Such funds shall be divided with at least six million dollars per year for the executive office of environmental affairs and its office of toxics use reduction assistance and technology, six million dollars per year for the Toxics Use Reduction Institute, two million dollars per year for the department of environmental protection, and four million dollars for the business transitions assistance program and the employee transition assistance program established by MGL chapter 21I section 28. The EOEA shall annually file a report with the house and senate committees on ways and means detailing the manner of expenditure of appropriations from the fund in the preceding fiscal year.

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SAB Work

The Toxics Use Reduction Act of 1989 created a Science Advisory Board (SAB) to work with the Institute as described in Chapter 21I, Section 6, line 496.

The Board's primary role is to consider petitions to add or delete chemicals from the TURA chemical list and make recommendations to the Institute accordingly. The Institute may call on the SAB for scientific or technical advice concerning other TURA-related issues.

SAB Role in implementing the New TURA Amendments

In July of 2006, the Massachusetts legislature voted to amend the Toxics Use Reduction Act (TURA) to encourage Massachusetts companies to move further along the path of reducing toxic chemical use. Among other items, the law now states that the TURA Administrative Council will decide which substances from the list should be designated higher or lower hazard chemicals, based on recommendations from the TURA Science Advisory Board and an analysis of the policy implications.

Lower threshold may bring additional facilities into the TURA Program

For the designated higher hazard chemicals, the threshold for reporting will be lowered from 25,000 pounds for manufactured or processed chemicals, or 10,000 pounds for chemicals otherwise used, to 1,000 pounds. These designations are expected to bring additional facilities into the TURA Program.

When the Administrative Council designates higher hazard substances, companies who use any of those chemicals will become part of the TURA Program if they:

- Either manufacture, process or otherwise use 1,000 pounds or more of the higher hazard substance
- Have ten or more full-time employees on staff, and
- Conduct business activities according to certain Standard Industrial Classification (SIC) codes

What will Massachusetts companies have to do?

If a company meets the requirements above for the higher hazard chemicals, if they are not already, they will become part of the Massachusetts TURA Program that requires companies to submit toxics use reduction plans, receive training, report chemical use, and pay fees. Please note that while companies must plan, the decision to actually implement the plan is voluntary.

The designation of the 10 lower hazard chemicals will only affect companies who currently report use of those chemicals. They will still have to plan and report use but they will no longer have to pay the \$1,100 fee for each lower hazard chemical per year.

It is expected that the first such designations will be made before the end of calendar year 2007, and the new reporting requirements would apply to the 2008 calendar year reporting (i.e. reports due in 2009).

Recent Recommendations

The SAB voted in July of 2009 to recommend adding 1-bromopropane (synonyms: n propyl bromide or nPB) to the TURA list of toxic or hazardous substances. TURI concurred, and provided a **policy analysis** supporting the listing to the Administrative Council at their July 29, 2009 meeting. The Administrative Council voted unanimously to list nPB. Draft regulations will be drawn up and put out for public comment in the fall of 2009.

For more information, please contact TURI Program Manager Heather Tenney at Heather@turi.org, 978-934-3260.

This page updated Wednesday January 06 2010

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- Higher and Lower Hazard Substances
- TURA More and Less Hazardous Lists
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Higher and Lower Hazard Substances

Under the 2006 Amendments to the Massachusetts Toxics Use Reduction Act, the TURA Administrative Council has the authority to designate up to 10 higher hazard substances and up to 10 lower hazard substances per year. The goal of this provision is to help Massachusetts companies and communities focus their toxics use reduction efforts on those chemicals that pose the most serious threats to health and the environment.

- The higher hazard designation lowers the threshold for reporting, planning, and paying TURA fees to 1,000 pounds per year.
- The lower hazard designation eliminates the per chemical fee. Reporting and planning requirements for these chemicals are unchanged.

To date, perchloroethylene (PCE), trichloroethylene (TCE), cadmium, and cadmium compounds have been designated as higher hazard substances. Persistent, bio-accumulative, and toxic (PBT) substances, which already have lower reporting thresholds, are also now designated as higher hazard substances.

In April 2011, the Administrative Council voted to separate hexavalent chromium compounds from the larger Chromium Compounds category, and to designate hexavalent chromium compounds as a higher hazard substance. In addition, in June 2011 the Administrative Council voted to designate formaldehyde as a higher hazard substance. If adopted in regulations, these changes will be effective for reporting year 2012.

The TURA program has also designated ten lower hazard substances. Three were designated in 2008, effective in reporting year 2009: Isobutyl alcohol (CAS 78-83-1), Sec-butyl alcohol (CAS 78-92-2), and n-butyl alcohol (CAS 71-36-3).

Seven were designated in 2009, effective in reporting year 2010: butyl acetate (CAS 123-86-4), isobutyl acetate (CAS 110-19-0), ferric chloride (CAS 7705-08-0), ferric sulfate (CAS 10028-22-5), ferrous chloride (CAS 7758-94-3), ferrous sulfate (heptahydrate) (CAS 7782-63-0), and ferrous sulfate (CAS 7720-78-7).

Chemicals designated as Higher Hazard or Lower Hazard Substances are drawn from a larger informational list of "more hazardous chemicals" and "less hazardous chemicals." These lists were created by the TURA Science Advisory Board as an informational resource.

This page updated Tuesday June 28 2011

Designation of Higher & Lower Hazard Substances Fact Sheet. 2008.

Download PDF file (47.05 kB)

Higher Hazard Substances Policy Analyses

- Formaldehyde Policy Analysis
- Hexavalent Chromium Policy Analysis
- Cadmium & Cadmium Compounds Policy Analysis
- TCE Policy Analysis
- PCE Policy Analysis

Lower Hazard Substances Policy Analyses

- Butyl Alcohols Policy Analysis

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Summary of Massachusetts Toxics Use Reduction Science Advisory Board Recommendations

Chemical	Recommendation	Supplemental Information	Status or Outcome
Nickel in alloy form	delist except for aerosols (less than 50 um)	Unanimous vote to accept recommendation. Aerosols should be reported under TURA because planning for efficient use is beneficial.	Delisting petition request accepted by Admin Council per SAB recommendation.
Chromium in alloy form	delist except for aerosols (less than 50 um)	Unanimous vote to accept recommendation. Aerosols should be reported under TURA because planning for efficient use is beneficial.	Delisting petition request accepted by Admin Council per SAB recommendation.
Copper in alloy form	delist except for aerosols (less than 50 um)	Unanimous vote to accept recommendation. Aerosols should be reported under TURA because planning for efficient use is beneficial.	Delisting petition request accepted by Admin Council per SAB recommendation.
Manganese in alloy form	delist except for aerosols (less than 50 um)	Unanimous vote to accept recommendation. Aerosols should be reported under TURA because planning for efficient use is beneficial.	Delisting petition request accepted by Admin Council per SAB recommendation.
Cobalt in alloy form	delist except for aerosols (less than 50 um)	Unanimous vote to accept recommendation. Aerosols should be reported under TURA because planning for efficient use is beneficial.	Delisting petition request accepted by Admin Council per SAB recommendation.
Chromium (III) oxide	delist	Unanimous vote to accept recommendation. Chromium (III) oxide is not known to cause significant human health effects, is not known to cause significant adverse effects on the env., does not bioaccumulate and the oxidation of chromium (III) to chromium (VI) is not likely to occur.	Delisting petition request accepted by Admin Council per SAB recommendation.
Sodium hydroxide	not delist	Majority decision to accept recommendation. Decision based primarily on its potential for acute toxicity to workers. For specific applications, there may be uses of sodium hydroxide for which there is scientific justification to determine that sodium hydroxide is the least hazardous material and presents the least risk; this should be considered by the Administrative Council	Delisting petition request denied by Admin Council per SAB recommendation.

Chemical Name	Recommendation	Supplemental Information	Status or Outcome
Hydroquinone	delist, except for manufacture	Unanimous vote to accept recommendation. Material has moderate to low toxicity. Recommendation to delist was made because material did not satisfy the criteria of "significant health effects"	Delisting petition request accepted by Admin Council per SAB recommendation.
Butyl benzyl phthalate	delist	Unanimous vote to accept recommendation. The Board recommended delisting in the absence of science to prove that butyl benzyl phthalate is estrogenic despite emerging science that suggests that this potential exists.	From a policy perspective, the Institute questioned whether the absence of knowledge is a sufficient basis to support a delisting at this time. The Admin Council denied the delisting petition.
Ethyl Acetate	not delist	Unanimous vote to accept recommendation. Recommendation based primarily on its potential for acute toxicity to workers.	Delisting petition request denied by Admin Council per SAB recommendation.
Acetic Acid	delist at conc. below 12%	Unanimous vote to accept recommendation.	Delisting petition request accepted by Admin Council per SAB recommendation.
Sodium Hypochlorite	not delist	Majority decision to accept recommendation.	Delisting petition request denied by Admin Council per SAB recommendation.
Acetone	no recommendation	Board vote was split.	Delisting request denied. Acetone will be reviewed again in one year and categorization of the list of chemicals will be evaluated.
Zinc oxide	delist	Unanimous vote to accept recommendation.	Delisting petition request accepted by Admin Council per SAB recommendation.
Sterling silver alloy	delist copper-silver alloys except for aerosols (less than 50 um)	Unanimous vote to accept recommendation. Aerosols should be reported under TURA because planning for efficient use is beneficial.	Delisting petition request accepted by Admin Council with qualifications as per SAB recommendation.
Zinc stearate		Unanimous vote to accept recommendation. Zinc stearate is not known to cause significant human health effects; it is not known to cause significant adverse effects on the	Delisting petition request accepted by Admin Council per SAB recommendation.

Prepared 12/3/96, Updated 04/06/11

		environment; and it does not present a safety hazard. The toxicity of zinc stearate fumes do not pose a significant threat in the manner in which it is used in the Commonwealth.	
Copper in alloy form	delist except for aerosols (less than 50 um)	Delisting originated in SAB to be consistent with previous decisions. Unanimous vote to accept recommendation. Aerosols should be reported under TURA because planning for efficient use is beneficial.	SAB recommendation accepted by Admin Council
Silver in alloy form	delist except for aerosols (less than 50 um)	Delisting originated in SAB to be consistent with previous decisions. Unanimous vote to accept recommendation. Aerosols should be reported under TURA because planning for efficient use is beneficial.	SAB recommendation accepted by Admin Council
Crystalline Silica	list particle sizes less than 10 um	Unanimous vote to accept recommendation	SAB recommendation accepted by Admin Council
n-Propyl Bromide	list	Unanimous vote to accept recommendation	SAB recommendation accepted by Admin Council

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Policy Analyses for CERCLA Chemicals

Statutory amendments to the Toxics Use Reduction Act in 2006 required the Science Advisory Board (SAB) and the Toxics Use Reduction Institute (TURI) to review the substances on the TURA Toxic or Hazardous Substances List originating from the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) list and make a recommendation to the Council as to which substances should be retained. In order to make review of this list manageable, the SAB and TURI considered the CERCLA chemicals in two principal groups: those that have been reported under TURA at some point, and those that have never been reported under TURA.

A decision to retain a substance means that TURA requirements for that substance will remain unchanged. A decision to take no action on a substance means that the substance will be removed from the TURA Toxic or Hazardous Substances List.

The documents shown on this page present the SAB's and TURI's recommendations to retain or take no action on both reported and never reported CERCLA chemicals. This information, along with recommendations of the Advisory Committee, was presented to the Administrative Council on July 18, 2008. At that meeting, the Council voted to retain all the substances recommended for retention by the SAB. The Council has not yet made a decision on those substances that were recommended by the SAB for no action. After a Council vote, the next step is the regulatory process, in which there will be draft regulations issued, time for public comment, and then final regulations promulgated.

Policy Analysis for CERCLA Chemicals reported under TURA

Policy Analysis for CERCLA Chemicals never reported under TURA

This page updated Wednesday January 06 2010

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Toxics Use Reduction Institute

*Policy Analysis: Recommendation to retain
certain CERCLA chemicals that have been reported by TURA filers*

June 16, 2008

Statutory amendments to the Toxics Use Reduction Act (TURA) in 2006 required the Science Advisory Board (SAB) and TURI to review the existing chemicals on the TURA Toxic or Hazardous Substance List originating from the CERCLA chemical list and make a recommendation to the Council as to which chemicals should be retained. The Council has until August 1, 2008, to make decisions taking these recommendations into account. The goal of this process is to help facilities focus their efforts more closely on substances that present greater hazards to human health and the environment in Massachusetts.

The SAB has considered the CERCLA chemicals in two broad groups: chemicals that have been reported at some point by TURA filers, and chemicals that have never been reported by TURA filers. This document presents information on those chemicals that:

- Have been reported by TURA filers, and
- Are recommended for retention on the TURA list.

The TURA Science Advisory Board (SAB) has recommended retaining the CERCLA substances discussed in this document. If these substances are retained on the TURA list, facilities subject to TURA and using these substances above reporting thresholds will continue to be required to file an annual toxics use report, pay an annual toxics use fee, and develop a toxics use reduction plan every two years for these substances.

This policy analysis presents the scientific information reviewed by the Science Advisory Board in developing its recommendations. In addition, it summarizes information for the most recent year in which the substance was reported, the number of filers that reported use of the substance in the most recent reporting year, and regulations that apply to these substances at the state, federal, and international levels. Based on the information presented here, TURI supports the SAB's recommendations to retain these CERCLA substances.

1. Substances recommended for retention

Appendix A is a list of CERCLA substances recommended for retention on the TURA list.

2. Basis for SAB recommendations

The discussion below provides an overview of the information considered by the SAB. Points discussed by the SAB are summarized briefly in Appendix A, and the specific data for each substance are shown in Appendix C. In addition to the data shown in Appendix C, in many instances individual SAB members brought additional scientific information to the meeting.

The substances recommended by the SAB for retention on the TURA list pose concerns based on health, safety, or environmental criteria. For each of the substances the SAB recommended retaining on the TURA list, there was particular concern based on one or more data points. In

some cases, the SAB based its recommendation on the fact that there were multiple data points of concern.

In reviewing the substances, the SAB considered the following data:

- International Agency for Research on Cancer (IARC) rating.
 - The SAB recommended retaining any substance that has an IARC rating (Group 1, 2, or 3). Eleven substances were retained on this basis.
- Data from the EPA PBT profiler (persistence in water, soil, sediment, and air; bioconcentration factor; and chronic toxicity in fish).¹
 - A number of the substances recommended for retention on the TURA list have a high persistence value in at least one medium. The SAB considered high persistence in sediment or soil to be a particular source of concern.
- Neurotoxicity (based on Scorecard's list of suspected neurotoxicants, and other sources in some cases).²
 - Of the substances recommended for retention, four (methylethylketone, 1,2-Ethanediamine, 1,1'oxybis-ethane, and diethylphthalate) are identified as neurotoxicants.
- Developmental/reproductive toxicity (based primarily on California's Proposition 65 list, and other sources in some cases).³
 - Of the substances recommended for retention, ten are listed as reproductive or developmental toxicants: nitrogen dioxide; caprolactam; 1,2-ethanediamine; Dodecylbenzenesulfonic acid; Ethylenediamine-tetraacetic acid (EDTA); N,N-dimethyl-Methanamine; Potassium permanganate; isophorone; butyl benzyl phthalate; and diethyl phthalate.
- Mutagenicity (based on the European Union's Consolidated List of Carcinogens, Mutagens, and Reproductive Toxicants [CMR], and other sources in some cases).⁴
 - Two of the substances recommended for retention are listed as mutagens: nitrogen dioxide and 1,2-ethanediamine. In both cases, the SAB cited the mutagenicity of these substances as a basis for retention.

¹ EPA PBT Profiler, available at <http://www.epa.gov/oppt/sf/tools/pbtprofiler.htm>.

² Scorecard's list of suspected neurotoxicants, and the sources used to compile the list, is available at <http://www.scorecard.org/health-effects/> (select the link for neurotoxicity). Information on neurotoxicity of methylethylketone is drawn from the Fisher Scientific Material Safety Data Sheet (MSDS) for the substance.

³ The California Proposition 65 List is available at http://www.oehha.org/prop65/prop65_list/Newlist.html. Additional information is drawn from the NIOSH Registry of Toxic Effects of Chemical Substances (RTECS); ReproEXPERT; Material Safety Data Sheets; and information presented by SAB members.

⁴ The EU Consolidated CMR List is available at <http://www.chemicalspolicy.org/downloads/cmrlist.pdf>. Additional information is drawn from the US National Library of Medicine Toxicology Data Network (TOXNET).

- Lethal dose or concentration information (LD50 and LC50). A number of substances were selected for retention on the list based on a low LD50 or LC50.
- Exposure limits required or recommended by Federal agencies
 - Reference dose and reference concentration (RfD and RfC, from EPA Integrated Risk Information System).⁵ The SAB did not emphasize the RfD or the RfC as the primary reason for any of its recommendations to retain substances. However, the RfD and RfC served as contextual information contributing to the SAB's over-all assessment for each substance.
 - ATSDR Minimum risk level (MRL). MRL's are not available for most of the substances discussed here. However, in a few cases the SAB took the MRL into account in developing its recommendation.
 - NIOSH Recommended Exposure Limit (REL); Threshold Limit Value – Time Weighted Average (TLV-TWA); and Threshold Limit Value – Short Term Exposure Limit (TLV-STEL).⁶ In several instances, the SAB cited a low REL, TLV (TWA), or TLV (STEL) as an important factor in its recommendation to retain a given substance.
- Flash point. A number of the substances recommended for retention have relatively low flash points. The SAB cited flash point in particular as a basis for concern about 1,1'-oxybis-ethane, which has a flash point of -49 degrees Fahrenheit, and for acetone, which was also the subject of a past delisting petition.
- Past delisting petitions. If a substance was the subject of a past delisting petition which failed and there is no new information regarding the substance, the Board deferred to its previous decision to retain.

3. Use Information

As shown in Appendix B, the majority of the substances recommended for retention on the TURA list have been reported by TURA filers within the last three years for which data are available (2003 to 2005). A few of the substances have not been reported in recent years, and in some cases may have been reported in error.

The number of filers is variable. Most substances are reported by fewer than 10 filers, while a few are reported by more than a hundred.

4. Regulatory Context

Appendix B shows selected regulatory information for each of the substances.

- Five of the substances are identified as EPA Clean Water Act Priority Pollutants. Thirty-one of the substances are identified on the EPA Clean Water Act 311 List of Hazardous Substances.
- Seven of the substances are found on the EPA Superfund Amendments and Reauthorization Act (SARA) 302A Extremely Hazardous Substances List.

⁵ EPA Integrated Risk Information System, available at <http://www.epa.gov/iris/>.

⁶ REL, TLV-TWA, and TLV-STEL are drawn from the National Institutes of Occupational Safety and Health (NIOSH) Pocket Guide to Chemical Hazards, available at <http://www.cdc.gov/niosh/npg/>.

- Eight of the substances are listed as hazardous constituents under the Resource Conservation and Recovery Act (RCRA).
- None of the substances have maximum contaminant levels (MCLs) under the Safe Drinking Water Act.
- Three of the substances are regulated as hazardous air pollutants under the Clean Air Act.
- All but three of the substances are on the New Jersey Right-to-Know list. All are on the Pennsylvania Hazardous Substances list.
- Twenty-six of the substances meet the categorization criteria for the Government of Canada's Domestic Substances List categorization, indicating that there is a need for further attention to these substances based on human health and/or environmental criteria.

5. Implications for the TURA Program

Retaining these substances on the TURA list will mean that the TURA program's approach to these substances will remain unchanged. TURA-covered facilities will continue to be subject to reporting, planning, and fee requirements for these substances. The TURA program will continue to provide services to assist facilities in reducing their use of these substances.

Appendix A: Information from SAB Minutes used in consideration of chemical retention

Chemicals recommended for retention by the Science Advisory Board

CAS#	Chemical Name	Date(s) Considered by SAB	Justification Note: Unless otherwise noted, votes were unanimous.
64-19-7	Acetic acid (concentrations of 12% or less are NOT reportable)	3/20/07; 4/23/2007	In response to a past delisting request, the SAB recommended retaining due to corrosivity. The SAB also recommended designation as a lower hazard substance. The SAB believed there was no reason to change its past recommendation.
67-64-1	Acetone	3/20/07; 4/23/2008	In response to a past delisting request, the SAB recommended retaining due to flammability and high vapor pressure. The SAB also recommended designation as a lower hazard substance. The SAB believed there was no reason to change its past recommendation.
141-78-6	Ethyl Acetate	4/23/07; 6/4/07; 6/25/07; 7/16/07	In response to a past delisting request, the SAB recommended retaining. Recommendation based primarily on its potential for acute toxicity to workers. The SAB also recommended designation as a lower hazard substance. The SAB believed there was no reason to change its past recommendation.
78-83-1	Isobutyl Alcohol	6/4/07; 7/16/07	LD50, Chronic Fish Toxicity, and TWA are lower than those for several other retained chemicals.
78-93-3	Methylethylketone	3/20/07; 6/4/07; 6/25/07; 7/16/07	The SAB previously categorized MEK as less hazardous. Information from EPA's delisting was reviewed. The SAB believed it should be consistent with its past actions and recommended retaining MEK and designating as a lower hazard substance.
10022-70-5	Sodium hypochlorite pentahydrate	10/17/2007	IARC 3 rating.
10025-87-3	Phosphorus oxychloride	10/17/2007	Low STEL and TLV, high persistence in air, and acute irritant qualities.
10102-44-0	Nitrogen dioxide	12/19/2007	Low TLV-STEL and inhalation hazard.
107-15-3	1,2-Ethanediamine	12/19/2007	Acutely toxic with low PEL and REL.
108-46-3	Resorcinol	10/17/2007	IARC 3 rating.
108-94-1	Cyclohexanone	10/17/2007	IARC 3 rating.
109-89-7	Diethylamine	12/19/2007	Acutely toxic with low PEL and REL.
123-62-6	Propionic anhydride	10/17/07; 12/19/07	Irritant potential, persistence in air, and comparison to acetic acid/anhydride. 6 votes to retain, 1 abstaining.

1310-58-3	Potassium hydroxide	10/17/2007	Compared to sodium hydroxide. Same TLV ceiling as sodium hydroxide; low pH; worker hazard; respiratory tract irritant.
1336-21-6	Ammonium hydroxide	10/17/2007	Compared to sodium hydroxide. Same TLV ceiling as sodium hydroxide; low pH; worker hazard; respiratory tract irritant.
16721-80-5	Sodium hydrosulfide	12/19/2007	Corrosivity.
25155-30-0	Sodium dodecylbenzenesulfonate	6/25/07; 10/17/07; 12/19/2007	Ecological effects.
27176-87-0	Dodecylbenzenesulfonic acid	6/25/07; 10/17/07; 12/19/2007	Ecological effects
540-84-1	2,2,4-Trimethylpentane	10/17/2007	Persistence in sediment.
60-00-4	Ethylenediamine-tetraacetic acid (EDTA)	12/19/2007	Low LD50 and persistence in sediment. 5 votes to retain, 1 opposed, 1 abstaining.
60-29-7	Ethane, 1,1'-oxybis-	12/19/2007	Retained due to persistence, flammability, peroxide formation, low vapor pressure, and ability to act as a CNS depressant.
7440-23-5	Sodium	12/19/2007	High reactivity.
75-04-7	Ethanamine	12/19/2007	Acutely toxic with low PEL and REL.
75-20-7	Calcium carbide	10/17/2007	IARC 3 rating.
75-50-3	Methanamine, N,N-dimethyl-	12/19/2007	The SAB discussed the amines as a group. All are acutely toxic with low PELs and RELs. The SAB voted to retain all four.
7631-90-5	Sodium bisulfite	12/19/2007	IARC 3 rating.
7778-54-3	Calcium hypochlorite	10/17/07; 12/19/2007	Retained due to IARC 3 rating.
78-59-1	Isophorone	6/25/07; 10/17/2007	Evidence of fetal malformations, persistence in soil, EPA Class C (possible carcinogen) rating, and low TWA.
79-09-4	Propionic acid	12/19/2007	Irritant potential, persistence in air, and comparison to acetic acid/anhydride. 4 voted to retain, 2 opposed, 1 abstaining.
98-01-1	Furfural	6/25/07; 10/17/2007	IARC 3 rating.
107-12-0	Propanenitrile (ethyl cyanide)	6/4/07; 6/25/07; 7/16/07	It is a cyanide compound and cyanide compounds are on the more hazardous list. Information from EPA indicates this substance is not clearly covered in the cyanide category.
108-24-7	Acetic anhydride	6/4/2007	It is more toxic than acetic acid, which has been retained.
108-98-5	Benzenethiol	4/23/07; 6/4/2007	LD50.
109-99-9	Furan, tetrahydro-	4/23/07; 6/4/2007	LD50.

12125-01-8	Ammonium fluoride	6/4/07; 6/25/07; 7/16/07	Ability to dissociate into HF in solution.
1310-73-2	Sodium hydroxide	4/23/2007	Decision based primarily on its potential for acute toxicity to workers. SAB previously recommended against a delisting petition; no new information to support changing this recommendation. Four voted to retain, 1 abstaining.
1341-49-7	Ammonium bifluoride	6/4/07; 6/25/07; 7/16/07	Ability to dissociate into HF in solution.
156-60-5	1,2-Dichloroethylene	4/23/07; 6/4/2007	LD50.
30525-89-4	Paraformaldehyde	4/23/07; 6/4/2007	LD50.
7681-52-9	Sodium hypochlorite	6/25/07; 7/16/07	SAB previously recommended against a delisting petition due to environmental toxicity and reactivity; no new information to support changing this recommendation.
7790-94-5	Chlorosulfonic acid	4/23/07; 6/4/2007	Retained due to LD50.
7664-93-9	Sulfuric acid	1/30/07; 6/4/07	IARC 1 rating.
8014-95-7	Sulfuric acid (fuming) (a.k.a. oleum)	6/25/2007; 12/19/07	IARC 1 rating.
85-68-7	Butyl benzyl phthalate (BBP)	4/23/07; 6/4/07	A previous delisting petition for this substance failed. ⁷ New information documents developmental & reproductive toxicity and ubiquitous presence in the environment.
95-57-8	2-Chlorophenol	4/23/07; 6/4/2007	LD50.
65-85-0	Benzoic Acid	1/29/08	Retained with all benzene related compounds
84-66-2	Diethylphthalate	5/20/08	The SAB made an initial recommendation to take no action on this substance. However, the SAB has requested information regarding conflicting studies, and will revisit this recommendation at its next meeting. Therefore, TURI recommends retaining this substance until that review is complete.
7664-38-2	Phosphoric Acid	5/20/08	Retained due to worker hazard.

⁷ In 1996 the SAB reviewed a delisting petition for BBP and recommended delisting it. However, at the time there was rapidly emerging new information about the substance. Therefore, TURI recommended retaining the substance and the Administrative Council voted not to delist it. Additional information about the substance has emerged since that time, and was reviewed by the SAB, leading to the recommendation to retain it.

Appendix B - Additional information on substances recommended for retention

Regulatory Data

Cas #	Chemical Name	Last Reported	Number of Filers	EPA Clean Water Act 126 Priority Pollutants	EPA Clean Water Act 311 List of Hazardous Substances	EPA SARA 302A Extremely Hazardous Substances List	Hazardous Constituents (Resource Conservation and Recovery Act)	Hazardous Air Pollutants (Clean Air Act)	NJ Right to Know List	PA Hazardous Substances List	Meets Canadian substances categorization criteria
64-19-7	Acetic acid (concentrations of 12% or less are NOT reportable)	2005	20	-	Y	-	N	N	Y	Y	Y
67-64-1	Acetone	2005	54	-	-	-	N	N	Y	Y	Y
141-78-6	Ethyl Acetate	2005	29	-	-	-	N	N	Y	Y	N
78-83-1	Isobutyl Alcohol	2005	3	-	-	-	N	N	Y	Y	Y
78-93-3	Methylethylketone	2005	36	-	-	-	Y	Y	Y	Y	Y
10022-70-5	Sodium hypochlorite pentahydrate	1999	1	-	Y	-	N	N	N	Y	-
10025-87-3	Phosphorus oxychloride	2003	1	-	Y	Y	N	N	Y	Y	N
10102-44-0	Nitrogen dioxide	2005	2	-	Y	Y	Y	N	Y	Y	N
107-15-3	1,2-Ethanediamine	2005	1	-	Y	Y	N	N	Y	Y	Y
108-46-3	Resorcinol	2003	1	-	Y	-	Y	N	Y	Y	Y
108-94-1	Cyclohexanone	2005	6	-	-	-	N	N	Y	Y	Y
109-89-7	Diethylamine	1994	1	-	Y	-	N	N	Y	Y	N
123-62-6	Propionic anhydride	2005	1	-	Y	-	N	N	Y	Y	N
1310-58-3	Potassium hydroxide	2005	27	-	Y	-	N	N	Y	Y	Y
1336-21-6	Ammonium hydroxide	2002	3	-	Y	-	N	N	Y	Y	Y

Cas #	Chemical Name	Last Reported	Number of Filers	EPA Clean Water Act 126 Priority Pollutants	EPA Clean Water Act 311 List of Hazardous Substances	EPA SARA 302A Extremely Hazardous Substances List	Hazardous Constituents (Resource Conservation and Recovery Act)	Hazardous Air Pollutants (Clean Air Act)	NJ Right to Know List	PA Hazardous Substances List	Meets Canadian substances categorization criteria
27176-87-0	Dodecylbenzenesulfonic acid	2005	4	-	Y	-	N	N	Y	Y	N
540-84-1	2,2,4-Trimethylpentane	2005	1	-	-	-	N	Y	Y	Y	N
60-00-4	Ethylenediamine-tetraacetic acid (EDTA)	2002	1	-	Y	-	N	N	Y	Y	Y
60-29-7	Ethane, 1,1'-oxybis-	2005	1	-	-	-	N	N	Y	Y	Y
7440-23-5	Sodium	2003	1	-	Y	-	N	N	Y	Y	N
75-04-7	Ethanamine	2005	2	-	Y	-	N	N	Y	Y	N
75-20-7	Calcium carbide	1992	1	-	Y	-	N	N	Y	Y	N
75-50-3	Methanamine, N,N-dimethyl-	2000	1	-	Y	-	N	N	Y	Y	N
7631-90-5	Sodium bisulfite	2005	8	-	Y	-	N	N	Y	Y	Y
7778-54-3	Calcium hypochlorite	2003	1	-	Y	-	N	N	Y	Y	Y
78-59-1	Isophorone	2003	1	Y	307A	-	N	Y	Y	Y	Y
79-09-4	Propionic acid	2005	2	-	Y	-	N	N	Y	Y	Y
98-01-1	Furfural	2005	1	-	Y	-	N	N	Y	Y	Y
107-12-0	Ethyl cyanide	1999	1	-	-	Y	Y	N	Y	Y	N
107-12-0	Propanenitrile	1999	1	-	-	Y	Y	N	Y	Y	N
108-24-7	Acetic anhydride	2005	1	-	Y	-	N	N	Y	Y	Y
108-98-5	Benzenethiol	2005	1	-	-	Y	Y	N	Y	Y	N
109-99-9	Furan, tetrahydro-	2005	6	-	-	-	N	N	Y	Y	Y
12125-01-8	Ammonium fluoride	2005	3	-	Y	-	N	N	Y	Y	Y

Cas #	Chemical Name	Last Reported	Number of Filers	EPA Clean Water Act 126 Priority Pollutants	EPA Clean Water Act 311 List of Hazardous Substances	EPA SARA 302A Extremely Hazardous Substances List	Hazardous Constituents (Resource Conservation and Recovery Act)	Hazardous Air Pollutants (Clean Air Act)	NJ Right to Know List	PA Hazardous Substances List	Meets Canadian substances categorization criteria
1310-73-2	Sodium hydroxide	2005	176	-	Y	-	N	N	Y	Y	Y
1341-49-7	Ammonium bifluoride	2005	3	-	Y	-	N	N	Y	Y	Y
156-60-5	1,2-Dichloroethylene	2005	1	Y	-	-	N	N	N	Y	N
30525-89-4	Paraformaldehyde	2005	1	-	Y	-	N	N	Y	Y	Y
7681-52-9	Sodium hypochlorite	2005	36	-	Y	-	N	N	Y	Y	Y
7790-94-5	Chlorosulfonic acid	2005	1	-	Y	-	N	N	Y	Y	N
8014-95-7	Sulfuric acid (fuming), a.k.a. oleum	2003	1	-	-	-	N	N	N	Y	-
7664-93-9	Sulfuric acid	2005	110	-	Y	Y	N	N	Y	Y	Y
85-68-7	Butyl benzyl phthalate	2005	2	Y	-	-	N	N	Y	Y	Y
95-57-8	2-Chlorophenol	1990	1	Y	307A	-	Y	N	Y	Y	N
65-85-0	Benzoic Acid	2005	1	-	Y	-	N	N	Y	Y	N
84-66-2	Diethylphthalate	2005	1	Y	N	-	Y	N	Y	Y	N
7664-38-2	Phosphoric Acid	2005	40	-	Y	-	N	N	Y	Y	Y

Key: Y = found on list; N = does not meet criteria; - = not found on list or in database; 307A = substance located on EPA Clean Water Act 307A Toxic Pollutants list

Retain: Appendix C: Data considered by the SAB

CAS#	Chemical Name	Synonyms	IARC	Water	Soil	Sediment	Air	BCP	Chronic Fish CVY (mg/l)	Neurotoxicity	Developmental/ Reproductive Toxicity	Mutagenicity	LD50 (mg/kg)	LC50 (mg/m ³)	LC50 (mg/m ³ /4hr)	RfD (mg/kg/day)	RC (mg/m ³)	NIOSH-REL	TLV(TWA) mg/m ³	TLV-STEL mg/m ³	FP (PF)	Reason				
TUR1 Report No. 18, 1999			http://www.grandis.com/links.htm	PBT Profiler: http://www.pbtprofiler.net/							Scorecard's List of Neurotoxicants: http://www.scorecard.org/health-effects/chemid-toxicity/short_hazard_name_neurotoxicall_p1	California Prop 65 list: http://www.cdph.ca.gov/Programs/OPA/Pages/P060500.aspx	EU Consolidated CLAR list: http://www.chemicalsp.com/prop65/prop65_list/files/P65single092506.pdf	RTEC from NIOSH r44 guide or MSDS (SEE NOTES but many from Mallinckrodt/JT Baker, Phys chem dept @ Oxford Univ, many updated in 2005-2006) http://www.oxfordmsds.com/ http://www.mallinckrodt.com/default.asp			Integrated Risk Information System: http://www.epa.gov/iris/	NIOSH Pocket Guide: NIOSH limits unless otherwise specified (CA means a chemical is thought to be a carcinogen by NIOSH) C= ceiling and ST = short term exposure limits http://www.cdc.gov/niosh/npg/			NIOSH or MSDS:					
													mg/kg	mg/m ³	mg/m ³ /4hr	mg/kg/day	mg/m ³		mg/m ³	mg/m ³						
64-19-7	Acetic acid (concentrations of 12% or less are NOT reportable)		N	87	17	75	22	3,2	2679	N	N	N	rat oral, 3310						5		102.2 (9 C)	failed delisting petition				
67-64-1	Acetone		N	15	30	75	75	3,2	480	N	N	N	oral rat 5340, oral rat 5870				0.9		500		-1	failed delisting petition				
141-28-6	Ethyl Acetate		N	15	30	75	10	3,2	43	N	N	N	oral mouse 4100, oral rat 5620				0.9		1400 TWA		24.8 (4 C)	failed delisting petition				
78-03-1	Isobutyl Alcohol		N	15	30	75	7.5	3,2	83	N	N	N	Oral mouse 3500, oral rat 74.1, oral rat 2460, skin rat, 3400				0.3		NIOSH & ACGIH TWA 150 OSHA PEL 100		82.4 (28 C)					
78-03-3	Methyl ethyl ketone		N	15	30	75	14	3,2	239	N	N	N	oral mouse 3000, oral rat 2787, skin rat, 6480				0.6	5.00E+00	NIOSH & ACGIH TWA 500		19.4 (7 C)					
1002-70-5	Sodium hypochlorite (bleach)		3	not profiled							N	N	N	800mg/kg												
10025-87-3	Phosphorus oxychloride			15	30	75	100	3,2	NE	N	N	N	36mg/kg						5 ppm/4H			FLP: NA				
10102-44-0	Nitrogen dioxide			not profiled							N	Y ₀₁	Y ₀₂						ST 1 ppm (1.6 mg/m ³)		3 ppm	5 ppm (7 mg/m ³) C	NA			
105-60-2	Caprothalam		4	15	30	75	0.85	3,2	140	N	Y ₀₁	N	600mg/kg					36-1 mg/kg/day				125°C o.e. FLP: 282°F	spermatogenic effects			
107-15-5	1,2-Ethanediamine			15	30	75	0.25	3,2	NE	Y	Y ₀₁	Y ₀₂	76 mg/kg, 70 mg/kg						TWA 10 ppm (25 mg/m ³)		10 ppm (40in)		FLP: 93°F			
108-46-3	Resorcinol		3	15	30	75	0.775	3,2	0.75	N	N	N	oral rat 501 mg/kg						TWA 10 ppm (45 mg/m ³) ST 20 ppm (90 mg/m ³)		10 ppm	20 ppm	FLP: 261°F			
108-94-1	Cyclohexanone		3	15	30	75	0.5	3,2	34	N	N	N	oral rat 1535 mg/kg					5E+0 mg/kg/day				TWA 25 ppm (100 mg/m ³) (skin)	TWA 20 ppm	STEL 50 ppm	FLP: 146°F	
109-88-7	Diethylamine			15	30	75	0.2	3,2	NE	N	N	N	Oral, mice, 500 mg/kg; ibl mouse 5000 mg/m ³						REL: TWA 10 ppm (40 mg/m ³) ST 25 ppm (75 mg/m ³)		REL: TWA 25 ppm (75 mg/m ³) TLV: 5 ppm (TWA)		TLV: 15 ppm (STEL: skin)	-15F		
123-62-6	Propionic anhydride			15	30	75	18	3,2	310	N	N	N	oral rat 2360 mg/kg										irritant			
1310-58-3	Potassium hydroxide			not profiled							N	N	N	oral rat 273 mg/kg									TLV			
1336-21-6	Ammonium hydroxide			not profiled							N	N	N	oral rat 330 mg/kg										TLV		
1571-87-5	Sodium hydroxide			not profiled							N	N	N	intraperitoneal rat 14.6 mg/kg						10 ppm (10 min)			45% soln 73F	corrosive		
25155-30-0	Sodium isobutylbenzenesulfonate			15	30	75	1	71	NE	N	N	N	IV, Mice, 105 mg/kg; oral rat 438 mg/kg											ecological effects		
27176-87-0	Dodecylbenzenesulfonic acid			15	30	75	1	71	NE	N	Y ₀₁	N	oral rat 650 mg/kg						.05 mg/m ³ TWA					ecological effects		
540-84-1	2,2,4-Trimethylpentane			18	36	72	340	4,2	240	N	N	N	rat > 2500 mg/kg bw										60F C.C.	ecological effects		
60-50-1	Ethylene diamine-tetraacetate acid (EDTA)			67	13	75	0.08	3,2	NE	N	Y ₀₁	Y ₀₂	IV, mice, 28.5 mg/kg; oral mouse 30 mg/kg													
63-29-7	Ethane, 1,1'-oxybis-	Ethyl Ether		15	30	75	1.2	3,2	47	Y	N	N	IV, mice, 996 mg/kg; oral rat 1214 mg/kg									TLV: 40 ppm ethyl ether (1200) 100 ppm ethyl alcohol	TLV: ST for ethyl ether 500 ppm; 1500 mg/m ³ 15 min		-10F	CNS depression, low VP, forms peroxides
7449-23-3	Sodium			not profiled							N	N	N	intraperitoneal mouse 4000 mg/kg										high reactivity		
75-04-7	Ethanimine	Monochloramine		15	30	75	0.78	3,2	NE	N	N	N	oral, rat, 400 mg/kg; SFN RST 890 mg/kg									REL: TWA 10 ppm (18 mg/m ³)	REL: 5 ppm TWA 10 ppm (14 mg/m ³)		0F o.e. 1F	
75-20-7	Calcium oxide		3 (production)	not profiled							N	N	N													
75-50-3	Melanamine, N,N-dimethyl-	Trimethylamine		15	30	75	0.22	3,2	NE	N	Y ₀₁	N	IV, mice 99 mg/kg									REL: TWA 10 ppm (24 mg/m ³) ST 15 ppm (36 mg/m ³)	5 ppm	15 ppm	NA (inst): 8-18F (liquid)	
7631-90-3	Sodium bisulfite		3	not profiled							N	N	Y ₀₁	IV, rabbit, 65 mg/kg; oral rat 2000 mg/kg												
7722-64-7	Potassium permanganate			not profiled							N	Y ₀₁	Y ₀₂	oral rat 750 mg/kg												
7778-54-3	Calcium hypochlorite		3	not profiled							N	N	Y ₀₁	oral rat 850 mg/kg												

(a) Registry of Toxic Effects of Chemical Substances (RTECS): data available; (b) Positive mutagenicity data available; (c) SAB input considered; (d) Reproductive effects; Reprod/EXPERT; (e) <http://www.epa.gov/iris/>; (f) Developmental effects; Reprod/EXPERT; (g) Reproductive/Developmental effects; Reprod/EXPERT; (h) Positive mutagenicity data available in Reprod/EXPERT; (i) Reproductive effects; Reprod/EXPERT

Where no subscript is included, Y indicates that the item was found in the list cited at the top of the column.

For PBT profiler data, red text indicates the EPA threshold criteria have been exceeded and green shading indicates specific reasons cited by the SAB for retention. Elsewhere, red text indicates specific reasons cited by SAB for retention.

Retain: Appendix C: Data considered by the SAB

CAS#	Chemical Name	Synonyms	IARC	Water	Soil	Sediment	Air	BCF	Chronic Fish CAV (mg/l)	Neurotoxicity	Developmental/Reproductive Toxicity	Mutagenicity	LD50 (mg/kg)	LC50 (mg/m ³)	LC50 (mg/m ³ /4hr)	RfD (mg/kg/day)	RIC (mg/m ³)	NIOSH-REL	TLV(TWA) mg/m ³	TLV-STEL mg/m ³	FP (F)	Reason									
TUR1 Report No. 18, 1999			http://www.epa.gov/ncis/ncis1/rfindex.php	PBT Profiler: http://www.pbtprofiler.net/						Scorecard's List of Neurotoxicants: http://www.scorecard.org/health-effects/chemicals-2.cfm?tab_hazard_submenu=neurotox	California Prop 65 list: http://www.cdph.ca.gov/prop65/prop65_list/files/Prop65/092006.pdf , http://www.cdph.ca.gov/prop65/prop65_list/files/Prop65/092006.pdf , http://www.cdph.ca.gov/prop65/prop65_list/files/Prop65/092006.pdf	EU Consolidated CLAR list: http://www.chemicalsafety.com/cheminfo/clar/clarlist.pdf	RTEC from NIOSH p4 guide or I-ASDS (SEE NOTES but many from Mallinckrodt/Baker, Phys chem dept @ Oxford Univ. many updated in 2005/2006) http://www.edc.gov/niosh/rtpg/ http://www.mallinckrodt.com/default.asp		Integrated Risk Information System: http://www.epa.gov/iris/	NIOSH Pocket Guide, NIOSH limits unless otherwise specified (CA means a chemical is thought to be a carcinogen by NIOSH) C= ceiling and ST= short term exposure limits http://www.edc.gov/niosh/rtpg/															NIOSH or I-ASDS's
													mg/kg	mg/m ³	mg/m ³ /4hr	mg/kg/day	mg/m ³		mg/m ³	mg/m ³											
78-59-1	Isophorone			38	25	340	0.055	4.1	1.1	N	Y ₆₀	N	oral rat 2330 mg/kg		inh gpg 460 ppm/8H	2E-1 mg/kg/day				C 5ppm		fatal malformations, low thr, EPA class C carcinogen									
79-09-4	Propionic acid			8.7	17	74	1.3	4.2	1200	N	N	N	IV, ms, 625 mg/kg; oral rat 3500 mg/kg					REL: TWA: 10ppm (38mg/m ³) ST 15ppm (45 mg/m ³)	TLV: 10ppm, TWA 30mg/m ³	45mg/m ³ /15min, 15ppm/15 min	12NF c.c., 134F o.c.	irritant									
99-01-1	Formal		3	15	30	143	0.46	3.2	1.1	N	N	N	oral rat 65 mg/kg			3E-3 mg/kg/day															
107-12-0	Ethyl cyanide			15	30	143	50	3.2	140	N	N	N	25 mg/kg		163ppm/1H							FLP: 36F									
107-12-0	Propenenitrile			15	30	143	50	3.2	140	N	N	N																			
108-24-7	Acetic anhydride			15	30	143	150	3.2	1300	N	N	N	oral rat 1780 mg/kg					C 5 ppm (20 mg/m ³)				FLP: 12PF	comp to acetic acid								
108-98-5	Benzenechlor			15	30	143	1.4	17	0.055	N	N	N	Rat oral <50 mg/kg																		
109-59-9	Furan, tetrahydro-			15	30	143	1	3.2	58	N	N	N	oral rat 2816 mg/kg		inh rat 21000 ppm/3H								**LD50								
12125-01-8	Ammonium fluoride			not profiled							N	N	N																		
1310-73-2	Sodium hydroxide			not profiled							N	N	N	intra-peritoneal mouse 40mg/kg										disassociates to HF							
1341-49-7	Ammonium bifluoride			not profiled							N	N	N	Rat oral about 130 mg/kg										failed delisting petition							
156-60-5	1,2-Dichloroethylene			33	75	340	5.8	8.1	NE	N	N	N	oral mouse 2122 mg/kg				2E-2 mg/kg/day						disassociates to HF								
30525-89-4	Paracetaldehyde			8.7	17	74	17	3.2	500	N	N	N	oral rat 970mg/kg		inhalation rat 1070mg/m ³ /4H									**LD50							
3681-53-9	Sodium hypochlorite			not profiled							N	N	N	oral mouse 5800mg/kg										failed delisting petition							
7790-94-5	Chloroacetic acid			15	30	143	120	3.2	NE	N	N	N	oral rat 52mg/kg																		
8014-85-7	Sulfuric acid (fuming)	Oleum	Misc-1	not profiled							N	N	N	Rat oral 2140mg/kg											Guinea pig, adult, inhalation/ 50 mg/6u m/8 hr /Sulfuric acid, mist of 1 micron particle size/						
7664-93-9	Sulfuric Acid		Misc-1	not profiled							N	N	N	Per NIOSH: oral rat 350 mg kg Per Mallin/Baker: oral rat 2140 mg/kg	inh GP 18mg/m ³	Inhalation rat 510 mg/m ³			REL: 1 mg/m ³	REL: 1 mg/m ³ TLV: 0.2 mg/m ³ (T)	TLV Ceiling 3mg/m ³	NF									
8014-95-7	Sulfuric acid, mixture with sulfur trioxide		Misc-1	No original data							N	N	N																		
85-68-7	Butyl benzyl phthalate	BBP	3	15	30	143	1.5	200	0.081	N	Y (dx)	N	oral rat 2330 mg/kg				2E-1 mg/kg/day						also repro								
95-57-8	2-Chlorophenol			not found							N	N	N	oral rat 670 mg/kg			3E-3 mg/kg/day														
7664-38-2	Phosphoric Acid			not profiled							Y	N ₆₀	Y ₆₀	oral, msee/rat, 1250mg/kg	inh, msee/rat, 25.5 mg/m ³	inh, rat, 850 mg/m ³ /1H	no data	1E-2 mg/m ³	10H - 1mg/m ³ ; STEL 3mg/m ³	1 mg/m ³ (44)	3 mg/m ³	n. flam									

(a) Registry of Toxic Effects of Chemical Substances (RTECS) data available; (b) Positive mutagenicity data available @ <http://ncsr.nlm.nih.gov/cgi-bin/ncis/search>; (c) SAB input considered; (d) Reproductive effects: Reppo/PERT & <http://www.edc.gov/niosh/rtpg/>; (e) Developmental effects: Reppo/PERT; (f) Reproductive/Developmental effects: Reppo/PERT; (g) Positive mutagenicity data available in Reppo/PERT; (h) Reproductive effects: Reppo/PERT; (i) data in Reppo/PERT demonstrated genetic and developmental abnormalities in sea urchin embryos which "appeared to be related to a reduction in the pH of the culture medium rather than specific toxicity of this compound"; (j) listed as Mutagen in RTECS; Mutagenicity data (c) in CCRIS; (k) Where no subscript is included, Y indicates that the item was found in the list cited at the top of the column.

For PBT profiler data, red text indicates the EPA threshold criteria have been exceeded and green shading indicates specific reasons cited by the SAB for retention. Elsewhere, red text indicates specific reasons cited by SAB for retention.

No Action Appendix C: Data considered by the SAB																						
CAS#	Chemical Name	Synonyms	IARC	Water	Soil	Sediment	Air	BCF	Chronic Fish Chv (mg/l)	Neurotoxicity	Developmental / Reproductive Toxicity	Management	LD50 (mg/kg)	LCS0 (mg/m3)	LCS0 (mg/m3/4hr)	RfD (mg/kg/day)	REC (mg/m3)	NIOSH-REL	TLV(TWA) mg/m3	TLV-STEL mg/m3	FP (°F)	
TURI Report No. 18, 1999			http://www.niosh.gov/pdfs/NIOSH/OSHA/NIOSH-OSHA-2005-0003.pdf							Scorecard's List of Neurotoxins: http://www.secc.org/ncs/ncs.html	California Prop 65 list: http://www.oeha.ca.gov/prop65/	EU Consolidated CDR list: http://www.euro.chem.safes.org/										NIOSH or MSDS's
1066-33-7	Ammonium bicarbonate		N	Low < 60 days (green), 60-180 days (yellow), High > 180 days (red)	30	140	31	3.2	200,000													
7705-08-0	Ferric chloride		N																			
10038-22-5	Ferric sulfate		N																			
10045-89-3	Ferrous ammonium sulfate (anhydrous)		N																			
7758-94-3	Ferrous Chloride		N																			
7720-78-7	Ferrous sulfate		N																			
7782-63-0	Ferrous sulfate		N																			
10043-01-3	Aluminum sulfate		N																			
10102-43-9	Nitric oxide		N																			
107-92-6	Butyric acid		N																			
110-15-7	Maleic acid		N																			
110-17-8	Fumaric acid		N																			
110-19-0	iso-Butyl acetate		N																			
117-84-0	Di-n-octyl phthalate		N																			
12125-40-9	Ammonium chloride		N																			
132-86-4	Butyl acetate		N																			
124-04-9	Adipic acid		N																			
124-41-4	Sodium methacrylate		N																			
540-88-5	tert-Butyl acetate		N																			
5952-36-1	Hexamethylenetetramine		N																			
628-63-7	Ammonium sulfate		N																			
7773-06-0	Ammonium sulfamate		N																			
7681-49-4	Sodium fluoride		N																			

(a) Data found in Registry of Toxic Effects of Chemical Substances (RTECS); (b) Data found <http://toxnet.nlm.nih.gov/cgi-bin/sis/search>; (c) Data found <http://hazard.nlm.nih.gov/cgi-bin/sis/search>; (d) Data found in New Jersey Hazardous Substance Fact Sheet: <http://nj.gov/health/eoh/ohhs/web/documents/50787.pdf>

Toxics Use Reduction Institute

Policy Analysis: Recommendation to take no action on certain CERCLA chemicals that have been reported by TURA filers

Statutory amendments to the Toxics Use Reduction Act (TURA) in 2006 required the Science Advisory Board (SAB) and TURI to review the existing chemicals on the TURA Toxic or Hazardous Substance List originating from the CERCLA chemical list and make a recommendation to the Council as to which chemicals should be retained. The Council has until August 1, 2008, to make decisions taking these recommendations into account. The goal of this process is to help facilities focus their efforts more closely on substances that present greater hazards to human health and the environment in Massachusetts.

The SAB has considered the CERCLA chemicals in two broad groups: chemicals that have been reported at some point by TURA filers, and chemicals that have never been reported by TURA filers. This document presents information on those chemicals that:

- Have been reported by TURA filers (or are chemically very similar to those that have been reported), and
- Are recommended for "no action."

The SAB has recommended "no action" on 23 CERCLA substances. Those substances for which the Council takes no action will be delisted under TURA, effective January 1, 2009. This document presents information on all 23 of these substances.

This policy analysis presents the scientific information reviewed by the Science Advisory Board in developing its recommendations. In addition, it summarizes information on the most recent year in which the substance was reported, the number of filers that reported use of the substance in the most recent reporting year, and regulations that apply to these substances at the state, federal, and international levels.

Based on the information presented here, TURI supports the SAB's recommendations to take no action on the 23 substances.

1. Substances recommended for no action or still under consideration

Appendix A is a list of substances recommended for no action on the TURA list.

2. Basis for SAB recommendations

The discussion below provides an overview of the information considered by the SAB. Points discussed by the SAB for each substance are summarized briefly in Appendix A.

Specific data for each substance are shown in Appendix C. In addition to these data, in many instances individual SAB members brought additional scientific information to the meeting.

In general, if there was any reason to retain a substance on the list, the SAB recommended retaining it. Thus, the substances recommended for no action are those for which the SAB saw no particular basis for retention.

In reviewing the substances, the SAB considered the following data:

- International Agency for Research on Cancer (IARC) rating.
 - The SAB recommended retaining any substance that has an IARC rating (Group 1, 2, or 3). Thus, of the substances recommended for no action, none has an IARC rating.
- Data from the EPA PBT profiler (persistence in water, soil, sediment, and air; bioconcentration factor; and chronic toxicity in fish).¹
 - A number of the substances recommended for no action cannot be profiled on the EPA PBT profiler. Of those able to be profiled and recommended for no action, a number have high persistence in air. The SAB considered persistence in air to be less of a concern than persistence in other media. One substance has high persistent in sediment; however, the SAB considered this to be counterbalanced by data indicating low toxicity.
- Neurotoxicity (based on Scorecard's list of neurotoxicants, and other sources in some cases).²
 - Of the substances recommended for no action, none are identified as neurotoxicants.
- Developmental/reproductive toxicity (based on California's Proposition 65 list, and other sources in some cases).³
 - Of the substances recommended for no action, none is listed as a developmental or reproductive toxicant on California's Proposition 65 list. For two substances (aluminum sulfate and di-n-octyl phthalate), a search of government databases indicated that there is some basis for concern about reproductive or developmental toxicity.
- Mutagenicity (based on the European Union's Consolidated List of Carcinogens, Mutagens, and Reproductive Toxicants [CMR], and other sources in some cases).⁴
 - Of the substances recommended for no action, none appears on the EU CMR list. For two substances (aluminum sulfate and nitric oxide), a search of government databases indicated that some studies have found some evidence of mutagenicity.
- Lethal dose or concentration information (LD50 and LC50). In general, the LD50 and LC50 for the substances recommended for no action are relatively high, indicating relatively low toxicity.
- Exposure limits required or recommended by Federal agencies
 - Reference dose and reference concentration (RfD and RfC, from EPA Integrated Risk Information System).⁵ The reference dose and reference concentration values for the substances

¹ EPA PBT Profiler, available at <http://www.epa.gov/oppt/sf/tools/pbtprofiler.htm>.

² Scorecard's list of suspected neurotoxicants, and the sources used to compile the list, is available at <http://www.scorecard.org/health-effects/> (select the link for neurotoxicity).

³ The California Proposition 65 List is available at http://www.oehha.org/prop65/prop65_list/Newlist.html. Additional information is drawn from the NIOSH Registry of Toxic Effects of Chemical Substances (RTECS) and the New Jersey Department of Health and Senior Services Hazardous Substances Fact Sheet for di-n-octyl phthalate (<http://nj.gov/health/eoh/rtkweb/documents/fs/0787.pdf>).

⁴ The EU Consolidated CMR List is available at <http://www.chemicalspolicy.org/downloads/cmrlist.pdf>. Additional information is drawn from the US National Library of Medicine Toxicology Data Network (TOXNET).

⁵ EPA Integrated Risk Information System, available at <http://www.epa.gov/iris/>.

recommended for no action indicate relatively low toxicity. For some substances, these values are not available.

- NIOSH Recommended Exposure Limit (REL); Threshold Limit Value – Time Weighted Average (TLV-TWA); and Threshold Limit Value – Short Term Exposure Limit (TLV-STEL).⁶ For several of the substances, these values indicate moderate toxicity.
- Flash point. For those substances on the list that have a flash point, the values are intermediate to high, indicating that flash point is not a major concern for any of these substances.
- The SAB did not consider specific data points related to sensitization or the potential to cause or exacerbate asthma. However, in response to a recommendation from the Advisory Committee, TURI checked the list of substances recommended for no action against a list of asthmagens compiled by UMass Lowell researchers based on information from the Institute of Medicine, the Association of Occupational and Environmental Clinics, and other sources. TURI also checked a list of substances identified as sensitizers in the EU (EU Risk Phrase 42).⁷ None of the substances is listed as either a sensitizer or an asthmagen.

3. Use Information

As shown in Appendix B, the majority of the substances recommended for no action have been reported by TURA filers within the last three years for which data are available (2003 to 2005). A few of the substances have not been reported in recent years, or have never been reported. The number of filers for a given substance in the most recent reporting year ranges from one to eleven.

4. Regulatory Context

Appendix B shows selected regulatory information for each of the substances recommended for no action.

- One of the substances, di-n-octyl phthalate, is identified as an EPA Clean Water Act Priority Pollutant. All but three of the substances are identified on the EPA Clean Water Act 311 List of Hazardous Substances.
- Two of the substances (nitric oxide and di-n-octyl phthalate) are found on the EPA Superfund Amendments and Reauthorization Act (SARA) 302A Extremely Hazardous Substances List.
- Two of the substances (nitric oxide and ethanol,2,2-oxybis,dicarbamate) are listed as hazardous constituents under the Resource Conservation and Recovery Act (RCRA).
- None of the substances have maximum contaminant levels (MCLs) under the Safe Drinking Water Act. None are regulated as criteria air pollutants under the Clean Air Act.

⁶ REL, TLV-TWA, and TLV-STEL are drawn from the National Institutes of Occupational Safety and Health (NIOSH) Pocket Guide to Chemical Hazards, available at <http://www.cdc.gov/niosh/npg/>.

⁷ EU risk phrase information is available at <http://ecb.jrc.it/classification-labelling/search-classlab/> (choose “search Annex 1” and “Risk phrase 42”); viewed March 2008. Information on asthma is drawn from the following sources: (a) Association of Occupational and Environmental Clinics, “Explanatory Protocol: Criteria for Designating Substances as Occupational Asthmagens on the AOEC List of Exposure Codes.” Revised April 2005. Accessed 11-2-07 at: <http://www.aoec.org/tools.htm>. (b) Janssen S, Solomon G, Schettler T., “Chemical Contaminants and Human Disease: A Summary of Evidence,” 2004. Accessed 11-2-07 at: <http://www.protectingourhealth.org/corethemes/links/2004-0203spreadsheet.htm>. (c) Institute of Medicine (IOM), Committee on the Assessment of Asthma and Indoor Air, Division of Health Promotion and Disease Prevention, 2000, *Clearing the Air: Asthma and Indoor Air Exposures*. Washington, D.C., National Academy Press, <http://books.nap.edu/books/0309064961/html>; (d) Malo J-L, Chan-Yeung M. Appendix: Agents Causing Occupational Asthma with Key References. In: Bernstein LI, Chan-Yeung M, Malo J-L, Bernstein DI (eds). *Asthma in the Workplace*. 3rd Ed. New York: Taylor & Francis, 2006.

- The majority of the substances are on the New Jersey Right-to-Know list. All but one are on the Pennsylvania Hazardous Substances list.
- Seven of the substances meet the categorization criteria for the Government of Canada's Domestic Substances List categorization, indicating that there is a need for further attention to these substances based on human health and/or environmental criteria. These are: ammonium bicarbonate; ferrous ammonium sulfate (anhydrous); aluminum sulfate; butyric acid; isobutyl acetate; ammonium chloride; and ammonium sulfamate.

5. Implications for the TURA Program

If the Council chooses to take no action on these substances, they will be removed from Toxic and Hazardous Substance List as of January 1, 2009. This means that TURA-covered facilities will no longer be required to report, pay a fee, and do toxics use reduction planning as a result of using these substances. The goal of this change is to help facilities focus their efforts more closely on substances that present more significant hazards to human health and the environment in Massachusetts.

According to the 2005 TURA data, there were filers for 14 of the substances that are designated for "no action". There were a total of 58 Form S's for these 14 substances. Thus, an expected 58 facilities will save \$1,100 per year in annual fees. Most facilities will continue to report and plan for other substances. One facility will drop out of the program completely.

The total reduction in fees for these 58 Form S's is \$63,800 (\$1,100 per Form S). The single facility that will drop out of the program completely will also stop paying an annual base fee of \$1,850. Thus, the total expected reduction in toxics use fees across all affected filers is expected to be \$65,650.

Appendix A: CERCLA substances recommended for no action

CAS#	Chemical Name	Synonym	Date(s) Considered by SAB	Justification Note: Unless otherwise noted, votes were unanimous.
1066-33-7	Ammonium bicarbonate		7/16/2007	No important concerns identified.
7705-08-0	Ferric chloride	Iron chloride hexahydrate	3/20/07; 4/23/2007; 7/16/07	Board discussed worker exposure issues as principal concern; deemed not significant.
10028-22-5	Ferric sulfate			Board discussed worker exposure issues as principal concern; deemed not significant.
10045-89-3	Ferrous ammonium sulfate (anhydrous)			Board discussed worker exposure issues as principal concern; deemed not significant.
7758-94-3	Ferrous Chloride			Board discussed worker exposure issues as principal concern; deemed not significant.
7720-78-7	Ferrous sulfate			Board discussed worker exposure issues as principal concern; deemed not significant.
7782-63-0	Ferrous sulfate	Iron Sulfate Heptahydrate		Board discussed worker exposure issues as principal concern; deemed not significant.
10043-01-3	Aluminum sulfate	Alum	12/19/2007	Compared to ferrous and ferric sulfate. Mild irritant.
10102-43-9	Nitric oxide	NO	12/19/2007	Transient existence. 5 voted to take no action, 2 opposed, 1 abstaining.
107-92-6	Butyric acid		10/17/2007	Nuisance smell and persistent in air.
110-16-7	Maleic acid		6/25/07; 10/17/2007	No important concerns identified.
110-17-8	Fumaric acid		10/17/2007	Food additive.
110-19-0	iso-Butyl acetate		10/17/2007	The flammability and flash point were discussed for iso-butyl acetate. Flash point is 64°F and it has a low vapor pressure.
117-84-0	Di-n-octyl phthalate		6/25/07; 10/17/07; 12/19/2007	This substance is often confused with other phthalates, such as DEHP. Principal concerns relate to possible binding with estrogen receptors. Data indicate that the substance does not bind with estrogen receptors.
12125-02-9	Ammonium chloride		10/17/2007	Ammonium chloride is found in shampoo, adhesives, candies, and anti-perspirants. Ammonium chloride is an upper respiratory tract irritant. Persistence in air is 180. TLV is nuisance dust standard.
123-86-4	Butyl acetate		10/17/2007	The flammability and flash point were discussed for butyl acetate. The flash point is 72°F. The vapor pressure is low.

124-04-9	Adipic acid		6/25/07; 10/17/2007	Chronic fish toxicity and RfD are high. ScoreCard ranked this chemical in the lowest percentile. TLV 5mg – same as nuisance dust. It is used in plasticizers and is also a food ingredient in jelly.
124-41-4	Sodium methylate		10/17/2007	Persistent in air; no other concerns.
540-88-5	tert-Butyl acetate		10/17/2007	The flammability and flash point were discussed for tert butyl acetate. The flash point is 72°F. The vapor pressure is low.
5952-26-1	Ethanol,2,2-oxybis,dicarbamate (diethylene glycol,dicarbamate)		6/25/07; 12/19/2007	This chemical has a high persistence in sediment; however, its LD50 is very high and does not present other concerns.
628-63-7	Amyl acetate		12/19/2007	Amyl acetate is used for fit testing respirators. It has a high explosion limit (100 ppm), is an eye irritant, and is persistent in air. 5 votes to take no action, 2 abstaining.
7773-06-0	Ammonium sulfamate		12/19/2007	Ammonium sulfamate is a nuisance dust issue. It does not present other concerns.
7681-49-4	Sodium fluoride		6/4/07; 6/25/07; 7/16/2007	For sodium fluoride, it was noted that two 2-year studies showed it was negative for carcinogenicity but also showed reproductive effects. It is approved for use in toothpaste, and is regulated by EPA as a pesticide and insecticide. About 30 to 40 drinking water systems in the state use it for fluoridating water.

Appendix B - Additional information on substances recommended for no action or on agenda for further discussion

(continued on next page)

Regulatory Data												
Cas #	Chemical Name	Synonym	Last Reported	Number of Filers	EPA Clean Water Act 126 Priority Pollutants	EPA Clean Water Act 311 List of Hazardous Substances	EPA SARA 302A Extremely Hazardous Substances List	Hazardous Constituents (Resource Conservation and Recovery Act)	Hazardous Air Pollutants (Clean Air Act)	NJ Right to Know List	PA Hazardous Substances List	Meets Canadian substances categorization criteria
1066-33-7	Ammonium bicarbonate		2005	2	-	Y	-	N	-	Y	Y	Y
7705-08-0	Ferric chloride	Iron chloride hexahydrate	2005	10	-	Y	-	N	-	Y	Y	N
10028-22-5	Ferric sulfate		2005	2	-	Y	-	N	-	Y	Y	N
10045-89-3	Ferrous ammonium sulfate (anhydrous)		n/r	n/r	-	Y	-	N	-	Y	Y	Y
7758-94-3	Ferrous Chloride		2005	1	-	Y	-	N	-	Y	Y	N
7720-78-7	Ferrous sulfate		2004	1	-	Y	-	N	-	Y	Y	N
7782-63-0	Ferrous sulfate	Iron Sulfate Heptahydrate	2005	1	-	Y	-	N	-	N	Y	-
10043-01-3	Aluminum sulfate	Alum	2005	8	-	Y	-	N	-	Y	Y	Y
10102-43-9	Nitric oxide	NO	2002	1	-	-	Y	Y	-	Y	Y	N
107-92-6	Butyric acid		1997	1	-	Y	-	N	-	Y	Y	Y
110-16-7	Maleic acid		2005	1	-	Y	-	N	-	Y	Y	N
110-17-8	Fumaric acid		2005	1	-	Y	-	N	-	Y	Y	N
110-19-0	iso-Butyl acetate		2005	4	-	Y	-	N	-	Y	Y	Y
117-84-0	Di-n-octyl phthalate		2000	1	Y	-	Y	N	-	Y	Y	N

Key: Y = found on list; N = does not meet criteria; - = not found on list or in database; 307A = substance located on EPA Clean Water Act 307A Toxic Pollutants list

Appendix B - Additional information on substances recommended for no action or on agenda for further discussion

(continued from previous page)

Regulatory Data												
Cas #	Chemical Name	Synonym	Last Reported	Number of Filers	EPA Clean Water Act 126 Priority Pollutants	EPA Clean Water Act 311 List of Hazardous Substances	EPA SARA 302A Extremely Hazardous Substances List	Hazardous Constituents (Resource Conservation and Recovery Act)	Hazardous Air Pollutants (Clean Air Act)	NJ Right to Know List	PA Hazardous Substances List	Meets Canadian substances categorization criteria
12125-02-9	Ammonium chloride		2005	3	-	Y	-	N	-	Y	Y	Y
123-86-4	Butyl acetate		2005	11	-	Y	-	N	-	Y	Y	N
124-04-9	Adipic acid		2005	5	-	Y	-	N	-	Y	Y	N
124-41-4	Sodium methylate		2003	1	-	Y	-	N	-	Y	Y	N
540-88-5	tert-Butyl acetate		1992	1	-	Y	-	N	-	Y	Y	N
5952-26-1	Ethanol,2,2-oxybis,dicarbamate (diethylene glycol dicarbamate)		1996	1	-	-	-	Y	Y	-	-	-
628-63-7	Amyl acetate		2005	2	-	Y	-	N	-	Y	Y	N
7773-06-0	Ammonium sulfamate		2005	8	-	Y	-	N	-	Y	Y	Y
7681-49-4	Sodium fluoride		2004	1	-	Y	-	N	-	Y	Y	N

Key: Y = found on list; N = does not meet criteria; - = not found on list or in database; 307A = substance located on EPA Clean Water Act 307A Toxic Pollutants list

Toxics Use Reduction Institute

*Policy Analysis: Recommendation to take no action on
certain CERCLA chemicals that have been reported by TURA filers:
Sodium phosphates*

June 16, 2008

Statutory amendments to the Toxics Use Reduction Act (TURA) in 2006 required the Science Advisory Board (SAB) and TURI to review the existing chemicals on the TURA Toxic or Hazardous Substance List originating from the CERCLA chemical list and make a recommendation to the Council as to which chemicals should be retained. The Council has until August 1, 2008, to make decisions taking these recommendations into account. The goal of this process is to help facilities focus their efforts more closely on substances that present greater hazards to human health and the environment in Massachusetts.

This document presents information on nine sodium phosphates, which were considered as a group by the SAB. The SAB recommended that these substances be retained based on their contribution to nutrient loading (a secondary environmental effect). However, TURI considers these substances to be lower priority for the TURA program, compared with other CERCLA substances recommended for retention. Thus, TURI recommends that the Council take no action on these substances.

1. Substances recommended for no action

Appendix A is a list of the nine substances recommended for retention by the SAB but which the program considers to be lower priority than the other CERCLA chemicals recommended for retention.

2. Basis for SAB recommendations

The discussion below provides an overview of the information considered by the SAB. Points discussed by the SAB for each substance are summarized briefly in Appendix A, and the specific data for each substance are shown in Appendix C. In addition to the data shown in Appendix C, in many instances individual SAB members brought additional scientific information to the meeting.

In reviewing the substances, the SAB considered the following data:

- International Agency for Research on Cancer (IARC) rating.
 - The SAB recommended retaining any substance that has an IARC rating (Group 1, 2, or 3). These sodium phosphates do not have an IARC rating.
- Data from the EPA PBT profiler (persistence in water, soil, sediment, and air; bioconcentration factor; and chronic toxicity in fish).¹
 - These substances cannot be profiled on the EPA PBT profiler.
- Neurotoxicity (based on Scorecard's list of neurotoxicants, and other sources in some cases).²

¹ EPA PBT Profiler, available at <http://www.epa.gov/oppt/sf/tools/pbtprofiler.htm>.

- These substances are not identified as neurotoxicants.
- Developmental/reproductive toxicity (based on California's Proposition 65 list).³
 - These substances are not listed as developmental or reproductive toxicants on California's Proposition 65 list.
 -
- Mutagenicity (based on the European Union's Consolidated List of Carcinogens, Mutagens, and Reproductive Toxicants [CMR]).⁴
 - These substances do not appear on the EU CMR list.
- Lethal dose or concentration information (LD50 and LC50). In general, the LD50s, for the substances for which it was available, are quite high indicating relatively low toxicity.

At the March 2007 meeting, the SAB recognized that the sodium phosphates do not pose direct threats to human health, workers, or the environment. However, at the March 2008 meeting the Board members addressed these chemicals potential for secondary environmental effects, specifically eutrophication resulting from nutrient loading. Board members felt the potential impacts on aquatic environment were significant and there were 5 votes to retain, 1 abstaining.

3. Use Information

As shown in Appendix B, four of the substances have been reported by TURA filers within the last three years for which data are available (2003 to 2005). Five of the substances have not been reported in recent years, or have never been reported. The number of filers for a given substance in the most recent reporting year ranges from one to five.

4. Regulatory Context

Appendix B shows selected regulatory information for each of the substances recommended for no action.

- None is identified as an EPA Clean Water Act Priority Pollutant. All of the substances are identified on the EPA Clean Water Act 311 List of Hazardous Substances.
- None of the substances are found on the EPA Superfund Amendments and Reauthorization Act (SARA) 302A Extremely Hazardous Substances List.
- None of the substances are listed as hazardous constituents under the Resource Conservation and Recovery Act (RCRA).
- None of the substances are listed as hazardous air pollutants under the Clean Air Act.
- One of the substances is on the New Jersey Right-to-Know list. All are on the Pennsylvania Hazardous Substances list.

² Scorecard's list of suspected neurotoxicants, and the sources used to compile the list, is available at <http://www.scorecard.org/health-effects/> (select the link for neurotoxicity).

³ The California Proposition 65 List is available at http://www.oehha.org/prop65/prop65_list/Newlist.html. Additional information is drawn from the NIOSH Registry of Toxic Effects of Chemical Substances (RTECS) and the New Jersey Department of Health and Senior Services Hazardous Substances Fact Sheet for di-n-octyl phthalate (<http://nj.gov/health/eoh/rtkweb/documents/fs/0787.pdf>).

⁴ The EU Consolidated CMR List is available at <http://www.chemicalspolicy.org/downloads/cmrlist.pdf>. Additional information is drawn from the US National Library of Medicine Toxicology Data Network (TOXNET).

- None of the substances meet the categorization criteria for the Government of Canada's Domestic Substances List categorization.

5. Implications for the TURA Program

The result of taking no action on these substances will be that they will be removed from Toxic and Hazardous Substance List as of January 1, 2009. This means that TURA-covered facilities would no longer be required to report, pay a fee, and do toxics use reduction planning as a result of using these substances.

According to the 2005 TURA data, there were filers for 4 of the 9 substances considered here. There were a total of 11 Form S's for these 4 chemicals. Thus, an expected 11 facilities will save \$1,100 per year in annual fees. These facilities will still have access to TURA program resources, and may choose to work with the TURA program to seek other financial savings through toxics use reduction.

The total reduction in fees for these 11 Form S's is \$12,100 (\$1,100 per Form S). Thus, the total expected reduction in toxics use fees across all affected filers is expected to be \$12,100.

Appendix A: CERCLA substances recommended for no action or on agenda for further discussion

CAS#	Chemical Name	Synonym	Date(s) Considered by SAB	Justification
7558-79-4	Sodium phosphate, dibasic	anhydrous	3/20/07; 7/16/2007; 3/24/08	Nutrient loading; 5 votes to retain, 1 abstaining
10039-32-4	Sodium phosphate, dibasic	dodecahydrate		
10140-65-5	Sodium phosphate, dibasic			
7601-54-9	Sodium phosphate, tribasic	Anhydrous		
7758-29-4	Sodium phosphate, tribasic	Sodium tripolyphosphate		
7785-84-4	Sodium phosphate, tribasic	Metaphosphoric acid trisodium salt		
10101-89-0	Sodium phosphate, tribasic	Dodecahydrate		
10124-56-8	Sodium phosphate, tribasic	Sodium Hexametaphosphate		
10361-89-4	Sodium phosphate, tribasic	Phosphoric acid, trisodium salt, decahydrate		

Appendix B - Additional information on sodium phosphates

Regulatory Data												
Cas #	Chemical Name	Synonym	Last Reported	Number of Filers	EPA Clean Water Act 126 Priority Pollutants	EPA Clean Water Act 311 List of Hazardous Substances	EPA SARA 302A Extremely Hazardous Substances List	Hazardous Constituents (Resource Conservation and Recovery Act)	Hazardous Air Pollutants (Clean Air Act)	NJ Right to Know List	PA Hazardous Substances List	Meets Canadian substances categorization criteria
7558-79-4	Sodium phosphate, dibasic	anhydrous	2005	2	-	Y	-	N	-	Y	Y	N
10039-32-4	Sodium phosphate, dibasic	dodecahydrate	n/r	n/r	-	Y	-	N	-	N	Y	n/f
10140-65-5	Sodium phosphate, dibasic		n/r	n/r	-	Y	-	N	-	N	Y	n/f
7601-54-9	Sodium phosphate, tribasic	Anhydrous	2005	1	-	Y	-	N	-	Y	Y	N
7758-29-4	Sodium phosphate, tribasic	Sodium tripolyphosphate	2005	5	-	Y	-	N	-	N	Y	N
7785-84-4	Sodium phosphate, tribasic	Metaphosphoric acid trisodium salt	n/r	n/r	-	Y	-	N	-	N	Y	N
10101-89-0	Sodium phosphate, tribasic	Dodecahydrate	2005	2	-	Y	-	N	-	N	Y	n/f
10124-56-8	Sodium phosphate, tribasic	Sodium Hexametaphosphate	1996	1	-	Y	-	N	-	N	Y	N
10361-89-4	Sodium phosphate, tribasic	Phosphoric acid, trisodium salt,	n/r	n/r	-	Y	-	N	-	N	Y	n/f

Key: Y = found on list; N = does not meet criteria; - = not found on list or in database; 307A = substance located on EPA Clean Water Act 307A Toxic Pollutants list

TURI - Toxics Use Reduction Institute

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TURA Frequently Asked Questions

Refer to the **TURA Portal** for links to the regulations, written planning guidance, training and workshops, technical assistance and information.

1. Why was the Toxics Use Reduction Act updated?
2. What are the major changes?
3. Who are the state agencies involved in implementing TURA and what are their roles?
4. What are the specific changes to TURA beginning in the reporting year 2006?
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6. What chemicals have been recently designated as higher hazard by the Administrative Council?
7. What do I have to do if I use more than 1,000 lbs. per year of a higher hazard substance?
8. When do I need to track chemical usage pay fees and, prepare plans?
9. What resources are available to help me reduce toxics and comply with the law?
10. How do I become a Toxics Use Reduction Planner?
11. Do I still need to report usage if I use a newly designated lower hazard substances?
12. What is the process for selecting higher hazard substances?
13. When and how will the CERCLA chemicals be delisted or retained?
14. How can I get involved in the chemical list process?
15. Who is the SAB (Science Advisory Board)?
16. Who is the TURA Advisory Committee and what is their role?
17. Who is the Administrative Council and what information do they consider when deciding if a chemical is higher hazard or lower hazard?
18. When can I prepare a Resource Conservation or EMS Plan?
19. What "natural assets" can I choose for my resource conservation plan?
20. What are the requirements for developing an EMS TURA Plan?
21. What resources are available to help me develop an EMS or Resource Conservation Plan?

1) Why was the Toxics Use Reduction Act updated?

In July of 2006, the Massachusetts legislature voted to amend the Toxics Use Reduction Act (TURA) to encourage further improvements in environmental performance. The amendments focus the TURA list of regulated chemicals and provide existing TURA companies alternative planning options.

2) What are the major changes?

The major changes of the 2006 TURA amendments are:

- Companies who currently submit toxics use reduction plans and report chemical usage now have more choices for planning. In lieu of a Toxics Use Reduction (TUR) plan, companies who have completed a plan and two plan updates can choose to develop a resource conservation plan or integrate TUR into their environmental management system (EMS). This allows facilities to focus their planning efforts on energy, water, and materials, in addition to addressing toxics.
- The TURA Administrative Council will help the program and companies focus on more hazardous substances by reducing the number of substances on the TURA list of regulated chemicals, and by designating up to 10 higher hazard substances and up to 10 lower hazards substances each year.
 - For the designated higher hazard substances, the threshold for reporting will be lowered from 25,000 pounds for manufactured or processed chemicals, or 10,000 pounds for chemicals otherwise used, to 1,000 pounds.
 - For chemicals designated as lower hazard substances, companies will still need to report usage and prepare TUR plans but will no longer have to pay the \$1,100 annual fee per chemical.
 - The CERCLA list of chemicals is currently being evaluated to determine which chemicals should be retained. Companies will no longer have to report or plan for CERCLA-only listed substances that are not retained by the administrative council.

3) Who are the state agencies involved in implementing TURA and what are their roles?

Three state agencies work together to implement the Massachusetts Toxic Use Reduction Act (TURA) Program --the Department of Environmental Protection (MassDEP), the Office of Technical Assistance and Technology (OTA), and the Toxics Use Reduction Institute (TURI) at UMass Lowell.

- The MassDEP is responsible for toxics use reduction regulations, collection and analysis of information from annual toxics use reduction reports, reporting and planning guidance, and

regulatory enforcement.

- The OTA is responsible for technical assistance and compliance assistance for companies.
- The TURI is responsible for continuing education training sessions on toxics use reduction, resource conservation planning, and environmental management systems.

In addition, the TURA Administrative Council makes decisions on listing, delisting and categorizing of the TURA chemical list, with recommendations from the Science Advisory Board and input from the TURA Advisory committee.

4) What are the specific changes to TURA beginning in the reporting year 2006?

The reporting changes include the following:

- Exempts toxics present in fuel oil except when used to produce electricity, steam or heat as primary business.
- Adds use of NAICS codes in addition to SIC codes (this does not change who is required to report)
- Harmonizes 10,000/25,000 pound reporting thresholds with the federal Toxics Release Inventory (TRI) program so that manufactured/ processed chemicals no longer need to be reported below 25,000 pounds (except for PBT chemicals and Higher Hazard Substances)
- Replaces the Byproduct Reduction Index and Emissions Reduction Index calculations with new production unit metrics that measure progress compared with the previous year
- Replaces escalating late fees with flat \$1,000 late fee
- Gives MassDEP responsibility for fee waiver requests (instead of EOEEA)

5) What are the specific changes for planning in 2008?

2008 is a TURA planning year, with plan summaries due July 1, 2008. The following options are available for the 2008 plan year:

- Provides alternative planning options after a company has completed one toxics use reduction plan and 2 plan updates
- Resource conservation plan for energy, water, or materials use (allowed every other planning cycle) or an EMS in lieu of a TUR plan (provided reportable toxics are addressed in the EMS)
- Establishes new TUR Planner continuing education requirements for EMS and resource conservation planning

6) What chemicals have been recently designated as higher hazard by the Administrative Council?

In October 2007, the Administrative Council designated cadmium, cadmium compounds and trichloroethylene (TCE) as higher hazard substances.

7) What do I have to do if I use more than 1,000 lbs. per year of a higher hazard substance?

If your company uses more than 1,000 lbs. of a higher hazard substance, has 10 or more full-time employees, and conducts business activities according to certain Standard Industrial Classification (SIC) codes, you will become part of the Massachusetts TURA Program if you are not already. This means that you will be required to prepare toxics use reduction plans, report chemical use, and pay fees. Please note that while companies must plan, the decision to actually implement the plan is voluntary.

8) When do I need to track chemical usage pay fees and, prepare plans?

You will need to start tracking your chemical usage in January 2008 and will need to report usage for 2008 by filing a toxics use report with MassDEP by July 1, 2009. Toxics Use Reduction Plans are prepared in even numbered years beginning the year following your first toxics use report for that chemical, so your first toxics use reduction plan for cadmium, cadmium compounds or TCE under the higher hazard designation will be required in 2010. You can avoid this plan by eliminating or reducing your use of these chemicals in 2009.

9) What resources are available to help me reduce toxics and comply with the law?

The strength of the Toxics Use Reduction Act is that it mandates that services and resources be provided to aid companies in finding safer alternatives to reduce use of toxic chemicals. Follow the links to the resources below provided by TURI, the Office of Technical Assistance, and the MassDEP:

- Toxics Use Reduction Planner Training
- Resource Conservation Training
- Research
- Databases
- Library
- Laboratory
- On-site technical assistance
- Guidance and fact sheets

Technical assistance and information are provided at no cost to Massachusetts firms. Most trainings have a fee associated with them, which is discounted for Massachusetts companies.

10) How do I become a Toxics Use Reduction Planner?

You can become a Toxics Use Reduction (TUR) Planner by taking the required courses from the Toxics Use Reduction Institute and passing a uniform certification exam administered by the Department of Environmental Protection (MassDEP) or, for Limited Practice Planners (only

certifying their own company's plan) by having demonstrated relevant education and experience.

Toxics Use Reduction Planners are environmental, safety, or process professionals who are qualified to prepare, write and certify toxics use reduction plans for companies that are required to report under the Massachusetts Toxics Use Reduction Act (TURA).

11) Do I still need to report usage if I use a newly designated lower hazard substance?

Yes, you still need to plan and report use if you use a lower hazard chemical. However, you no longer have to pay the \$1,100 fee for each lower hazard chemical. The designation of the lower hazard chemicals will only affect companies who currently report use of those chemicals.

12) What is the process for selecting higher hazard substances?

Under the amended TURA statute, the Science Advisory Board (SAB) is responsible for recommending up to 10 chemicals per year as higher hazard substances and up to 10 as lower hazard substances. The SAB makes their recommendations to the Toxics Use Reduction Institute (TURI) based upon science. TURI then conducts a policy review, solicits input from the TURA Advisory Committee (see question 17), and makes recommendations to the Administrative Council, which is responsible for the final designations of higher and lower hazard substances. In 2007, the Administrative Council designated cadmium, cadmium compounds and trichloroethylene (TCE) as higher hazard substances effective for reporting year 2008.

13) When and how will the CERCLA chemicals be delisted or retained?

The SAB and TURI are in the process of evaluating TURA chemicals originating only from the CERCLA chemical list. TURI then conducts a policy review, solicits input from the TURA Advisory Committee, and makes recommendations to the Administrative Council. On or before August 1, 2008, the Administrative Council will decide which chemicals should be retained on the TURA list of toxic or hazardous substances. Substances not retained will no longer be reportable for reporting year 2009.

For more information, contact Heather Tenney at 978-934-3260 or heather_tenney@uml.edu.

14) How can I get involved in the chemical list process?

All Science Advisory Board, TURA Advisory Committee and Administrative Council meetings are open to the public and posted on the TURA Resource Portal web site. You'll also find minutes to meetings and chemical policy reviews and recommendations. You can also contact Heather Tenney of TURI.

15) Who is the SAB (Science Advisory Board)?

Currently, the Science Advisory Board consists of 8 members. The statute allows for 11 members to be appointed by the Governor, serving three-year terms and not more than two consecutive terms. Although the Governor makes the final appointments to the Board, three members are nominated by TURI; three are nominated by the Secretary of Environmental Affairs; three are nominated by the Secretary of Economic Affairs; one is nominated by the Secretary of Labor; and one is nominated by the Secretary of Human Services.

To be nominated to the SAB, an individual must have extensive professional experience and/or academic expertise in fields such as toxicology, epidemiology, occupational medicine, environmental science or chemistry.

16) Who is the TURA Advisory Committee and what is their role?

The TURA Advisory Committee is a diverse stakeholder committee established by the 2006 TURA Amendments to advise the Administrative Council.

The Committee provides diverse perspectives on matters that come before the Administrative Council, including higher and lower hazard substance designations, CERCLA chemical retention, TURA fee structure, and chemical listing and delisting petitions.

Committee members include Massachusetts environmental and health policy advocacy organizations, organized labor, businesses, the water authority, the general public as well as the attorney general (or his designee) and certified toxics use reduction planners.

17) Who is the Administrative Council and what information do they consider when deciding if a chemical is higher hazard or lower hazard?

The TURA Administrative Council is the body with the power to officially designate chemicals as higher and lower hazard. The Council is composed of the following representatives (or their designees): Secretary of Energy and Environmental Affairs, Commissioner of Environmental Protection, Secretary of Economic Development, Commissioner of Public Health, Director of Labor and Workforce Development, and the Secretary of Public Safety. Meetings of the Council are posted on the **OTA Calendar**.

The Science Advisory Board makes chemical recommendations to the TURI based on science. TURI conducts a policy review that addresses the policy implications of the recommended chemical designations. When deciding whether or not to designate chemicals to either the higher or lower hazard lists, the Administrative Council considers both--the scientific assessment from the Science Advisory Board and the policy review from TURI.

18) When can I prepare a Resource Conservation or EMS Plan?

Beginning with the 2008 planning year, TURA facilities who have completed a toxics use reduction (TUR) plan and two plan updates now have the option to develop either a resource conservation plan (for alternating planning cycles) or to integrate toxics planning efforts into a comprehensive environmental management system (EMS) in lieu of preparing a separate TUR plan. Plans are due by July 1, 2008.

The EMS must have been in place for one complete cycle, and have been independently audited. Resource Conservation planning is available every other planning year, so if you complete a plan for 2008, you must update your TUR plan in 2010. In 2012 you could return to Resource

Conservation planning for the same asset or a different asset than in your previous plan.

19) What "natural assets" can I choose for my resource conservation plan?

Asset areas that can be included in a resource conservation plan include:

- Water use
- Energy use (including reducing greenhouse gas emissions and shifting to renewable energy sources)
- Other materials and products that contribute to solid waste
- Toxic substances that are identified on the list of toxic or hazardous substances established pursuant to 301 CMR 41.00, but are used below below threshold amounts as defined in 310 CMR 50.10
- Chemical substances that are exempt from reporting under TURA, including toxic substances in articles and janitorial products used at a facility (e.g., mercury in bulbs, lead in parts)

A facility choosing to complete a resource conservation plan must select at least one "natural asset" as the focus of the plan and apply the TUR planning methods and source reduction approach to this asset. After developing a resource conservation plan, a facility must return to TUR planning for the following planning cycle two years later.

20) What are the requirements for developing an EMS TURA Plan?

If you choose the EMS option, your EMS must have been in place for at least one full cycle, contain certain elements (based generally on ISO 14001) and must integrate toxics use reduction planning for all TURA chemicals and production units into the EMS.

21) What resources are available to help me develop an EMS or Resource Conservation Plan?

The TURA Program agencies have many resources to help you. Refer to the **TURA Portal** for links to the regulations, written planning guidance, training and workshops, technical assistance and information.

This page updated Friday January 08 2010

Toxics Use Reduction Institute

University of Massachusetts Lowell

600 Suffolk Street • Wannalancit Mills • Lowell, MA 01854. 978-934-3275 - [Contact Us](#)