



Commonwealth of Massachusetts  
Executive Office of Energy and Environmental Affairs  
Toxics Use Reduction Administrative Council

## Designating Higher and Lower Hazard Substances in Massachusetts

The Massachusetts Toxics Use Reduction Administrative Council (Council), which coordinates implementation of the Toxics Use Reduction Act (TURA), has designated six chemicals as Higher Hazard Substances, and nine as Lower Hazard Substances. Users of Higher Hazard Substances should know that the reporting threshold for these chemicals is 1,000 instead of 10,000 (or 25,000) pounds. Users of Lower Hazard Substances must report on their use of the chemical, but do not have to pay the per-chemical part of the TURA fee.

### Background

Enacted in 1989, the TURA program has helped thousands of Massachusetts businesses reduce toxics use and waste generation. From 2000 to 2009, companies reporting under TURA have reduced chemical use by 206 million pounds and waste by 44 million pounds [Note: The TURA data referred to has been normalized for changes in production and covers a consistent set of chemicals and industries over time]. Amendments to TURA in 2006 encouraged businesses to enhance environmental performance through the preparation of resource conservation plans and the implementation of environmental management systems (EMS).

Businesses are subject to TURA regulation if the annual use of a listed chemical at the facility exceeds the applicable threshold and it employs the equivalent of 10 or more full-time employees and conducts any business activities within any of the following TURA-covered Standard Industrial Classification (SIC) codes, or their equivalent NAICS codes: 10 – 14, 20 – 39, 40, 44 – 51, 72, 73, 75 and 76. These codes include all manufacturing, as well as transportation, utilities, and some commercial operations, such as dry cleaning and auto repair. These facilities must track their chemical use, submit a toxics use report to MassDEP by July 1<sup>st</sup> of the subsequent year, develop a toxics use reduction plan, and submit a summary of the results of their TUR planning efforts to the MassDEP by July 1<sup>st</sup> in even-numbered years.

Higher Hazard Substances (HHS)			
Higher Hazard Substance	EPA CAS/Category	TURA #	First Reporting Period
Trichloroethylene (TCE)	CAS 79-01-6	1222	2008
Cadmium	CAS 7440-43-9	1220	2008
Cadmium compounds	EPA category N050	1004	2008
Perchloroethylene (PERC)	CAS 127-18-4	1219	2009
Hexavalent chromium compounds	Portion of EPA category N090	1216	2012
Formaldehyde	CAS 50-00-0	1218	2012

Lower Hazard Substances (LHS)		
Lower Hazard Substance	CAS/Category #	First Reporting Period
Isobutyl alcohol	CAS 78-83-1	2009
Sec-butyl alcohol	CAS 78-92-2	2009
n-butyl alcohol	CAS 71-36-3	2009
Ferric chloride	CAS 7705-08-0	2010
Ferrous chloride	CAS 7758-94-3	2010
Ferric sulfate	CAS 10028-22-5	2010
Ferrous sulfate	CAS 7720-78-7 & CAS 7782-63-0	2010
Butyl acetate	CAS 123-86-4	2010
Iso-butyl acetate	CAS 110-19-0	2010

The 2006 amendments also directed the TUR Administrative Council, in consultation with the Toxics Use Reduction Institute (TURI) and its Science Advisory Board (SAB), to review the list of reportable chemicals and when appropriate, to designate chemicals as Higher Hazard Substances, Lower Hazard Substances, or to leave chemicals uncategorized. The Council may designate up to 10 chemicals as Higher Hazard Substances and up to 10 chemicals as Lower Hazard Substances in any calendar year. **Designation as a Higher Hazard Substance lowers the reporting threshold from 10,000 pounds if a facility otherwise uses the substance, 25,000 pounds if the facility manufactures the substance, or 25,000 pounds if the facility processes the substance, to 1,000 pounds for each type of use.** Thus, designation brings lower-quantity users of these chemicals into the TURA program, making them responsible for

annual toxics use reporting and fees and biennial toxics use reduction planning. (The 2006 amendments automatically designated persistent, bio-accumulative, and toxic (PBT) chemicals as Higher Hazard Substances, which already have reporting thresholds lower than 1,000 pounds as established by the U.S. Environmental Protection Agency). **Designation as a Lower Hazard Substance does not affect reporting thresholds or other requirements, but eliminates the per-chemical fee** [Note: Covered companies must still pay the “base” TURA fee].

### **The Designation Process**

To designate a chemical as an HHS or LHS:

- The SAB reviews the scientific data for chemicals, initially those on the SAB’s more and less hazardous lists, and recommends substances to TURI for the appropriate designation.
- TURI, with input from the Office of Technical Assistance and Technology (OTA) and the Department of Environmental Protection (MassDEP), prepares a policy analysis for each chemical recommended by the SAB, and then recommends designations for Administrative Council consideration.
- Throughout its assessments, the Council solicits comments from the TURA Advisory Committee, the public, and program stakeholders, including industry representatives, who may be affected by the designations.
- The Council considers the TURI and SAB recommendations and votes on whether to designate the chemical as an HHS or LHS.
- Any designations by the Council must be added to regulation 301 CMR 41.00 – Toxic or Hazardous Substance List to become effective. Proposed designations follow the MGL c. 30A formal public hearing and comment process prior to final regulation promulgation.
- Companies subject to the new requirements are required to begin tracking the use of these chemicals in the calendar year after the designation is promulgated in 301 CMR 41.00.

### **The Basis for Designation**

For all recommended designations as Higher or Lower Hazard Substances, the SAB reviews objective scientific hazard data regarding the substance in question. The SAB uses screening endpoints in the areas of human health, environment, safety, and chemical persistence/bioaccumulation as a framework for their review and considers the overall potential impact for each chemical. When there are data gaps or when evaluation models require subjective inputs, the SAB uses an expert judgment method adapted from the Delphi Method, a process for forming consensus among experts. The SAB focuses its deliberations on the inherent hazard of each substance, as opposed to a risk assessment that considers the typical context of substance use and worker exposure, which may include the utilization of engineering controls and/or personal protective equipment. This approach is protective because it considers unanticipated events such as the failure or absence of safety equipment and impacts that may arise over the entire life-cycle of the substance, from its creation or extraction to its final disposal. Because the SAB considers *overall* inherent toxicity and environmental and safety hazards, recommended Higher Hazard Substances are not necessarily those with the highest carcinogenicity or individual toxicity values. While the SAB’s recommendations are focused on inherent hazard, TURI, in its policy analysis, and the Administrative Council in its decision-making, consider issues such as quantities used in the Commonwealth, exposure, available alternatives, impacts to business and other information regarding substance use.

### **Other Chemicals Considered for Designation**

In addition to those chemicals already designated by the Administrative Council as Higher Hazard Substances, the SAB has recommended that seven other substances be considered for HHS designation: cyanide compounds, ethylene oxide, nickel compounds, chlorine, arsenic compounds, benzene, and hydrogen cyanide. The SAB also has recommended the following substances be considered for designation as Lower Hazard Substances: ethylene glycol, methanol, silver in alloy form, zinc in alloy form, acetone, acetic acid (>12% concentration), methyl ethyl ketone, and ethyl acetate. The Council may designate up to 10 chemicals as an HHS and 10 chemicals as an LHS in a calendar year. In making future designations, the Council may consider the other chemicals recommended by the SAB as well as other chemicals that have yet to be reviewed by the SAB.

### **For Additional Information**

Up-to-date information about the TURA program is available from the Office of Technical Assistance and Technology: <http://www.mass.gov/eea/ota>, MassDEP: <http://www.mass.gov/dep/toxics/toxicus.htm>, and the Toxics Use Reduction Institute: <http://www.turi.org>.

The Administrative Council sets toxics use reduction policy in the Commonwealth. In this role, the Council reviews proposed regulations to protect the health and safety of workers and the public at large and promotes increased coordination in the enforcement of toxics reduction laws statewide. The Council also promotes the competitive position of Commonwealth businesses by advancing innovation in toxics use reduction and management.

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