The Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

Charles D. Baker
GOVERNOR

Karyn E. Polito
LIEUTENANT GOVERNOR

Kathleen A. Theoharides
SECRETARY

Tel: (617) 626-1000
Fax: (617) 626-1181
http://www.mass.gov/eea

Background Document
For Proposed Amendments To

301 CMR 41.00
Toxic or Hazardous Substance List

Regulatory Authority:
M.G.L. Chapter 21I, §§ 4 and 9

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INTRODUCTION

These draft regulations prepared by the Executive Office of Energy and Environmental Affairs (EEA), as chair of the Administrative Council on Toxic Use Reduction (TUR), amend the Toxic or Hazardous Substance List regulations, (301 CMR 41.00), in accordance with decisions made by the Administrative Council, pursuant to its duties under the Toxics Use Reduction Act M.G.L. c. 21I, as amended in July 2006 (TURA). TURA expands the Toxic Chemical Release Inventory (TRI) reporting requirements required by the Federal Emergency Planning and Community Right to Know Act (EPCRA) Section 313 to include reporting on chemical use, chemical waste (byproduct), and on the results of a biennial assessment of whether there are ways companies could reduce chemical use and waste that make good business sense.

The proposed action is mandated by TURA, which requires that changes made by the United States Environmental Protection Agency (USEPA) to the EPCRA Section 313 Toxic Chemical List) be mirrored in the TURA Toxic or Hazardous Substance List. Specifically, the Council voted to:

1) list the nonylphenol ethoxylates (NPE) category, added by USEPA to the EPCRA Section 313 Toxic Chemical List on June 7, 2018.

BACKGROUND AND PURPOSE

Unanimously passed by the legislature in 1989 and enacted in 1990, the Massachusetts Toxics Use Reduction Act (TURA) was the first comprehensive state pollution prevention law in the United States. The Act expanded on the existing Federal EPCRA Section 313 TRI requirement that manufacturers using more than threshold amounts of certain listed toxic substances report on the quantity of those substances released to the environment. Under TURA, certain facilities are required to report on the quantities of listed substances used and wasted in production and conduct a biennial examination of whether it would be economically advantageous to reduce the use and waste of these substances. TURA also provides free and confidential technical assistance to Massachusetts businesses, toxics use reduction grants, and research and training programs designed to promote the voluntary adoption of cost-effective toxics use reduction techniques. This unique combination of regulatory requirements and incentives furthers TURA's goal of protecting public health, the environment, and workers, while helping businesses find financial savings, product improvements, and greater efficiency in production processes.

Companies subject to TURA are still making progress. Between 2007 and 2016 those facilities that reported in 2007 and were still manufacturing in Massachusetts in 2016 experienced a 29% increase in production and, taking that increase into account, reduced:

- toxic chemical use by 26%;
- toxic byproducts (waste) by 19%;
- toxics shipped in product by 22%; and,
- on-site releases of toxics to the environment by 36%.

MassDEP preliminary analysis of the most recent data shows that, between 2014 and 2016, of the Massachusetts facilities that reported with sufficient frequency to evaluate TUR implementation, 86% of facilities reduced use or waste per unit of product on at least one chemical.

These reductions have brought cost savings to these businesses through reduced chemical purchases, reduced waste management and pollution control costs while simultaneously lowering chemical transportation risks, workplace hazards, and toxics in products. They have also helped Massachusetts businesses remain competitive in a global marketplace increasingly aware of toxics issues.

TURA established an Administrative Council on Toxics Use Reduction that has the responsibility, among other duties, to make the adjustments to the Toxic or Hazardous Substance List mandated by the statute as well as any other adjustments they believe are needed to meet the goals of the Act. As the chair of the Council, the Secretary of Energy and Environmental Affairs promulgates the Council's actions in regulations.

DESCRIPTION OF THE PROPOSED REGULATIONS

On June 7, 2018, USEPA added the nonylphenol ethoxylates (NPE) category consisting of 13 specific NPEs to EPCRA section 313. USEPA's technical evaluation of that data concluded that the NPEs in the category can reasonably be anticipated to cause toxic effects in aquatic organisms and break down into other substances that are highly toxic to aquatic organisms. Based on the toxicity of the NPE category and its breakdown products, USEPA determined that the NPE category meets the EPCRA Section 313 listing criteria. As required by the statute, the TURA Administrative Council voted in September of 2018 to list the NPE category. These substances are included in the NPE category and will be added to 301 CMR 41.00 section 41.03(12):

CAS#	Chemical Name
7311-27-5	Ethanol, 2-[2-[2-[2-(4-nonylphenoxy)ethoxy]ethoxy]ethoxy]-
9016-45-9	Poly(oxy-1,2-ethanediyl), α-(nonylphenyl)-ω-hydroxy-
20427-84-3	Ethanol, 2-[2-(4-nonylphenoxy)ethoxy]-
26027-38-3	Poly(oxy-1,2-ethanediyl), α-(4-nonylphenyl)-ω-hydroxy-
26571-11-9	3,6,9,12,15,18,21,24-Octaoxahexacosan-1-ol, 26-(nonylphenoxy)-
27176-93-8	Ethanol, 2-[2-(nonylphenoxy)ethoxy]-
27177-05-5	3,6,9,12,15,18,21-Heptaoxatricosan-l-ol, 23-(nonylphenoxy)-
27177-08-8	3,6,9,12,15,18,21,24,27-Nonaoxanonacosan-1-ol, 29-(nonylphenoxy)-
27986-36-3	Ethanol, 2-(nonylphenoxy)-
37205-87-1	Poly(oxy-1,2-ethanediyl), α-(isononylphenyl)-ω-hydroxy-
51938-25-1	Poly(oxy-1,2-ethanediyl), α-(2-isononylphenyl)-ω-hydroxy-
68412-54-4	Poly(oxy-1,2-ethanediyl), α-(nonylphenyl)-ω-hydroxy-, branched
127087-87-0	Poly(oxy-1,2-ethanediyl), α-(4-nonylphenyl)-ω-hydroxy-, branched

Any facility in a TURA-covered business/manufacturing sector with 10 or more full-time employee equivalents (FTEs) using at least 25,000 pounds per year of the NPE category for manufacturing or processing or 10,000 pounds per year of the NPE category for other uses are subject to the regulation. The manufacturers affected by this change will submit first EPCRA Section 313 TRI reports on this category by July 1, 2020. Under TURA, facilities in Massachusetts must track use during calendar year 2020 and report above threshold use by July 1, 2021.

ECONOMIC IMPACTS

The cost associated with annual reporting to MassDEP consists of a base fee and a per-substance fee up to a fee maximum. In the case of a category, filers would add together their use of all substances in the category (excluding those that are already individually listed) in order to make threshold determinations. The base fee depends on the size (number of employees) of the facility; the per-substance fee is the same for all facilities, and is set at $1,100. Small businesses (companies with less than 10 employees) are specifically exempt and do not report to TURA. If a facility were already a TURA filer, then reporting on an additional substance would add $1,100 to the amount already paid by that facility unless that facility had reached the fee maximum. The fees associated with TURA reporting are as follows:

Number of employees	**Base fee**	**Base fee + one substance**
10-49	$1,850	$2,950
50-99	$2,775	$3,875
100-499	$4,625	$5,725
> 500	$9,250	$10,350

Companies also incur costs associated with TUR report and plan preparation. Facilities will incur larger preparation costs the first time they file a Form S with the MassDEP and prepare a toxics plan, than they will in subsequent reporting and planning years. As companies adjust to the routine of TUR reporting, the cost of implementation declines.

OTA provides assistance to first-time filers, and its services are provided at no charge. Covered facilities may take advantage of OTA's assistance to mitigate these first-time costs, and OTA will be reaching out to new filers to offer its help.

After two years of reporting toxics use, companies are required to engage in TUR planning. Only those companies that have never had to do planning before would experience the major portion of the costs described below. For companies that only need to report the newly reportable substance or category, the cost of hiring a planner will likely be in the range of $1,000 - $3,000. Companies that want to have their own in-house TUR planner can qualify either by relying on past work experience in toxics use reduction or by having a staff member take the TUR Planners' training course. Those companies with experienced staff can become certified for as little as $100. For those that want staff to take a course the cost will be between $650- $2000 depending on whether the company has previously filed a TURA report. Listing of the NPE category will result in minimal incurred costs for companies that have already had to do planning as they will already have incurred these costs of establishing the planning process and acquiring the trained expertise needed to review the plan.

The cost of planning depends on the number of substances used and the complexity of the process, but experience has shown that establishing a plan has many potential benefits for companies. Massachusetts companies with in-house toxics use reduction planners have reported ancillary benefits from having an employee on staff that is knowledgeable about methods for reducing the costs and liabilities of toxics use. Companies that use external consultation have reported experiencing benefits from bringing in a trained practitioner who may have wide experience in toxics use reduction and related matters. Additionally, through the process of planning and reducing or eliminating higher hazard substances, companies have found ways to make their workplaces and products safer. Some companies have reported that the process motivated personnel to find ways to eliminate the costs of managing highly hazardous and highly regulated waste products and releases. Others have found that they were able to:

expand their markets, better comply with other regulations and reduce their overall regulatory burden, lower their insurance, emergency planning and response costs, and lower the risk of litigation resulting from accidents, exposures and contamination.

Adding the NPE category, as required by statute, to the TURA List would help to fulfill the intent of TURA, provide important guidance and incentives to Massachusetts businesses, and help businesses move toward safer alternatives and avoid making regrettable substitutions. Listing does not require any business to stop using these substances, but will likely cause them to exercise greater care. Many businesses affected by past designations have found they were able to eliminate use, or reduce use below the threshold for coverage under TURA.

Any facility in a TURA-covered business with 10 or more full-time employees using at least 25,000 pounds per year of the NPE category for manufacturing or processing or 10,000 cumulative pounds per year of the NPE category for other uses would be subject to the regulation. NPEs are used in a variety of applications as nonionic surfactants used in adhesives, wetting agents, emulsifiers, stabilizers, dispersants, defoamers, cleaners, paints and coatings. USEPA estimates that 178 facilities will be affected nationally by the addition of the NPE category to EPCRA Section 313 TRI. First TRI reports are due July 1, 2020.

The Office of Technical Assistance (OTA) reviewed the EPCRA Tier II data for those substances in the NPE category. To develop an expected number of TURA filers, the data set was limited based on TURA reportable SIC codes, employee numbers, and on-site quantity of chemical reported. Based on this analysis, the number of facilities that are likely to report on the category based upon Tier II is approximately 5-10. It is likely that a small number of additional filers are not captured in the data shown above. Conversely, facilities may report a significant amount as stored on site under Tier II, while still not exceeding the annual TURA thresholds for use.

As shown in Table 1, 3 substances in the NPE category were reported under Tier II in Massachusetts in 2017.

Table 1: 2017 Tier II data

Chemical Abstract Service (CAS) Number	Tier II reports	Estimated number of TURA filers
9016-45-9	6	1
68412-54-4	4	1
127087-87-0	4	3
Total	14	5

This table shows 2017 Tier II reports for those substances in the NPE category. Other substances in the category were not reported under Tier II in Massachusetts in 2017. To develop an expected number of TURA filers, OTA limited the Tier II data set based on TURA reportable SIC codes, employee numbers, and roughly on quantity of substance reported as present on-site.

SMALL BUSINESS IMPACT STATEMENT

TURA requires that companies carefully track toxics use and examine ways to reduce the use of substances that pose dangers to health, safety and the environment when they are used, stored, shipped,

and incorporated into products. Companies are not required to implement specific toxics use reduction options identified in their plan, nor does coverage under TURA require that companies stop using substances that they deem important to their operations. Participation in TURA can be of general benefit, not just to the Commonwealth, but to the companies regulated by the Act.

There would be some additional cost to companies that would begin reporting a substance or substances as part of a category, including preparing annual toxics use reports and biennial toxics use reduction plans, and paying toxics use fees. This proposal is for facilities to add together their use of all substances in the category for reporting purposes; detailed reporting by individual substance would not be required. While this could make it easier for small businesses to track and report, the TURA program would not receive detailed information on use of individual substances within the category.

The TURA program is in a good position to offer services to small businesses interested in reducing or eliminating their use of these substances. The program has substantial experience with and expertise in working with small businesses and has a history of working successfully with users on these issues.

Small businesses do not always feel that they have the time or the resources to fully evaluate either the risks and costs imposed by their current use of highly hazardous substances, or to investigate alternatives. The use of toxic or hazardous substances can cause accidents, high-cost management, and potential liabilities pertaining to regulation, litigation and insurance, as well as reducing the attractiveness of products and commercial partnerships. Motivating small businesses to consider reducing such use, and helping them to understand their options, has significant benefits that cannot be quantified in advance. However, the history of the program supports the expectation that many companies will be motivated to engage in the effort to become safer, and many will use the resources of the program to supplement their efforts.

Activities of both OTA and TURI already provide infrastructure which could help smaller users to reduce their use of these substances. Several on-going program activities would help meet the demand for services.

- Both the OTA and the TURI Lab have significant experience helping large and small users identify safer alternatives to these substances for a variety of uses and both are available as a resource for small businesses entering the program. The TURI Lab has conducted solvent cleaning alternative testing since 1993, assisting businesses in making the transition to less toxic alternatives without compromising performance.
- The TURA program's ability to help facilities identify and select the best possible alternative for a given use is particularly important given that some of the available alternatives are preferable to others not only from an effectiveness standpoint but from a safety, health, and environmental perspective. The TURA program is able to assist facilities both in researching and identifying the alternatives that pose the fewest health and environmental concerns.
- TURI has an academic research grant program that can target seed funding to researchers who are developing safer alternatives to these substances used in a specific application. When specific industry needs are identified, along with companies willing to share performance criteria, materials and/or other forms of expertise, TURI can identify university researchers interested in focusing their R&D efforts for solutions. If a specific application of the use of these substances

presents an on-going challenge for companies with respect to shifting to safer alternatives, TURI could direct R&D efforts to find feasible solutions.

AGRICULTURAL IMPACTS

Pursuant to MGL c. 30A, Section 5, state agencies must evaluate the impact of proposed programs on agricultural resources within the Commonwealth. The proposed revisions are intended to further reduce the use and release of toxic substances into the environment. The proposed regulations are not expected to have any negative impacts on agricultural production in Massachusetts. This action can reduce the costs, severity and frequency and the likelihood of land or water contamination requiring remediation or treatment.

IMPACTS ON MUNICIPALITIES

Pursuant to Executive Order 145, state agencies must assess the fiscal impact of new regulations on the Commonwealth's municipalities. Municipalities are statutorily exempt from TURA and therefore the proposed amendments will have no direct effect on them. However, municipalities are likely to benefit from reduced pollution and associated risks to the extent the proposed amendments reduce the use of toxic substances in their jurisdictions. This action can reduce the costs, severity and frequency of emergencies requiring response from municipal authorities, the incidence of exposures requiring medical treatment, and the likelihood of land or water contamination requiring remediation or treatment.

MASSACHUSETTS ENVIRONMENTAL POLICY ACT (MEPA)

Pursuant to 301 CMR 11.03(12) (MEPA Regulations), these proposed regulations will not reduce standards for environmental protection, opportunities for public participation in permitting or other review processes, or public access to information generated or provided in accordance with these regulations. Promulgation of these regulations, therefore, does not require the filing of an Environmental Notification Form under MEPA.

IMPACTS ON OTHER PROGRAMS

The substances in the nonylphenol ethoxylates (NPE) category have been recently regulated under EPCRA Section 313. The listing of the NPE category under TURA, as required by statute, is not likely to have an impact on other programs. The requirements under TURA lead to enhanced awareness about the use of toxics and increased efficiency.

PUBLIC PARTICIPATION

Meetings of the TURA Administrative Council are open to the public and attendees in addition to the committee or board members are included in discussion. The Administrative Council consists of the leadership from six environmental, public health, and public safety state agencies. Industry stakeholders that were notified about public meetings where the nonylphenol ethoxylates (NPE) category was discussed and voted on included: the American Chemistry Council (ACC), Associated Industries of Massachusetts (AIM), and the Massachusetts Chemistry and Technology Alliance (MCTA).

M.G.L. Chapter 30A requires the Executive Office of Energy and Environmental Affairs to give public notice and provide an opportunity to review the proposed regulations at least 21 days prior to holding a public hearing. The hearing will be held in accordance with the procedures of M.G.L. Chapter 30A. The

public hearing notice, proposed regulations and background document are available at this URL: https://www.mass.gov/orgs/administrative-council-on-toxics-use-reduction

Questions about this document may be addressed to Rich Bizzozero at 617-626-1080, or rich.bizzozero@mass.gov.