

TURA Administrative Council Update on Changes to the CERCLA and EPCRA Chemical Lists - March 2016

The Toxics Use Reduction Act (TURA) M.G.L. Chapter 21I: Section 9 Toxic or Hazardous Substance List defines which substances shall be regulated under TURA. Initially, the list consisted of chemicals on the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) list and the federal Toxics Release Inventory (TRI) Emergency Planning and Community Right to Know (EPCRA) Section 313 list. Both lists are managed by the Environmental Protection Agency. The TURA statute directs the Administrative Council to incorporate any changes in the TRI list into the TURA list on an ongoing basis. The rules for CERCLA chemicals are different, however. The 2006 amendments to TURA directed the Administrative Council to review the CERCLA list and determine which substances to retain and which substances to remove, and thereafter gave the Council the choice of whether or not to incorporate changes to the CERCLA list into the TURA list. This memo outlines recent changes to the EPCRA 313 list (listing of a nonylphenol category) and the CERCLA list (de-listing of three sodium phosphate compounds).

Nonylphenol Category. On September 30, 2014 EPA added a nonylphenol category consisting of the following six chemicals to the EPCRA Section 313 Toxics Release Inventory substance list, reportable for calendar year 2015.ⁱ The six nonylphenols are a chemical category rather than individually reportable substances. They do not yet appear on the TURA substance list.

Chemical Name	CAS Number
4-Nonylphenol	104-40-5
Isononylphenol	11066-49-2
Nonylphenol	25154-52-3
4-Isononylphenol	26543-97-5
4-Nonylphenol, branched	84852-15-3
Nonylphenol, branched	90481-04-2

Relevant Regulatory Considerations. Per the statute, the TURA list shall include "...the chemicals identified on the Toxic Chemical List established pursuant to Section 313 of EPCRA. Each year the council shall adjust the toxic or hazardous substance list to add or delete substances consistent with changes in said toxic chemical list."

Nonylphenol Category Decision for the TURA Council. The TURA Council needs to vote to add these substances to the list. Should the Council feel that these chemicals should not be on the TURA list, they may ask the program to follow the process for delisting a chemical.

Phosphates: Relevant Regulatory Considerations. Sodium phosphate, tribasic is a substance which was added to the Clean Water Act (CWA) in 1978 and to the CERCLA list of reportable substances in 1985. It has existed since that time on those lists with the correct name and multiple chemical abstract service (CAS) identifying numbers, three of which are correctly listed as forms of sodium phosphate, tribasic, and three of which are actually other forms of sodium phosphate (STPP, SMTP and SHMP). In 2011, EPA removed these three incorrect CAS numbers from both the CWA and CERCLA.ⁱⁱ

Chemical Name	CAS Number
Sodium tripolyphosphate (STPP)	7758-29-4
Sodium trimetaphosphate (SMTP)	7785-84-4
Sodium hexametaphosphate (SHMP)	10124-56-8

In 2008 based on recommendations from the TURA Science Advisory Board the Administrative Council voted to retain all the sodium phosphates on the TURA list, specifically because of eutrophication of water bodies due to phosphorous nutrient loading. In addition, MassDEP has prioritized phosphorus removal from wastewater discharge to better prevent and control eutrophication of rivers and fresh water bodies. The most significant hazard from these chemicals is eutrophication in fresh water bodies.

Massachusetts industries have asked for clarification on whether STPP, SMTP, and SHMP are still reportable under TURA since the 2011 CERCLA de-listing, and whether it will impact their TURA amnesty eligibility if they fail to file before June 30, 2016.

Uses of STPP, SMTP, and SHMP.ⁱⁱⁱ Of these three phosphates, sodium tripolyphosphate (STPP) makes up the largest share of the market and use is growing due to an increase in processed seafood, poultry and meat. STPP is added to processed food to accelerate curing, extend shelf-life and to maintain product texture, moisture and color. The majority of STPP used to process seafood is not incorporated into the product and in most cases is likely discharged via the sewer into local wastewater treatment plants (WWTPs) which then discharge treated effluent to coastal or inland waterways or to the ground. Fewer than half of WWTPs that discharge to fresh waters have phosphorous effluent limits and associated treatment now, but most are expected to receive limits soon from the U.S. EPA. Capital costs to treat and remove phosphorous can range from \$200,000 to more than \$50 million. According to U.S. EPA, phosphorous in sewerage arriving at WWTPs comes from human waste, food and detergents^{iv}. The significance of the current and potential contribution to fresh water eutrophication from STPP, SMTP, and SHMP has not been quantified and is unknown.

Non-Food Processing Uses for Phosphates:

- STPP is the primary phosphate used in the detergent industry. Although Massachusetts has banned dishwashing detergents that contain more than 0.5 percent phosphorous, the ban does not include commercial dishwashing products.
- STPP and SHMP are used to control calcium scaling in low-pressure industrial boilers.
- SHMP, STPP and MSP (monosodium phosphate) are being increasingly used as corrosion inhibitors in municipalities that have lead pipes.
- SMTP is the least popular phosphate of those listed above. Possible SMTP uses include detergents, water treatment, starch modification and metal cleaning.

Phosphate Decisions for the TURA Council. TURA states in Section 9(C) that the Council “may add or delete substances from the toxic or hazardous substance list.”

The TURA Administrative Council may now either retain the three phosphate substances, in accordance with their 2008 decision or vote to delist, following EPA’s 2011 CERCLA decision.

ⁱ US Federal Register, 79 FR 58686. *Addition of Nonylphenol Category; Community Right-To-Know Toxic Chemical Release Reporting*

ⁱⁱ US Federal Register vol. 76, No. 174, Sep 8, 2011, 55583. *Environmental Protection Agency 40 CFR Parts 116 and 302 Designation of hazardous Substances; Designation, Reportable Quantities and Notification.*

ⁱⁱⁱ IHS Chemical Economics Handbook, *Industrial Phosphates*, Feb 2012, 760.2500 A.

^{iv} <https://www.epa.gov/nutrientpollution/sources-and-solutions-wastewater>