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.
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- 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.

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[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