

March 9, 2015

U.S. Environmental Protection Agency
EPA Docket Center (EPA/DC)
Mail Code 28221T
1200 Pennsylvania Avenue NW
Washington, DC 20460

Attn: Docket ID No. EPA-HQ-OAR-2014-0471

Re: Petition to Add n-Propyl Bromide to the List of Hazardous Air Pollutants

Dear Sir/Madame:

The Northeast States for Coordinated Air Use Management (NESCAUM) offers the following comments on the U.S. Environmental Protection Agency's (EPA's) request for comment on the New York State Department of Environmental Conservation (NYSDEC) petition to add n-propyl bromide (n-PB) to the list of hazardous pollutants (HAPs) regulated under Section 112 of the Clean Air Act (CAA) [80 Fed. Reg. 6676-6679 (February 6, 2015)]. NESCAUM is the regional association of state air pollution control agencies representing Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont.

Section 112 authorizes the petitioning of the Administrator to add a substance to the CAA HAP list if there is sufficient data demonstrating that the substance is known to cause or may be reasonably anticipated to cause adverse human health or environmental effects. The NYSDEC petition not only effectively summarizes the toxicological concerns associated with n-PB exposures, but also sufficiently demonstrates the adverse effects of the potential future use of and exposure to n-PB if this pollutant is not added to the CAA HAP list for regulation under Section 112. Therefore, NESCAUM supports this petition to add n-PB to the CAA Section 112 HAP list.

EPA's Toxics Release Inventory does not require sources to report n-PB emissions because that substance is not a listed HAP. As a result, national n-PB emissions data are not available. However, NYSDEC's petition demonstrates that the use of n-PB as a replacement for chlorinated solvent HAPs (including the dry-cleaning solvent perchloroethylene)¹ is increasing. The petition further demonstrates and supports numerous other studies showing that n-PB is more neurotoxic than perchloroethylene² and that the increased use of that substance has

¹ National Clothesline, (2010), "HSIA Asks EPA to Add nPB to Hazardous Air Pollutants List." BPS Communications. December 2010 Issue.

² Finkel, A. (2010a), *Increased toxicity and carcinogenicity of n-propyl bromide (1-bromopropane) relative to perchloroethylene*. Supplemental report to the City of Philadelphia Department of Public Health/Air Management Services. June 2010; Finkel, A. (2010b), *Perspectives on n-propyl bromide neurotoxicity and carcinogenicity in*

resulted in serious neurological health effects in occupationally exposed individuals.³ Although n-PB ambient exposures have not been well documented, increased emissions are associated with higher n-PB ambient air levels in the vicinity of sources, and will result in a higher potential for public health impacts, including elevated cancer risks.

Furthermore, because carcinogenic risk is often a controlling factor in evaluating public health impacts associated with ambient pollutant exposures, evidence of carcinogenicity of n-PB bromide must be taken into account in the EPA's determination. The most recent (October 2014) edition of the National Toxicology Program's (NTP's) Report on Carcinogens states that "1-Bromopropane [n-propyl bromide] is reasonably anticipated to be a human carcinogen based on sufficient evidence of carcinogenicity from studies in experimental animals."⁴ Therefore, the NTP cancer classification for n-PB (reasonably expected to be a human carcinogen) is now the same as the classification for trichloroethylene (TCE), tetrachloroethylene (perchloroethylene - PCE), and methylene chloride (MC), all of which are listed HAPs. Listing n-PB as a HAP would remove the incentive for sources to substitute one carcinogen (n-PB) for another (TCE, PCE or MC) in order to circumvent National Emission Standards for Hazardous Air Pollutants (NESHAP) requirements.

Other environmental and public health agencies have either regulated or proposed regulating n-PB. The Occupational Safety and Health Administration's Hazard Communication Standard applies to n-PB. Under this requirement, employers must provide health and safety information and training to workers using n-PB.⁵ The European Union classifies n-PB as R60 (may impair fertility) and R63 (possible risk of harm to the unborn child) under its European Chemical Substances Information System. It also lists n-PB as a Substance of Very High Concern under its Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).⁶ A main aim of REACH is "to ensure a high level of protection of human

light of new evidence and new challenge. November 12, 2010; Ichihara, G. (2005a), *Neuro-reproductive toxicities of 1-bromopropane and 2-bromopropane*. Int Arch Occup Environ Health, March, 78(2): 79-96; Ichihara, G. (2005b). *Investigation of toxicity through human cases and animal experiments—study of bromopropanes*. Nippon Eiseigaku Zasshi, November, 60(4): 405-10; Yu, X., Ichihara, G., Kitoh, J., Xie, Z., Shibata, E., Kamijima, M. and Takeuchi, Y. (2001). *Neurotoxicity of 2-Bromopropane and 1-Bromopropane, Alternative Solvents for Chlorofluorocarbons*. Environmental Research, Section A, January, 85(1): 48-52; Centers for Disease Control and Prevention (CDC). (2008). *Neurologic Illness Associated with Occupational Exposure to the Solvent 1-Bromopropane —New Jersey and Pennsylvania, 2007-2008*. Morbidity and Mortality Weekly Report (MMWR), Vol. 57, No. 48: pp. 1300-2. Dec. 5, 2008; Majersik, J.J., Caravati, E.M., and Steffens, J.D. (2007). *Severe Neurotoxicity Associated with Exposure to the Solvent 1-Bromopropane (n-propyl bromide)*. Clinical Toxicology, 45: 270-6; Harney, J., Hess, J., Reh, C., and Trout, D. (2002). *Health Hazard Evaluation Report, STN Cushion Company, Thomasville, North Carolina*. Centers for Disease Control and Prevention (CDC). National Institute for Occupational Safety and Health (NIOSH), August 2002. Report No. HETA 2000-0410-2891.

³Centers for Disease Control and Prevention. (2008), *Neurological Illness Associated with Occupational Exposure to the Solvent 1-Bromopropane – New Jersey and Pennsylvania, 2007-2008*. Morbidity and Mortality Weekly report, Vol. 57, No. 48: pp. 1300-2. December 5, 2008.

⁴ National Toxicology Program's Report on Carcinogens. October 2014.

⁵ Occupational Safety and Health Administration, National Institute for Occupational Safety and Health. Hazard Alert: 1-Bromopropane. July 2013.

⁶ European Commission Joint Research Center, Institute for Health and Consumer Protection, European Chemical Substances Information System. CAS# 104-96-5 and European Chemicals Agency, "Agreement of the Member State Committee on the identification of 1-bromopropane as a Substance of Very High Concern," November 2012.

health and the environment from the risks that can be posed by chemicals[.]”⁷ California regulates n-PB under Proposition 65, which lists n-PB as a developmental/reproductive toxicant.⁸ Pennsylvania lists n-PB on its hazardous substance list, Rhode Island has regulated n-PB as a toxic air contaminant since 1980, and Massachusetts requires facilities to report on their use of n-PB and to conduct toxics use reduction planning under its Toxics Use Reduction Act (TURA).

In summary, the NYSDEC petition provides a strong basis for listing n-PB as a Section 112 HAP. It summarizes the growing amount of toxicological data on the adverse health effects of n-PB exposures, including carcinogenicity. This also includes the increasing evidence that n-PB is a hazardous chemical that should be regulated to prevent occupational exposure, as well as exposure of the general public and sensitive populations to unregulated vented or fugitive n-PB emissions. NESCAUM supports the NYSDEC petition as having sufficiently demonstrated that n-PB causes adverse human health effects, and it should be listed as a HAP under Section 112 of the CAA.

Sincerely,



Arthur N. Marin
Executive Director

cc: NESCAUM Directors
NESCAUM Air Toxics and Public Health Committee
David Conroy, EPA Region 1
Richard Ruvo, EPA Region 2

⁷ http://ec.europa.eu/enterprise/sectors/chemicals/reach/index_en.htm.

⁸ California Office of Environmental Health Hazard Assessment. Proposition 65. Notice to Interested Parties, December 3, 2004.