Appendix to Comments of Safer Chemicals Healthy Families on Risk Evaluation Problem Formulation Documents for Ten Chemical Substances under the Toxic Substances Control Act

For 1-Bromopropane, Docket ID No.: EPA-HQ-OPPT-2016-0741
Submitted via Regulations.gov (August 16, 2018)

This document supplements our general comments on the problem formulations for all 10 chemicals by providing specific details on 1-Bromopropane (1-BP).

On March 15, 2017, Safer Chemicals Healthy Families, Environmental Health Strategy Center, and Healthy Building Network provided detailed comments on the scope of the risk evaluation for five of the 10 chemicals EPA designated for initial risk evaluations on December 19, 2016.[1] We summarized information on each chemical's production and trade, uses, disposal, potentially vulnerable populations, exposure scenarios, and health and environmental hazards, as applicable. We urged the agency to ensure that the risk evaluation for each chemical would reflect the best information available on hazard and exposure, be based on a comprehensive understanding of the chemicals' conditions of use, and employ sound, precautionary methodologies that fully capture the risks they pose to human health and the environment.

The Problem Formulation of the Risk Evaluation for 1-Bromopropane (1-BP Problem Formulation),[2] issued by EPA on June 1, 2018, has several critical deficiencies toward meeting those criteria.

I. USES

EPA must evaluate the complete life cycle of the chemical, but currently plans to disregard important sources of exposure to 1-Bromopropane (1-BP).

A. EPA's list of conditions of use to be included in the risk evaluation (Table 2-3) does not mention certain products containing 1-BP that could be significant sources of exposure

In our March 2017 comments, we provided evidence for five uses of 1-BP that are not in the 1-BP Scope Document or Problem Formulation.

- Cosmetics and personal care products[3]
- Flame retardant, such as in polyisocyanurate insulation[4]

[1] The March 2017 comments submitted on 1-BP were assigned the identifier of EPA-HQ-OPPT-2016-0741-0027. They were removed from the public docket because they referenced Google Earth. They are available on the SCHF website at: https://saferchemicals.org/sc/wp-content/uploads/2017/03/saferchemicals.org_npb_comment_schf_ehsc_hbn.pdf
[2] https://www.epa.gov/sites/production/files/2018-06/documents/1bp_problem_formulation_05-31-18.pdf (1-BP Problem Formulation)
[3] SCHF, EHSC, HBN comments, Technical Appendix, p 19, 24

- Mechanical degreasing of transmissions, gear assemblies, and forklifts[5]
- Research & Development[6]
- Pharmaceutical synthesis (intermediate)[7]

We identified these potential uses through an investigation of 1-BP's production and trade data and review of articles and websites. EPA should study these uses further to ensure that the risk evaluation captures all products and other uses of 1-BP.

B. EPA may be incorrectly disregarding the use of adhesive chemicals in consumer products

EPA states that 1-BP's use as a solvent in adhesives is not a consumer use, but instead is "sold through wholesale channels for commercial and industrial uses, and usually in amounts larger than consumers could use."[8] Our research found that one importer, MC International, submitted CDR reports for 1-BP imports from 2012 to 2015 that indicated the chemical is incorporated into construction adhesives used in the industrial, commercial, and consumer sectors.[9] EPA should investigate this use to ensure it is not disregarding a consumer use.

II. EXPOSURES

A. EPA has not confirmed it will capture exposures to *all* potentially exposed or susceptible subpopulations (PESS)

EPA identifies some potentially exposed or susceptible subpopulations (PESS) based on their greater exposure: workers and occupational non-users, consumers and bystanders associated with consumer use, and groups within the general population "who live or work near manufacturing, processing, use or disposal sites."[10] The 1-BP Problem Formulation further states: "EPA may also identify additional potentially exposed or susceptible subpopulations that will be considered based on greater exposure."[11] To reach this conclusion, EPA says it will look at unique characteristics of groups such as "activities, duration, or location of exposure."[12] As stated in our March 2017 comments, we urge EPA to fully assess whether any communities of color or low-income communities are disproportionately exposed and thus a PESS.[13] We recommend making this determination using Census Bureau data, geocoded locations of industrial facilities and disposal sites, and modeled or measured exposures.

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[4] SCHF, EHSC, HBN comments, Technical Appendix, p 22, 24-25
[5] SCHF, EHSC, HBN comments Technical Appendix, p 23, 24-25. The 1-BP Problem Formulation references automotive care products, but only provides engine degreasers and break cleaners as examples (page 24).
[6] SCHF, EHSC, HBN comments, Technical Appendix, p 24-25
[7] SCHF, EHSC, HBN comments, Technical Appendix, p 12, 15, 16, 24. EPA's Preliminary Information on Manufacturing, Processing, Distribution, Use, and Disposal for 1-Bromopropane categorized this under "Past and Potential Other Uses," but further support for possible current usage in pharmaceuticals can be found at the citations we referenced in our comments.
[8] 1-BP Problem Formulation, p 19
[9] SCHF, EHSC, HBN comments, Technical Appendix, p 18
[10] 1-BP Problem Formulation, p 40
[11] Id.
[12] Id.
[13] SCHF, EHSC, HBN comments, Summary comment, p 6-7

In our March 2017 comments, we quoted from the minutes of a 2016 Chemical Safety Advisory Committee meeting:

> "[E]xposures occurring in close proximity to facilities using 1-BP could result in a disproportionate health risk in low-income communities and communities of color, as has been documented with perchloroethylene emissions from dry cleaning facilities."[14]

We continued with an excerpt from public comments submitted by public health and environmental organizations in 2016:

> "Exposure to 1-BP due to its presence in ambient air from dry cleaning, foam and furniture manufacturing and chemical manufacturing likely disproportionately impacts low-income communities and communities of color. For example, EPA found that air emissions from foam fabricators covered by a separate air toxics rule created disproportionate exposure and other impacts for African Americans, since African Americans are overrepresented in communities within a 3 mile radius of foam fabricators. The African American population in areas surrounding foam manufacturing facilities exceeds the national average by 53% (19% versus 13%)."[15]

We also call on EPA to reach a conclusion on whether women of reproductive age, pregnant women and their fetus, infants, children, and the elderly may be disproportionately exposed to 1-BP.

B. EPA must evaluate aggregate exposures

EPA should not isolate its evaluations of risk to workers, consumers using products, people living close to a manufacturing facility, or the general population. Rather, the agency should assume that one person may fall into all four categories and assess the aggregate risk.

C. EPA needs to assess cumulative exposure and risk for 1-BP in combination with other risk factors

The 1-BP Problem Formulation has no reference to cumulative exposure. EPA must include this in its risk evaluation.

III. HEALTH AND ENVIRONMENTAL IMPACTS

A. EPA ignores 1-BP's risks - to both human health and the environment - resulting from its ozone depleting potential

[14] https://www.epa.gov/sites/production/files/2016-08/documents/final_csac_minutes_no_2016-02_082216.pdf
[15] Eve Gardner and Emma Cheuse, Comments on TSCA Work Plan Chemical Risk Assessment Peer Review Draft 1- Bromopropane; Docket ID: EPA-HQ-OPPT-2015-0084, Earthjustice, on behalf of Blue Green Alliance, Earthjustice, Environmental Health Strategy, Natural Resources Defense Council, Safer Chemicals Healthy Families and Sierra Club Toxics Committee, May 9, 2016

In 2007, EPA approved some uses of 1-BP to replace ozone-deleting substances (ODS). However, 1-BP has ozone-depleting potential itself, at a level similar to hydrochlorofluorocarbons (HCFCs) that are classified as ODS.[16] Since 2007, 1-BP's production and use in the U.S. has increased dramatically. As we stated in our 2017 comments: "This raises growing concern about the impact of [1-BP] on the stratospheric ozone layer that protects human health from skin cancer and cataracts."[17] The harmful UV rays that the ozone layer prevents from reaching the Earth's surface could also reduce plants' growth rates and reduce survival rates for organisms at the bottom of the food chain.[18] The EPA should assess how 1-BP's ozone-depletion potential could harm health and the environment.

IV. DATA GAPS

A. EPA should require industry to fill data gaps

In its Analysis Plan, EPA states that the agency will "attempt to address data gaps" by reviewing "reasonably available exposure data for surrogate chemicals that have uses and chemical and physical properties similar to 1-BP." Additionally: "For conditions of use where data are limited or not available, [the agency will] review existing exposure models that may be applicable in estimating exposure levels."[19] Instead of relying on these measures, EPA should ask industry to produce the data that is necessary for EPA to complete the risk evaluation.

V. PERSONAL PROTECTIVE EQUIPMENT

A. EPA must not rely on personal protective equipment to give the illusion of lower occupational exposure levels

Exposures in all relevant industries need to be evaluated without assuming the workers will wear proper personal protective equipment. For example, a study by the National Institute for Occupational Safety and Health (NIOSH) of workers at dry cleaning facilities found the workers did not wear adequate personal protective gear, and had higher exposures as a result.[20] EPA should assess exposures without assuming that personal protective gear will be used, because there are no guarantees that it will be worn properly, if at all.

[16] SCHF, EHSC, HBN comments, Summary Comment, p 5
[17] SCHF, EHSC, HBN comments, Summary Comment, p 6
[18] https://www.epa.gov/ozone-layer-protection/health-and-environmental-effects-ozone-layer-depletion
[19] 1-BP Problem Formulation, p 64-65
[20] https://www.safetyandhealthmagazine.com/articles/11932-dry-cleaning-workers-need-to-wear-ppe-niosh-says