6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

[EPA-HQ-OLEM-2022-0971; FRL-10181-01- OLEM]

Response to Petition to Classify Discarded Polyvinyl Chloride as RCRA Hazardous Waste

AGENCY: Environmental Protection Agency (EPA).

ACTION: Petition response.

SUMMARY: The Environmental Protection Agency (EPA) is responding to a rulemaking petition from the Center for Biological Diversity requesting that discarded polyvinyl chloride be listed as a hazardous waste under the Resource Conservation and Recovery Act. After careful consideration, the Agency is tentatively denying the petition for the reasons discussed in this document. The Agency is also soliciting public comment on this tentative denial.

DATES: Comments must be received on or before **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: You may send comments, identified by Docket ID No. **EPA-HQ-OLEM-2022-0971**, by any of the following methods:

- Federal eRulemaking Portal: https://www.regulations.gov/ (our preferred method). Follow the online instructions for submitting comments.
- Mail: U.S. Environmental Protection Agency, EPA Docket Center, Office of Land and Emergency Management Docket, Mail Code 28221T, 1200 Pennsylvania Avenue NW, Washington, DC 20460.
- Hand Delivery or Courier: EPA Docket Center, WJC West Building, Room 3334, 1301 Constitution Avenue, NW, Washington, DC 20004. The Docket Center's hours of operations are 8:30 a.m. – 4:30 p.m., Monday – Friday (except Federal Holidays).

Instructions: All submissions received must include the Docket ID No. for this rulemaking. Comments received may be posted without change to https://www.regulations.gov/, including any personal information provided. For detailed instructions on sending comments and additional information on the rulemaking process, see the "Public Participation" heading of the **SUPPLEMENTARY INFORMATION** section of this document.

FOR FURTHER INFORMATION CONTACT: Daniel Lowrey, Materials Recovery and Waste Management Division, Office of Resource Conservation and Recovery, (5304T), Environmental Protection Agency, 1200 Pennsylvania Avenue NW., Washington, DC 20460; telephone number: 202-566-1015; email address: lowrey.daniel@epa.gov.

SUPPLEMENTARY INFORMATION:

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I. Public Participation

A. Does this Action Apply to Me?

The Agency is not proposing any regulatory changes at this time. Entities that may be interested in this tentative denial of the rulemaking petition include any facility

that manufactures, uses, or generates as waste any materials containing polyvinyl chloride (PVC) or its components. If you have questions regarding the applicability of this action to a particular entity, consult the person listed in the **FOR FURTHER INFORMATION CONTACT** section.

B. Written Comments

Submit your comments, identified by Docket ID No. **EPA-HQ-OLEM-2022-0971**, at https://www.regulations.gov (our preferred method), or the other methods identified in the **ADDRESSES** section. Once submitted, comments cannot be edited or removed from the docket. The EPA may publish any comment received to its public docket. Do not submit to EPA's docket at https://www.regulations.gov any information you consider to be Confidential Business Information (CBI), Proprietary Business Information (PBI), or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (i.e., on the web, cloud, or other file sharing system). Please visit https://www.epa.gov/dockets/commenting-epa-dockets for additional submission methods; the full EPA public comment policy; information about CBI, PBI, or multimedia submissions; and general guidance on making effective comments.

II. General Information

A. List of Abbreviations and Acronyms

APA Administrative Procedure Act

CAS Chemical Abstract Services

CBD Center for Biological Diversity

BBP Butyl benzyl phthalate

DBP Dibutyl phthalate

DEP Diethyl phthalate

DEHP Diethylhexyl phthalate

DIDP Diisodecyl phthalate

DINP Diisononyl phthalate

DMP Dimethyl phthalate

DnOP Di-n-octyl phthalate

EPA Environmental Protection Agency

g grams

kg kilogram

L liter

mg milligram

NSF/ANSI Approved American National Standard

ppm parts per million

PVC Polyvinyl chloride

RCRA Resource Conservation and Recovery Act

TCLP Toxicity characteristic leaching procedure

wt% percent by weight

B. What action is the EPA taking?

The EPA is providing notice of and requesting comment on its tentative denial of CBD's 2014 rulemaking petition concerning the regulation of discarded polyvinyl chloride (PVC) and associated chemical additives under the Resource Conservation and Recovery Act (RCRA). With this action, the Agency is publishing its evaluation of the

petition and supporting materials and requesting public comment on the tentative denial.

C. What is the EPA's authority for taking this action?

On July 24, 2014, the Center for Biological Diversity (CBD) petitioned the EPA to list discarded PVC as a hazardous waste under RCRA ("Petition"). The Agency is responding to this petition for rulemaking pursuant to 42 U.S.C. 6903, 6921 and 6974, and implementing regulation 40 CFR part 260.21. Authority for the identification and listing of hazardous wastes is granted pursuant to 42 U.S.C. 6903 and 6921, and implementing regulations 40 CF.R parts 260 and 261.

D. What are the incremental costs and benefits of this action?

As this action proposes no regulatory changes, this action will have neither incremental costs nor benefits.

III. Background

A. Background on polyvinyl chloride and how it is regulated under RCRA

PVC is one of the most common plastics, used in a variety of applications—primarily in the construction industry, but also in packaging and consumer goods (OECD 2022).

PVC is formed from the polymerization of vinyl chloride monomer and additives. Typical additives include plasticizers that make the PVC more flexible and stabilizers that limit degradation from sources such as oxygen, heat, light, and flame. Currently, discarded PVC may be classified as hazardous waste under RCRA if it leaches specified toxic constituents in excess of the toxicity characteristic leaching procedure (TCLP) regulatory limit for any contaminant (identified by a hazardous waste "D" number) listed in Table 1 of 40 CFR 261.24. PVC may contain RCRA hazardous constituents such as

vinyl chloride monomer (toxicity characteristic level of 0.2 milligrams per liter (mg/L)) as well as certain metals like barium, cadmium, and lead. Compounds listed on appendix VIII to 40 CFR part 261, which also includes all compounds that have D- and/or U- listed numbers, are hazardous constituents. “U” number wastes listed in 40 CFR 261.33 are substances that are hazardous wastes when they are discarded commercial chemical products, off-specification species, container residues, and spill residues thereof. Waste containing hazardous constituents is not automatically regulated as hazardous waste.

In the United States, there are no mandatory standards limiting residual vinyl chloride in domestically manufactured or imported PVC. However, some product standards apply to PVC products, such as NSF/ANSI 14 and 61 for plastic pipes. These standards apply to the leaching of vinyl chloride monomer into water carried by pipes, and do not directly limit the amount of vinyl chloride monomer that may be present in the PVC product. Vinyl chloride monomer limits in drinking water are found in 40 CFR 141 Appendix A to Subpart O, with a Traditional MCL of 0.002 mg/L.

A 2000 survey of American vinyl producers found average concentrations of residual vinyl chloride monomer to be between 0.52 and 1.45 mg/kg, and cites industry practice that PVC with residual vinyl chloride of less than 3.2 mg/kg is suitable for pipes that need to meet the leaching standards for drinking water (Borelli et al. 2005). Methods for evaluating residual vinyl chloride monomer in PVC are found in 40 CFR 61 Appendix B (Methods 107, 107A).

All PVC contains stabilizers. Some PVC contains stabilizers containing RCRA hazardous metals such as barium (D005), cadmium (D006), and/or lead (D008) (toxicity characteristic levels of 100 mg/L, 1 mg/L, and 5 mg/L, respectively). Other PVC contains stabilizers based on calcium, zinc, and/or tin, which are not regulated as RCRA hazardous constituents (Hahladakis et al. 2018; European Commission 2022).

PVC may contain plasticizers, with the concentration of plasticizers varying

widely based on the desired properties of the final material. Rigid forms of PVC contain little to no plasticizers while more flexible forms require the addition of more plasticizers. Common plasticizers include but are not limited to: di(2-ethylhexyl) phthalate (DEHP, CAS 117-81-7, U028), dibutyl phthalate (DBP, CAS 84-74-2, U069), diethyl phthalate (DEP, CAS 84-66-2, U088), dimethyl phthalate (DMP, CAS 131-11-3, U102), di-n-octylphthalate (DnOP, CAS 117-84-0, U107), and benzyl butyl phthalate (BBP, CAS 85-68-7, on Appendix VIII only) (Carlos, de Jager, and Begley 2018; Hahladakis et al. 2018, 185; Czogała, Pankalla, and Turczyn 2021). Common plasticizers that are not RCRA hazardous constituents include adipates, trimellitates, and other phthalates such as diisononyl phthalate (DINP, CAS 28553-12-0) and diisodecyl phthalate (DIDP, CAS 28761-40-0) (Carlos, de Jager, and Begley 2018; Hahladakis et al. 2018; Czogała, et al 2021).

Typically, plasticizers constitute from zero up to about 50 percent of the product by weight, although higher concentrations have been reported (Carlos, de Jager, and Begley 2018; Hahladakis et al. 2018; Kim et al. 2020; European Commission 2022).

It is difficult to determine the proportion of PVC products that contain plasticizers because PVC manufacturers and PVC product manufacturers are not generally required to report this information. Voluntary data from 2000 indicates about two thirds of PVC is of rigid grades that do not contain significant amounts of plasticizers (Borelli et al. 2005). In the United States, concentrations of certain phthalates are prohibited in some children's products (16 CFR 1307), but no single standard covers all PVC.

B. Summary of the Petitioner's Requested Changes

The EPA has been petitioned to "promulgate regulations governing the safe treatment, storage and disposal of PVC, vinyl chloride and associated dialkyl- and alkylarylesters of 1,2-benzenedicarboxylic acid, commonly known as phthalate

plasticizers."

CBD requests that discarded PVC be listed as a hazardous waste, which would require a narrative listing of discarded PVC from non-specific sources be added to the "F" list under 40 CFR 261.31, the requirements for which are specified in 40 CFR 261.11.

C. How is the EPA addressing discarded PVC?

The EPA regulates the management of solid waste, including discarded plastics such as PVC, under RCRA. RCRA sets forth different standards for different types of waste, but in general prohibits open dumping and requires that landfills have structures and procedures to prevent release of waste.

The EPA Strategic Plan of 2022-2026 (U.S. EPA 2022) sets forth priorities to reduce waste and prevent environmental contamination (Objective 6.2) including "EPA will administer grant programs to improve Tribal, state, and local solid waste management programs and infrastructure and education and outreach on waste prevention. EPA also will address land-based contributions to the mismanagement of post-consumer materials and plastic waste." Further information about the management of discarded plastic, including discarded PVC, can be found at https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/advancing-sustainable-materials-management.

The EPA Strategic Plan also sets priorities to protect and restore waterbodies and watersheds (Objective 5.2) including "EPA also will engage in both domestic and international partnerships to support trash pollution prevention programs, recycling efforts in rural and suburban communities, and waterfront revitalization." and "Implement programs to prevent or reduce nonpoint source pollution, including nutrients and plastic pollution." Further information about the EPA's actions on plastic pollution in

bodies of water, including marine plastic pollution as directed by the Save Our Seas 2.0 Act of 2020 (Public Law 116-224) signed into law in December 2020, can be found at https://www.epa.gov/trash-free-waters.

IV. Reasons for the EPA's Tentative Denial of the Petition

A. Petition Does Not Adequately Support Regulation of Discarded PVC under RCRA

The Petition does not provide sufficient evidence to suggest that listing discarded PVC as a hazardous waste would have a meaningful impact, if any, on reducing exposure to phthalates, including phthalates used as plasticizers in some PVC products. The rulemaking the petition is seeking under RCRA is, by definition, limited to hazards that present a substantial present or potential hazard to human health or the environment when solid waste is improperly treated, stored, transported or disposed of, or otherwise managed (40 CFR 261.11), which does not appear to correspond to the studies or data cited in the petition. As a result, the information provided about potential exposures during use of PVC is not relevant.

The petition identifies three primary potential harms, all related to phthalate plasticizers, that are related to disposal: 1) Environmental exposure from marine litter; 2) fugitive leachate from poorly lined landfills; and 3) atmospheric exposure from incineration. However, the petition does not identify any cases or situations where hazardous exposure to phthalate plasticizers results from discarded PVC under current waste management practices.

First, RCRA already prohibits open dumping of any solid waste, which includes marine plastic litter (40 CFR 257.1through 257.4). Classification of PVC as hazardous waste under RCRA would not introduce new controls to prevent marine litter.

Second, RCRA already requires that landfills control both blowing litter and leachate (40 CFR 258.20 through 258.29). Classification of discarded PVC as hazardous

waste, i.e., requiring disposal at a hazardous waste facility, would not change the types of controls required for existing landfills containing discarded PVC.

Third, regarding incineration, RCRA provides that air emissions from thermal processing of municipal-type solid waste are governed by the Clean Air Act (40 CFR 240.205). Standards for air emissions of incineration are not regulated by RCRA. Classification of discarded PVC as hazardous waste could impose additional requirements for incineration facilities (40 CFR 264.340 through 264.351), but it is not clear whether such requirements would reduce phthalate emissions.

Fourth, the Petition does not provide evidence for the release of hazardous constituents from discarded PVC, such as the leaching of plasticizers listed on Appendix VIII of 40 CFR part 261, that would require management as a hazardous waste as opposed to non-hazardous solid waste.

B. The EPA has Higher Priorities for Limited Available Resources

In addition to the reasons provided above, based on the information presented in the Petition, the resources that the EPA would have to allocate to list PVC as a hazardous waste are unwarranted and would preclude the EPA from pursuing more pressing rulemakings, implementation, and reviews with respect to currently identified hazards under RCRA.

Listing hazardous wastes is a resource-intensive process. The EPA must carefully consider the eleven regulatory factors in 40 CFR 261.11(a)(3). While the Petition discusses each of these factors, it often conflates exposure from the use of PVC (and specifically phthalate constituents in PVC) with potential hazards from the treatment storage and disposal of PVC. Moreover, the EPA would need to conduct extensive research to understand the scope and impact of the proposed ruling, including a research survey of all potentially impacted industries and facilities. Indeed, the last rulemaking

that led to a new hazardous waste listing in 2002 (Paint) required more than 2 full-time equivalent (FTE) staff for 5 years. In addition, funding to maintain and advance RCRA regulations has been flat or reduced for more than 20 years. By comparison, the number of FTE for the entire hazardous waste listing program in RCRA is currently 1.5. Because of the scope and required analysis, the EPA estimates that the resources required to propose listing discarded PVC as a hazardous waste would require more than 2 FTE over the course of 5 years. Meanwhile, OLEM is currently considering more than 20 petitions, including more than 10 regarding RCRA (https://www.epa.gov/petitions/petitions-office-land-and-emergency-management), and is also engaged in rulemaking. Acting on the proposed listing of discarded PVC as a hazardous waste would delay rulemakings that address hazards specifically identified by the EPA where regulating the treatment, storage, transport, or disposal of the hazard would meaningfully improve public health and the environment.

Agencies are generally given significant discretion in setting priorities and determining where the limited resources will be devoted. The Petition does not present evidence that discarded PVC presents a substantial present or potential hazard to human health or the environment when solid waste is improperly treated, stored, transported or disposed of, or otherwise managed. Accordingly, at this time and considering the constraints discussed above, the EPA will not divert limited resources from priority actions for a rulemaking to list discarded PVC as a hazardous waste.

V. References

The following is a listing of the documents that are specifically referenced in this document. The docket includes these documents and other information considered by the EPA, including documents that are referenced within the documents that are included in the docket, even if the referenced document is not physically located in the docket. For

assistance in locating these other documents, please consult the technical person listed under FOR FURTHER INFORMATION CONTACT.

1. CBD. Petition for Rulemaking Pursuant to section 7004(a) of the Resource Conservation and Recovery Act, 42 U.S.C. 6974(A), and section 21 of the Toxic Substances Control Act, 15 U.S.C. 2620, Concerning the Regulation of Discarded Polyvinyl Chloride and Associated Chemical Additives. July 29, 2014.

2. Borelli, F. , de la Cruz, P. , and Paradis, R. 2005. Residual Vinyl Chloride Levels in U.S. PVC Resins and Products: Historical Perspective and Update. Journal of Vinyl & Additive Technology, June 2005 65-69. https://doi.org/10.1002/vnl.20040

3. Carlos, K. , de Jager, L., and Begley, T. 2018. Investigation of the primary plasticisers present in polyvinyl chloride (PVC) products currently authorized as food contact materials. Food Addit. Contam. Part A Chem. Anal. Control Expo. Risk Assess., 35(6):1214-1222. https://doi.org/10.1080/19440049.2018.1447695.

4. Czogała, J., Pankalla, E., and Turczyn, R. 2021. Recent Attempts in the Design of Efficient PVC Plasticizers with Reduced Migration. Materials (Basel, Switzerland) 14(4): 844. https://doi.org/10.3390/ma14040844.

5. European Commission, Directorate-General for Environment. 2022. The use of PVC (poly vinyl chloride) in the context of a non-toxic environment: final report. Publications Office of the European Union. https://data.europa.eu/doi/10.2779/375357.

6. Hahladakis, J., Velis, C., Weber, R., Iacovidou, E., and Purnell, P. 2018. An overview of chemical additives present in plastics: Migration, release, fate and environmental impact during their use, disposal and recycling. Journal of Hazardous Materials 344, 179-199. https://doi.org/10.1016/j.jhazmat.2017.10.014.

7. Kim, D.Y.; Chun, S.-H.; Jung, Y.; Mohamed, D.F.M.S.; Kim, H.-S.; Kang, D.-Y.; An, J.-W.; Park, S.-Y.; Kwon, H.-W.; Kwon, J.-H.. 2020. Phthalate Plasticizers in Children's Products and Estimation of Exposure: Importance of Migration Rate. International Journal of Environmental Research. and Public Health, 202017(22) 8582. https://doi.org/10.3390/ijerph17228582.

8. NSF/ANSI 14: Plastics Piping System Components and Related Materials.

9. NSF/ANSI 61: Drinking water system components — Health Effects.

10. Organisation for Economic Cooperation and Development (OECD). 2022. Global Plastics Outlook: Policy Scenarios to 2060. OECD Publishing, Paris,. https://doi.org/10.1787/aa1edf33-en.

11. United States Environmental Protection Agency. 2020. Advancing Sustainable Materials Management: Facts and Figures Report, December 2020. https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/advancing-sustainable-materials-management

12. United States Environmental Protection Agency. 2022. FY 2022-2026 EPA Strategic Plan. Washington, D.C.: U.S. Environmental Protection Agency, March 2022. Periodical. https://www.epa.gov/system/files/documents/2022-03/fy-2022-2026-epa-strategic-plan.pdf.

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