

PREPUBLICATION COPY NOTICE:

The OCSPP Principal Deputy Assistant Administrator signed the following notice on **November 29, 2012:**

**Polychlorinated Biphenyls (PCBs): Recycling Plastics from Shredder Residue;
Request for Public Comment
[FRL-9371-9]**

This is a **prepublication** version of the notice that EPA is submitting for publication in the *Federal Register*. While the Agency has taken steps to ensure the accuracy of this Internet version of the notice it is not the official version of the notice for purposes of public comment. Please refer to the official version of the notice that will appear in a forthcoming *Federal Register* publication.

Once the official version of the notice publishes in the *Federal Register*, the prepublication version of the notice that appears on the Web site will be replaced with a link to the notice that appears in the *Federal Register* publication. At that time, you will also be able to access the on-line docket for this notice at <http://www.regulations.gov>. You can then use EPA's electronic docket and comment system at www.regulations.gov to submit or view public comments, access the index listing of the contents of the docket, and to access those documents in the docket that are available electronically. The docket number for this notice is **EPA-HQ-OPPT-2012-0902**. For further information about the docket and commenting, please consult the ADDRESSES section in the front of the notice.

ENVIRONMENTAL PROTECTION AGENCY

[EPA-HQ-OPPT-2012-0902; FRL-9371-9]

Polychlorinated Biphenyls (PCBs); Recycling Plastics from Shredder Residue

AGENCY: Environmental Protection Agency (EPA).

ACTION: Request for public comment.

SUMMARY: EPA is seeking comment on an interpretation of its regulations currently under consideration that would generally allow for the recycling of plastic separated from shredder residue under the conditions described in the Voluntary Procedures for Recycling Plastics from Shredder Residue, relying principally on the regulatory provisions for excluded PCB products. The interpretation described in this notice responds to questions EPA has received about the applicability of the excluded PCB products regulations.

DATES: Comments must be received on or before *[insert date 30 days after date of publication in the Federal Register]*.

ADDRESSES: Submit your comments, identified by docket identification (ID) number EPA-HQ-OPPT-2012-0902, by one of the following methods:

- *Federal eRulemaking Portal:* <http://www.regulations.gov>. Follow the online instructions for submitting comments.
- *Mail:* Document Control Office (7407M), Office of Pollution Prevention and Toxics (OPPT), Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460-0001.
- *Hand Delivery:* OPPT Document Control Office (DCO), EPA East Bldg., Rm. 6428, 1201 Constitution Ave., NW., Washington, DC. ATTN: Docket ID Number EPA-

HQ-OPPT-2012-0902. The DCO is open from 8 a.m. to 4 p.m., Monday through Friday, excluding legal holidays. The telephone number for the DCO is (202) 564-8930. Such deliveries are only accepted during the DCO's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to docket ID number EPA-HQ-OPPT-2012-0902. EPA's policy is that all comments received will be included in the docket without change and may be made available online at <http://www.regulations.gov>, including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through regulations.gov or email. The regulations.gov website is an "anonymous access" system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an email comment directly to EPA without going through regulations.gov, your email address will be automatically captured and included as part of the comment that is placed in the docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses.

Docket: All documents in the docket are listed in the docket index available at <http://www.regulations.gov>. Although listed in the index, some information is not

publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either in the electronic docket at <http://www.regulations.gov>, or, if only available in hard copy, at the OPPT Docket. The OPPT Docket is located in the EPA Docket Center (EPA/DC) at Rm. 3334, EPA West Bldg., 1301 Constitution Ave., NW., Washington, DC. The EPA/DC Public Reading Room hours of operation are 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number of the EPA/DC Public Reading Room is (202) 566-1744, and the telephone number for the OPPT Docket is (202) 566-0280. Docket visitors are required to show photographic identification, pass through a metal detector, and sign the EPA visitor log. All visitor bags are processed through an X-ray machine and subject to search. Visitors will be provided an EPA/DC badge that must be visible at all times in the building and returned upon departure.

FOR FURTHER INFORMATION CONTACT: Peter Gimlin, National Program Chemicals Division, Office of Pollution Prevention and Toxics, Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460-0001; telephone number: (202) 566-0515; email address: gimlin.peter@epa.gov.

SUPPLEMENTARY INFORMATION:

I. General Information

This notice is directed to the public in general, and may be of interest to a wide range of stakeholders, including private citizens, federal, tribal, state and local governments, environmental consulting firms, industry representatives, environmental

organizations and other public interest groups. Since others may also be interested, the Agency has not attempted to describe all the specific entities that may have interest in this notice. If you have any questions regarding the applicability of this action to a particular entity, consult the person listed under **FOR FURTHER INFORMATION CONTACT**.

EPA is considering an interpretation of its regulations that would generally allow for recycling of plastic separated from shredder residue under the conditions described in the Voluntary Procedures for Recycling Plastics from Shredder Residue (Ref. 1), relying principally on the regulatory provision for excluded PCB products at 40 CFR part 761. In the interest of transparency, EPA is inviting the public to provide comments as part of this process. EPA has opened the docket for public comment for 30 days after publication in the **Federal Register**. Details on how to provide comments to the docket are provided under **ADDRESSES**.

II. Background

EPA was approached by the Institute of Scrap Recycling Industries, Inc. (ISRI), regarding separation, recycling, use, and distribution of recycled plastics from shredder residue recovered from metals recycling facilities (referred to by ISRI as automobile shredder residue (ASR) aggregate). In a February 24, 2011 letter, ISRI requested “written confirmation that separating plastics from ASR aggregate for use and distribution in commerce, using processes that reduce any PCBs that may be present to a level at or below which there is no unreasonable risk, is authorized” under regulations

promulgated pursuant to the Toxic Substances Control Act (TSCA) (see 16 U.S.C.

2605(e)) (Ref. 2). ISRI stated that:

... analysis shows that the separation, recycling, distribution in commerce, and reuse of plastics from shredder aggregate is consistent with existing authorizations that allow the use and distribution in commerce of products that contain low levels of PCBs, including provisions for “excluded PCB products” and “excluded PCB manufacturing processes” (as defined in 40 C.F.R. § 761.3).

ISRI also stated that resolving regulatory uncertainty could lead to investments and further development in innovative methods to separate plastics from ASR aggregate that would produce broad environmental benefits and increase global competitiveness (Ref. 2).

ISRI developed a set of voluntary procedures designed to prevent the introduction of PCBs that are regulated for disposal into recycled plastics recovered from shredder residue generated by metal recycling facilities. The Voluntary Procedures for Recycling Plastics from Shredder Residue (Ref. 1) includes development and implementation of a documented materials management system through: (1) Documented source control programs aimed at preventing the introduction of PCBs regulated for disposal into the shredder feedstock materials that contribute to any shredder residue from which plastics will be recovered for recycling; and (2) documented output control programs for facilities processing/producing/recycling plastics from shredder residue. The Voluntary Procedures for Recycling Plastics from Shredder Residue and supporting materials are available at EPA-HQ-OPPT-2012-0902.

According to ISRI, 1 to 2 million tons of plastic are generated annually in ASR aggregate, most of which could be separated and recycled rather than disposed using

novel technologies (Ref. 3). ISRI further delineates that the most common automotive plastic categories are polypropylene (PP), polyethylene (PE), polyurethane (PU), and polyvinyl chloride (PVC). ISRI also mentions acrylonitrile styrene butadiene (ABS) and high-impact polystyrene (HIPS) as additional types of automotive plastics found in ASR. By assuming that the 1 to 2 million tons of plastic generated from ASR annually, when characterized by the percentage of total scrap plastics from a typical 2001 vehicle (Ref. 4), this would imply the following total annual volumes: PP (22.1%): 221,000-442,000 tons; PU (19.3%): 193,000-386,000 tons; nylon (12.4%): 124,000-248,000 tons; PVC (7.9%): 79,000-158,000 tons; ABS (7.4%): 74,000-148,000 tons; PE (4.4%): 44,000-88,000 tons; polycarbonate (3.9%): 39,000-78,000 tons; other engineering resins, including HIPS (10.9%): 109,000-218,000 tons; polyvinyl butyral (2.1%): 21,000-41,000 tons; other (9.8%): 98,000-196,000 tons. However, ISRI notes that not all of these plastics are currently technically or economically feasible for recovery. But, ISRI highlights several plastics as likely candidates for recycling. These are PP, high-density PE, ABS, HIPS, and PU foam. Recovery of these plastics would require installation and operation of new or modified material separation equipment.

To characterize the potential benefits of recovering and recycling plastics in ASR aggregate, ISRI commissioned a report from Nathan Associates, Inc. (Ref. 5). This report estimates economic benefits and environmental improvements from separating, sorting, processing, and recycling plastics found in ASR aggregate rather than disposing this material. In brief, the report finds that allowing plastics in ASR aggregate to be recycled would create demand for new capital equipment to be manufactured, installed, and operated in material separation facilities. This would lead to increased economic

activity both directly through purchase, installation, and operation of this equipment, as well as indirectly through increased demand for intermediate goods and services. The report also estimates positive environmental impacts on energy consumption, greenhouse gases, water use, and landfill space if virgin plastics were replaced with recycled material.

EPA believes that recycling turns materials that would otherwise become waste into valuable resources. Recycling includes collecting recyclable materials that would otherwise be considered waste, sorting and processing recyclables into raw materials such as fibers, manufacturing raw materials into new products, and purchasing recycled products. Collecting and processing secondary materials, manufacturing recycled-content products, and then buying recycled products creates a circle or loop that ensures the overall success and value of recycling. Ultimately, recycling can generate a host of financial, environmental, and social returns. Some of these benefits accrue locally as well as globally. Examples of the general benefits of recycling include protecting and expanding U.S. manufacturing jobs and increasing U.S. competitiveness; reducing the need for landfilling and incineration; preventing pollution caused by the manufacturing of products from virgin materials; saving energy; decreasing emissions of greenhouse gases that contribute to global climate change; conserving natural resources such as timber, water, and minerals; and helping sustain the environment for future generations.

With respect to recycling by the automotive industry overall, research on improvements in automotive design and construction has been conducted in order to facilitate the recycling of automotive materials/components. The recycling of automotive steel has proven to be economically advantageous, so that wholesale automotive

recycling is now widespread. Since a large volume of wastage is also generated, industry is interested in reusing as much automotive plastic as may be environmentally and economically feasible (Ref. 6).

Increases in the recycling of plastics from ASR aggregate may also offer some benefits beyond that of other forms of plastics recycling. For instance, because substantial automotive recycling systems are already in place for the primary purpose of recovering steel, large quantities of ASR aggregate are already being simultaneously collected. Such available quantities of ASR aggregate may then be further separated and processed as necessary for purposes of reuse. Also, any potential expansion of ASR aggregate recycling capabilities could potentially generate excess capacity and/or technological advancements for use in the recycling of non-automotive products of a similar nature, such as large appliances for example.

Such dynamics demonstrate the potential for creating a broad range of direct and indirect benefits that may be directly attributed to improved procedures and reduced regulatory barriers associated with the recycling of plastics in ASR aggregate. Any stimulation of the market for ASR aggregate may thereby help to not only protect and expand U.S. manufacturing jobs, but also foster new technologies and products while increasing U.S. competitiveness.

While EPA agrees that recycling plastics from ASR aggregate could have net economic benefits and positive environmental impacts, EPA has not conducted an independent estimate of the precise magnitude or timing of these benefits and impacts. Therefore, EPA is not in a position to assess the underlying assumptions, or the savings per ton and multipliers, used in the benefit estimates from the Nathan Associates, Inc.

report commissioned by ISRI. EPA notes that the report does not address the extent to which economic activity associated with the recycling of plastics from ASR aggregate would displace current economic activity associated with disposal of these plastics or the manufacturing of virgin materials. Nor does it address the timing of potential investments in new equipment. Additionally, the report relies on assumptions supported by limited data on plastic volumes, recoverability, environmental impacts, and market prices. EPA is interested in the public views on factors that may affect the direction, magnitude, and timing of benefits, costs, and environmental impacts associated with recycling plastics found in ASR aggregate rather than disposing of this material.

As expressed in the Pollution Prevention Act of 1990, 42 U.S.C. 13101 *et seq.*, and the Agency's pollution prevention policies, EPA generally prefers recycling to disposal of materials within the waste management hierarchy. This general preference is a factor EPA has considered here. Plastics recovered from ASR aggregate could be incorporated into a wide variety of consumer products such as appliances, house wares, office goods, electronics, and carpeting. Plastics from ASR aggregate could also be returned in a closed loop to the automotive market. Although some of the same categories of plastics recovered from ASR aggregate are also used in certain food contact and medical applications, these recycled plastics are not expected to make large inroads into demand for virgin materials for these applications due to the voluntary procedures described in this notice. These procedures require plastic recyclers to include contractual provisions in sales contracts expressly stating that plastics containing recycled material

separated from ASR aggregate may contain PCBs, and therefore the recycled plastics may be unsuitable for many products that currently use virgin plastic, such as products that involve oral contact.

III. Summary of Approach

The interpretation under consideration would generally allow for the recycling of plastic separated from shredder residue under the conditions described in the Voluntary Procedures for Recycling Plastics from Shredder Residue (Ref. 1), relying principally on the regulatory provisions for excluded PCB products.

TSCA section 6(e) generally prohibits the manufacture, processing, distribution in commerce and use of PCBs. However, EPA has by regulation excluded certain materials, including excluded PCB products, from these prohibitions. Excluded PCB products are defined as follows:

Excluded PCB products means PCB materials which appear at concentrations less than 50 ppm, including but not limited to:

(1) Non-Aroclor inadvertently generated PCBs as a byproduct or impurity resulting from a chemical manufacturing process.

(2) Products contaminated with Aroclor or other PCB materials from historic PCB uses (investment casting waxes are one example).

(3) Recycled fluids and/or equipment contaminated during use involving the products described in paragraphs (1) and (2) of this definition (heat transfer and hydraulic fluids and equipment and other electrical equipment components and fluids are examples).

(4) Used oils, provided that in the cases of paragraphs (1) through (4) of this definition:

(i) The products or source of the products containing < 50 ppm concentration PCBs were legally manufactured, processed, distributed in commerce, or used before October 1, 1984.

(ii) The products or source of the products containing < 50 ppm concentrations PCBs were legally manufactured, processed, distributed in commerce, or used, i.e., pursuant to authority granted by EPA regulation, by exemption petition, by settlement agreement, or pursuant to other Agency-approved programs;

(iii) The resulting PCB concentration (i.e. below 50 ppm) is not a result of dilution, or leaks and spills of PCBs in concentrations over 50 ppm. 40 CFR 761.3.

EPA regulations allow the use, processing, and distribution in commerce of excluded PCB products. 40 CFR 761.20(a) and (c). Except as otherwise specifically provided, the regulations do not restrict the forms of use, processing and distribution that are allowed. EPA specifically identified, as one likely source of PCBs in excluded PCB products, “contamination during recycling activities involving” historic PCBs. 52 FR 25838, 25844 (July 8, 1987). EPA believes that it is reasonable to interpret the regulations as generally allowing the recycling of excluded PCB products. Accordingly, under the interpretation discussed in this notice, to the extent that the feedstock (scrap materials) to a shredder consists of these kinds of materials, the plastics separated from the resulting residue could be recycled (and the resulting recycled product would also be an excluded PCB product that could be processed, used and distributed in commerce, including being further recycled), provided the PCB concentration in any resulting product is below 50 ppm.

Typically, the burden of demonstrating that a regulatory exclusion applies rests with the party seeking that exclusion. EPA believes that, for shredders and their suppliers that follow the Voluntary Procedures document, it is appropriate to generally treat the feedstock as consisting of excluded PCB products unless there is information specifically indicating that the feedstock does not qualify. If shredders and suppliers do not follow the voluntary procedures, they will need to be able to otherwise demonstrate that the feedstock and residue meet the exclusion. Clearly if the feedstock materials or residue contain PCBs at concentrations ≥ 50 ppm, the materials cannot qualify as excluded PCB products.

EPA acknowledges uncertainty as to the source of the PCBs in shredder residue. However, EPA believes the procedures, as explained in the Voluntary Procedures document, can prevent the introduction of PCBs at levels ≥ 50 ppm. EPA may periodically evaluate the processes and procedures involved in recycling plastics recovered from shredder residue. In addition, EPA believes it is likely that the number of potential sources of PCBs at levels ≥ 50 ppm has declined since the TSCA section 6(e) prohibitions went into effect. If PCBs in the feedstock material are < 50 ppm, it is plausible that the sources of PCBs in the residue are excluded PCB products. The information available to EPA indicates that the PCBs found associated with plastics separated from residue are Aroclor PCBs. Aroclors were intentionally manufactured PCB mixtures, not inadvertently generated PCBs. Since PCBs in general and Aroclors more specifically have not been intentionally produced in the U.S. since the prohibitions in TSCA section 6(e) became effective, the Aroclor identity of the PCBs found associated with plastics separated from shredder residue suggests that they were manufactured prior to 1984.

In promulgating the excluded PCB product rule, EPA described the provision as follows:

EPA is adopting the generic 50 ppm exclusion for the processing, distribution in commerce, and use, based on the Agency's determination that the use, processing, and distribution in commerce of products with less than 50 ppm PCB concentration will not generally present an unreasonable risk of injury to health or the environment. EPA could not possibly identify and assess the potential exposures from all the products which may be contaminated with PCBs at less than 50 ppm. . . . EPA has concluded that the costs associated with the strict prohibition on PCB activities are large and outweigh the risks posed by these activities. 53 FR 24210 (June 27, 1988).

EPA has further stated, with respect to the excluded PCB products rule: "These

amendments have excluded the majority of low-level PCB activities (less than 50 ppm) from regulation” (Ref. 7). Given the difficulty of determining the precise source of PCBs, EPA believes the purpose of excluding “old” PCBs under the excluded products rule is best effectuated in these circumstances by treating < 50 ppm materials entering a shredder as excluded PCB products unless there is information specifically indicating that the materials do not qualify.

EPA’s regulations provide another potentially relevant exclusion from regulation for PCBs that result from an excluded manufacturing process. 40 CFR 761.3. EPA believes that this interpretation would also support recycling plastics if PCBs produced by an excluded manufacturing process are present in shredder feedstock. However, based on examination of data provided by ISRI in a “Summary of Analysis Done on Plastics Recovered from Shredder Aggregate” (Ref. 8), for four types of plastic recovered from shredder residue (i.e., ABS, HIPS, PP, HDPE (high density polyethylene)), EPA believes it is less likely that the PCBs that have been found associated with these plastics separated from shredder residue resulted from excluded manufacturing processes, because, among other things, EPA has not received notification from manufacturers required for these processes under 40 CFR 761.185.

EPA requests comment on the regulatory interpretation described above. EPA will accept comments for 30 days after date of publication in the **Federal Register**. If adopted, the interpretation would not be a legislative rule because it would not impose any binding requirements on either EPA or the regulated community. EPA is requesting comment on the approach because EPA is interested in the views of stakeholders on the approach, not because EPA intends to establish binding requirements.

IV. References

As indicated under **ADDRESSES**, a docket has been established for this notice under docket ID number EPA-HQ-OPPT-2012-0902. The following is a listing of the documents that are specifically referenced in this action. The docket includes these documents and other information considered by 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 person listed under **FOR FURTHER INFORMATION CONTACT**.

1. ISRI. Voluntary Procedures for Recycling Plastics from Shredder Residue, October 24, 2012.
2. ISRI. Letter from Robin K. Weiner to Steve Owens, February 24, 2011.
3. ISRI. Letter Re: Docket ID No. EPA-HQ-OPPT-2009-0757—Advance Notice Of Proposed Rulemaking, Polychlorinated Biphenyls (PCBs); Reassessment of Use Authorizations, August 20, 2010.
4. American Chemistry Council. Chemistry and Light Vehicles, August 2012, available at <http://www.plastics-car.com/lightvehiclereport>.
5. Nathan Associates, Inc. Economic Impacts and Environmental Benefits of Separating, Sorting, Processing, and Recycling Plastics in the Automobile and Appliance Shredder Aggregate, December 21, 2010.
6. Argonne National Laboratory. Recycling End-of-Life Vehicles of the Future, December 1, 2009, available at <http://www.ipd.anl.gov/anlpubs/2010/01/65969.pdf>.

7. EPA. PCB Q & A Manual: An EPA TSCA assistance document designed to provide the regulated community with Agency interpretations to frequently posed questions, 1994, available at <http://www.epa.gov/osw/hazard/tsd/pcbs/pubs/manual.pdf>.

8. ISRI. Summary of Analysis Done on Plastics Recovered from Shredder Aggregate, Late 2010/Early 2011.

List of Subjects

Environmental protection, Hazardous substance, PCBs, Plastic, Polychlorinated biphenyls, Recycling, Shredder residue.

Dated: 11-29-12

Louise P. Wise for Jim Jones

P.T.

Louise P. Wise,

Acting Assistant Administrator, Office of Chemical Safety and Pollution Prevention.