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ENVIRONMENTAL PROTECTION AGENCY

[FRL- 9659-9; Docket ID No. EPA-HQ-ORD-2012-0512]

Nanomaterial Case Study: A Comparison of Multiwalled Carbon Nanotubes and Decabromodiphenyl Ether Flame-Retardant Coatings Applied to Upholstery Textiles

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of Public Comment Period and Public Information Exchange Meeting.

SUMMARY: EPA is announcing a 60-day public comment period for the external review draft document titled, "Nanomaterial Case Study: A Comparison of Multiwalled Carbon Nanotubes and Decabromodiphenyl Ether Flame-Retardant Coatings Applied to Upholstery Textiles" (EPA/600/R-12/043A). The draft document is being issued by the National Center for Environmental Assessment (NCEA) within EPA's Office of Research and Development (ORD). It does not draw conclusions regarding potential environmental risks or hazards of multiwalled carbon nanotubes (MWCNT); rather, it aims to identify what is known and unknown about MWCNT to support future assessment efforts. EPA is releasing this draft document for the purposes of public comment and peer review. This draft document is not final as described in EPA's information quality guidelines, and it does not represent and should not be construed to

represent Agency policy or views. EPA will consider public comments it receives in accordance with this notice when finalizing the draft document. EPA is also announcing a Public Information Exchange Meeting to: (1) Receive comments and questions on the draft "Nanomaterial Case Study: A Comparison of Multiwalled Carbon Nanotubes and Decabromodiphenyl Ether Flame-Retardant Coatings Applied to Upholstery Textiles;" and (2) to provide information on the draft EPA nanomaterial case study and the workshop process that the draft document will be used in for identifying and prioritizing research gaps that could support future assessment and risk management efforts for MWCNT. This workshop process will be conducted independently by RTI International, a contractor to EPA.

Dates: The public comment period begins, [INSERT DATE PUBLISHED IN THE FEDERAL REGISTER], and ends [INSERT DATE 60 DAYS AFTER DATE PUBLISHED IN THE FEDERAL REGISTER]. Comments must be received on or before [INSERT DATE 60 DAYS AFTER DATE PUBLISHED IN THE FEDERAL REGISTER].

The Public Information Exchange Meeting on the draft EPA document "Nanomaterial Case Study: A Comparison of Multiwalled Carbon Nanotubes and Decabromodiphenyl Ether Flame-Retardant Coatings Applied to Upholstery Textiles" will be held on October 29, 2012, beginning at 8:30 am and ending at 10:30 am Eastern Standard Time.

ADDRESSES: The draft EPA document "Nanomaterial Case Study: A Comparison of Multiwalled Carbon Nanotubes and Decabromodiphenyl Ether Flame-Retardant Coatings Applied to Upholstery Textiles" is available primarily via the Internet on the NCEA home page under Recent Additions and the Data and Publications menus at http://www.epa.gov/ncea. A

limited number of paper copies are available. For copies, contact Marieka Boyd by phone (919-541-0031), fax (919-541-5078), or e-mail (boyd.marieka@epa.gov). If you are requesting a paper copy, please provide your name, your mailing address, and the document title, "Nanomaterial Case Study: A Comparison of Multiwalled Carbon Nanotubes and Decabromodiphenyl Ether Flame-Retardant Coatings Applied to Upholstery Textiles."

Comments may be submitted electronically via http://www.regulations.gov, by mail, by facsimile, or by hand courier. Please follow the detailed instructions provided in the **SUPPLEMENTARY INFORMATION** section of this notice.

The Public Information Exchange Meeting on the draft EPA document "Nanomaterial Case Study: A Comparison of Multiwalled Carbon Nanotubes and Decabromodiphenyl Ether Flame-Retardant Coatings Applied to Upholstery Textiles" will be held at the EPA facility in Research Triangle Park, North Carolina. The RTI Workshop will be held in the same location, following the Public Information Exchange Meeting. To attend the Public Information Exchange Meeting or observe the RTI workshop, register no later than October 15, 2012, by calling Ms. Kristin Smith at 919-541-6081, or by sending an e-mail to ceananocarbon@rti.org. Space is limited, and reservations will be accepted on a first-come, first-served basis. Please indicate whether you are interested in attending the EPA Public Information Exchange Meeting or observing the RTI International Workshop or both.

Information on Services for Individuals with Disabilities: EPA welcomes public attendance at the Public Information Exchange Meeting and will make every effort to accommodate persons with disabilities. For information on access or services for individuals with disabilities, contact: Kristin Smith at 919-541-6081.

ADDITIONAL INFORMATION: For information on the docket or the public comment period, contact the Office of Environmental Information Docket; telephone: 202-566-1752; facsimile: 202-566-9744; or e-mail: Docket_ORD@epa.gov. For technical information on the draft document, contact Dr. Christy Powers, National Center for Environmental Assessment; (MD B243-01), U.S. Environmental Protection Agency, Research Triangle Park, NC 27711; telephone: 919-541-5504; facsimile: 919-541-5078; or email: powers.christina@epa.gov.

SUPPLEMENTARY INFORMATION:

I. Information about the Project/Document

The draft document will be used in a workshop process that engages experts with diverse technical backgrounds (e.g., toxicology, polymer science, environmental fate, and transport) and sector perspectives (e.g., academia, industry, government, and nongovernment organizations). Experts will use the draft case study document to identify and prioritize research gaps that could support future assessment and risk management efforts for MWCNT using a structured decision process. This workshop process will be conducted by RTI International, an EPA contractor, and will utilize web-based tools to gather expert input prior to culminating in a face-to-face workshop convened by RTI International.

The Public Information Exchange Meeting announced above will precede the workshop convened by RTI International. Following the conclusion of the Information Exchange Meeting, RTI International, a contractor to EPA, will conduct a separate meeting, the "Nanomaterial Case Study Workshop Process: Identifying and Prioritizing Research for Multiwalled Carbon Nanotubes," in the same location. This workshop will be conducted with a set of invited expert participants selected by RTI International and utilize a structured decision science process

similar to the process used in previous workshops (e.g., http://www.epa.gov/osp/bosc/pdf/nano1005summ.pdf). The RTI workshop will use the draft EPA document "Nanomaterial Case Study: A Comparison of Multiwalled Carbon Nanotubes and Decabromodiphenyl Ether Flame-Retardant Coatings Applied to Upholstery Textiles" [External Review Draft] (U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-12/043A, 2012, (http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=244011) as a starting point for identifying and prioritizing possible research directions related to multiwalled carbon nanotubes. Although funded by EPA, the RTI workshop process is being conducted independently of EPA to comply with provisions of the Federal Advisory Committee Act (5 U.S.C. App. 2 [http://www.archives.gov/federal-register/laws/fed-advisory-committee]). The RTI workshop will be open to public observers.

This draft document and structured workshop process is funded by EPA but is independently conducted by RTI International and follows previous efforts on engineered nanoscale materials (nanomaterials). Nanomaterials have often been described as having at least one dimension between 1 and 100 nanometers and frequently possessing unusual, if not unique, properties that arise from their small size. Like all technological developments, nanomaterials offer the potential for both benefits and risks. The assessment of such risks and benefits requires information, but given the emergent state of nanotechnology, much remains to be learned about the characteristics and effects of nanomaterials before such assessments can be accomplished.

In its 2007 Nanotechnology White Paper (2007, p. 89), EPA included the following recommendations regarding the risk assessment of nanomaterials: (1) Develop case studies based on publicly available information on one or several intentionally produced nanomaterials, and from such case studies identify information gaps to help map areas of research that would

support the risk assessment process; and (2) hold a series of workshops involving a substantial number of experts from several disciplines to assist in this process. In keeping with these recommendations, the National Center for Environmental Assessment (NCEA) in EPA's Office of Research and Development (ORD) prepared the Nanomaterial Case Studies: Nanoscale Titanium Dioxide in Water Treatment and in Topical Sunscreen [Final] (U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-09/057F, 2010, http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=230972), released in November 2010, and the Nanomaterial Case Study: Nanoscale Silver in Disinfectant Spray [External Review Draft] (U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-10/081, 2012).

The two draft documents each supported a workshop: "Nanomaterial Case Studies Workshop: Developing a Comprehensive Environmental Assessment Research Strategy for Nanoscale Titanium Dioxide" on September 29–30, 2009, in Durham, North Carolina, and "Nanomaterial Case Studies Workshop: Developing a Comprehensive Environmental Assessment Research Strategy for Nanoscale Silver" on January 4–7, 2011, in Research Triangle Park, North Carolina. A summary of the workshops may be found at: http://www.epa.gov/osp/bosc/pdf/nano1005summ.pdf and http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=226723 for nanoscale titanium dioxide and nanoscale silver, respectively. The summary documents provide information on the design and conduct of the workshops, noting that the Nanomaterial Case Studies Workshop for nanoscale titanium dioxide was held under the auspices of the EPA Board of Scientific Counselors (BOSC), an advisory committee of independent scientists and engineers established by EPA to provide advice, information, and recommendations concerning practices and programs of ORD, including ORD's research planning process, in accordance with provisions of the Federal

Advisory Committee Act and related regulations. In August 2010, the BOSC provided comments on the case studies workshop (http://www.epa.gov/osp/bosc/pdf/nano1008rpt.pdf).

The case study documents are structured by the comprehensive environmental assessment (CEA) framework, to systematically organize information on the product life cycle, environmental fate, exposure-dose, and impacts in humans, ecological receptors, and the environment. As noted above, CEA also includes a process component involving decision science methods, and this aspect of CEA was used in prior workshops to identify and prioritize research or information needed to assess nanoscale titanium dioxide and nanoscale silver, respectively.

The nanomaterial case studies are intended to be used in the development and refinement of long-term research planning efforts for potential human health, ecological, and environmental risks. Such a comprehensive strategy is expected to develop in an evolutionary process reflecting adjustments and modifications as additional nanomaterials are considered and new information becomes available. To that end, the current case study on multiwalled carbon nanotubes (MWCNT) builds on previous efforts by incorporating a comparative perspective with conventional flame-retardant, decabromodiphenyl ether. This comparison is included to provide a relatively more robust data base that may help identify key data gaps for MWCNT related to future assessment and risk management efforts. It further provides a foundation for future efforts to identify risk-related tradeoffs between a traditional material, such as decaBDE and a

nano-enabled product.

II. How to Submit Technical Comments to the Docket at www.regulations.gov

Submit your comments, identified by Docket ID No. **EPA-HQ-ORD-2012-0512** by one of the following methods:

- www.regulations.gov: Follow the on-line instructions for submitting comments.
- E-mail: Docket_ORD@epa.gov.
- Fax: 202-566-9744.
- Mail: Office of Environmental Information (OEI) Docket (Mail Code: 28221T), U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, N.W., Washington, DC 20460. The phone number is 202-566-1752.
- Hand Delivery: The OEI Docket is located in the EPA Headquarters Docket Center, EPA West Building, Room 3334, 1301 Constitution Avenue, N.W., Washington, DC. The EPA Docket Center Public Reading Room is open from 8:30 am to 4:30 pm, Monday through Friday, excluding legal holidays. The

telephone number for the Public Reading Room is 202-566-1744. Such deliveries are only accepted during the docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information. If you provide comments by mail or hand delivery, please submit three copies of the comments. For attachments, provide an index, number pages consecutively with the comments, and submit an unbound original and three copies.

Instructions: Direct your comments to Docket ID No. **EPA-HQ-ORD-2012-0512**. Please ensure that your comments are submitted within the specified comment period. Comments received after the closing date will be marked "late," and may only be considered if time permits. It is EPA's policy to include all comments it receives in the public docket without change and to make the comments available online at www.regulations.gov, including any personal information provided, unless a comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information through www.regulations.gov or e-mail that you consider to be CBI or otherwise protected. The www.regulations.gov Web site 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 e-mail comment directly to EPA without going through www.regulations.gov, your e-mail address will be automatically captured and included as part of the comment that is placed in the public 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. For additional information about EPA's public docket visit the EPA Docket Center home page at www.epa.gov/epahome/dockets.htm.

Docket: Documents in the docket are listed in the www.regulations.gov index. 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 materials, such as copyrighted material, are publicly available only in hard copy. Publicly available docket materials are available either electronically in www.regulations.gov or in hard copy at the OEI Docket in the EPA Headquarters Docket Center.

Dated: June 25, 2012.

Darrell A. Winner, Acting Director,
National Center for Environmental Assessment.

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