

**OPPT Proposed Draft Charge to External Peer Reviewers for the review of the TSCA
Workplan Chemical Risk Assessment of HHCb**

December 2012

The HHCb Workplan Assessment evaluated the environmental risk to the aquatic and terrestrial environments from the use of the polycyclic musk HHCb (CASRN 1222-05-5) as a fragrance ingredient in consumer and commercial products. Risk was calculated for scenarios including exposure to aquatic organisms through the water or sediment and exposure to terrestrial organisms through contact with contaminated soil.

Issue 1. General Organization of the Risk Characterization. The document describes the scope and conceptual plan for the HHCb environmental risk assessment (Chapter 1); provides information on chemistry, fate and transport, production, and uses (Chapter 2); and characterizes exposure, hazard, and risk (Chapter 3). Supporting information is provided in appendices. The risk assessment is intended to provide a clear and transparent summary of EPA's analysis.

Question 1-1: Please comment on whether the characterization provides a clear and logical summary of EPA's analysis. Where necessary, please provide specific suggestions for improving the document.

Question 1-2: Please comment on whether appropriate background information is provided and accurately characterized. Please provide any other significant literature, reports, or data that would be useful to complete this characterization, and if so, what are they?

Issue 2. Chemistry, Environmental Fate and Transport, Production and Uses. The HHCb risk assessment document summarizes chemistry, environmental fate and transport, production, and uses of HHCb. This information is used to determine the likely extent and duration of environmental exposures and better understand the toxicity data.

Question 2-1: Please comment on whether the information is used appropriately in the risk characterization. Please provide any specific suggestions for improving the assessment.

Issue 3. Environmental Exposure Assessment. Data on measured levels of HHCb in wastewater, surface water, sediment, soil, and biota are summarized and analyzed to characterize the range of potential environmental concentrations of HHCb. Monitoring data from the USGS NWIS data were combined with monitoring data from the published literature and are assumed to be representative of the range of HHCb concentrations in the US.

Question 3-1: Please comment on the use of data from multiple years and locations to characterize environmental concentrations in surface water and sediment in the US.

Question 3-2: Please comment on the approach of using both the monitoring data from the literature and the USGS NWIS data.

Issue 4. Environmental Hazard Assessment. Ecotoxicity studies of acceptable quality were identified and summarized for fish, aquatic invertebrates, aquatic plants, sediment invertebrates, terrestrial invertebrates, and terrestrial plants. The ecotoxicity concentrations of concern were calculated for the most sensitive species. Toxicity endpoints included acute and chronic toxicity to aquatic species, chronic toxicity to sediment organisms, and chronic toxicity to terrestrial invertebrates and plants.

Question 4-1: Please comment on the ecotoxicity studies selected to represent the most sensitive species in each of the risk scenarios (acute aquatic, chronic aquatic, chronic sediment, chronic terrestrial invertebrate, and chronic terrestrial plant). Please comment on the use of the marine copepod chronic value for chronic toxicity to aquatic species. Please provide discussion, suggestions, and references to support any recommendations for the hazard characterization.

Issue 5. Environmental Risk Characterization. Environmental risk for HHCB is calculated by comparing the measured environmental concentrations of HHCB to the ecological concentrations of concern from toxicity studies for each risk scenario. The range of environmental concentrations is incorporated in the analysis by calculating risk for both mean and upper limit concentrations.

Question 5-1: Please comment on the calculation of risk derived from the different datasets and how they account for environmental variability. Please provide specific recommendations as needed for improving the risk characterization and references to support any recommendations.